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Report

European Industrial Technologies of High Cooperation and Business Potential with Japan

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LC Innoconsult INTERNATIONAL

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This report provides a good-faith effort. The depth of the information gathered has been limited by time and budget constraints. In addition, the work we conduct is limited by what data are available as of the date of the project. The same project conducted in another period may result in different findings and/or recommendations. While utmost care was taken to check and translate all information used in this study, the authors and the EU-Japan Centre for Industrial Cooperation may not be held responsible for any errors that might appear. This report does not constitute legal advice in terms of business development cases.

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EXECUTIVE SUMMARY

This report has been made to support and complement the policy exchange in the framework of the EU-Japan Industrial Dialogue by providing a snapshot of European technologies (three from each EU Member State) of high investment and collaborative potential with Japan.

The identification of the relevant industrial technologies was carried out without any limitation to the business areas to maximize the initial coverage and diversity.

For the purpose of the project LC Innoconsult and Primary Care Innovation Consulting (PCIC) have listed and contacted a large number of organisations that could be connected with or directly in possession of innovative technologies. The mentioned organisations include many key players of national and pan-European innovation ecosystems (National Innovation Agencies, Public Research organisations, Technology Transfer Offices of high rated universities, H2020 beneficiaries etc.)

Through these channels, 185 technologies from 28 EU Member States were collected. Received technologies were mostly in mid/late development stage or commercially ready stage (93 of them were TRL 4-7, and 86 TRL 8-9).

After the formal pre-screening made by LC Innoconsult, PCIC performed a preliminary technologies evaluation based on the QuickLook™ method developed by Dr Buff. This assessment technique is focused on technologies' competitive advantage and their market potentials and does not require much time. During the first round of evaluation technologies were divided into three categories: "Strong candidates", "Need more information" and "Definite no" candidates.

The "strong candidates" and the candidates in the 'need more information' category were then assessed by Japan Technology Group based on the specifics and interests of the Japanese market. The purpose was to establish a final list of recommended technologies.

Japan Technology Group used an objective evaluation system for the strongest candidates that associated each technology's characteristics (Technology uniqueness, Development stage, Marketability in Japan etc.) with a ranking score number to highlight the best of the best.

15 "strong candidates" were shown to be the best candidates with the highest score. These technologies are from developing sectors like Additive manufacturing (3D printing), Nanotechnology and Environmental protection, etc. It is worth noticing that these technological areas remain highly competitive globally in terms of both R&D and commercialization.

In the case of 3D printing, several national level projects are active in Japan including additive manufacturing of ceramics, which is one of our top rated technologies of all. This technology can be useful in a variety of markets and applications (Automotive, medical device, dental supply, household appliance etc.) and is not only promising in Japan but is also expected to be globally very competitive in the near future.

Cancer research remains one of the most important areas in life science. Because of increasing disease rates and impacts on society we emphasized a valuable technology, a new approach for a faster cancer diagnostics. The novelty of this solution is in the use of spatially multiplexed spectrophotometry. This technique has been applied to the investigation of cancer cells by their refractive index and their mechanical properties. There are several medical device companies in Japan (Olympus, Toshiba etc.) with product lines that can benefit from it.

As for nanotechnology, the Japanese government has been focusing on supporting this area of technology for over a decade. There have been nationally funded projects of which several startups were established. Amongst the top ranked technologies listed in this report, several deal with nanotechnology:

- Nanomembranes for the biomedical sector (exceptionally resistant, strong and suitable for applications in a wide pH range),

- Nanofibers for stronger and lighter materials (polymer, ceramic and metals), and

- Zinc-Oxide Nanorods for degrading pollutants in air or water.

Furthermore, as one of the most developed countries, Japan has implemented solid strategies to address its environmental problems. Water and wastewater treatment technologies fit perfectly with Japan's strategy considering the trend on the market. One of the best technologies presented in this report (a tertiary treatment technology for water) is exceptionally compelling because of its ability to remove ammonia and other residual pollutants and its suitability for nitrification of raw water, anaerobic digestate or anaerobic digestion of liquid waste streams.

There are also green energy/environment related technologies, for example a multi fuel power production unit for decentralized power and heat generation. The same company has made a hydrogen generator, a solution mainly for decentralised hydrogen production in areas where small production plants of Natural Gas or Biogas exist. Another promising technology connected to green energy is a polymer battery that is less volatile/flammable, environmentally friendly and inexpensive. This technology offers a promising R&D opportunity with great market possibilities in Japan.

The above mentioned technologies and the rest of the top 15 technologies introduced in the second chapter of this report are unique and truly innovative. For the potential investors, these technologies could demonstrate directions/sectors where European countries are more open and innovative. However, for organisations with a more country specific focus, the third chapter could be more relevant, since it contains

technologies presented by country. A more detailed list of the contacted organisations, as well as the technologies that did not make it into the top 3 by country are presented in the annexes.

ABBREVIATIONS

AC	Alternating Current
ALD	Automatic Laser Deposition
AM	Additive Manufacturing
APAC	Asia-Pacific
BDD	Boron-Doped Diamond
CAD	Computer-Aided Design
CAPEX	Capital expenditures
CMOS	Complementary Metal–Oxide–Semiconductor
CVD	Chemical Vapor Deposition
DC	Direct Current
EEN	European Enterprise Network
EMI	Electromagnetic Interference
EPO	European Patent Office
ESIC	Exploitation Strategy and Innovation Consultants
EV	Electric Vehicle
FPP	Floating Power Plant
FTO	Freedom To Operate
HIPAA	Health Insurance Portability and Accountability Act
HIPSC	Human Induced Pluripotent Stem Cells
HTS	High-throughput screening
IP	Intellectual property
JTG	Japan Technology Group
LC	LC Innoconsult
LHV	Lower Heating Value
LPG	Liquefied petroleum gas
NPK	Nitrogen (N), phosphorous (P), potassium (K)
OEM	Original Equipment Manufacturer
OPEX	Operating expenses
PBR	Physically-Based Rendering
PCB	Printed Circuit Boards
PCIC	Primary Care Innovation Consulting
PCT	Patent Cooperation Treaty
PECVD	Plasma-Enhanced Chemical Vapor Deposition
PGNAA	Prompt Gamma-Neutron Activation Analysis
PHNM	Porous Hydrophilic Nano Membranes
PM	Permanent Magnet

POP	Persistent Organic Pollutants
PRO	Public Research Organisation
PTFE	Polytetrafluoroethylene
qPCR	Real-time Polymerase Chain Reaction
SAM	Standard Allowed Minute
SEU	Single Event Upset
SRAM	Static Random Access Memory
TAM	Total Addressable Market
TRL	Technology Readiness Level
UAV	Unmanned Aerial Vehicle
UHF	Ultra-High Frequency
USP	Unique Selling Point
VHF	Very High Frequency
WEEE	Waste Electrical and Electronic Equipment
WPCB	Waste of Printed Circuit Board

CONTEXT

To fulfil the task, the work was divided into three subtasks that were accomplished by three consortium companies, LC Innoconsult International, Primary Care Innovation Consulting, and Japan Technology Group.

LC Innoconsult International was the leader and the main contractor. Its' task was to contact governmental bodies, international associations, companies, universities and other relevant contacts to deliver at least 3 technologies of interest selected from each Member State. The main objective was to gather technologies at early stages of development and ensure that the provided information is sufficient for the partners to carry out the assessment. The task of LC Innoconsult International after the valuation process was to prepare a detailed written report to summarize the finding and introduce the methodology and gathered technologies.

Primary Care Innovation Consulting (PCIC) provided additional channels for information collection through its proprietary partnership with multiple European investment and incubator organisations, regional universities and networks of individual inventors/entrepreneurs. The main task of PCIC experts on this project was however preliminary and second tier assessments of the received leads. All leads were classified into three major categories as "strong candidates", "definite no's" and "need more information". We have then reached out to most of the third category providers to resolve the uncertainties. Methodology and decision making criteria for the assessments are described later in the report.

Japan Technology Group conducted technology assessment of the identified technologies with recommended status "strong candidate" and "need more info". The assessment process was specially designed and targeted for entering Japanese market specifics and ranked all "strong candidate" technologies according to an evaluation score based on original selection criteria, also making a comment on each technology of both recommended statuses based on preliminary market research and technical assessment including IP status check as well as our technology transfer expertise.

1. METHODOLOGY

1.1 Identification of technologies

As a first step LC Innoconsult International and Primary Care Innovation Consulting (PCIC) prepared a letter (Annex 1) for requesting technologies with an attached template for technology owners to fill out in relation with the technologies they feel to be suitable for our search. The information package also contained a support letter from the EU-Japan Centre for Industrial Cooperation (Annex 1) to prove that we were acting on behalf of a seriously interested organisation, not on our own.

As a next step LC Innoconsult compiled a list of national associations which are closely linked to their country's and companies' innovations, technological developments and are well-known in the field of research.

PCIC has also started a technology scouting through its' channels including multiple technology incubators and technology accelerators as well as universities' entrepreneurship programs.

In parallel, LC Innoconsult have organized a second list consisting of individuals and companies from both internal and external networks with high expertise and experience in the field of research and innovative technologies.

List of contacted organisations:

- Permanent Representations to the EU
- Embassies in Tokyo (Japan)
- National Innovation agencies
- National Investment promotion agencies
- National government level innovation ministries, departments
- Research and Technology transfer departments of high level national universities
- Public Research Organisations (PROs)
- Project participants of the H2020 R&D programme
- Project participants of the V4 R&D programme
- Project participants of the Danube R&D programme
- Project participants of the Central Europe R&D programme
- SME instrument beneficiaries
- TII (Technology Innovation International) members
- Internal databases:
    - ESIC (Exploitation Strategy and Innovation Consultants)
    - Coach Colleagues
    - Professional EU organisations and Strategic partners

A more detailed version of the list can be found in the Annex 2.

We also revisited the organisations from which we haven't received any response. This was necessary because there was an assumption that the reason behind the lack of feedback could be that the organisations haven't got the letter in the first place. This assumption was found proven in approximately 10% of the cases.

1.2 Evaluation process

Primary Care Innovation Consulting:

Identified technologies has been evaluated using the proprietary QuickLook™ methodology developed by Dr Buff during his tenure at Foresight Science and Technology Inc. in early 2000s. Original QuickLook™ (QL) assessment aimed to determine if there are markets worth pursuing for a technology. The level of analysis behind a Quick Look assessment does not exceed eight hours and may require less in order to assess which market niches present commercialization opportunities. The findings are based on an examination of the material provided by developer and web searching. A standard deliverable for a QuickLook™ assessment is a heavily templated 4-6 pages report. QLs have been provided as a tool of decision making to state and US Federal funding agencies, Universities, research institutions and individual start-ups. It is currently offered by Primary Care Innovation Consulting as a standalone commercialization assessment service.

For the purpose of this project we modified the methodology to an average of 4-5 hours analysis per project and focused on identifying problems and/or barriers for commercialization. We have chosen to use templates for collection of the information (both preliminary and a follow-up for a “Need more information” category) in order to emphasize both key criteria and developers’ status and business literacy. The key decision making criteria are also used to present the information at the enclosed leads spreadsheet.

For the initial assessments we classified all obtained technologies into three actionable categories:

I. Strong Candidate,
II. Definite “no” and
III. Need More Information.

We focused our analysis on three major criteria:

- Value proposition
- Development status (TRL) and
- Intellectual Property (IP)

The approach of a QuickLook™ takes into account actual information/data on these criteria as well as a pattern of their interrelationship. For example, a late stage technology without appropriate IP protection is likely to be classified as a “no”; similarly an uncertain value proposition for a very narrow application in unlikely to get our attention if below prototype level. The strength of the methodology however is in the large proprietary uniformalised knowledge that allows to recognize less obvious patterns as GO or NOGO indicators. The uncertainties and possible missing

information requests are identified and noted in the comments section of the leads spreadsheet.

For this particular project we also paid additional attention to the possibility to protect technology in Japan. If identified as limited or impossible – we significantly lowered the ranking of a corresponding technology.

And finally, we maintained tight focus on business to business types of technologies and thus marked consumer oriented projects, as well as the ones with limited civilian application as a “definite no”.

Here are some of the considerations and logic that went into our decision making process for each criteria:

1. Value Proposition.

Value proposition remains a key factor in determining commercial viability of a technology and we tried to assess both feasibility and importance of the “problem to be solved” and developers’ understanding of market realities.

Several sections in the information gathering template were relevant to this assessment criteria:

- Self-explanatory title of the project. Our intent was to enable developers formulate their innovation and competitive advantage in an ‘elevator pitch’ format;
- Non-proprietary description. Arguably the main section of the information on the technology – has been divided into several very specific bullet points
    - Short description of the technology. Executive summary type of pitch. Need to be focused on the market need/problem and its solution (market niche or application).
    - Innovative aspects. Suppose to provide focus on the key innovation points within the technology.
    - Economic advantages. Financial perspective (if available).
    - Commercial advantages. Hints on the business model and data or speculations on the industrial application and growth potentials.
    - Environmental advantages. If relevant.
    - Societal advantages. If relevant.
- Value Proposition. An opportunity for developer to formulate their view on value proposition. Supposed to be different from above and focused on value to cost ratio for direct customers.
- Existing Alternatives. This section was designed to assess developers understanding of the market, its competitive landscape and their potential competitive advantage.

Unfortunately, in our experience most of the technology providers were not very effective in formulating these key points. As a most common mistake we should mention a confusion and often duplication of the description and value proposition sections. This was one of the main reasons for the large “need more information” category as the limited scope of our analysis did not allow for an independent assessment and relied heavily on the developers self-positioning.

2. Development Status (TRL).

We used a simple stage gate map to ask developers on the status of the project as following:

(__ Idea)

(___ Concept)

___ Tested in the lab (proof of concept)

___ Developing Prototype; ___ Prototype Available

___ Ready for Betta Testing; ___ Test Data Available

___ Ready for commercialization

___Commercially available, where: ……

___Other development stage.

We have asked to mark only one of the stages and were quite surprised when many submissions came with several check marks, not always consequently.

Our assessment for the analysis was based on Technology Readiness Levels (TRLs) as defined by US government agencies. TRLs are a type of measurement system used to assess the maturity level of a particular technology. Each technology project is evaluated against the parameters for each technology level and is then assigned a TRL rating based on the projects progress. There are nine technology readiness levels. TRL 1 is the lowest and TRL 9 is the highest. In particular we used NASA descriptions and levels numeration as in https://esto.nasa.gov/files/TRL_definitions.pdf

In itself, the technology TRL level was not determining our recommendation status but was considered as a weight factor to identify viable combinations with preferred deal structure, IP situation and value proposition.

3. Intellectual Property (IP).

Intellectual property protection information has been used as one of the key factors in determining commercial feasibility of presented technologies.

One section in the template was specifically marked to gather information on the filed, pending and issued patents. Other types of IP protection supposed to be identified. We also asked for possibility to protect the innovation in Japan and preferred deal structure (marked as “Your commercialization objectives” section).

The key for the assessment decisions is again to identify realistic patterns and corresponding business logic between value proposition, type/level of IP and business models. We also aimed to identify actual patents to review if necessary.

To our surprise many submissions came with some very generic statements and no clear IP strategy. The mismatch of the IP and deal preference was a significant factor in many “need more info” decisions.

Several submissions have self-identified their project as not protectable in Japan. These were marked as “definite no” without further consideration.

Because of the limited scope of this project and time/budget restriction of the QuickLook™ methodology we also asked submitters several self-evaluating questions. These sections, such as

- Collaborations
- Asian connection
- Prospects on international market, and
- Please explain why can this technology be interesting for a Japanese investor

were meant to provide explanations and potentially missing pieces of info to confirm or question our decisions.

We were thus being able to identify several projects with good established connections and clear commercialization path for Japanese partners. In most other cases, the uncertainty of answers in these sections provided independent validation for our ranking.

Japan Technology Group:

JTG conducted technology assessment with recommended status “strong candidate” and “need more info”. The assessment process was specially designed and targeted for the Japanese market. The primary methodology of this assessment was ranking the identified technologies according to an evaluation score based on the original selection criteria. The following were evaluated (evaluation items):

- Technology uniqueness in Japan

- Development stage
- Market application
- IP status
- Marketability specifically in Japan

Each item was evaluated based on technical assessment and on a preliminary market research for target markets in Japan. After receiving the list of identified technologies based on the initial assessment, we have carefully reviewed the application forms and other provided materials of each identified technology to pick up critical information for each evaluation item. We also have checked other related information including website, patent publication and other available public information. Preliminary market research was conducted by identifying target markets in Japan.

Each evaluation items were numerically evaluated in two major categories as 4 items of basic scores and 1 item of primary score. The following are the evaluation standard tables.

Table 1. Evaluation table

Evaluation Items	Basic Score				
	0	1	2	3	4
Technology uniqueness in Japan	Known	New	Innovative	-	-
Development stage	Planning/ POC	Research/ Prototype	Pilot	Validation	Commercialization
Market Application	Not specified	1 App: 1 Market	Multi App: 1 Market	1 App: Multi Market	Multi App: Multi Market
Japanese Patent	Lapsed	Not filed, JP patentable	PCT Filed, JP patentable	JP Filed	At least 1 JP Patent granted

Evaluation Item	Primary Score				
	0	1	2	4	6
Marketability in Japan	None	Lack of marketability	Marketable but competitive	Marketable	Promising

The basic scores were evaluated based on the application form and other provided information. The primary score was evaluated based on a preliminary market research by JTG's technology transfer and marketing specialists. After the evaluation process, "strong candidate" technologies were ranked based on the total score of basic scores and primary score.

The basic methodology of the assessment for the "need more info" was the simplified assessment approach, which means JTG's technology transfer specialists assessed technologies based on the information of the initial assessment list created by PCIC. We especially focused on the items of value proposition, industry, TRL, IP and comments. Major assessment points were marketability and ease of application specifically for Japanese markets and industries.

2. ANALYSIS AND INTERPRETATION

During the implementation period of the project we contacted approximately two thousand individuals/companies/associations from which we received over 200 feedbacks with 185 technologies in total. All collected technologies were accessible for each partner (LC, PCIC and JTG) in the form of a shared folder.

Table 2. The number of received technologies by country:

Country	Number of received technologies
Austria	8
Belgium	2
Bulgaria	6
Croatia	7
Republic of Cyprus	2
Czech Republic	7
Denmark	5
Estonia	10
Finland	6
France	4
Germany	6
Greece	7
Hungary	9
Ireland	3
Italy	17
Latvia	4
Lithuania	5
Luxembourg	3
Malta	1
The Netherlands	2
Poland	11
Portugal	6
Romania	0
Slovak Republic	2
Slovenia	7
Spain	35
Sweden	3
United Kingdom	7
Sum:	**185**

Out of the received technologies, several countries (e.g. Germany, Spain, Italy, UK and Poland) showed relative versatility in terms of markets and technology areas. Others, like Estonia and Latvia were more focused on a few technological sectors (IT

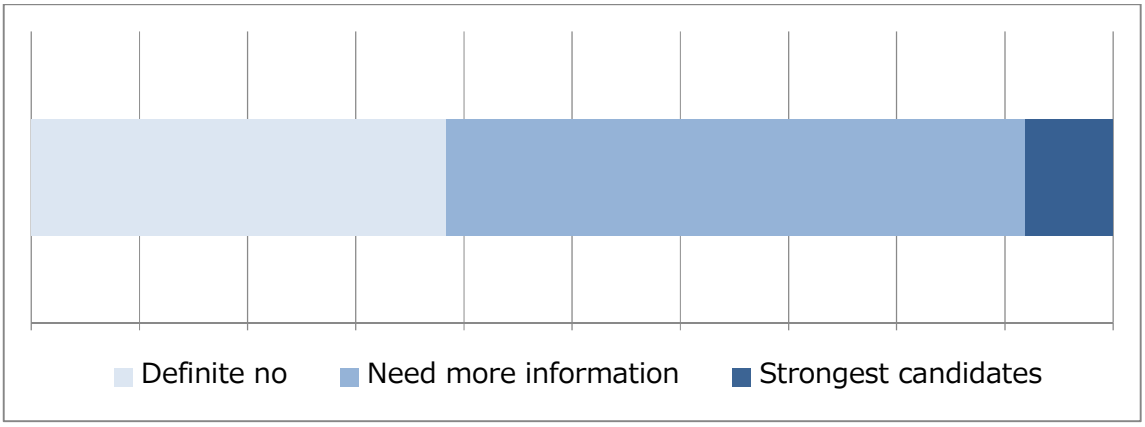
and biotech, laser and optics correspondently). We think these differences may reflect potential country specialization and suggest further investigation into these areas of expertise on a country to country basis.

There were some countries from which we received a lower number of technologies, in those cases the top three technologies could not be selected e.g. Belgium, Republic of Cyprus, Malta, the Netherlands, Romania and the Slovak Republic. There were countries from which the received technologies were less developed or less interesting. Nevertheless these were selected into the top three technology/country because of the low number of received technologies.

We received the biggest number of technologies from Spain and Italy, countries that are very active in the Horizon2020 Programme.

On the first level we have assessed the 185 technologies (see attached tracking spreadsheet). Out of these, 15 were identified as “strong candidates”; 71 have been assessed as “definite no’s”; and 99 requested additional information before final decision.

Chart 1: Proportions of the categories

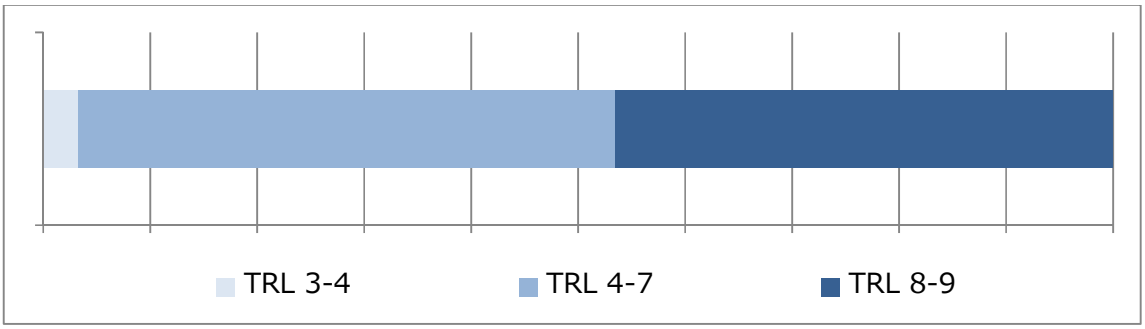


Many of the technologies have been included in the “Definite no” category because of:

- their narrow application,
- they cannot be protected in Japan,
- they are not B2B technologies,
- or there is a mismatch between TRL and preferred business model/IP status

From the 185 technologies 93 technologies were self-identified as TRL 4-7, 86 – as late stage TRL 8-9 and remaining as early stage 3-4s.

Chart 2: Proportion of the TRLs



We requested supplementary data on the ‘need more info’ technologies to fulfil the gaps for a better understanding. Unfortunately because of the small number of responses we mostly had to work with the earlier received data and decided to treat these as a separate group – Fair Candidates.

The remaining 15 technologies, the “strong candidates” were assessed according to the mentioned methodology described on the page 19. This method enabled us to set up the ranking of these technologies based on the sum of their basic and primary scores (see Table 3).

Table 3. Ranking of the strongest candidates

Title	Country	Basic score				Sub Total	Primary score	Total
		Technology Uniqueness	Development Stage	Market Application	IP		Marketability in Japan	
Additive Manufacturing of High-performance Ceramics	Austria	1	4	3	4	12	2	14
In-K Strain System: A turnkey, low cost, wireless Structural Health Monitoring Solution	Italy	2	3	1	2	8	6	14
Commercialization of an energy efficient and environmentally friendly multi-fuel power system with CHP capability, for stand-alone applications.	Greece	1	2	1	4	8	4	12
Aluminum Oxide Nanofiber	Estonia	0	4	3	2	9	2	11
Self-standing giant porous hydrophilic nanomembranes (PHNM)	Austria	1	1	3	2	7	2	9
Commercialization of hydrogen generating systems for refueling station	Greece	1	1	1	4	7	2	9
The Expanded Bed Biofilm Reactor: a generic technology for intensification of bioprocesses, such as water or wastewater treatment, fermentation or biocatalysis.	UK	1	3	1	2	7	2	9
Intelligent glass – smart windows	Germany	0	1	3	2	6	2	8
Recycling technology for mixed polymer waste to high performance polymer blends	Germany	1	3	1	2	7	1	8
Advanced corrosion protection for anodizable surfaces	Estonia	1	3	1	3	8	0	8
Polymeric membranes. Lithium polymeric membrane based on a semi-crystalline fluorinated polymeric matrix and a non-ionic surfactant	Spain	1	1	2	2	6	2	8
Novel process for deposition of functional layers on hollow objects by electrical plasma generated from the liquid precursor	Czech Republic	2	0	1	2	5	2	7
Injection moulded hologram decoration for differentiation and anti-counterfeit	Denmark	0	3	1	2	6	1	7
Spatially miltiplexed spectrophotometry: Fast Spectro	Spain	1	1	1	1	4	2	6
Technology for production of ZnO nanorod layers for efficient degradation of environmentally hazardous pollutants in air and water	Estonia	0	1	1	2	4	1	5

Out of the best 15 the first 7 were chosen as top tier technologies due to its general high score (9 or higher) and their balanced individual scores. These also tend to have a more advantageous IP status and development stage.

Table 4. Top 15 technologies and their Japanese market potential

Technology title	Country	Market Potential
Additive Manufacturing of High-performance Ceramics	Austria	Industrial 3D printing market in Japan is expected to grow significantly in the next 10 years. Additive manufacturing (AM) is one of the most attractive techniques especially in the ceramic production industry. There are number of ongoing R&D and commercialization projects in Japan in this particular area. It is a great advantage that the present unique technology is already in a market ready stage.
In-K Strain System: A turnkey, low cost, wireless Structural Health	Italy	SHM is getting more attention nowadays and there is an increasing demand on tools for improvement of safety and increasing maintenance performance of buildings, aircrafts, ships and bridges. At the same time, construction and maintenance & engineering

Monitoring Solution		companies have high expectations against new solutions. Big data and IoT are mainstream topics and shows a strong trend on the market. This is market ready technology and service platform.
Commercialization of an energy efficient and environmentally friendly multi-fuel power system with CHP capability, for stand-alone applications.	Greece	Japanese government and major energy companies in Japan consider the hydrogen and fuel cell systems to be a future system for CHP. This company has been conducted several pilot projects with Japanese companies and it seems they recognized the market opportunity for CHP in Japan.
Aluminum Oxide Nanofiber	Estonia	Nanomaterial has been set for one of the top 4 R&D focus areas by Japanese government. Significant R&D investments in this area has been made, however there are some major challenges, e.g. increased global competition especially with China and Korea. A great advantage of this unique technology is its mature development stage.
Self-standing giant porous hydrophilic Nano membranes (PHNM)	Austria	The nanotechnology related market in Japan is expected to grow significantly for the next 20 years. Both application fields of this technology (biomedical and biosensor sectors) have high future growth potential.
Commercialization of hydrogen generating systems for refuelling station	Greece	Fuel Cell Vehicle (FCV) is considered to be one of the most promising future automotive alternatives. On the other hand, Japanese government and major automobile companies also encourage broad use of PHEV and EV. Low number of hydrogen stations has been installed in Japan to this moment; there were only 80 stations in 2016. High installation cost of a station is the major bottleneck.
The Expanded Bed Biofilm Reactor: a generic technology for intensification of bioprocesses, such as water or wastewater treatment, fermentation or biocatalysis.	UK	Water treatment device and engineering market in Japan is expected to grow at least 10 % in next 5years. Major market growth factor is a growing demand in eastern Asian countries, especially in China. Japanese companies active in the water business, such as Kubota, Mitsubishi, Asahi Kasei and Toray are basically very active in R&D.
Intelligent glass – smart windows	Germany	Smart window, smart glass is one of the emerging segments on the market of architecture and civil engineering industry with expected 20% annual growth by 2022 based on the forecast. It seems to be a robust demand for the smart glass in the automotive industry;

		it shows great potential in Japan. Primary impact of improving the energy efficiency of infrastructures is attractive for the premium construction industry as well. However, production cost and reliability need to be well demonstrated.
Recycling technology for mixed polymer waste to high performance polymer blends	Germany	Polymer recycle industry in Japan is already a mature and saturated industry. Existing technologies are fully developed. The recycling processes are basically managed and regulated by local governments.
Advanced corrosion protection for anodizable surfaces	Estonia	In Japan there is only one ALD machine manufacture company, the Tokyo Electron. Even though the ALD related semiconductor market is expanding globally, we would say that the Japanese market is limited for this particular technology.
Polymeric membranes. Lithium polymeric membrane based on a semi-crystalline fluorinated polymeric matrix and a non-ionic surfactant	Spain	Polymer battery technology is considered to be a promising future technology for EV, mobile & wearable device, and so on. The Japanese government's organisation, called New Energy and Industrial Technology Development Organisation (NEDO) is now focusing on R&D of a solid-state rechargeable battery technology including a polymer battery technology over 10 years and the R&D activity was accelerated especially in recent years.
Novel process for deposition of functional layers on hollow objects by electrical plasma generated from the liquid precursor	Czech Republic	Medical materials market in Japan is one of the most promising markets. The competition by new entries is increasing. It shows there is a compelling need for new approaches and innovative technologies from outside.
Injection moulded hologram decoration for differentiation and anti-counterfeit	Denmark	In-mold transfer and decorating method is already a very common method in plastic products industry and the market has become already saturated in Japan. It seems there is a significant competitive advantage of the technology, but it is necessary to differentiate it from the existing techniques.
Spatially Multiplexed Spectrophotometry: Fast Spectro	Spain	Spectrophotometry is a well-known technology however the cancer diagnostics application is quite a new approach. There are several pilot cases in Japan but it seems not commercially available yet.
Technology for production of ZnO nanorod layers for efficient degradation of environmentally	Estonia	ZnO has received attention from industrial society as a material which has various optical, electrical and magnetic features. It is expected to have wide range of applications, such as transparent conductive film, sensors, semiconductor light electric device, nano device and surface processing thin film. A number of

hazardous pollutants in air and water		R&D projects related to this technology have been conducted and there are several start-ups and R&D based SMEs who have related and similar technologies. Photocatalysis is one of the most advanced and strongest research areas in Japan.

Based on our assessment process which was specially designed for the Japanese market, we have carefully reviewed each selected technology from the perspectives of the market potential and competitive advantage as well as the IP status and development stage. Meanwhile, beyond the selected 15 technologies, we believe that all 185 received technologies have some potential relative to the Japanese market.

3. TOP THREE INDUSTRIAL TECHNOLOGIES BY COUNTRY

3.1 AUSTRIA

Country introduction

Capital	Vienna	**Official EU language(s)**	German
Geographical size	83 879 km²	**Political system**	federal parliamentary republic
Population	8 576 261 (2015)	**EU member country since**	1 January 1995
Population as % of total EU population	1.7 % (2015)	**Currency**	Euro. Member of the Eurozone since 1 January 1999
Gross domestic product (GDP)	€ 337.162 billion (2015)	**Schengen area member**	Yes, Schengen Area member since 1 December 2007.
Gross Domestic Expenditure on R&D (GERD) as % of GDP	2.83 (2014)		

The most important sectors of Austria's economy in 2014 were wholesale and retail trade, transport, accommodation and food services (22.8 %), industry (22.1 %) and public administration, defence, education, human health and social work activities (17.7 %).

Austria's main export partners are Germany, Italy and the US, while its main import partners are Germany, Italy and Switzerland.

List of selected top three technologies:

1	Additive Manufacturing of High-performance Ceramics	Lithoz GmbH
2	Self-standing giant porous hydrophilic Nano membranes (PHNM)	Austrian Centre of Industrial Biotechnology – acib GmbH
3	eMurmur	CSD Labs

Additive Manufacturing of High-performance Ceramics	
Stage of the development	Commercially available
Where has this technology offer been published/introduced/ described before?	Lately participated at Techinnovation Signapore2016 http://www.techinnovation.com.sg/
Technological sector According to the Field of science and technology classification	2.2; 2.3; 2.5; 2.6; 2.7
Non-Proprietary Description	**Short description of the technology:** High-performance ceramics possess exceptional mechanical properties in many respects. Hence, they are usually employed in environments where other materials fail (extreme temperatures, extreme mechanical loads, corrosive environments, extreme tribological stress, medical applications, etc.). Fields of application include the automotive industry (e.g. diesel particulate filter), special machinery manufacture (e.g. textile industry), electrical engineering (e.g. functional ceramics), medical engineering (e.g. implants and dentures), jewellery (e.g. watch cases) and household (e.g. premium-quality mills). The technology is based on the selective curing of a photosensitive resin which contains homogeneously dispersed ceramic particles. The centrepiece of the process is a specifically designed imaging system which enables the transfer of the layer information by means of the latest LED-technology. This innovative imaging technique along with special projection optics even allows the production of small structures and very fine details. Through many years of experience in research and development the company has gained a lot of competences in the development of AM for high performance ceramics and offers its customers a diversity of materials and support along the whole process chain. **Innovative aspects:** • Tool-free production of individual parts and concurrent production of small batch series or various individual parts up to series of hundred parts • High performance ceramics with the same material characteristics as in serial production • Sophisticated geometries in injection moulding quality that cannot be produced with conventional manufacturing methods • High density, high strength and high precision • Excellent surface quality, no need for post-processing • Resource-efficient through waste-free, material-saving production • Direct production from CAD data

<table>
<tr><td></td><td>• Product changes already during the life cycle
Economic advantages:
• Simple and cost-effective individualization of products
• Cost-effective production of high-performance ceramics from batch size 1
• On-demand-production – more efficiency in production planning and supply chain</td></tr>
<tr><td>Value Proposition</td><td>The ceramics industry can benefit in different ways by applying AM. Considering the new conditions and challenges imposed on the industry, there is a growing need for AM also in the ceramic sector. Shorter product life cycles, the need for mass customization of products and the need for resource-efficient manufacturing technologies for the production of small scale series and individual pieces are drivers for AM. The tool-less production method can achieve a mass customization and an individualization of ceramic products. The batch-oriented manufacturing approach offers the opportunity of combining individualized products with the simultaneous benefits of mass production.</td></tr>
<tr><td>Existing alternatives</td><td>Currently no adequate alternative exists (in terms of strength, density, precision and reproducibility)</td></tr>
<tr><td>Collaboration(s)</td><td>Yes, the technology was developed at the Vienna University of Technology. Lithoz is a spin-off of the university and is now commercializing the technology.</td></tr>
<tr><td>Asian connections</td><td>Lithoz has already a couple of co-operations with Japanese companies. Most are in the field of application development for additive manufactured ceramic parts.
Lithoz has also a sales agent in Japan since one year!</td></tr>
<tr><td>Intellectual property status</td><td>Granted patent:
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>JP5571917</td><td>Japan</td><td>2014-08-13</td></tr>
<tr><td>JP5480907</td><td>Japan</td><td>2014-04-23</td></tr>
<tr><td>JP5571090</td><td>Japan</td><td>2014-08-13</td></tr>
<tr><td>JP5841753</td><td>Japan</td><td>2016-01-13</td></tr>
</table></td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes</td></tr>
<tr><td>Your commercialization objectives</td><td>Research & Development Agreement

Joint Venture

Purchase & Sale Agreement</td></tr>
<tr><td>Prospects on international market?</td><td>Lithoz is world leader in additive manufacturing of ceramics and will establish a subsidiary in the USA next year. Lithoz was focusing from the beginning on export!</td></tr>
<tr><td>Please explain why can this technology be</td><td>Investments should be made in companies, which want to deliver new ceramic products based on additive manufacturing.</td></tr>
</table>

interesting for a Japanese investor?	
Company (source) name	**Lithoz GmbH**
Address	**Mollardgasse 85a/64-69, 1060 Vienna, Austria**
Main activity	**Additive Manufacturing of High-performance Ceramics**
Contact details	**Contact person: Dr Johannes Homa** **Contact e-mail: jhoma@lithoz.com** **Website: www.lithoz.com**

Self-standing giant porous hydrophilic Nano membranes (PHNM)	
Stage of the development	Prototype available
Where has this technology offer been published/introduced/ described before?	http://www.acib.at/wp-content/uploads/2016/09/TechOffer-Nanomembranes.pdf To partners of acib in frame of regular meetings. To companies at BIO 2016 in San Francisco via one to one partnering events.
Technological sector **According to the Field of science and technology classification**	2.5 Materials engineering 2.10 Nano-technology
Non-Proprietary Description	**Short description of the technology:** The porous hydrophilic Nano membranes are made from hydrophilic polymers, which are ideally suited for use in aqueous media typical for biological systems. They are exceptionally resistant, strong and tough, are suitable for applications in a wide pH range and in the presence of a broad variety of electrolytes. The 50 – 150 nm thick PHNMs have a planar surface with uniform pores and a tensile strength of at least 0.1 MPa. Effective pore diameters can be adjusted according to the intended application from 10 nm to 500 nm. Additionally bioactive substances (such as enzymes, substrate receptors, active drugs, etc.) can be either immobilized on the surface or incorporated into the pores. The use of PHNM allows for ultrafast diffusion of (bio)molecules, along with high tunable selectivity based on size and charge or biologically mediated affinity. **Innovative aspects:** Difficulties in production, the fragility, and hydrophobicity (nonbiocompatibility) of current Nano membranes prevented their widespread use. By solving this issues PHNM technology is innovative, because of: + easy manufacture, + hydrophilicity (fabricated from hydrophilic polymers), + biocompatibility, + self-standing and exceptionally resistant, + adjustable pore diameters – also pore size larger than the thickness of the membrane. **Economic advantages:** + Cheap and easy production process + Low cost materials + Ultra-fast mass transfer across the membrane – no external force needed for filtration operation **Commercial advantages:**

	+ Ultra-fast mass transfer across the membrane – no external force needed for filtration operation + Hydrophilic polymers suited for biological systems (biocompatibility) + Selective transport of compounds + High degree of porosity + Large scale production + Adjustable pore diameters **Environmental advantages:** + Very low consumption of materials for fabrication (very thin membranes 50 – 150 nm). + Ultra-fast mass transfer across the membrane – no external force needed for filtration operation (no power consumption for filtration process). **Societal advantages:** + Lower carbon foot print by saving energy for filtration process. + Reduced waste volume.
Value Proposition	Current sufficiently stable Nano membranes lack biocompatibility in addition to economically unfavourable high production costs and time. The fast and easy fabrication of our PHNM circumvents the need for cost and time intensive serial pore formation methods and allows scale up for industrial applications. The chemical nature additionally renders them superior to many other polymeric Nano membranes. Their amphiphilic nature combined with hydrophilic reactive surface residues makes them ideal for potential biological functionalizations.
Existing alternatives	The cost intensive fabrication of silicon-nitride filtration membranes with defined pore size is usually followed by yet another step of surface functionalization in order to impart biocompatibility. Furthermore, a scale up to industrial scale is fraught with problems yet to be addressed. The bottom up and simultaneous pore formation approach of our PHNM promises fast, easy and inexpensive fabrication on a larger scale. Our PHNM are the first polymeric Nano membranes with such unprecedented mechanical stability simultaneously offering pores of narrow size distribution allowing for size selective separation of molecules. Furthermore, in contrast to alternative polymeric materials, the chemistry of PHNM is ideally suited for covalent linkage and incorporation of bioactive materials.
Collaboration(s)	The technology was developed in collaboration with the University of Natural Resources and Life Sciences Vienna, which is patent holder together with acib.
Asian connections	**Vivimed** (India) – 3 year research project **Advanced Enzyme Technologie**s (India) – 1 year research project

<table>
<tr><td></td><td>National Tsing Hua University (Taiwan) – 3,25 year research project</td></tr>
<tr><td>Intellectual property status</td><td>Patent already applied for
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>US 14900436</td><td>USA</td><td>21.12.2015</td></tr>
<tr><td>EP 14729346.8</td><td>Europe</td><td>13.1.2016</td></tr>
</table></td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes</td></tr>
<tr><td>Your commercialization objectives</td><td>Research & Development Agreement

Licensing

Purchase & Sale Agreement</td></tr>
<tr><td>Prospects on international market?</td><td>Very good prospects due to: □□Hydrophilic polymers suited for biological systems, □□High degree of porosity, □□Ultra-fast diffusion times, □□Selective transport of compounds, □□Large scale production</td></tr>
<tr><td>Please explain why can this technology be interesting for a Japanese investor?</td><td>Nano membranes are already in use for some applications and are on the verge of introduction to the global market. They promise significant economic benefits in (bio)separation applications, biomedical applications, biosensors, and membrane bioreactors which considerate companies should set their wits to become a technology leader in the field of bioprocessing.</td></tr>
<tr><td>Company (source) name</td><td>Austrian Centre of Industrial Biotechnology – acib GmbH</td></tr>
<tr><td>Address</td><td>Petersgasse 14, 8010 Graz, Austria</td></tr>
<tr><td>Main activity</td><td>Research in the field of Industrial Biotechnology</td></tr>
<tr><td>Contact details</td><td>Contact person: Dr. Martin Trinker
Contact e-mail: martin.trinker@acib.at
Contact phone: +43 316 873 9316
Website: http://www.acib.at/</td></tr>
</table>

eMurmur	
Stage of the development	Ready for commercialization
Where has this technology offer been published/introduced/ described before?	Product website will launch in early November 2016 URL: www.emurmur.com
Technological sector **According to the Field of science and technology classification**	Medical Engineering, Clinical Medicine, eHealth
Non-Proprietary Description	**Short description of the technology:** CSD Labs' eMurmur is a clinically tested auscultation platform for the objective detection of heart murmurs. *e*Murmur is powered by SADIE, its Machine Intelligence based Sound Analysis and Diagnosis Engine, which analyses and classifies heart sounds acquired via electronic stethoscopes. The system is comprised of an app that runs on a mobile device (e.g. smartphone or tablet), SADIE running on a HIPAA compliant server, and a web portal for auscultation management. Via Bluetooth or audio cable, the app pairs with a commercially available electronic stethoscope or other appropriate recording devices, receives and sends the acquired heart sounds to the server for analysis and displays the results to the health care professional on their mobile device. After one or more recordings, medical professionals can document their own findings using *e*Murmur. This novel way of standardized documentation of auscultation findings offers a range of new possibilities to store and analyse auscultation data. *e*Murmur can be utilized by medical professionals performing auscultation in their daily routine right at the patient's side. Moreover, *e*Murmur offers medical professionals the capacity to retrieve a PDF report containing all of the above results and enables integration into electronic patient files and hospital information systems. **Innovative aspects:** • Powered by SADIE – eMurmur's innovative Machine Intelligence – CSD Labs transforms the subjective art of auscultation into an objective, data driven, screening practice that everyone's heart deserves. • Invention of patent pending data analysis techniques as a basis for robust heart sound segmentation • Technology validation in two blinded clinical studies, one yielded the largest and most detailed clinical evidence ever produced for this kind of technology

	• Clinical evidence supporting that eMurmur is powered by SADIE, the most accurate heart sound analysis engine (Machine Intelligence) available to date • Design and implementation of a novel method for standardizing auscultation data • Design and implementation of standalone eMurmur auscultation platform • Technology endorsement by renowned cardiologists • CSD Labs is a first mover in computer aided auscultation by offering a truly clinically validated solution with eMurmur. **Economic advantages:** • higher efficiency and effectiveness in the medical treatment of patients • time savings for medical staff • a reduction of unnecessary follow-up examinations • significant cost savings for the medical system due to a reduction of unnecessary echocardiograms • fewer long-term treatments • fewer emergency surgeries **Commercial advantages:** • Novel proprietary signal processing methods developed by CSD Labs ensure consistent, timely, low cost and reliable identification of patients suffering from potential heart defects. • eMurmur is utilized for the screening of heart defects for echocardiographic referral conditions • eMurmur provides standardized electronic documentation of heart murmur conditions • eMurmur provides web-based auscultation management system for case revisions, HIS integration and patient monitoring • eMurmur includes telemedical eConsultation for remote expert case review • eMurmur was designed for unchanged auscultation routine for easy clinical integration • eMurmur works on any heart sound recording of sufficient quality – hardware independent platform **Environmental advantages:** Not applicable. **Societal advantages:** • eMurmur permits cardiologists to spend more time with asymptomatic patients

<table>
<tr><td></td><td>

eMurmur reduces the huge stress burden on families awaiting clear diagnosis on potential heart health issues
eMurmur reduces the significant cost burden on families having to follow up on unnecessary specialist referrals.

</td></tr>
<tr><td>Value Proposition</td><td>The auscultation of the heart requires that examining physicians have acute hearing and extensive experience since there is no currently available technology that can perform this test. An accurate diagnosis remains challenging for various reasons including noise, high heart rates, and distinguishing innocent from pathological murmurs. Since objective screening tools are unavailable, the risk of human error increases and current reliance on subjective screening creates issues of consistency, accuracy and objectivity. The result is a high number of patients undergoing unnecessary heart testing, high re-hospitalization rates, high reimbursement costs for insurance providers, and high costs for hospitals. The costs, in addition to patient anxiety and inconvenience, in the US alone amount to over USD 800 million a year due to unneeded testing.</td></tr>
<tr><td>Existing alternatives</td><td>Sensi Cardiac is the only direct competitor with an FDA approved system on market. The key difference to eMurmur is, that eMurmur has been clinically validated, shows much higher accuracy, works for all patient age groups, all heart rate ranges and is robust against noise. With eMurmur, CSD Labs is a first mover in computer aided auscultation by offering a truly clinically validated solution.</td></tr>
<tr><td>Collaboration(s)</td><td>CSD Labs has close relationships with renowned medical institutions in both Europe and North America, who were key during years of technology development. At the same time, CSD Labs is the sole owner of all IP related to their innovative technologies.</td></tr>
<tr><td>Asian connections</td><td>None so far.</td></tr>
<tr><td>Intellectual property status</td><td>Patent already applied for
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>14/209,919</td><td>USA</td><td>3/15/2013</td></tr>
<tr><td>CA 2,907,020</td><td>Canada</td><td>3/13/2014</td></tr>
<tr><td>EP 14725921.2</td><td>Europe</td><td>3/13/2014</td></tr>
<tr><td>14/210,026</td><td>USA</td><td>3/13/2014</td></tr>
<tr><td>14/244,873</td><td>USA</td><td>4/3/2014</td></tr>
</table>
Other forms of protection: CSD Labs pursues a black box patenting strategy to protect its innovative core algorithms by</td></tr>
</table>

	not revealing them to the public and at the same time reducing the risk of IP theft and litigation costs.
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Licensing Outright Sale of business/technology Investment
Prospects on international market?	Auscultation is the standard examination method worldwide, therefore our technology could be utilized in all relevant international markets.
Please explain why can this technology be interesting for a Japanese investor?	Japan, together with the US and Europe, are the three key markets for the eMurmur technology.
Company (source) name	**CSD Labs**
Address	**Nikolaiplatz 4, 8020 Graz, AUSTRIA**
Main activity	**eHealth, Medical Technology**
Contact details	**Contact person: Andreas Schriefl, CEO** **Contact e-mail: schriefl@csdlabs.com** **Website: csdlabs.com**

3.2 BELGIUM

Country introduction

Capital	Brussels	**Official EU language(s)**	Dutch, French, German
Geographical size	30 528 km²	**Political system**	federal parliamentary constitutional monarchy
Population	11 258 434 (2015)	**EU member country since**	1 January 1958
Population as % of total EU population	2.2 % (2015)	**Currency**	Euro. Member of the Eurozone since 1 January 1999
Gross domestic product (GDP)	€ 409.407 billion (2015)	**Schengen area member**	Yes, Schengen Area member since 26 March 1995.
Gross Domestic Expenditure on R&D (GERD) as % of GDP	2.46% (2014)		

The most important sectors of Belgium's economy in 2014 were public administration, defence, education, human health and social work activities (22.7 %), wholesale and retail trade, transport, accommodation and food services (19.8 %) and industry (16.8 %). Belgium's main export partners are Germany, France and the Netherlands while its main import partners are the Netherlands, Germany and France.

List of selected top three technologies:

1	Highly flexible and cost-efficient radiation and radio-activity sensor	KU Leuven
2	Micro Plug and Play (MicroPnP)	VersaSense NV

Highly flexible and cost-efficient radiation and radio-activity sensor	
Stage of the development	Tested in the lab (proof of concept) Developing Prototype;
Where has this technology offer been published/introduced/ described before?	This technology is not published.
Technological sector According to the Field of science and technology classification	2.1 Engineering and technology – Electrical Engineering 2.7 Engineering and technology – Environmental Engineering
Non-Proprietary Description	**Short description of the technology:** The radiation sensor is implemented in a standard CMOS chip technology and is able to measure the presence and intensity of high energy particles. The sensor is highly-flexible to be sensitive to various particles and energy levels. Since standard CMOS is used, the sensor can be fabricated in high volumes at low cost. **Innovative aspects:** The sensor is based on a novel CMOS SRAM memory cell topology, for which the sensitivity to radiation is highly flexible by design. **Economic advantages:** The main advantage of this technology is the obtained cost reduction. This technology can scale down the prices of radiation detectors by more than a factor 10. **Commercial advantages:** Radiation monitoring is mandatory in all nuclear facilities. Most nuclear facilities will benefit from the obtained cost reduction and/or will be able to improve their monitoring coverage. **Environmental advantages:** Cost-efficient radiation sensors enable nuclear organisations or governments to use radiation sensing on a large scale to improve the environmental monitoring (e.g. Nuclear contamination) and nuclear safety. **Societal advantages:** Nuclear safety can significantly be improved by increasing the monitoring ionizing radiation in reactors, power plants, nuclear waste storage and high-energy physics experiments.
Value Proposition	Radiation monitoring is mandatory in all nuclear facilities like nuclear power plants, nuclear waste storage, space programs or even nuclear power plant decommissioning. Currently, the monitoring is done using expensive sensors, which reduce the available coverage of the monitoring system. This technology

<table>
<tr><td></td><td>allows to reduce the cost of the radiation sensors and allows to build a network of radiation sensors to accurately and cost-efficiently monitor a full nuclear facility. The added value of this technology lies in its low production cost which allows the end-user to improve its coverage range.</td></tr>
<tr><td>Existing alternatives</td><td>This technology allows the end-user to improve the quality of their radiation sensing. A table shows various applications and their solutions today.
<table>
<tr><th>Application</th><th>Impact of this technology</th><th>Current situation</th></tr>
<tr><td>Global cosmic radiation monitoring</td><td>Distributed sensing with central data storage.</td><td>None existing. Different modules are used today that are not compatible at different locations.</td></tr>
<tr><td>Aircraft SEU monitoring</td><td>Safety improvement and accident intervention.</td><td>Expensive sensors are omitted in airplanes such that radiation is not monitored.</td></tr>
<tr><td>Nuclear power plant sensing</td><td>Improved monitoring coverage of the area.</td><td>Limited placement of costly radiation sensors.</td></tr>
<tr><td>High-energy physics experiments</td><td>Increase of radiation data for nuclear protection.</td><td>Low efficiency radiation sensing</td></tr>
<tr><td>Nuclear waste monitoring</td><td>Quality improvement of storage safety.</td><td>Single measurement during packaging.</td></tr>
<tr><td>Space market</td><td>Reduced sensor weight and complexity.</td><td>Advanced and complex radiation monitors.</td></tr>
<tr><td>Irradiation facilities</td><td>Common measurement and calibration of particle flux reducing the measurement offset between different irradiation facilities</td><td>Different facility – specific instruments</td></tr>
</table></td></tr>
<tr><td>Collaboration(s)</td><td>This technology was developed by the KU Leuven University Belgium.</td></tr>
<tr><td>Asian connections</td><td>No</td></tr>
<tr><td>Intellectual property status</td><td>Patent not yet applied</td></tr>
</table>

Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Research & Development Agreement (s) Licensing Investment New company formation
Prospects on international market?	This technology is prospected to be competitive on the international market of radiation sensors and radiation safety. With the upcoming next generation of nuclear energy reactors or the decommissioning of old facilities, nuclear industry is expected to increase during the next decade.
Please explain why can this technology be interesting for a Japanese investor?	Nuclear monitoring and safety has become increasingly important during the last decades. Since Japan is highly-active in the area of nuclear applications, this technology is not only concerned on the international market but can have a large impact on national applications like the Japanese space program (JAXA), nuclear waste and power plant monitoring. Finally, it is also applicable to monitor the remains of a nuclear accident, where a highly distributed measurement system is required, which is (at this moment) not available at a reasonable cost.
Company (source) name	**KU Leuven**
Address	**Kleinhoefstraat 4, 2440 Geel**
Main activity	**Research in micro-electronics for nuclear applications**
Contact details	**Contact person: Prof. Dr Ir. Paul Leroux** **Contact e-mail: Paul.Leroux@kuleuven.be** **Website: www.kuleuven.be/advise**

Micro Plug and Play (MicroPnP)	
Stage of the development	Commercially available, primarily in EU, first customers appearing in Japan and the US.
Where has this technology offer been published/introduced/ described before?	Technology arose from academic research and has now been presented at industrial trade-shows across the world. FTO and patent search completed.
Technological sector According to the Field of science and technology classification	2.2 Electrical engineering, Electronic engineering, Information engineering
Non-Proprietary Description	**Short description of the technology:** MicroPnP is the world's first true plug---and---play Internet of Things (IoT) platform. Each MicroPnP device is a wireless hub that supports up to 3 plug---and---play sensors and actuators. Devices self---organize to form a self---healing wireless mesh network with excellent reliability, range and power consumption characteristics.

	Innovative aspects: Zero configuration customization of sensors and actuators. 10 year battery life. 99.999% network reliability or multi---KM range. **Economic advantages:** Vastly reduced total cost of ownership in comparison to prior industrial monitoring solutions. Lower acquisition cost. Lower operational costs. **Commercial advantages:** Extreme agility. Lead---time to integrate a new sensor with MicroPnP is only two weeks. Initial customers include several multinational corporations. **Environmental advantages:** IoT technologies will play a key role in addressing environmental challenges such as reducing energy consumption, monitoring the climate and providing early warnings of impending environmental disasters.
Value Proposition	VersaSense provides wireless Internet of Things (IoT) products and services that radically reduce the total cost of ownership for industrial sensing and control systems. Our award winning MicroPnP product line is a game changer for the sensing and control marketplace. MicroPnP provides a standards---based solution that radically reduces the cost of acquiring, building, and operating highly scalable wireless sensing and control systems. The MicroPnP product range offers up to 10 years of battery life, 99.999% reliability, multi---KM range and a growing portfolio of over 20 plug---and---play sensors and actuators.
Existing alternatives	Key competitors include: WorldSensing, Libellium, Vicotee, ThingSquare and B+B SmartWorx. We can provide a more detailed presentation on competition on request. No competitor can match our low energy consumption, high security or (crucially) our zero configuration plug---and---play sensors and actuators.
Collaboration(s)	We partner closely with Linear Technology (now part of Analog Devices). This provides us access to a large EU sales network and important marketing events.
Asian connections	We currently have one Japanese customer and good links with Linear Technology in Japan. We are interested to expand our ability to follow---up on Asian sales lead.
Intellectual property status	Patent not yet applied for. Other forms of protection
Is it possible to file Japanese patent application?	Unknown
Your commercialization objectives	Licensing (nonexclusive, geographic/application specific) Purchase & Sale Agreement Iinvestment
Prospects on international market?	Evidence so far is very positive; we have many sales leads outside of the EU even though we have no active international sales efforts.

Please explain why can this technology be interesting for a Japanese investor?	MicroPnP has direct applicability to critical industrial and business scenarios and is an excellent match with many of the high tech. manufacturing businesses in Japan. VersaSense is a successful and rapidly growing spin---off of KU Leuven, with proven and growing revenues. We are now looking for external investment to fund the companies growth.
Company (source) name	**VersaSense NV** **a spin off of KU Leuven**
Address	**Kroegberg 3, B---3000, Leuven, BELGIUM**
Main activity	**Internet of Things Products and Services**
Contact details	**Contact person: Danny Hughes** **Contact e---mail: danny.hughes@cs.kuleuven.be** **Website: www.versasense.com**

3.3 BULGARIA

Country introduction

Capital	Sofia	**Official EU language(s)**	Bulgarian
Geographical size	110 370 km²	**Political system**	parliamentary republic
Population	7 202 198 (2015)	**EU member country since**	1 January 2007
Population as % of total EU population	1.4 % (2015)	**Currency**	Bulgarian lev BGN
Gross domestic product (GDP)	€ 44.162 billion (2015)	**Schengen area member**	No, Bulgaria is not a member of the Schengen Area.
Gross Domestic Expenditure on R&D (GERD) as % of GDP	0.7% (2013)		

The most important sectors of Bulgaria's economy in 2014 were industry (23.5 %), wholesale and retail trade, transport, accommodation and food services (21.3 %) and public administration, defence, education, human health and social work activities (13.2 %). Bulgaria's main export partners are Germany, Turkey and Italy while its main import partners are Russia, Germany and Italy.

List of selected top three technologies:

1	Laser Adaptive Ablation Deposition (LAAD) – Laser assisted technology for deposition on large area hybrid nanocomposite including biohybrid coatings.	Nanotechplasma Ltd.
2	3D Biohybrid printing -disruptive innovation: 3D printing (3DBHP) of hybrid nanocomposites including biohybrid objects by one step and one technological cycle.	Nanotechplasma Ltd.
3	New generation incinerator for medical and hazardous waste. Running on OXY-HYDROGEN gas. With unique filtration system, eliminating the harmful exhaust emissions.	New Energy Coproration OOD

Laser Adaptive Ablation Deposition (LAAD) + 3D Biohybrid printing -disruptive innovation:	
Stage of the development	Test Data Available (LAAD) Developing Prototype (3DBHP)
Where has this technology offer been published /introduced/ described before?	EEN Ref: TOBG2015102700 01 www.nanotechexpo.jp/seedsneeds2016/32-8.html http://nanotech2016.icsbizmatch.jp/Info/en/ExhibitorDetail?val=VhZwQIRYif Biohybrid printing ,Conference Paper · July 2015 Conference: 12th International Conference on Nanoscience & Nanotechnology, 07-10 July, Thessaloniki, Greece 01/2015, At Greece, Thessaloniki http://www.bloombergtv.bg/video/the-next-big-thing-valeri-serbezov
Technological sector **According to the Field of science and technology classification**	Health-related biotechnology; Technologies involving the manipulation of cells, tissues, organs or the whole organism (assisted reproduction) Nano-bio – mediine
Non-Proprietary Description	**Short description of the technology:** 3DBHP is additive laser based technique enables in a single step and in one technological cycle to synthesize and printing of 3D objects with micron and submicron hybrid nanocomposites onto any substrates. The hybrid nanocomposites consist, inorganic nanoparticles, nanostructures, non-biogenic objects and complex organic substances as proteins and living cells. **Innovative aspects:** Simultaneous synthesis and printing of new pre-programmable byohybrid objects on nanoscale lavel. **Economic advantages:** Low cost with implications - no excess materials and fabrication steps, high- speed, 3D printing with possibility roll-to-roll manufacturing, 3D printing in inaccessible points or areas, 3D printing of different substances in one points or area. Reliable with implications- embedded rather than added-on, high degree of cells viability, strict control of embedded non-biogenic or inorganic nanostructures, bio- hemocombatable, printing heterogeneous structures, minimal biohybrid printing size with highest precision and resolution. Flexibility with implications – small amount and big amount of printed material, in situ 3D Biohybrid printing, scaffold and scaffold-free based printing. **Commercial advantages:** New pre-programmable materials, Cheaper & Better -Technological process by single step. Applications in several fast grow up multi Billions market niches as: new generation biomaterials, smart implants, pharmacology-drug formulation, transplant and regenerations, biohybrid robotics, biosensors, metamaterials. **Environmental advantages:** Clean - Not waste process

	Societal advantages: 3D BHP and LAAD are focusing in healthcare industry. Nanoscale inorganics and organics bonding for the life benefits.
Value Proposition	Synthesis and printing (3DBHP) of novel pre-programmable biohybrid materials and systems and Large area deposition (LAAD) new hybrid nanocomposites and biohybrid coatings by one step. Printing homogeneous and heterogeneous structures. Scaffold based and scaffold-free or self-assembling bioprinting. High degree of cell viability. High degree of cell viability. Printing in "inaccessible points and areas".
Existing alternatives	"State of the art" 3D Bioprinting : **Bioextrusion** – High material viscosity slow printing speed **Microvalves**- rely on a mechanical valve allowing fluid to pass from a hyperbaric chamber. **Inkjets**- rely on the material properties to create a droplet with low resolution. **Classical Laser bio printing** - good resolution and medium printing speed, printing in flat plane only. FOR ALL **"State of the art"** techniques **– time-consuming and NO capability for pre-programmable biohybrid materials printing with nanoscale resolution by one technological cycle!** Our New paradigm - Convergence between Nanotechnology, Biotechnology and ICT. Customization: generating of the type, form and hence the functionality of hybrid and biohybrid nanocomposite objects virtually unlimited. Reduces drastically the total time required to generate a finished part or object. Cost-effective: no need for purchase from a supplier of expensive nanostructures. Scalable - useful for large and complex objects, rapid motion and high-resolution patterns. Easy adaptation to R2R technologies.
Collaboration(s)	No
Asian connections	No
Intellectual property status	Patent already applied for "Laser direct synthesis and deposit of nanocomposite materials or nanostructures"WO2015/107051 A1, PCT/EP2015050506 (2015)
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Research & Development Agreement Licensing (nonexclusive, geographic/application specific) Joint Venture Purchase & Sale Agreement Iinvestment New company formation
Prospects on international market?	Our focus is international markets.

Please explain why can this technology be interesting for a Japanese investor?	3DBHP is cutting edge technology. The Biohybrid technology platform recipes may be modified /adapted by the End-user needs in accordance of Open Source principle: Everyone knows what is best for them.
Company (source) name	**Nanotechplasma Ltd.**
Address	**Sofia, " Tzar Osvoboditel" 17 A**
Main activity	**Development and commercialization of new technologies in nano-bio – medicine and health care industry**
Contact details	**Contact person: Valery Serbezov** **Contact e-mail: info@nanotechplasma.com** **Website: www.nanotechplasma.com**

New generation incinerator for medical and hazardous waste Running on OXY-HYDROGEN gas. With unique filtration system, eliminating the harmful exhaust emissions.	
Stage of the development	Tested in the lab Developing prototype
Where has this technology offer been published/introduced/ described before?	No
Technological sector [According to the Field of science and technology classification]	2.7 Environmental engineering
Non-Proprietary Description	**Short description of the technology:** We developed unique Electrolyze system, for producing of OXY-HYDROGEN gas on demand. The system is with very high efficiency – volume of gas produced related to the input of energy (electricity). Such equivalent is still unknown, even worldwide. Using the properties of OXY-HYDROGEN gas - reaching the temperature point for vaporization of the materials by burning, in the First stage we are treating the waste in the primary combustion chamber. In the second stage, by similar process, in the secondary combustion chamber we are treating the gases, produced by burning of the waste. On the third stage, we are treating the system exhaust gases, so at the end we have at the chimney's output no harmful gasses. **Innovative aspects:** Implementation ONLY Oxyhydrogen gas as fuel in Incinerator system. Treatment of waste and the exhaust gases in the incineration process ONLY by burning of OXYHYDROGEN gas. **Economic advantages:** • Fuel cost savings • No or minimum expenses for consumables for exhaust gasses filtration systems. • Minimum or No expenses for landfilling **Commercial advantages:** • No expenses for landfilling • Transportation savings. **Environmental advantages:** Minimum environmental impact through less or no such (by some gases) harmful exhaust gas emissions after incineration process!
Value Proposition	Most of the hazardous waste is hard and expensive to destroy. Some types of waste cannot be incinerated, therefore they needs to be stored under special conditions. The new technology innovation, we are developing, will help to make the process of destroying of hazardous waste more efficient, given the

	opportunity to destroy hazardous waste, which is classified for storage, and make the process cost effective.
Existing alternatives	The breakdown of dioxin requires exposure of the molecular ring to a sufficiently high temperature to trigger thermal breakdown of the strong molecular bonds holding it together. There are tradeoffs between increasing either the temperature or exposure time. Both cases are connected with costs for fossil fuels. Further, most modern incinerators, utilize fabric filters (often with Teflon membranes to enhance collection of sub-micron particles) which can capture dioxins on solid particles. These are additional costs for filters. Our proposal is an environmentally friendly incinerator to be created. Incinerator, that does not need fossil fuels (also emitting harmful emissions), and does not need expensive filters. Our proposal is for reliable incinerator with zero harmfull emissions. Nowadays the price for incinerating is between 1,6 – 2,4 EUR/kg. The half of that price goes for fossil fuel and spare parts for filtration system. Implementing our technology, the savings expectation are for up to 50% from these prices.
Asian connections	No
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Research & Development Agreement, Joint Venture, Investment
Please explain why can this technology be interesting for a Japanese investor?	Waste treatment is one of the most important challenges on our time. Japan is leading country in the implementation and development of innovation. Our technology propose combination of environmental friendly and innovative solution for the waste treatment problem.
Company (source) name	**New Energy Coproration OOD**
Address	**Bulgaria, 1220, Sofia, Bul. Rozhen 2B**
Contact details	**Contact person: Deyan Deltchev** **Contact e-mail: d.deltchev@newenergycorp.eu** **Website: www.newenergycorp.eu**

3.4 CROATIA

Country introduction

Capital	Zagreb	**Official EU language(s)**	Croatian
Geographical size	56 594 km²	**Political system**	parliamentary republic
Population	4 225 316 (2015)	**EU member country since**	1 January 2013
Population as % of total EU population	0.8% (2015)	**Currency**	Croatian Kuna HRK
Gross domestic product (GDP)	€ 43.897 billion (2015)	**Schengen area member**	No, Croatia is not a member of the Schengen Area.
Gross Domestic Expenditure on R&D (GERD) as % of GDP	0.8 % (2014)		

The most important sectors of Croatia's economy in 2014 were wholesale and retail trade, transport, accommodation and food services (21.2 %), industry (21.1 %) and public administration, defence, education, human health and social work activities (15.4 %). Croatia's main export partners are Italy, Bosnia & Herzegovina and Slovenia while its main import partners are Germany, Italy and Slovenia.

List of selected top three technologies:

1	Electric and Hybrid Marine Propulsion Motors in advance premium efficiency permanent magnet technology	TEMA d.o.o.
2	MALE RPAS solution	Hipersfera Ltd.
3	"Gy3o" 3D movement tilting and rotating personal transporter	Viking d.o.o.

Electric and Hybrid Marine Propulsion Motors in advance premium efficiency permanent magnet technology	
Stage of the development	**Commercially available** Industrial production in three family group covering different nominal torque/power range as follows: SPM132: 50-200Nm/ 6-50KW medium speed <3600rpm MWB400: 200-1500Nm/ 7-70KW low speed <600rpm external rotor (hub) version LPMR: 700-6000Nm /150-1000KW medium speed <2500rpm
Where has this technology offer been published/introduced/ described before?	The technology is based on a long time science research followed by products construction design and prototyping. At that time basic idea was patented and published on many professional meetings and papers ("Electric & Hybrid" magazine October, 2014 and April,2015). Among different the most important also with a lot of inquires: http://www.nauticexpo.com/prod/tema-doo-39710.html Or at TEMA web page: www.tema.hr Numerous specific marine exhibitions: Genova, Venezia, LaSpezia, Pula, Rijeka, Zagreb,Amsterdam, Hamburg, Berlin, Beograd, Istambul…
Technological sector **According to the Field of science and technology classification**	Marine electric & hybrid propulsion technology
Non-Proprietary Description	**Short description of the technology:** Electric synchronous motors based on permanent magnet (PM) technology has always been a "future hightech" that engineers has been orientated. Last decade price reduction and quality increase in permanent magnet material leads this technology to be transferred from robotics only usage to industrial and marine applications. Today in every new industrial and high demands application the PM tech is planned to be used. TEMA has invested in R&D a lot of time and money to get the industrial top product. Our experience in marine engineering and start up production in the same yard as the biggest Adriatic shipyard (Uljanik) redirect our marketing interest in marine sector. Our limited investment resources define the "idea to market" strategy. We have made all theoretical calculation base, make all production documentation establish us today as the biggest PM motors portfolio. To catch the best possible market position we have decided to invest in three, the most requested, motor families production tools. We rent the production facility and outsource the production machines but we offer about fifty different PM machines to actually global market. **Innovative aspects:** Every technology has features & back draws. We have resolved some problems in PM machines what positioning TEMA solutions as one of probably the best

	Economic advantages: less fuel and maintenance cost, much more robust construction, save the engine room space, better maneuverability, reduction of auxiliary services (fuel water and lubrication pumps, heat exchangers, simple cooling installation and accessories, easy to install and maintenance, simply start up procedure, user friendly **Commercial advantages:** tuned with actual and future hybrid & electric public and personal vehicles market orientation. Environmental advantages: this technology guarantee the best motor efficiency for next decades **Societal advantages:** comfortable usage (extremely low noise and low vibration) and bust of green & removable energy usage public opinion
Value Proposition	Increasing the efficiency in electric traditional machines stuck because of several limits. One of this: rotor loses, has been solved by introducing the PM rotor what directly makes the step ahead in motor overall efficiency. That kind of rotor than face the other limits: the max speed limitation, possible demagnetization and mechanical protection, corrosion protection. Some of these problems can be solved by embedding the magnets in rotor structure but then new problem rise – partly flux loses and torque decrease. TEMA solution use additional synchronous reluctance torque bust to solve max speed limitation, possible demagnetization and mechanical & corrosion protection and to save a size down traditional to PM motor dimensions. This push TEMA large PM machines on actually top technical solution for marine and specific industrial applications.
Existing alternatives	TEMA embedded rotor solution prevent magnets from corrosion and demagnetization as well any mechanical impact. Robust rotor design and segmentation of magnetic material facilitates the production process and makes much more reliable the final product. Special rotor cage permits the motor high speed as traditional propulsion diesel motors (MTU.CAT,CUMMINS, YANMAR…) have and this way makes easy to redesign (even retrofit) traditional power train to electric or hybrid. Needs no special knowledge in shipyard to apply this new advance propulsion. This makes crucial advantages compared to our competitors. But also very important that TEMA specific rotor design makes propulsion motor much more robust in application as well in long time maintenance.
Collaboration(s)	The technology was developed in collaboration with Universities, Institutes and worldwide specialists. All collaboration was covered by contracts and TEMA as a leading research entity has

	full and exclusive rights on the actual production and companion technology.
Asian connections	TEMA has sold the license production rights for LPMR motor family to China electric factory in the year 2007.
Intellectual property status	Patent granted: P20080304 – Croatia - 12th Feb,2013
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Joint Venture Purchase & Sale Agreement Investment
Prospects on international market?	Kyoto Protocol and high demands for reduction of greenhouse gases emission push electric drives in all transportation sectors. Rapid hybridization in land transport and personal vehicles has strong impact on marine hybridization. Next two years will present a massive rise of usage electric driven propulsion systems in marine applications. For this the necessity, many arguments will be pointed to: - Advance electric technology motorization of the propulsion power train (what TEMA actually have) and - On board power generation or/and accumulation what rapidly is developing for electric/hybrid land vehicles. This two technology effort results will push rapidly usage of electric/hybrid propulsion systems in all kinds of marine applications.
Please explain why can this technology be interesting for a Japanese investor?	This reminds me on Toyota "Prius" hybrid car marketing approach. Being the first on the market with good quality results and fair price makes a great marketing difference when other producers come with the same technology. TEMA actually has many successfully running applications on global oceans with wide power range demonstrating the realistic capability and pioneering. Our applications are used in luxury yacht building (Italy is one among biggest global producer), protection nature and parks areas (Maldives, Croatia, Hungarian, Austria…), advance technology products (GB, Norway, Netherland, US…) or fuel lack zones (Oceania). Next years this technology will expend on the market. Investing in R&D, prototyping and production start up needs human and financial resources but also time – and no guaranty for the successful end. Here Japanese investor has zero time delay, working high tech products, limited serial start up production with several years' evidence of operating experience and a good position on the market. Minimum investment risk and maximum prosperity in actually growing market.
Company (source) name	**TEMA d.o.o.**

Address	**HR52100 PULA Voltica 14**
Main activity	**Premium Efficiency Synchronous Permanent Magnet Motors**
Contact details	**Contact person: Prof.Dr.Branimir Ruzojcic** **Contact e-mail: branimir@tema.hr** **Website: www.tema.hr**

MALE RPAS solution	
Stage of the development	Tested in the lab Developing Prototype
Where has this technology offer been published/introduced/ described before?	Latest events: • Frontex: AERIAL BORDER SURVEILLANCE DEMO "TETHERED BALLOONS/AEROSTATS" 2016 • FEBEA: General Assembly 2016 European Federation of Ethical and Alternative Banks • Pioneers Festival 2016, Vienna • Frontex: European Day for Border Guards annual conference – the Industry Exhibition part (Serock, May 2016)
Technological sector According to the Field of science and technology classification	2.2 Electrical engineering, Electronic engineering, Information engineering 2.3 Mechanical engineering 2.5 Materials engineering 2.11 Other engineering and technologies
Non-Proprietary Description	**Short description of the technology:** We are creating an airship (UAV) that is designed for a slow flight or hovering, for all-weather long-endurance operations and mission specific payloads. As such, Hipersfera fleet of airships can perform as a cluster of robust industrial-grade payload platforms in a reliable, safe and also commercially viable way for extended periods of time (up to 24/7/365). **Innovative aspects:** Lighter than air flight technologies enabling persistent airborne presence with significant and scalable payload capability. **Economic advantages:** Hipersfera creates a new flagship aeronautical technology and industry niche for Europe, an original, high profile and strong brand that creates both direct and indirect employment opportunities within its value chain and ecosystem. **Commercial advantages:** Hipersfera provides a unique method for positioning payloads in airspace on demand, and a unique business model approach for creating a service from this: Persistent aerial Payload Positioning as a Service (PaPPaaS). No other vehicle can provide as competitive a combination of operating cost, mission duration, flexibility and scalability. A true "blue-sky" value proposition. **Environmental advantages:** Platform for environmental researches and surveillances. **Societal advantages:** MALE RPAS solution for various data intensive applications developed by HiperSfera company can play a critical role in continuous surveillance and monitoring of Gas&Oil-pipeline infrastructure, Disaster Management, Search and Rescue

	operations, Border Surveillance Systems as well as Poaching/Illegal Lodging/Trafficking Monitoring, etc.
Value Proposition	There is currently no equivalent commercially available, viable and cost effective solution for the generic airborne platform in a long-endurance, 100kg/10kW payload class. The ability to position a payload above area of interest at a fixed point, high above ground, in a reliable, safe and cost-effective manner, for an extended period of time can also provide with a turnkey service supporting early detection and surveillance of technical malfunction, teft or terorism.
Existing alternatives	As a telecom platform, a fleet of moored HS airships can serve as a broadband network with 10Gbps+ cell "towers" (persistently hovering airships), significantly outperforming traditional, mast based network infrastructure. HS telecom solution offers 90%+ reduction in number of ground infrastructure, resulting in significant savings in network operational expenses, faster network roll-out; on-demand network capacity upgrade; and continuously active geographical distribution of available network capacity.
Collaboration(s)	No, but further development foresees various technology partnerships
Asian connections	Yes, latest investor is from Singapur (August 2016)
Intellectual property status	Relevant patents: US9004397 (B2) - AUTONOMOUS STRATOSPHERIC UNMANNED AIRSHIP (http://worldwide.espacenet.com/publicationDetails/biblio?CC=US&NR=9004397B2&KC=B2&FT=D) WO2012025769 (A1) - AN AUTONOMOUS STRATOSPHERIC UNMANNED AIRSHIP (http://worldwide.espacenet.com/publicationDetails/biblio?CC=WO&NR=2012025769A1&KC=A1&FT=D)
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Research & Development Agreement
Prospects on international market?	Blue ocean opportunity
Please explain why can this technology be interesting for a Japanese investor?	Japanese technology partners and universities could be interested for first test trials for various aplications.
Company (source) name	**Hipersfera Ltd.**
Address	**Zagreb, Ilica 36, office: Zagreb, Slavonska avenija 52**
Main activity	**R&D**
Contact details	**Contact person: Ratko Pesek** **Contact e-mail: info@hipersfera.hr ;** **ratko.pesek@hipersfera.hr** **Website: https://hipersfera.hr/**

"Gy3o" 3D movement tilting and rotating personal transporter	
Stage of the development	Tested in the lab Developing Prototype Ready for Betta Testing
Where has this technology offer been published/introduced/ described before?	To the agency Hamag - Bicro for project Proof of concept, and for program Razum, positive evaluation, no budget in the program.
Technological sector **According to the Field of science and technology classification**	Traffic, ecology, smart city, technology, trend, new
Non-Proprietary Description	**Innovative aspects:** Unique 3d movement and rotational steering, unique in street vehicles, battery powered **Economic advantages:** Use of electric grid to transport people very cheap and safe. **Commercial advantages:** Much safer than moped, much cheaper then car, safety and agility with future design make this very popular future vehicle. **Environmental advantages:** Using only 70kg vehicle to transport single human is very economical, and with electric power from the grid and solar panels is very environmental friendly. **Societal advantages:** Cheap and safe vehicles that people could use without driving licence and insurance, the low power type is registrated like electric tricycle, higher power is licenced like moped and full powered like motorcycle category.
Value Proposition	We solve gap between mopeds and cars. Gap between that type of vehicles is too big, we think that we making new types of vehicles, completely new segment of closed personal transporter for health and handicapped people. We could provide link with video of alfa prototype progress from
Existing alternatives	There is no vehicle that have 3d movement on the street, only 78cm wide, very safe, closed, electric, with innovative steering, that change all dimensions while you drive, length, width, and height, tilting front and back, left and right, and all combinations in between. Closed from rain and wind, only command is with two hands.
Collaboration(s)	Only with support of Hamag Bicro "Proof of Concept" program. Positive evaluation of pre-commercial stage, but not enough budget in program "Razum" in 2015.
Asian connections	No
Intellectual property status	This project is secret, and only our company and agency Bicro know more than picture. Technical details and state of art of this

	patent is still under secret and we wait for investors to help us cover this problem on global field. We are now in the state of final devaloping technical solutions, and we prepare patent pending final documentation when project will be finished. Becose if we change something will not be covered with old patent. This is link of what we published in public yet, nothing else, just basic informations; http://www.poduzetnistvo.org/news/ekolosko-vozilo-buducnosti-gy3o-osmisljeno-je-u-zagrebu
Is it possible to file Japanese patent application?	Yes, because we never show core of patent outside of company, patent is focused on unique steering joint.
Your commercialization objectives	• Research & Development Agreement • Licensing • Joint Venture • Purchase & Sale Agreement • Outright Sale of business/technology • Investment • New company formation We are focused on developing new products, and we looking for partner that will comercialize our products. We produce electric vehicles and we are focused on design and innovations, commercialisation is out of our main focus for now.
Prospects on international market?	Making new segment of smart future vehicles. Cheap production, unique design and perfect steering.
Please explain why can this technology be interesting for a Japanese investor?	It is very unique and smart idea to produce this micro car for single human, hand command is very suitable for paraplegic persons, build like helmet for whole body and head is very safe economical, environmental friendly, natural 3d movement. Gy3o is new very close future segment of transport. We solve ever problem, technology is cheap and works. Potential is huge, and global. We are open for collaboration.
Company (source) name	**Viking d.o.o., Zagre**
Address	**Vida Došena 27**
Main activity	**Innovation and production**
Contact details	**Contact person: Robert Vlasic CEO** **Contact e-mail: robert@viking.hr** **Website: www.viking.hr**

3.5 REPUBLIC OF CYPRUS

Country introduction

Capital	Nicosia	**Official EU language(s)**	Greek
Geographical size	9 251 km²	**Political system**	presidential republic
Population	847 008 (2015)	**EU member country since**	1 May 2004
Population as % of total EU population	0.2% (2015)	**Currency**	Euro. Member of the eurozoe since 1 January 2008
Gross domestic product (GDP)	€ 17.421 billion (2015)	**Schengen area member**	No, Cyprus is not a member of the Schengen Area.
Gross Domestic Expenditure on R&D (GERD) as % of GDP	0.475% (2013)		

The most important sectors of Cyprus's economy in 2014 were wholesale and retail trade, transport, accommodation and food services (28.6 %), public administration, defence, education, human health and social work activities (20.7 %) and real estate (11.5 %). Cyprus's main export partners are Greece, the UK and Israel, while its main import partners are Greece, Israel and the UK.

List of selected top three technologies:

1	Self actuating mechanical lock system	MTH Maglid Technologies Holdings Ltd
2	Pre-lingual Assessment of Noetic Difficulties with Automated System (PANDIAS): Mass screening in the early years of pre-school and primary education	AAI Scientific Cultural Services

Self actuating mechanical lock system	
Stage of the development	Commercially available: http://www.maglid.com/products.html Constantly innovating various implementations using the technology
Where has this technology offer been published/introduced/ described before?	http://www.maglid.com/products.html http://red-dot.de/pd/onlineexhibition/work/?lang=en&code=11-01003-2016&y=2016&c=210&a=0http://www.teio.eu/product.html
Technological sector According to the Field of science and technology classification	2. Engineering and technology 3. Medical and Health sciences 4. Agricultural sciences
Non-Proprietary Description	**Short description of the technology:** Magnetically assisted mechanical lock and seal system for containers **Innovative aspects:** Assured lock and seal of lid to canister, guaranteeing safety of contents **Economic advantages:** Incentivized reuse of container by general populace. **Commercial advantages:** Product differentiation, “wow” factor. Ease of use especially for aging demographic and physically challenged. **Environmental advantages:** Reuse versus disposable **Societal advantages:** Ease of use especially for aging demographic and physically challenged.
Value Proposition	Due to the automated lock and seal and one handed use features, MagLid is especially suited for the ever expanding aging demographic and physically challenged. MagLid is also especially suited for physically difficult environments such as aerospace and deep sea, offering automated closer of portholes/airlocks with very easy opening by manual or robotic means.
Existing alternatives	Traditional screw top or mason jar. Direct magnetic lid. Maglid combines the efficiency and easy of use of a typical magnetic closer with the mechanical assuredness of a screw top lid, thereby offering the best of both worlds. Throw the lid on, and it will automatically align, rotate seal and lock. MAGIC Focus study with housewives in USA showed a “definitely would buy for MagLid equipped canisters 89% acceptance post demo”
Collaboration(s)	No
Asian connections	Design for manufacturability testing and small run production was done with OEM manufacturer in China.
Intellectual property status	Granted patents: EP2334571 (B1) EP2334571 (B8) US2010032403 (A1) US8317048 (B2) ZA201101396 (B) SMT201300018 (B)

	SI2334571 (T1) PT2334571 (E) NZ591519 (A) MX2011001658 (A) KR20110102294 (A) JP2012508672 (A) JP5542137 (B2) IL211197 (A) WO2010018431 (A1) HRP20130055 (T1) HK1162003 (A1) ES2398344 (T3) EA201100327 (A1) EA018677 (B1) DK2334571 (T3) CN102177075 (A) CN102177075 (B) CA2735568 (A1) BRPI0917252 (A2) AU2009280900 (A1) AU2009280900 (B2) Other forms of protection: Trademark
Is it possible to file Japanese patent application?	Already filed in Japan https://worldwide.espacenet.com/publicationDetails/originalDocument?FT=D&date=20140709&DB=EPODOC&locale=en_EP&CC=JP&NR=5542137B2&KC=B2&ND=4
Your commercialization objectives	• Research & Development Agreement • Licensing • Joint Venture • Purchase & Sale Agreement • Outright Sale of business/technology • Investment • New company formation • Other: multi platform multi industry technology
Prospects on international market?	Due to MagLid's multi industry applications and international IP patent protections, there is a very large international business scope.
Please explain why can this technology be interesting for a Japanese investor?	We believe that MagLid offers Japan's increasing aging demographic key benefits for many different products both for home and especially pharmaceutical child proof packing which are unique and solve many problems currently inherent with traditional child proof packaging. Additionally we believe MagLid has aero space applications yet to be investigated.
Company (source) name	**MTH Maglid Technologies Holdings Ltd**
Address	**33 Korinthou str. Ag. Trimithias, 2671, Nicosia**
Main activity	**Developing products utilizing patented technology**
Contact details	**Contact person: Louis H Christou** **Contact e-mail: Louis@maglid.com** **Website: www.maglid.com**

Pre-lingual Assessment of Noetic Difficulties with Automated System (PANDIAS): Mass screening in the early years of pre-school and primary education	
Stage of the development	Ready for Beta Testing* *The stage of development is actually beyond Beta testing, as the services are already available for private customers and schools in Cyprus and the first beta testing was completed last year at a private school in Cyprus. Also, the new tests were beta tested in selected schools in Cyprus using the earlier PC-based format. Discussions with the Ministry of Education of Cyprus to beta-testing of the PANDIAS personalized platform have been slow to be approved by the ministry because of recent introduction of a new general evaluation procedure of children in parallel with reorganizing its curriculum. In any case, for widespread application in the Japanese primary schools it will be wise to go beyond the existing prototype version re-designing the actual device to satisfy Japanese requirements best and then repeat the beta testing, initially in selected Japanese schools.
Where has this technology offer been published/introduced/ described before?	The technology has not yet been widely publicized because the process of protecting the Intellectual Property Rights (IPR) has started less than a year ago. It is hoped that the patent application(s) will be submitted within this year, or at the latest early in 2017, so that the methodology details and tests results from the early testing can be published.
Technological sector **According to the Field of science and technology classification**	2.2 Electronic engineering, Information engineering 3.1 Neuroscience (pshychophysiology) 5.1 Psychology, special (early diagnosis of learning problems)
Non-Proprietary Description	**Short description of the technology:** A combination of short diagnostic tests using visual stimuli and a dedicated electronic device for personalized use **Innovative aspects:** It allows individual testing of children within a class setting, screening an entire classroom with minimal interruption in one teaching period. Children identified as at risk can be further studied in separate session(s) using the same device with optional addition of EEG. **Economic advantages:** It has the potential of eliminating, or at least greatly reducing learning difficulties through targeted early intervention, leading to huge saving for the schools, to the individuals affected and their families (avoiding loss of income because of inadequate education).

	Commercial advantages: The service can be centrally managed for accuracy and precision or leased to schools or other providers after appropriate training of the people delivering it. **Environmental advantages:** It is totally non-invasive, easy to use with minimal disturbance of lessons and school program. **Societal advantages:** Learning difficulties are a burden to individuals affected and their families. Yet, some become prominent and successful. Unfortunately many more turn to disruptive behaviors and crime as a way out of their predicament. Helping children cope at school has huge payoffs, for the individuals involved, their families and for society at large.
Value Proposition	The proposition aims to solve the need to identify early individual children at risk of falling behind in school because of the way their brain is organized. The proposition is also ideal for delivering intervention, but more to the point the proposition offers an objective evaluation of the efficacy of **any** early intervention (this could be a most valuable commercial asset for the proposition). Since developing the solution, many other applications have been identified, including applications in neuromarketing, decision making in business, psychometric testing etc.
Existing alternatives	To the best of our knowledge there exists no alternative solutions for individual, early, class room screening that is automated and objective. Alternatives use paper and pencil, PC-based solutions and are difficult to evaluate the local conditions for each individual case. Doing the test within just one lesson-period allows for follow up tests on the small subset of children identified as low performers; special attention can be given so that the conditions and level of understanding of what is required are good for each child, thus ensuring test reliability. The basic tests offers results that include both accuracy and reaction time. For children identified as at risk further tests using the same device with EEG can then offer more specific description of the likely problem that each individual child may have. The same set up can then be used to deliver intervention and test the efficacy of such intervention.
Collaboration(s)	The technology was developed with partial support from national grants (Cyprus Research Promotion Foundation and Ministry of Energy, Commerce Industry and Tourism) and the EU structural funds. All intellectual property rights for the output belong to AAI Scientific Cultural Services Ltd (AAISCS). The last externally supported project finished in May 2015. The work since then was supported entirely from AAISCS internal resources and some income from private customers using the PANDIAS service.
Asian connections	The technology owner and key personnel have worked for a number of years at the brain Science institute (BSI) RIKEN, Wako

	Shi, near Tokyo. Prof. Andreas A. Ioannides set up and headed the MEG laboratory at BSI in 1998 and he was team leader of the laboratory for Human brain Dynamics at BSI throughout the 11 years of its existence (1998 – 2009).
Intellectual property status	Patent not yet applied for, but preparations are ongoing expecting to submit a patent application later this year or early in 2017. __Other forms of protection (copyright, trademark, trade secret, …): Proprietary knowledge and knowhow based on 8 years research with teachers, educators and psychologist working for AAISCS or working in collaboration with AAISCS researchers.
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Research & Development Agreement (s) Licensing (geographic/application specific) Joint Venture (could include Japan and a wider geographical area) New company formation For the reasons described below, the prospect of applying this technology across schools first in Japan is a very sensible way before expanding to the international market. AAISCS is therefore open to any of the options listed above, but with a clear preference for the ones underlined. Prof. Andreas Ioannides will be happy to visit Japan to explore options for joint commercial initiatives and with government (MITI) and academic and national organisations and Institutions interested in joint research and further development of the proposed industrial solution.
Prospects on international market?	We believe that there are tremendous prospects for the international market because of the uniqueness of the solution offered. We add here that the solution should not be seen only as a diagnostic and intervention for children with learning difficulties, but as a tool that can potentially identify both strengths and weaknesses in each and every child.
Please explain why can this technology be interesting for a Japanese investor?	The Japanese society is one of the most advanced societies in utilizing technology for mass screening and especially so for nurturing physical and mental health of children. Prof. Andreas Ioannides knows this from first-hand experience, having received the related benefits through the safe delivery of twins by his wife while they both worked at BSI, RIKEN, and especially, with the follow up examinations and care the twins received in their first years of life at the regular check-ups in clinics and the nursery education near BSI RIKEN. The industrial solution offered here fits perfectly the Japanese way of organizing the provision and monitoring of education and health.

	The provider of this solution therefore sees this not only as an opportunity for applying the solution to Japan, but also as an opportunity to further develop the product utilizing the organisation and precision of Japanese work, so that the services are fully developed and its potential as a universal tool of identifying both strengths and weaknesses in each and every child is realized. It is for this reason that the commercialization objectives mentioned above include as highly desirable Research and Development agreement, Joint venture and possibly the formation of a new company in Japan.
Country	Cyprus
Company (source) name	**AAI Scientific Cultural Services Ltd**
Address	Galaxias Center Office 501 33 Arch. Makarios III Avenue Nicosia 1065, Cyprus
Main activity	**Basic Neuroscience Research with emphasis on non-invasive Neuroimaging (mainly EEG and MEG)** **Translation of results for clinical applications and to services and devices for use by the wider public**
Contact details	**Contact person: Prof. Andreas A. Ioannides** **Contact e-mail: a.ioannides@aaiscs.com** **Website: http://aaiscs.com/**

3.6 THE CZECH REPUBLIC

Country introduction

Capital	Prague	**Official EU language(s)**	Czech
Geographical size	78 868 km²	**Political system**	parliamentary republic
Population	10 538 275 (2015)	**EU member country since**	1 May 2004
Population as % of total EU population	2.1% (2015)	**Currency**	Czech koruna (CZK)
Gross domestic product (GDP)	€ 163.947 billion (2015)	**Schengen area member**	Yes, Schengen Area member since 21 December 2007
Gross Domestic Expenditure on R&D (GERD) as % of GDP	1.9% (2013)		

The most important sectors of the Czech Republic's economy in 2014 were industry (32.6 %), wholesale and retail trade, transport, accommodation and food services (17.9 %) and public administration, defence, education, human health and social work activities (14.9 %). The Czech Republic's main export partners are Germany, Slovakia and Poland while its main import partners are Germany, Poland and Slovakia.

List of selected top three technologies:

1	Novel process for deposition of functional layers on hollow objects by electrical plasma generated from the liquid precursor	Masaryk University Brno
2	Advanced diamond electrochemical electrodes	Institute of Physics of the Academy of Sciences of the Czech Republic
3	High-speed low-cost plasma treatment of textile materials	ROPLASS s.r.o.

Novel process for deposition of functional layers on hollow objects by electrical plasma generated from the liquid precursor	
Stage of the development	Tested in the lab
Where has this technology offer been published/introduced/ described before?	http://ceplant.cz/research.html http://scitation.aip.org/content/aip/journal/apl/105/15/10.1063/1.4898134
Technological sector According to the Field of science and technology classification	2.5: Materials engineering
Non-Proprietary Description	**Short description of the technology:** We have developed a novel type of surface dielectric barrier discharge generating thin layers of visually diffuse plasmas along the treated polymer surfaces using water-solution electrodes. The technique has been designed particularly to achieve uniform treatment of outer or inner surfaces of polymeric tubes and other hollow bodies usable in medicine (for example PTFE tubes, catheters, blood containers) that is a serious challenge for atmospheric pressure plasma processing. **Innovative aspects:** Plasma is generated in the contact line between the liquid electrode and the dielectric material of treated object. Friendly to heat sensitive materials. **Economic advantages:** According to other common techniques, this set-up is without the using of expensive noble gases or vacuum systems. **Commercial advantages:** New, progressive technique for the processing of hollow objects. Possible to plug into the in-line industrial processes. **Environmental advantages:** No environmental harmful chemicals are required.
Value Proposition	The surface treatment using electric plasmas is not just a green alternative to wet chemistry, but offers a large number of advantages for this kind of applications: The modifications are strongly adhering, and can result in a physical and/or chemical modification of the first few molecular layers of the surface. Activation, cleaning, etching, hydroxylation or oxidation processes can be applied to achieve a newly prepared functional layers, synthesis of nanoparticles or grafting polymeric layers on the sample surface.

Existing alternatives	Motivating by the wide range of industrial applications, the water based plasmas generated at atmospheric pressure have already demonstrate their potential. The application of plasma-chemically enhanced wet methods can significantly lead to reduction of environmental problems which are normally associated with industrial techniques resulting from the use of toxic and corrosive chemicals. Therefore, unlike conventional wet processes, which penetrate deeply into the treated material, plasma only reacts with the surface while maintaining the properties of the bulk. Today, the challenge lies mainly in the effective surface plasma treatment of hollow bodies and hollow products with irregular surface geometry (flasks, containers, vessels). Especially the treatment of internal surface of long thin hollow bodies (e.g. tubes, catheters, capillaries) represents a great technical problem.
Collaboration(s)	No
Asian connections	No
Intellectual property status	Granted Patent: 305 156 – Czech Republic - 19.12.2013 Patent applied: PCT/CZ2014/000159 - EP, SG, US, JP - 18.12.2014
Is it possible to file Japanese patent application?	Japanese patent is pending.
Your commercialization objectives	Licensing
Prospects on international market?	As described above, this is a new, progressive technique for the processing of inner surfaces of polymeric tubes and other hollow bodies usable in medicine. This treatment can for example create a barrier for releasing of polymer softeners which can be released from materials the tubes are made from. As polymeric tubes are used worldwide in medicine also the applicability of this technology is global. The target companies recruit especially from medical polymeric tubes manufacturing sector and from other sectors where polymeric tubes are used and contamination of liquids is undesirable.
Please explain why can this technology be interesting for a Japanese investor?	See previous row.
Company (source) name	**Department of Physical Electronics, Masaryk University Brno**
Address	**Kotlarska 2, 611 37 Brno**
Main activity	**Research and development facility for low-cost plasma and nanotechnology surface modifications**
Contact details	**Contact person: Dr. David Pavlinak** **Contact e-mail: d.pavlinak@mail.muni.cz**

	Website: www.muni.cz, www.ceplant.cz

Advanced diamond electrochemical electrodes	
Stage of the development	Tested in the lab
Where has this technology offer been published/introduced/ described before?	No data are have been published on fabrication method until now.
Technological sector According to the Field of science and technology classification	2.4 Chemical engineering, Chemical process engineering
Non-Proprietary Description	**Short description of the technology:** A nanofiber porous template imbedded in a polymer is deposited on the support. The sample is submitted to a classical PECVD plasma use for diamond deposition. While the polymer is consumed by the plasma, the fibers template is being coated by an electrically conductive diamond layer and the fibers and the whole structure is interlocked by the deposited diamond layer. **Innovative aspects:** No limitation in porous layer thickness by repetition of the fabrication process. Freestanding porous diamond films have been demonstrated. **Economic advantages:** Porous diamond electrochemical electrodes offer longer stability and durability for better electrochemical properties. **Commercial advantages:** Durability, chemical stability, superior electrochemical properties. **Environmental advantages:** Product aimed to treatment of polluted water. **Societal advantages:** Water supply and treatment is a worldwide problem and water is expected to be one of the most crucial factors in the future.
Value Proposition	Electrochemical oxidation processes are suitable for small and middle-sized producers, where simple and an easily automated solution is required. Porous BDD electrodes also represent a suitable solution for landfill leachate treatment and drinking water treatment. If demonstrated, freestanding porous diamond could also be a chemically stable material with high stiffness to mass ratio with potential space applications.
Existing alternatives	Several alternatives to produce diamond surface with high surface to area ratio (“porous”) can be found in the literature (scientific journals and patents). Porous CVD diamonds are produced by bottom-up (deposition on a porous template) or top-down approach (etching). Dry etching methods are quickly limited by the metallic mask properties (incompatible high resistance to etching vs small mask size). Fabricated diamond nanowires

	exhibits high resistance incompatible with electrochemical applications. Deposition of CVD diamond on porous template such as fiberglass and carbon nanotube have been successfully reported. However diamond coating is limited to the upper surface of the substrate (few micrometers) and limited to one step. On contrary to the reported method, the bottom-up method is not limited to one coating and can be multiplied as necessary, hence allowing fabrication of thick porous layers.
Collaboration(s)	The concept of the developed product had been developed in collaboration with the Institute of Physical Chemistry of the Academy of Sciences of the Czech Republic in Prague. Further development is carried out at Institute of Physics of the Academy of Sciences of the Czech Republic.
Asian connections	No
Intellectual property status	Patent not yet applied for
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Research & Development Agreement Licensing (exclusive, nonexclusive)
Prospects on international market?	Can be exploited internationally. The targeted market of porous BDD electrodes is the waste water treatment industry.
Please explain why can this technology be interesting for a Japanese investor?	Demand for water treatment technology is worldwide. Our product offers superior E/C properties and a large surface to area ratio for water treatment application. The fabrication technology is simple and can be scaled up easily. We are in the optimization phase of the fabrication process and testing phase of the electrodes. After optimization of the product, following steps consist of marketing and upscaling production facilities to reach sustainable size.
Company (source) name	**Institute of Physics of the Academy of Sciences of the Czech Republic**
Address	**Na Slovance 1999/2, 182 21 Prague 8, Czech Republic (Branch on the Cukrovarnicka street, Prague)**
Main activity	**Public research institute oriented on the fundamental and applied research in physics**
Contact details	**Contact person: Mr. Vincent Mortet** **Contact e-mail: mortetv@fzu.cz** **Website: www.fzu.cz/en**

High-speed low-cost plasma treatment of textile materials	
Stage of the development	Prototype Available Ready for Betta Testing
Where has this technology offer been published/introduced/ described before?	M. Cernak et al.: Plasma Phys. Control. Fusion **53** (2011) 124031
Technological sector **According to the Field of science and technology classification**	2.5 Materials Engineering
Non-Proprietary Description	**Short description of the technology:** Technology for in-line surface activation of textile materials using a novel type of atmospheric-pressure plasma source at speeds up to 1000 m/min. **Innovative aspects:** Based on a novel proprietary plasma technology. **Economic advantages:** *The technology is an order faster and superior in cost* efficiency to competitive commersially available techniques for plasma treatment of textile materials. **Commercial advantages:** Capable of meeting the basic on-line production requirements in highly competitive, but highly profit-yielding, market of technical textiles and nonwovens. **Environmental advantages:** Capable to reduce the use of problematic chemicals in textile finishing, enables efficient surface treatment of biodegradable nonwovens. **Societal advantages:** For example, cheaper and more efficient medical and hygiene fabrics.
Value Proposition	There is a long term demand for a low-cost plasma technique capable to reduce the consumption of chemicals in finishing of a wide range of textile materials, preferably nonwovens. The equipment must be easily integrated into existing finishing lines, whatever the width or the web speed.
Existing alternatives	The technology was successfully tested in real industrial environment including in-line treatment of light-weight polypropylene nonwovens at speeds up to 800 m/min., energy consumption 0.005 kWh/kg, using ambient air as the plasma gas. Competitive technologies by, for example, ENERCON (USA, see

	http://www.enerconind.com/treating/library/technical-articles/atmospheric-plasma-treatment-apt-for-nonwovens.aspx), PLASMATREAT (Germany, http://www.plasmatreat.com/industrial-applications/plasma-treatment-in-textile-manufacturing.html), and BON UNI FUKUOKA (Japan, http://japan-product.com/bonuni-uniform-material-functionalities/) are operating at speeds less than 100 m/min. and at much higher energy consumption.
Collaboration(s)	The technology was developed to its recent maturity in collaboration with the R&D Centre for Low-Cost Plasma and Nanotechnology Surface Modifications (CEPLANT) at Masaryk University (MU) Brno. The ROPLASS company is a MU spin-off.
Asian connections	No
Intellectual property status	Granted patent EP 1387901
Is it possible to file Japanese patent application?	Yes It is possible to file a new patent application based on EP 1387901
Your commercialization objectives	Research & Development Agreement (s) Joint Venture New company formation
Prospects on international market?	Many of the consumer products that already are highly penetrated in the mature markets of North America, EU and Japan continue to generate growth for nonwovens by expanding their functionality. This provides a great opportunity for applications of the technique according to EP 1387901.
Please explain why can this technology be interesting for a Japanese investor?	Japanese nonwovens industry plays an important role as one of the technology leaders in the world. All Nippon Nonwovens Association (ANNA) has 154member companies engaged in nonwovens-related businesses.
Company (source) name	ROPLASS s.r.o.
Address	U vodárny 3032/2a, Královo Pole, 616 00 Brno, Czech Republic
Main activity	Development and manufacturing of atm. Plasma sources
Contact details	**Contact person:** Prof. Mirko Cernak **Contact e-mail:** cernak@physics.muni.cz **Website:** www.roplass.cz

3.7 DENMARK

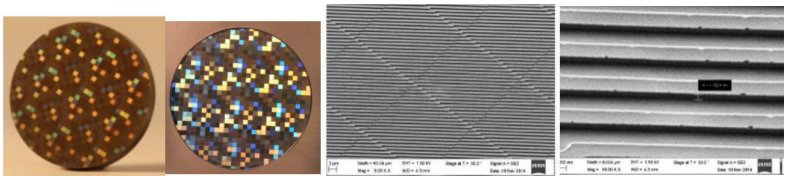
Country introduction

Capital	Copenhagen	**Official EU language(s)**	Danish
Geographical size	42 924 km²	**Political system**	parliamentary constitutional monarchy
Population	5 659 715 (2015)	**EU member country since**	1 January 1973
Population as % of total EU population	1.1% (2015)	**Currency**	Danish krone DKK
Gross domestic product (GDP)	€ 266.244 billion (2015)	**Schengen area member**	Yes, Schengen Area member since 25 March 2001
Gross Domestic Expenditure on R&D (GERD) as % of GDP	3.08% (2014)		

The most important sectors of Denmark's economy in 2014 were public administration, defence, education, human health and social work activities (23.4 %), wholesale and retail trade, transport, accommodation and food services (19.5 %) and industry (18.1 %).
Denmark's main export partners are Germany, Sweden and the UK, while its main import partners are Germany, Sweden and the Netherlands.

List of selected top three technologies:

1	Injection moulded hologram decoration for differentiation and anti-counterfeit	Inmold A/S
2	A Floating Wind and Wave Energy Hybrid System	Floating Power Plant
3	Wavepiston wave power technology	Wavepiston A/S

Injection moulded hologram decoration for differentiation and anti-counterfeit	
Stage of the development	Ready for commercialization, Demo stage Commercially available: 3 Demo projects with customers
Where has this technology offer been published/introduced/ described before?	Materio.com (website for new materials) Tradeshow: Euromold 2015 (Germany). Tradeshow: Plastteknik 2016 (Germany). Numerous R&D conferences in the nano-imprint community: NNT, NME, PRN, NIL Industrial Day, others
Technological sector **According to the Field of science and technology classification**	2.3 Shaping tools with micro- and nanostructures, for plastics, polymers and rubbers. 2.5 Preparation of shaping tools with suitable surfaces by choice and processing of materials 2.10 Nanostructures on tool surfaces for replication in the plastics, polymers and rubbers
Non-Proprietary Description	**Short description of the technology:**  IM insert IM plastic Surface structures Example: „MoldGrfx – injection moulded holograms": product is imprinted with holograms simultaneously with production! No coating, no printing, no labels, no extra processes Plastic products are made by high-speed processes such as pressing, moulding and web-coating. **The surface properties of plastic products pose a valuable part of their appearance and function**. Previously, coatings were used to accurately control the surface properties of plastic, however, accurate control of the surface micro-roughness now leads to many of the same results. The required micro-roughness is formed by specially designed micro- and nano-structures (MNS), allowing for a universe of valuable effects. Inmold is manned by experts. Inmold provides services for two major production methods: injection moulding (IM) and roll-to-roll film-coating by polymer extrusion (coex). In both areas, Inmold has Unique Selling Points, providing the simplest value chains with highest fidelity of MNS and broadest range of applicable thermoplastic products. **Innovative aspects:** Endowing cheaply produced plastic products with valuable functions opens new markets: holograms, light diffusion, light concentration, anti-reflection, special plasmon colours, meta-materials, decoration and anti-counterfeit, sensors, super-hydrophobic and -hydrophilic, oleo-phobic, anti-fog, self-cleaning, reduced friction, tactile control, weldability, micro-

	fluidics, lab-on-a-chip, moulding of other materials, anti-counterfeit, differentiation, etc. etc. **Economic advantages:** Simplified production setup over competition. Durability. Lower cost. Upgrading low-cost materials. **Commercial advantages:** High productivity. Our value chain and supply chain is largely in-house. We have a platform technology – so we have the tools to make many products. Many products are possible. **Environmental advantages:** In general, no need for secondary processes or materials. Example: injection moulded holograms removes the need for paint or labels. Functionalities include self-cleaning and concentrated solar power. **Societal advantages:** Functionalities include counterfeit protection and climate-impact reduction.
Value Proposition	Inmold's technologies are a platform for many valuable solutions. High-fidelity MNS raise the value of commodity plastic enormously. Our cheap and strong counterfeit prevention saves costs and can shift market share. Our functional films open new markets in architecture, energy, cleantech, medical devices, etc. etc. We have the cheapest processes for creating cheap plastic with valuable surfaces.
Existing alternatives	Injection moulding: general high-end decoration today relies on etching, blasting, spark-erosion, of textures. 3-4 startup companies worldwide have activities in hologram decoration of IM plastic. Inmold has the best platform with the most valuable USP's: high fidelity, greater variability in mold geometry (freeform), cooler molds = shorter cycle time. Full industrial maturity. R2R: Inmold has the mastering and tooling technology complete with expert input. Inmold is therefore one-stop service provider. We can produce MNS at 300 m/min, width of up to 1500 mm.
Collaboration(s)	Inmold has full-scale OEM production ability on roll-to-roll products with its collaboration partner Danapak. MoldGrfx is provided as an exclusive Inmold service with no further depending collaborations.
Asian connections	Inmold has organized an evaluation of its roll-to-roll technology together with Soken Chemical & Engineering Co., Ltd. Soken provided high value clichés as a sub-contractor.
Intellectual property status	Granted patent: PCT/DK2011/000075 PCT/EP2006/060744 Patent already applied for WO/2015/144174

	WO/2016/092014 PCT/DK2014/000018
Is it possible to file Japanese patent application?	In some cases
Your commercialization objectives	Research & Development Agreement (s) Licensing Outright Sale of business/technology Investment New company formation
Prospects on international market?	Inmold's technologies will apply in all developed economies and in many developing economies.
Please explain why can this technology be interesting for a Japanese investor?	It matches well with many Japanese companies. The production equipment required for implementing Inmold's technologies is available in Japan and worldwide. Inmold's technologies have worldwide appeal and can solve many valuable applications.
Company (source) name	**Inmold A/S**
Address	**Gregersensvej 6H, 2630 Høje Taastrup**
Main activity	**Tools for micro- and nanostructuring of plastic by moulding and R2R**
Contact details	**Contact person: Guggi Kofod** **Contact e-mail: gk@inmold.dk** **Website: www.inmold.dk**

A Floating Wind and Wave Energy Hybrid System	
Stage of the development	Ready for Betta Testing
Where has this technology offer been published/introduced/ described before?	The technology and company have been involved in a number of publications, conferences, news articles and events including those managed by: • Wind Energy Europe (formerly EWEA) • Ocean Energy Europe • Renewable UK • Scottish Renewables • All Energy The company also has a comprehensive website.
Technological sector **According to the Field of science and technology classification**	Engineering and Technology
Non-Proprietary Description	**Short description of the technology:** A highly stable, semi submersible floating wind energy foundation which integrates unique wave energy convertors to provide an increased energy output with a high power quality. **Innovative aspects:** • Unique, highly efficient wave energy convertors • Simplified turret mooring system • Creation of an artificial harbor to improve access – caused by the efficient wave energy convertors absorbing wave energy and reducing the wave height **Economic advantages:** • Increased energy production (revenue) • Lower Levelised Cost of Energy (LCOE) **Commercial advantages:** • Increased uptime through improved O&M access • Access to a wider geographical market • Efficient installation and recovery procedure • Smoother, more predictable power output quality **Environmental advantages:** • Minimal seabed disturbance (vs fixed offshore wind) • Reduced impact on wildlife (birds and sea mammals) **Societal advantages:** • Clean energy located in deep water, either far from shore to reduce visual impact or in deep water close to energy demand • Nature of system contributes to local job creation / security
Value Proposition	FPP's technology provides a highly efficient energy generating system which can provide clean, affordable power in deep water

<table>
<tr><td></td><td>areas with medium to high wave resource. The ability to exploit areas with higher wave energy expands the potential market for floating wind energy. The combination of wind and wave energy provides a number of commercial advantages including the ability to maximize the use of valuable sea space and provide a high output system which provides a smooth power output due to the lag effect between wind and waves.</td></tr>
<tr><td>Existing alternatives</td><td>The main existing alternative is fixed foundation offshore wind. This technology is becoming well proven and leading to a number of cost reductions which will also benefit FPP and other floating wind technologies. However fixed foundation offshore wind is limited to water depths of around 50m, beyond which the technical requirements make the technology not economically feasible.
Other floating wind technologies are the alternative in deep water however these do not provide the same level of energy density (energy produced per km2) as FPP’s system and most also avoid energetic wave environments due to the impact this has on operability and maintenance.
FPP are the only company to have deployed a wind and wave hybrid offshore and delivered power to the grid. This was achieved with the P37, a half scale prototype which was deployed and grid connected in Denmark.</td></tr>
<tr><td>Collaboration(s)</td><td>In order to protect shareholder capital and utilize the best possible resources FPP regularly work with a number of partners including:
Siemens Industry (power and automation control)
Fritz Schur Energy (wave energy oil hydraulic systems)
Cefront Technologies (Naval architecture and marine engineering)
Lloyds Energy (certification development)
FPP also work closely with a number of universities and research organisations to assist with testing and R&D projects
None of FPP’s partnerships bind FPP or limit their supply chain options.</td></tr>
<tr><td>Asian connections</td><td>FPP have held several discussions with Chinese and Japanese organisations regarding projects and investment but do not currently have any existing collaborations.</td></tr>
<tr><td>Intellectual property status</td><td>Granted patent:<table><tr><td>Number</td><td>Country</td><td>Application date</td></tr><tr><td>DK 174 463 B1</td><td>Denmark</td><td>22/07/1998</td></tr><tr><td>EP 2 546 510</td><td>EP: Spain, France, UK, Ireland, Portugal</td><td>13/07/2011</td></tr></table></td></tr>
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<tr><td>EP 2 546 511</td><td>EP: Spain, France, UK, Ireland, Portugal</td><td>13/07/2011</td></tr>
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Patent already applied for
<table>
<tr><th>Number</th><th>Country</th><th>Application date</th></tr>
<tr><td>WO 2013 007261</td><td>Canada
EPO
Japan
USA</td><td>04/07/2012</td></tr>
<tr><td>WO 2013 007259</td><td>Canada
EPO
Japan
USA</td><td>04/07/2012</td></tr>
</table>
</td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes</td></tr>
<tr><td>Your commercialization objectives</td><td>Purchase & Sale Agreement (s)

Outright Sale of business/technology

Investment</td></tr>
<tr><td>Prospects on international market?</td><td>FPP’s technology has a truly global market potential. The deployment of offshore renewable energy is expected to grow significantly over the next 10-15 years and floating wind energy will play a key role in this expansion. FPP’s technology is ideally suited to exploiting areas in this market where there is also an energetic wave environment. Key geographical markets include:
Western Europe
Western North America
Western South America
East Asia
Southern Africa
Australia</td></tr>
<tr><td>Please explain why can this technology be interesting for a Japanese investor?</td><td>FPP is currently issuing new shares in order to raise €10m new capital in order to complete the design of the commercial scale device and ensure deployment of the first system. The projections associated with the process indicate that a return of ~7 times the investment may be possible in 4-5 years.
Japan is a leading market for floating offshore wind and a key region for FPP’s technology, which could complement the existing floating wind technologies being developed in Japan to offer an alternative for higher wave energy sites. The strong Japanese supply chain also presents a number of potential opportunities to deliver major components of the system both locally and globally.</td></tr>
</table>

Company (source) name	**Floating Power Plant**
Address	**Bandholm, Denmark (FPP A/S) & Edinburgh, Scotland (FPP Ltd)**
Main activity	**Technology development and delivery**
Contact details	**Contact person: Chris McConville** **Contact e-mail: cmc@floatingpowerplant.com** **Website: www.floatingpowerplant.com**

Wavepiston wave power technology	
Stage of the development	Prototype Available Ready for Betta Testing
Where has this technology offer been published/introduced/ described before?	www.wavepiston.dk Misc reports/papers (can be downloaded from our web site).
Technological sector **According to the Field of science and technology classification**	2.7 Environmental engineering
Non-Proprietary Description	**Short description of the technology:** The Wavepiston wave power technology is based on capturing the surge energy with vertical energy collectors (ECs) distributed on a horizontal string (like pearls on a string). • Many ECs on the same structure => the forces on the structure from the ECs will cancel each other out => a slim, light and extremely cost effective structure as we can reduce the mooring and structural elements. The concept is patented as “Force Cancellation”. **Innovative aspects:** Force cancellation => low weight per installed Watt. Other innovative aspects: - Logistics: Ikea’s flatpack principle => shipped in standard 40 foot containers for local assembly and installation. - Scalable and redundant: ECs mounted on strings as standard (‘LEGO’) building blocks => system can be expanded over time, local work force and high redundancy. - Grid connection: Electricity in the water is expensive. The ECs convert wave power into pressurised water, which is led to a turbine station on-shore (or spar for installations further offshore). **Economic advantages:** Low levelised cost of energy (cost per kWh). **Commercial advantages:** Low cost renewable energy. **Environmental advantages:** Renewable energy. Nonintrusive – Both related to visual profile and material usage. Low carbon footprint. **Societal advantages:** Renewable energy. Local assembly and maintenance => local jobs, more independent.
Value Proposition	Renewable energy at an affordable price.

	Wave power is a supplement to the existing portfolio of renewable energy sources. In first phase a high demand from islands and isolated coastal communities to replace their expensive and polluting diesel generators. A spin off is that the pressurised water can also be used for desalination plants.
Existing alternatives	Other renewable energy technologies: Wind and solar are the most efficient reaching levelised cost of energy down to 25 - 30 EUR per MWh. Not all places are ideal for wind and/or sun (or other alternatives), but they have a lot of waves. Other wave power technologies: It is estimated that 75-100 companies worldwide are working with the development of wave power technologies. Less than 10 have larger tests running. There are no commercial sites. So far there is no common design consensus on the market and all developers struggle with too high CAPEX and OPEX resulting in very high levelised cost of energy (currently EUR 300 – 600 per MWh but expected to move towards EUR 100 per MWh the coming years). As can be seen from earlier description we expect to slash the costs considerable and believe the potential is at least as low as EUR 27 per MWh.
Collaboration(s)	Yes. In the current prototype project, we are in a consortium with Global Maritime Vryhof (Mooring), Fiellberg (Hydraulics) and Technical University of Denmark (Theoretical Modelling / Hydrodynamics). Wavepiston is the technology owner.
Asian connections	No
Intellectual property status	Granted patent: 2009295053 – Australia PI0918552-6 – Brazil 2,737,444 – Canada 11159337.2 – EPO 2175/DELNP/2011 – India 13/119,487 – USA 2011/02087 – South Africa New patent is being applied
Is it possible to file Japanese patent application?	No Not for the main patent, but we are currently filing another related patent application.
Your commercialization objectives	Research & Development Agreement Licensing Investment New company formation

	We are preparing our next phase, to install and test a full-scale demonstration system in 2018-2020. We are looking for potential partners to join us.
Prospects on international market?	First step: Near shore market potential 20 – 30 GW representing a turnover of EUR 25 – 50 Bn. • Total potential according World Energy Council is 2000 GW. Ocean Energy Systems estimates that 337 GW of Ocean Energy are installed by 2050 worldwide.
Please explain why can this technology be interesting for a Japanese investor?	Renewable energy. Low price. Non-Intrusive. Validated technology after our prototype test in the North Sea. Many Japanese companies have a good track record within the energy industry. Potential first mover with a competitive wave power technology. Japan has good wave power potential.
Company (source) name	**Wavepiston A/S**
Address	**Strandgade 95** **3000 Helsingør** **Denmark**
Main activity	**Wave power**
Contact details	**Contact person: Michael Henriksen** **Contact e-mail: mh@wavepiston.dk** **Website: www.wavepiston.dk**

3.8 ESTONIA

Country introduction

Capital	Tallinn	**Official EU language(s)**	Estonian
Geographical size	45 227 km²	**Political system**	parliamentary republic
Population	1 313 271 (2015)	**EU member country since**	1 May 2004
Population as % of total EU population	0.3% (2015)	**Currency**	Euro. Member of the Eurozone since 1 January 2011
Gross domestic product (GDP)	€ 20.461 billion (2015)	**Schengen area member**	Yes, Schengen Area member since 21 December 2007
Gross Domestic Expenditure on R&D (GERD) as % of GDP	1.44% (2014)		

The most important sectors of Estonia's economy in 2014 were wholesale and retail trade, transport, accommodation and food services (22.5 %), industry (21.1 %) and public administration, defence, education, human health and social work activities (15.4 %).
Estonia's main export partners are Sweden, Finland and Latvia, while its main import partners are Finland, Germany and Sweden.

List of selected top three technologies:

1	Aluminum Oxide Nanofiber	ANF Technology Limited
2	Advanced corrosion protection for anodizable surfaces	University of Tartu
3	Technology for production of ZnO nanorod layers for efficient degradation of environmentally hazardous pollutants in air and water	Tallinn University of Technology

Aluminum Oxide Nanofiber	
Stage of the development	Commercially available, where: Direct sale and distributors
Where has this technology offer been published/introduced/ described before?	Various US and European trade shows (JEC, SAMPE, CAMX, etc.), through Asian chemical distribution companies.
Technological sector **According to the Field of science and technology classification**	nanotechnology
Non-Proprietary Description	**Short description of the technology:** Aluminum oxide nano fibers dispersed in resin, solvent and water. **Innovative aspects:** High aspect ratio, large surface area nano fibers with easy dispersion and high strength. **Economic advantages:** Lower loadings required for increasing mechanical performance of end-products. **Commercial advantages:** Higher performance products in composites, adhesives and coatings. **Environmental advantages:** Environmentally friendly production process—non toxic material. **Societal advantages:** Ongoing creation of jobs in new industrial sectors. Stronger, lighter materials used in buildings, vehicles and aircraft to make the public safer.
Value Proposition	NAFEN alumina nanofibers have the potential to increase the performance of lower cost materials so they can compete in higher value industrial sectors. The material allows companies to explore opportunities in both value-added pricing and cost savings in production.
Existing alternatives	High loading nano fillers. Currently the industries we are targeting use nano fillers like nano silica, nano clay and carbon nano tubes. These require higher loadings and have trade-offs that require the manufacturer to balance complicated formulations. The materials range in price from very cheap to very expensive, so manufacturers don't typically get to use high-quality materials to solve their problems. Since NAFEN fibers require much lower loadings to boost performance, the manufacturers can achieve the value added benefits without the struggle and complications of highly filled formulations.
Collaboration(s)	No

<table>
<tr><td>Asian connections</td><td>We are only working through chemical distributors and directly with some Asian customers in the region.</td></tr>
<tr><td>Intellectual property status</td><td>Granted patent - patent number/s:
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>US20130192517 A1 / PCT/IB2013/000120</td><td>USA</td><td>01.08.2013</td></tr>
<tr><td>13/783,297</td><td>USA</td><td>03.03.2013</td></tr>
</table>
Patent already applied for
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>13/783,295</td><td>USA</td><td>02.03.2013</td></tr>
<tr><td>13/952,661</td><td>USA</td><td>n/a</td></tr>
</table></td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes</td></tr>
<tr><td>Your commercialization objectives</td><td>Licensing

Purchase & Sale Agreement (s)

Investment</td></tr>
<tr><td>Prospects on international market?</td><td>Our material is commercially sold in the UK at this time. We have several industrial customers who are close to concluding their product development, who will begin commercial sales in Europe and the United States by the first quarter of 2017.</td></tr>
<tr><td>Please explain why can this technology be interesting for a Japanese investor?</td><td>The potential for this material is significant for the advanced materials world. NAFEN fibers have a cross-over potential that other materials don’t. NAFEN can potentially be used not only in polymers, but ceramics, cements and metals as well.</td></tr>
<tr><td>Company name</td><td>ANF Technology Limited</td></tr>
<tr><td>Address</td><td>Tööstuse 48a, Tallinn, Estonia 10416</td></tr>
<tr><td>Contact details</td><td>Contact person: Tim Ferland
Contact e-mail: tferland@anftechnology.com
Website: -</td></tr>
</table>

Advanced corrosion protection for anodizable surfaces	
Stage of the development	Test Data Available Ready for commercialization
Where has this technology offer been published/introduced/ described before?	1. University of Tartu website: http://www.ut.ee/en/business/advanced-corrosion-resistance-treatment 2. Local events directed at SME-s in Estonia 3. Direct contacts with companies
Technological sector **According to the Field of science and technology classification**	2.5 Engineering and technology. Materials engineering 2.10 Nanoscale materials
Non-Proprietary Description	**Short description of the technology:** The object to be treated is first anodized in a proprietary manner and then an oxide coating a few nanometers thick is grown on the surface using atomic layer deposition. This produces a uniform oxide layer on top of the treated surface, regardless of surface geometry. **Innovative aspects:** Combining anodizing and ALD to produce a surface protection layer superior to most other treatments. The resulting layer is chemically and mechanically more durable than either untreated or anodized metal alone. **Economic advantages:** Treated objects/surfaces last significantly longer in difficult, corrosive (i.e. chemically active) environments than those treated with most other methods, leading to longer periods of exploitation and less resources spent on maintenance and replacing damaged parts. **Commercial advantages:** More durable and quality-retaining products **Environmental advantages:** Less energy and resources are spent on replacing parts damaged by corrosion. Less waste materials from treatment method itself, as opposed to paint-based methods. **Societal advantages:** -
Value Proposition	Parts and tools in challenging environments from aerospace, automotive to medical applications are often anodized to protect them from corrosion. Anodization leaves pores open to the exposed metal surface, allowing corrosion to eventually set in. Thermal and mechanical stresses introduce cracks that amplify the problem. We propose combining anodizing with a technique so far only used in nanotechnology – atomic layer deposition. ALD fills the pores left by anodizing, giving the surface exceptional durability.

<table>
<tr><td></td><td>The resulting surface layer is thin and strong enough to move with the underlying material as it deforms under mechanical and thermal stresses without cracking.</td></tr>
<tr><td>Existing alternatives</td><td>Most common methods for protecting metallic surfaces are painting and chemical modification, e.g. oxidizing, anodization etc.
Anodizing is often used to give the surface a strong, lightweight and thin protective layer. Anodizing is also often used for decorative purposes. The problem is that anodizing leaves pores in the anodized surface that expose the metal below so eventually, depending on environmental factors, corrosion will set in. These pores can be sealed with laquer etc, but this brings its own problems with it.
The proposed method seals these pores completely from the bottom up, eliminating any pathways for corroding substances to the metallic surface and giving added mechanical durability to the surface. This has been described in scientific literature by the authors – Väino Sammelselg, Lauri Aarik and Maido Merisalu.</td></tr>
<tr><td>Collaboration(s)</td><td>To a point. Basis of technology stems from Framework Program 7 project “CORRAL”, with industry partners including Linde AG, Schaeffler Technologies AG & Co. KG, Diarc Technology OY, Hauzer Techno Coating b.v., Picosun OY, Messier-Bugatti SA.</td></tr>
<tr><td>Asian connections</td><td>There are several examples of scientific and commercial partnerships between UT and Japan. Incuding contractual R&D for Samsung and Hohsen Corp. and cooperation agreement with Gakushin University</td></tr>
<tr><td>Intellectual property status</td><td>Patent already applied for
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>GB2509335</td><td>United Kingdom</td><td>31.12.2012</td></tr>
<tr><td>WO2014102758</td><td>PCT</td><td>31.12.2013</td></tr>
<tr><td>US14804533</td><td>United States of America</td><td>21.07.2015</td></tr>
<tr><td>EP13826641.6</td><td>European Union</td><td>23.07.2015</td></tr>
<tr><td>JP2015-550197</td><td>Japan</td><td>31.08.2015</td></tr>
</table></td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes, already filed</td></tr>
<tr><td>Your commercialization objectives</td><td>Research & Development Agreement (s)

Licensing (geographic/application specific)

Joint Venture

New company formation

Other or not sure: we are open to discuss all propositions</td></tr>
</table>

Prospects on international market?	The technology has a wide range of applications spanning different industries. Technology is also easy to verify for infringement. Therefore, international prospects are promising.
Please explain why can this technology be interesting for a Japanese investor?	Due to the high-tech industry profile of Japan, advanced methods are often sought to produce next-level added value. From specialized performance car parts to space applications to medical devices – there are products and companies aplenty that could benefit from this technology.
Company (source) name	**University of Tartu**
Address	**Ülikooli 18, Tartu, Estonia 50090**
Main activity	**Education/Research**
Contact details	**Contact person: Siim Kinnas, technology transfer officer** **Contact e-mail: siim.kinnas@ut.ee** **Website: www.ut.ee**

Technology for production of ZnO nanorod layers for efficient degradation of environmentally hazardous pollutants in air and water	
Stage of the development	Developing Prototype Prototype available
Where has this technology offer been published/introduced/ described before?	1. Krunks, M.; Dedova, T.; Oja Acik, I. (2006). Spray pyrolysis deposition of zinc oxide nanostructured layers. Thin Solid Films, 515, 1157−1160. 2. T. Dedova, M. Krunks, I.O. Acik, D. Klauson, O. Volobujeva, A. Mere, Materials Chemistry and Physics 141 (2013) 69-75 3. Klauson, D.; Gromyko, I.; Dedova, T.; Pronina, N.; Krichevskaya, M.; Budarnaja, O.; Oja Acik, I.; Volobujeva, O.; Sildos, I.; Utt, K. (2015). Study of photocatalytic activity of zinc oxide nanoneedles, nanorods, pyramids and hierarchical structures obtained by spray pyrolysis. Materials Science in Semiconductor Processing, 31 (1), 315−324. 4. I. Gromyko, M. Krunks, T. Dedova, A. Katerski, D. Klauson, I. Oja Acik,Surface wetting properties of electrodeposited and sprayed ZnO nanorod layers, 11th International Conference on Surfaces, Coatings and Nanostructured Materials (NANOSMAT 2016) Aveiro, Portugal during 6-9 September 2016.
Technological sector **According to the Field of science and technology classification**	2. Engineering and technology; 2.5 Materials Engineering Non-Proprietary
Non-Proprietary Description	**Short description of the technology:** We have developed the technology of deposition of ZnO nanorod layers by chemical spray [M. Krunks, Oja Acik, I., Dedova, T., Method of Preparing Zinc Oxide Nanorods on a Substrate by Chemical Spray Pyrolysis, USA, 2014; China 2010; Canada 2015]. This technology enables to grow highly c-axis orientated ZnO nanopillars on a substrate when spraying a solution of a zinc salt (Zn chloride or acetate) onto a preheated substrate at temperatures around 500°C. Surface area of the ZnO nanostructured layer could be significantly increased by secondary branching. **Innovative aspects:** Both bare and hierarchical ZnO nanostructures show photocatalytic degradation activity comparable to or exceeding that of TiO2 (P25). Photocatalytic activity can be further enchanced by decorating ZnO structures with plasmonic nanoparticles [T. Dedova, M. Krunks et al., Materials Chemistry and Physics 141 (2013) 69-75; Klauson, D.; Gromyko et al. (2015). Study of photocatalytic activity of zinc oxide nanoneedles, nanorods, pyramids and hierarchical structures obtained by spray pyrolysis. Materials Science in Semiconductor Processing, 31 (1), 315−324].

	Economic advantages: ZnO nanorods deposition by chemical spray pyrolysis method is an easy, fast and low-cost deposition process which does not require sophisticated apparatus, process is performed in air. Process uses low concentrations Zn-precursor in an aqueous solution, process is easily industrially scalable and enables to cover large areas in single-step process. Significant advantage is that the nanostructures are grown on a substrate and do not need any further immobilization. This technology can be used in water purification (cleaning of waste water and sea water), indoor air purification devices and have antibacterial effect. **Commercial advantages:** ZnO nanorods have shown more effective photocatalytic behavior than that of TiO2 nanopowders. As the larger effective surface area is achieved by ZnO nanorod structure, then the overall sample and thus device can be smaller and thus less material is needed. **Environmental advantages:** TiO2 powdered materials as photocatalyst have been so far considered as not high health risk materials, and is allowed also as food additives. However latest nanotoxicity studies on TiO2 powders have indicated that TiO2 nanoparticles (smaller than 20-30 nm) may cause a serious health risk. Moreover, these ZnO nanorods structures fabricated by chemical spray pyrolysis method are well adhered to the substrate and thereby no additional risk to the environment by flying nanoparticles is minimized. **Societal advantages:** Current level of technological development, mankind needs and the environmental situation require the elaboration of novel sustainable technologies able to clean air and water. All these tasks can be readily accomplished by photocatalysis, which is very efficiently used for indoor air purification, waste water and sea water cleaning. Societal advantage and strength depends on how clear is environment around people, ie ensure more healthy people, less costs for medicine, strengh economic and more jobs.
Value Proposition	All these nanostructured layers are grown on a substrate, thus further immobilization step is not necessary, layers have large active area, and surface wetting properties are reversible from superhydrophilic to superhydrophobic. In order to increase the chemical stability of ZnO nanostructures in acidic/basic solutions the core/shell structures comprising, for example, ZnO core and TiO2 shell could be grown applying techniques of sol-gel dip-coating or spray method.
Existing alternatives	Nowadays most of the photocatalytic systems are based on TiO2 powders. However, these nanopowdered material is not well

	adhered to the substrate and thereby can easily get to the surrounding environment. Latest nanotoxicity studies on TiO2 powders have indicated that TiO2 nanoparticles may cause a serious health risk. ZnO nanorods deposited by chemical spray pryolysis method are well adhered to the substrate, thus also further immobilisation step is not needed. ZnO nanorods deposition by chemical spray pyrolysis method is an easy, fast and low-cost deposition process which does not require sophisticated apparatus, process is performed in air. Process uses low concentrations Zn-precursor in an aqueous solution, process is easily industrially scalable and enables to cover large areas in single-step process. Using ZnO nanorods technology, gives in environmental engineering possibility to reprocess very easily already developed products and technologies. It means that it is very simple to add ZnO nanorods technology to existing manufacturing processes.
Collaboration(s)	Technology was developed in the Laboratory of Thin Film Chemical Technologies at Tallinn University of Technology without collaboration of any industrial partner/sponsor
Asian connections	No, connections with partners in Asia/Japan. // No
Intellectual property status	Grandted Patent: CN101203948B US8808801B CA2649200C WO2006108425 EP1880413B
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Research & Development Agreement (s) Joint Venture Investment New company formation
Prospects on international market?	Haven't done it yet
Please explain why can this technology be interesting for a Japanese investor?	Current level of technological development, mankind needs and the environmental situation require the elaboration of novel sustainable technologies able to clean air and water. All these tasks can be readily accomplished by photocatalysis, which is very efficiently used for indoor air purification. However, the main drawbacks of photocatalysis are its relatively low efficiency. ZnO nanorods have shown higher photocatalytic efficiency as generally used TiO2, and thereby is a challenging

	material towards more efficient and environmental friendly waste water and air purification devices. It is very simple to add ZnO nanorods technology to existing manufacturing processes and efficiency is still guaranteed.
Company (source) name	**Tallinn University of Technology** **Department of Materials Science** **Laboratory of Thin Film Chemical Technologies**
Address	**Ehitajate tee 5, 19086 Tallinn Estonia**
Main activity	**Basic & applied Research**
Contact details	**Contact person: Ilona Oja Acik** **Contact e-mail: Ilona.oja@ttu.ee** **Website: http://www.ttu.ee/faculty-of-chemical-and-materials-technology/department-of-materials-science/**

3.9 FINLAND

Country introduction

Capital	Helsinki	**Official EU language(s)**	Finnish, Swedish
Geographical size	338 440 km²	**Political system**	parliamentary republic
Population	5 471 753 (2015)	**EU member country since**	1 January 1995
Population as % of total EU population	1.1% (2015)	**Currency**	Euro. Member of the Eurozone since 1 January 1999
Gross domestic product (GDP)	€ 207.220 billion (2015)	**Schengen area member**	Yes, Schengen Area member since 25 March 2001
Gross Domestic Expenditure on R&D (GERD) as % of GDP	3.17% (2014)		

The most important sectors of Finland's economy in 2014 were public administration, defence, education, human health and social work activities (22.2 %), industry (19.8 %) and wholesale and retail trade, transport, accommodation and food services (16.5 %).
Finland's main export partners are Germany, Sweden and Russia, while its main import partners are Sweden, Germany and Russia.

List of selected top three technologies:

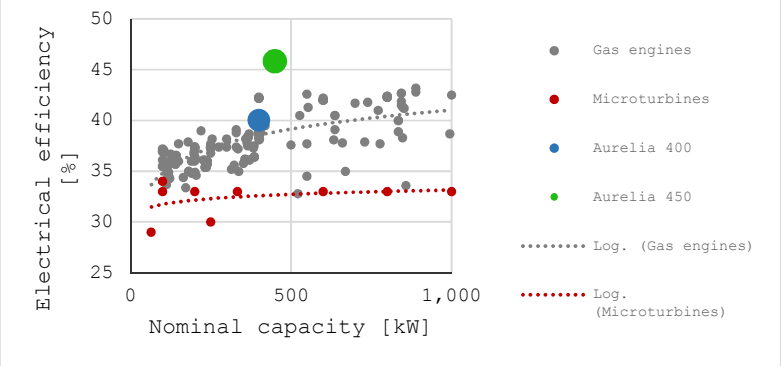
1	novel, user-friendly and cost effective technology to pre-screen and assist in diagnose and treatment of sleep apnea and snoring	Nukute Ltd.
2	Sofi Filter – a self-cleaning microfilter for industrial wastewater reuse	Sofi Filtration
3	The highest efficiency gas turbine in its size range (400-450kWe)	Aurelia Turbines Oy.

Nukute Oy, a novel, user-friendly and cost effective technology to pre-screen and assist in diagnose and treatment of sleep apnea and snoring.	
Stage of the development	Ready for Betta Testing Ready for commercialization
Where has this technology offer been published/introduced/ described before?	Tekes – the Finnish Funding Agency for Innovation EU Horizon2020 Oulu, Tampere and Helsinki University Hospitals and Universities
Technological sector According to the Field of science and technology classification	Health biotechnology
Non-Proprietary Description	**Short description of the technology:** Nukute collar solution is based on tracheal microphones and gravitymeters combined with mobile application. The novelty comes from using noise and acceleration/gravity of body as biomarkers of sleep apnea and using electric pulses to stimulate patient when sleep apnea or snoring occurs. Microphone based on electronic stethoscope detects airflow and breathing quality resulting sleep apnea biomarker. Gravitymeter detects sleeping position, and measures accurately respiratory motion resulting apnea-hypopnea index (AHI). **Innovative aspects:** Nukute technology is sophisticated, accuracy and robust, and comfort wireless design without mask and with easy use mobile application. The device can be combined with an electric pulse stimulation based on treatment device (embedded). It enables conditioning the patient to change the sleeping position and strengthening obstructive muscles when apnea or snoring occurs. This treatment method is based on individual conditioning and patient does **not** awake when stimulation starts. **Economic advantages:** The main benefits of Nukute system compared to existing pre-screening, diagnostic and treatment devices is cheapness, about 50-90% cheaper than competitors. **Societal advantages:** Nukute technology makes patient queues in hospital more efficient, because sleep study can be made at home, easily.
Value Proposition	Nukute product solves one industrial problem: it is much more easier and cheaper to produce than competitors' products.
Existing alternatives	Other commercial alternatives are mostly based on old technology with wires. It is difficult to measure sleeping when patient can not sleep well because of measurement systems.

	Oulu University hospital has made clinical reference study with newest and most used one, NOX T3 device for detecting sleep apnea. Raport says that Nukute measurement data is more accurate than NOX T3 has.
Collaboration(s)	Not yet.
Asian connections	Not yet.
Intellectual property status	Patent already applied for Finland in 01.05.16
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Research & Development Agreement (s) Licensing Joint Venture Purchase & Sale Agreement (s) Outright Sale of business/technology Investment New company formation
Prospects on international market?	Not yet
Please explain why can this technology be interesting for a Japanese investor?	Sleep apnea is not just disease, it is nowadays epidemical problem. Sleep apnea is common disease in Asia. Not so much Japan but India, China, and Australia mostly.
Company (source) name	**Nukute Ltd.**
Address	**Kiviharjuntie 11, 90220, Oulu, Finland**
Main activity	**Medtech**
Contact details	**Contact person: Tuukka Visuri** **Contact e-mail: tuukka.visuri@nukute.com** **Website: www.nukute.com**

<table>
<tr><th colspan="2">Sofi Filter – a self-cleaning microfilter for industrial wastewater reuse</th></tr>
<tr><td>Stage of the development</td><td>Commercially available: Finland, US, EU</td></tr>
<tr><td>Where has this technology offer been published/introduced/ described before?</td><td>13 client installations, a number of exhibitions in Finland, EU and US</td></tr>
<tr><td>Technological sector
According to the Field of science and technology classification</td><td>Water and wastewater treatment</td></tr>
<tr><td>Non-Proprietary Description</td><td>Short description of the technology:
Innovative water filter for industrial waste water treatment.
Innovative aspects:
Only self-cleaning microfilter operating at 0.2-10 micron filtration area, hich means it can remove even the finest particles from waste water.
Economic advantages:
No need to chemicals, manual labor or frequently changed disposable filters
Commercial advantages:
Small footprint, high capacity, fully automatic
Environmental advantages:
Low energy consumption since it requires low feed pressure to operate
Societal advantages:
Can be operated in small areas such as urban construction</td></tr>
<tr><td>Value Proposition</td><td>Sofi Filter enables industrial processes to resuse their water, to save in fresh water intake, less waste water produced and have clean water for the processing. Such processes can be urban tunneling, mining, industrial laundry, car wash, power plants etc.</td></tr>
<tr><td>Existing alternatives</td><td>Traditional methods include clarficiation with chemicals, sand filters, bag or cartridge filters. Sofi can replace all those in one single filtration phase.</td></tr>
<tr><td>Collaboration(s)</td><td>It was developed in-house.</td></tr>
<tr><td>Asian connections</td><td>No</td></tr>
<tr><td>Intellectual property status</td><td>Granted patent - patent number/s:
<table>
<tr><th>Number</th><th>Country</th><th>Application date</th></tr>
<tr><td>Core tech patent</td><td>EU, US, Australia, S-Africa, Canada</td><td>2011</td></tr>
</table></td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Have to be studied.</td></tr>
</table>

Your commercialization objectives	Licensing Joint Venture Purchase & Sale Agreement (s) Investment
Prospects on international market?	Technology fits developed markets that currently have water tariffs.
Please explain why can this technology be interesting for a Japanese investor?	High margin product for growing water market.
Company (source) name	**Sofi Filtration**
Address	**Luoteisrinne 4 A 02270 Espoo**
Main activity	**High-tech industrial water treatment**
Contact details	**Contact person: Ville Hakala** **Contact e-mail: ville@sofifiltration.com** **Website: www.sofifiltration.com**

The highest efficiency gas turbine in its size range (400-450kWe)	
Stage of the development	Prototype Available
Where has this technology offer been published/introduced/ described before?	ASME Papers, Seoul, 2016. www.asme.org/events/turbo-expo Cleantech awards/shows 2015-2016, Ecosummit London 2014, Berlin 2016 and London 2016. Currently, Kasvu Open Competition 2016 www.kasvuopen.fi www.aureliaturbines.com (News section)
Non-Proprietary Description	**Short description of the technology:** High efficiency gas turbine. **Innovative aspects:** Twin shafts with high and low pressure radial turbines, recuperated and intercooled with frictionless magnetic bearings and active magnetic controls. **Economic advantages:** Consumes less fuel than conventional engines and turbines with lower cost of ownership and less maintenance **Commercial advantages:** Payback typically 2-4 years with ability to generate heat for hot water or steam or chilling in addition to electricity. Able to be operated on various fuels. **Environmental advantages:** Low noise, low emissions (NOx/Sox), no lubricant oils, lower CO2 **Societal advantages:** Longer operational life than other turbines due to use of magnets. Ease of operation. Ability to be assembled regionally rather than shipped from Europe.
Value Proposition	The SME process industries have a requirement for electricity and steam/hot water or chilling. Engines deliver electricity but do not have sufficient thermal energy to generate steam and are expensive to operate. Gas turbines have high thermal energy but their kWe output is too great for most process industries to consume. A400-450kwe turbine able to produce 3-6 t/hr steam with low maintenance is a good fit for the SME sector.
Existing alternatives	
Collaboration(s)	Yes. The Lappeenranta University of Technology.

<table>
<tr><td>Asian connections</td><td>The directors of the company have established distribution partners and JVs in Japan since 1997: some remain operational today.</td></tr>
<tr><td>Intellectual property status</td><td>Granted patent - patent number/s:
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>2</td><td>Finland/EU</td><td>2015</td></tr>
<tr><td>1</td><td>Finland/EU</td><td>2016</td></tr>
</table>
__Patent already applied for
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>12</td><td>Finland/EU</td><td>2016</td></tr>
<tr><td></td><td></td><td></td></tr>
</table>
Patent not yet applied for
Other forms of protection (copyright, trademark, trade secret, …):
……</td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes</td></tr>
<tr><td>Your commercialization objectives</td><td>Joint Venture

Purchase & Sale Agreement (s)

Investment

New company formation</td></tr>
<tr><td>Prospects on international market?</td><td>Our pipeline includes opportunities in Russia/CIS, across EU with interest from China and S. Korea.</td></tr>
<tr><td>Please explain why can this technology be interesting for a Japanese investor?</td><td>Existing Japanese gas turbines and engines are NOT as efficient or cost effective in ownership. Japanese energy prices are high and will remain high. Average commercial/industrial energy users will find a 400-450kWe unit suitable for their demand and the ability to generate steam hot water or chilling very attractive over the existing use of boilers or refrigeration.
Aurelia is prepared to allow a local partner to add value in Japan through local sourcing and manufacture.</td></tr>
<tr><td>Company (source) name</td><td>Aurelia Turbines Oy.</td></tr>
<tr><td>Address</td><td>Lappeenranta, Finland</td></tr>
<tr><td>Main activity</td><td>Development of small high efficiency gas turbines</td></tr>
<tr><td>Contact details</td><td>Contact person: Tony Hynes
Contact e-mail: tony.hynes@aureliaturbines.com
Website: www.aureliaturbines.com</td></tr>
</table>

3.10 FRANCE

Country introduction

Capital	Paris	**Official EU language(s)**	French
Geographical size	633 187 km²	**Political system**	semi-parliamentary republic
Population	66 415 161 (2015)	**EU member country since**	1 January 1958
Population as % of total EU population	13.1% (2015)	**Currency**	Euro. Member of the Eurozone since 1 January 1999
Gross domestic product (GDP)	€ 2.184 trillion (2015)	**Schengen area member**	Yes, Schengen Area member since 26 March 1995
Gross Domestic Expenditure on R&D (GERD) as % of GDP	2.26% (2014)		

The most important sectors of France's economy in 2014 were public administration, defence, education, human health and social work activities (23.2 %), wholesale and retail trade, transport, accommodation and food services (17.7 %) and industry (13.8 %).
France's main export and import partners are Germany, Belgium and Italy.

List of selected top three technologies:

1	A unique approach for hiPsc derived cell types maturation and amplification	Univercell-Biosolutions
2	The Smart Building Envelope (SBE)	EcoXia SAS
3	Range extending service for electric vehicles	EP Tender

A unique approach for hiPsc derived cell types maturation and amplification	
Stage of the development	Ready for commercialization Commercially available: France (international customers in Europe and US)
Where has this technology offer been published/introduced/ described before?	We have developed a very robust proof of concept on human beta cell production using our technology. This has led to a peer paper publication (Ravassard P., Hazhouz Y., Pechberty S., Bricout-Neveu E., Armanet M., Czernichow P., Scharfmann R. "A genetically engineered human pancreactic β cell line exhibiting glucose-inducible insulin secretin" in J Clin Invest. January 2011; 121(9):3589-97). Actually our Endoc-BH1 cell lines is approved by most of European and US big Pharmas using our cell for HTS screening campaign and assay development. We have developed more than 150 collaborations with academia which use our cell:

	Diabetes & Risk Associated Genes			
2014	Interaction between islet transcription factors and epigenome	Human Islets, Mouse Islets, MIN6, Zebrafish islet	Pasquali et al., Nature Genetics 2014	EndoC-βH1
2015	Causal mechanisms in T2D susceptibility loci	Human Islets, Mouse	Gaulton et al., Nature Genetics 2015	EndoC-βH1
2015	Cell-cycle control gene CDKN2A and glucose homeostasis	Human OGTT, IVGTT	Pal et al., Diabetes 2015	EndoC-βH1
	β-cell death			
2013	Imatinib, c-Abl and SHIP2 activity in β-cells	ßTC6, human islets, Min6	Mokhtari et al., Diabeteologia 2013	EndoC-βH1
2014	NMI and cytokine-induced β-cell apoptosis	INS-1E, FPRBC, human islets	Brozzi et al., J Biol Chem. 2014	EndoC-βH1
2014	IL-17A and proinflammatory chemokines in human pancreatic islets	INS-1E, Mouse Islets	Grieco et al., Diabetologia 2014	EndoC-βH1
2014	BACH2, JNK1 and PTPN2 in β-cell apoptosis	INS-1E, human islets	Marroqui et al., Diabetes 2014	EndoC-βH1
2015	Endoplasmic reticulum stress induction by cytokines	Min6, INS-1E, human islets	Brozzi et al., Diabetologia 2015	EndoC-βH1
2015	Imatinib mesylate and LRP1 in insulin-producing cells.	INS1 832/13	Fred et al. ClinSci 2015	EndoC-βH1
2015	AMP kinase and cytokine-induced human β-cell death	βTC6	Fred et al., Mol Cell Endocrinol. 2015	EndoC-βH1
2015	TYK2, apoptosis and innate immune response in human β-cells	Human Islets	Marroqui et al., Diabetes 2015	EndoC-βH1
2015	Non-canonical NF-κB pathway and cytokines-induced β-cell death	INS-1E, FPRBC	Meyerovich et al, Diabetologia 2015	EndoC-βH1
2015	Human β-cell responses to proinflammatory cytokines.	human islets; rat islet; INS1 832/13	Oleson et al, AJPRICP 2015	EndoC-βH1
2015	Brusatol and pro-inflammatory cytokines response	ßTC6; RIN-5AH	Turpaev et al., BBRC 2015	EndoC-βH1
2015	Innate and adaptive immunity in EndoC-βH1	ECi50	van der Torren, Diabetologia 2015	EndoC-βH1

			β-cell physiology		
	2012	Specific human β-cell lncRNAs	Human Islets, Mouse islets	Moran et al., Cell Metab 2012	EndoC-βH1
	2014	Implication of RFX6 in insulin secretion by modulating Ca2+ homeostasis	human islets	Chandra et al., Cell Rep. 2014	EndoC-βH2
	2015	Characterization of stimulus-secretion coupling in EndoC-βH1 cell line	INS1 832/13, human islets	Andersson et al., PLoS One 2015	EndoC-βH1
	2015	DNA methylation and functional maturation of pancreatic β cells	Mouse islets, Mouse Embryonic Fibroblast	Dhawan et al., JCI 2015	EndoC-βH1
	2015	Physiological characterization of EndoC-βH1	RINm5F	Gurgul-Convey et al. BBRC 2015	EndoC-βH1
	2015	GPR44 as a pancreatic protein restricted to the human beta cell	Human Islets	Hellström-Lindahl et al., Acta Diabetol. 2015	EndoC-βH1
	2015	Calcium signaling in a EndoC-βH1	-	Krishnan et al., Pancreas 2015	EndoC-βH1
	2015	Context-dependent recruitment of PDX1 coregulatory complexes and ATP-dependent chromatin remodeling	ßTC3	McKenna et al., Cells Reports 2015	EndoC-βH1
	2015	Prox1 and postnatal β-cells expansion and maturation	Mouse, Mouse islets, ßTC6	Paul et al., Diabetes 2015	EndoC-βH1
	2015	Regulation of MAFA and MAFB transcriptions factors by MLL3 and MLL4	βTC-3, mouse islets in vivo	Scoville et al., Diabetes 2015	EndoC-βH1
	2015	FFA2 and FFA3 and insulin secretion	Human Islets, Min6, Mouse, Mouse islets	Tang et al., Nature Med 2015	EndoC-βH1
	2015	INS-IGF2 fusion transcript analysis	Human Islets	Wernesson et al., BMC 2015	EndoC-βH1
	2016	Implication of MafA and nicotinic signaling in insulin secretion and T2D	Mouse islets, ßTC6	Ganic et al., Cell Reports 2016	EndoC-βH1
			Others		
	2014	Development of human fucci pancreatic β cell lines	-	Carlier et al., PLoS One 2014	EndoC-βH2
	2015	Development of a human beta cell line with drug inducible excision of immortalizing transgenes	-	Benazra et al., Mol Metab. 2015	EndoC-βH2
	2015	Insulin-secreting cells production		Bruin et al., Stem Cell Reports, 2015	EndoC-βH1
	2016	Senescence, beta cells and insulin secretion		Helman et al, Nature Medicine 2016	EndoC-βH2

Technological sector **According to the Field of science and technology classification**	Biotechnologies, Pharmas. (Diabetes, human cell models development)
Non-Proprietary Description	**Short description of the technology:** Univercell-biosolutions has developed a unique in vivo bioreactor for human cell amplification and maturation which is associated with a proprietary construct to provide a positive selection leading to a totally homogeneous population of relevant human cell type desired. **Innovative aspects:** To provide hipsc derived mature cell type: - In vivo bioreactor (maturation, amplification) - Constructs (cell selection, cell population homogeneity) **Economic advantages:**

<table>
<tr><td></td><td>- Quite the same price as compared with current less relevant cell models from animals, GMO cell lines or primary cell lines.
Commercial advantages:
Access to unlimited amount of hipsc derived human models which are fully functional and so predictive of the clinical situation.</td></tr>
<tr><td>Value Proposition</td><td>Most of our customers want to have access to HUMAN cell which are more predictive of the clinical situation. Most of hipsc derived cells are not functional and not fully mature. Furthermore, yield provided by current differentiation protocols are very low.</td></tr>
<tr><td>Existing alternatives</td><td>Human cell from cadaveric origin.</td></tr>
<tr><td>Collaboration(s)</td><td>Univercell-Biosolutions is the sponsor. Technology has been developed in collaboration with the CNRS and INSERM in France</td></tr>
<tr><td>Asian connections</td><td>Yes. Cosmobio Inc. and our technology has been adopted by Takeda.</td></tr>
<tr><td>Intellectual property status</td><td>Granted patent - patent number/s:
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>1020047005812</td><td>US/Europe/Japan</td><td>19/04/2004</td></tr>
<tr><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Already</td></tr>
<tr><td>Your commercialization objectives</td><td>Research & Development Agreement (s),Licensing (nonexclusive)</td></tr>
<tr><td>Prospects on international market?</td><td>Lilly, Pfizer, Astrazeneca….</td></tr>
<tr><td>Please explain why can this technology be interesting for a Japanese investor?</td><td>Totally new.
A solution to brdge the gap betwwenn preclinical and clinical data and so decreasing the drug failure rate during the clinical stage.</td></tr>
<tr><td>Company (source) name</td><td>Univercell-Biosolutions</td></tr>
<tr><td>Address</td><td>Canceropole, entrée B, 1 place pierre potier, BP 50624, 31106 Toulouse cedex 1</td></tr>
<tr><td>Main activity</td><td>Innovative human cell models development(Beta cells, Endothelial Cells, Cardiomyocytes, Neurons)</td></tr>
<tr><td>Contact details</td><td>Contact person: Guillaume Costecalde
Contact e-mail: g.costecalde@univercell-biosolutions.com
Website: www.univercell-biosolutions.com</td></tr>
</table>

The Smart Building Envelope (SBE)	
Stage of the development	Commercially available in France
Where has this technology offer been published/introduced/ described before?	**France**: ADEME : http://www.ademe.fr/elv2 Advancity : http://www.advancity.eu/ecoxia/ La Maison Passive : Congrès Passi'Bat 2016 ; L'Essentiel **USA**: Prefabulous World ; Sheri Koones ; Abrams 2014 ; ISBN 978-1-61769-083-9 **Japan**: ZEMCH: Toward the Delivery of Zero Energy Mass Custom Homes ; Dr Masa Noguchi ; Springer 2016 ; ISBN 978-3-319-31965-0
Technological sector **According to the Field of science and technology classification**	2.1 Civil engineering
Non-Proprietary Description	**Innovative aspects:** all-in-one building system for high energy performance buildings (design & make). B2B2C solution. **Economic advantages:** low carbon and high comfort dwellings at an affordable price **Commercial advantages:** certainty of results **Environmental advantages:** low energy (from passive buildings to positive energy buildings), low carbon footprint (wood frame, biosourced insulation, prefabrication) **Societal advantages:** democratization of green, safe and comfortable new buildings
Value Proposition	**EcoXia is a start-up in the green new building industry. It helps building professionals develop buildings in line with the 21st century: green, comfortable, affordable.** Thanks to the SBE, builders and developers can offer zero energy buildings, with a low carbon impact and a high comfort level for the occupants: indoor air quality, natural light, acoustic insulation, ideal humidity and temperature levels… Thanks to organisational change and prefabrication, the premium compared to standard buildings remains affordable (**<15%**).
Existing alternatives	To achieve the same level of performance, nowadays architects design plans & specs to be implemented by the construction companies. There are risks at the design phase, at the interaction between design and make (feasibility) and during the building phase (skills). Most projects fail at the airtightness level, which induces building delays and extra costs (passive buildings often show a premium of **40%** compared to standard constructions).

<table>
<tr><td></td><td>Constructive systems are developing to address this quality/ cost issue but they are not as comprehensive as the SBE by EcoXia.</td></tr>
<tr><td>Collaboration(s)</td><td>The technology was developed with public and academic organisations as well as an industrial partner (carpentry).</td></tr>
<tr><td>Asian connections</td><td>EcoXia is a French member of the association ZEMCH (Zero Energy Mass Custom Homes). This international network is headed by the Japanese Dr. Masa Noguchi.
EcoXia took part to a one-week study trip to Japan in 2007 organized by ZEMCH.</td></tr>
<tr><td>Intellectual property status</td><td>Granted patent - patent number/s: 2
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>FR2977611</td><td>France</td><td>2011/07/06</td></tr>
<tr><td>FR2952084</td><td>France</td><td>2009/11/05</td></tr>
</table>
Other forms of protection: copyrights, trademarks, industrial & trade secrets</td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>No</td></tr>
<tr><td>Your commercialization objectives</td><td>Licensing (exclusive)</td></tr>
<tr><td>Prospects on international market?</td><td>Yes, mainly on the European market currently (Belgium, Germany)</td></tr>
<tr><td>Please explain why can this technology be interesting for a Japanese investor?</td><td>Japan is a leading country in house prefabrication and zero energy buildings. EcoXia’s technology can be of interest for a Japanese investor/manufacturer wishing to help unskilled building professionals address the growing ZEMCH market.</td></tr>
<tr><td>Company (source) name</td><td>ECOXIA SAS</td></tr>
<tr><td>Address</td><td>43 rue Royale – 91330 Yerres</td></tr>
<tr><td>Main activity</td><td>Design and make of new energy efficient buildings</td></tr>
<tr><td>Contact details</td><td>Contact person: Laurent RISCALA
Contact e-mail: laurent.riscala@ecoxia.com
Website: www.ecoxia.com</td></tr>
</table>

An innovative range extending service for electric vehicles, based on a modular range extender available for on demand rental	
Stage of the development	Ready for Beta Testing
Where has this technology offer been published/introduced/ described before?	The tender was presented to large audience during automobile exhibitions (see videos in Paris and Geneva). The innovation has been largely spread on internet: 43 000 unique visitors on our website and many references (try a search). General (France2), technical (crashtest techology international) and finance medias (CNBC), have taken interest in our innovative service
Technological sector **According to the Field of science and technology classification**	2. Engineering and Technology 2.2 Electrical engineering, Electronic engineering, Information engineering 2.3 Mechanical Engineering
Non-Proprietary Description	**Short description of the technology:** EP Tender offers a range extending service for EVs. A Tender is a small trailer which increases the motorway range by 400km (80kWh). It contains a 35 L fuel tank, a small automotive combustion engine and a generator. With future fuel cell and battery technological progress, EP Tender will also exist in versions carrying zero emission energy storage. The tender was designed to fit customer acceptance: attractive design, connection in one go with the car (see video) and mechanical system that requires no drivers skills when backing (see patent). **Innovative aspects:** EP Tender is proposing a paradigm shifting innovation for the transport sector: design EV for typical use and provide a network of energy modules (Tender'Lib) available for on demand renting (motorway service stations and commercial centres) for longer trips. **Economic advantages:** User data, demonstrate that the marginal utility of a battery is fast decreasing beyond satisfying 98% of usage: the cost per use of a larger batteries is astronomical, contrary to EP Tender. **Commercial advantages:** The freedom to make any trip with your EV, in a convenient and affordable way! **Environmental advantages:** Drive 98% full electric, instead of 100% petrol. **Societal advantages:** Soft mobility for all, and everywhere.

Value Proposition	There is a drive towards the implementation of EVs. However, they remain a niche market primarily due to their cost and their range. It is noteworthy to point out a key difference between internal combustion engine vehicles and EVs: for the former the fuel tank is one of the cheapest components; for the latter the batteries are the most expensive. By splitting the daily energy demands on the battery from the peak demand on the occasional long distance trips, EP Tender is providing a novel solution which simplifies a fairly complex problem by having two simpler equations: - Compact and affordable electric powertrain for daily usage - Energy module add-on for occasional long distance journeys, based on high energy density sources
Existing alternatives	Nomadic Power is also developing a trailer, but with a battery instead of a range extender. We know them well and share a common vision. They seem to struggle reaching a meaningful range at an acceptable weight with the current battery technology. The Better Place project developed an ambitious battery swapping system. It has failed in 2012 due to over expensive infrastructure. Large on board battery, or on board range extender are the main current solutions to long distance travel. EP Tender is a better solution: + Pay per use, resulting in a acceptable cost for occasional long distance trips, contrary to on board solutions where the cost and weight are borne at all times. + 80 kWh additional energy, at a weight of 250kg, which furthermore is not impacting the vehicle's payload. + Easy to attach and to maneuver + Safe (passes the USVFM301R crash test), as well as the Moose test.
Collaboration(s)	Yes. Renault has provided all technical data, including CAN frames, access to engineering and has authorized the homologation of Zoe for towing a light trailer. Politecnico di Milano, Bosch, Brussels Vrije University, ESTACA engineering school have provided some academic and technical support. We are supported by the Horizon 2020 SME phase 2 innovation program, as well as the French Ademe and Commissariat Général à l'Investissement. ENEDIS (ex ERDF, the French electricity grid) is our first major client and supporter. They have a fleet of 2000 EVs.
Asian connections	Two Chinese car manufacturers, Lifan and Changan Suzuki have agreed to equip one of their EVs with EP Tender hitch for testing.

<table>
<tr><td></td><td>We have had senior contacts with Nissan (Andy Palmer in particular), and we are looking to get their support as soon as field testing evidences a large customer support from B2B and B2C client bases.</td></tr>
<tr><td>Intellectual property status</td><td>Granted patent - patent number/s:

<table><tr><td>Number</td><td>Country</td><td>Application date</td></tr><tr><td>EP2666704</td><td>EU</td><td>22/05/2013</td></tr><tr><td>WO2013132468</td><td>European Union, USA</td><td>9/03/2012</td></tr></table>
Patent already applied for
<table><tr><td>Number</td><td>Country</td><td>Application date</td></tr><tr><td>WO2013132468</td><td>Canada, China, Brazil, Mexico, Japan, India, Russia, Indonesia, and Australia.</td><td>9/03/2012</td></tr></table>Other forms of protection: “EP Tender” and “Tender’Lib” brands have also been protected in the EU, USA, and China, as well as appropriate web domains.</td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes, the application has been made for patent WO2013132468</td></tr>
<tr><td>Your commercialization objectives</td><td>Research & Development Agreement (s)

Joint Venture

Investment</td></tr>
<tr><td>Prospects on international market?</td><td>Our market is the global automotive market: 100 million cars sold every year, and a target of 2 billion cars in 2050 (from 1 billion today). Our marketing research indicates that 2% of car buyers would become EP Tender users, which at that point would mean an annual turnover of 500 M €. France, California and China will be our initial target markets. We will expand from there in Europe, North America, Japan and most China.</td></tr>
<tr><td>Please explain why can this technology be interesting for a Japanese investor?</td><td>EP Tender is also a key enabler of fuel cell deployment in transport: a basic 15k € EV can use a fuel cell Tender on a corridor where H2 distribution has been deployed. The car is affordable, and the network can be affordably deployed progressively! This is a huge benefit compared to carrying the fuel cell onboard the car, and having to build a continental network at once…</td></tr>
</table>

	Global EV sales can be significantly boosted by EP Tender, as the car remains affordable, while capable of satisfying 100% of the user's requirements. The life cycle impact of EVs is minimized by carrying acceptable energy storage which is suited to 98% of usage, with major environmental benefits. The EVs are recharged in demand-response mode, which is the best ally for developing renewable (but intermitted) energy sources. This technology is there to last: in 2030, cars are clean, connected, autonomous level 4 on motorways, and lean. The Tenders will attach autonomously to the cars when entering the motorway, and deliver seamlessly a range extending service for occasional long distance travelers. Main features of the business model: Range extending as a service: functional economy Pricing power: high client value; margin protected by patents; sticky business Distribution: low client acquisition cost (via car dealers and B2B) Growth: scalable business (wireless rental management, passive docking stations); variable costs; global market; growth >20% for decades
Company (source) name	**EP Tender**
Address	**Technoparc** **22 rue Gustave Eiffel** **78300 Poissy**
Main activity	**On demand range extending service for electric vehicles (EV)**
Contact details	**Contact person: Jean Baptiste SEGARD** **Contact e-mail: jean-baptiste.segard@eptender.com** **Website: www.eptender.com**

3.11 GERMANY

Country introduction

Capital	Berlin	**Official EU language(s)**	German
Geographical size	357 376 km²	**Political system**	federal parliamentary republic
Population	81 197 537 (2015)	**EU member country since**	1 January 1958
Population as % of total EU population	16% (2015)	**Currency**	Euro. Member of the Eurozone since 1 January 1999
Gross domestic product (GDP)	€ 3.026 trillion (2015)	**Schengen area member**	Yes, Schengen Area member since 26 March 1995
Gross Domestic Expenditure on R&D (GERD) as % of GDP	2.9% (2014)		

The most important sectors of Germany's economy in 2014 were industry (25.9 %), public administration, defence, education, human health and social work activities (18.2 %) and wholesale and retail trade, transport, accommodation and food service activities (15.5 %). Germany's main export partners are France, the US and the UK while its main import partners are the Netherlands, France and China.

List of selected top three technologies:

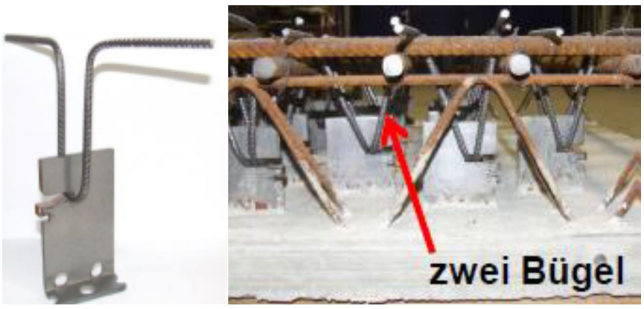
1	Intelligent glass – smart windows	TransMIT GmbH (IP by Justus-Liebig-Universität Giessen)
2	Recycling technology for mixed polymer waste to high performance polymer blends	HPX Polymers GmbH
3	Punching shear reinforcement system	TransMIT GmbH (IP by University of Applied Sciences, Hessen)

Intelligent glass – smart windows	
Stage of the development	Ready for Betta Testing Ready for commercialization
Where has this technology offer been published/introduced/ described before?	H-IP-O (Hessische Intellectual Property Organisation) http://www.hipo-online.net/d_expose.cfm?expose_id=891 Transmit https://www.transmit.de/exposes/pdf/654de_2016-06-16.pdf
Technological sector **According to the Field of science and technology classification**	Engineering and Technology Materials Engineering
Non-Proprietary Description	**Short description of the technology:** The innovation comprises a thin film system for glass, which regulates the warmth in a room without external control, within an invisible switching process. **Innovative aspects:** High colour neutral transmittance which does not obstruct the view. The switching process is not visible or rather cannot be perceived. **Economic advantages:** It is a passive coating without external regulations, which is why no extra costs are necessary. It also has the special advantage that interiors are not heated by the sun in the summer, while in winter the sun rays can contribute to heating of the interior. **Commercial advantages:** In contrast to the prior art, where the coating leads to a yellow streak, this innovation does not disturb visible perception, as it is colour neutral transparent. **Environmental advantages:** The interior warmth regulation can contribute to reduce energy consumption. **Societal advantages:** Contrast to the prior art, where the coating leads to a yellow streak, this innovation does not disturb visible perception.
Value Proposition	This development makes it possible to coat window glass energy-efficiently, which provides a regulation of the warmth in interiors without external control- for buildings as well as for vehicles.
Existing alternatives	**There are a few existing alternative in the market:** **Self-darkening windows:** Controls the light and heat that gets through it. **Disadvantage:** Obstructs the view **High reflectivity films/coatings:** High-reflectivity window films that block summer heat. **Disadvantage:** They also block the sun's heat in the winter.

	Dyed window films: It is thin colour dyed film or laminate for heat and glare reduction. **Disadvantage:** Obstructs the view at any time of the day.
Collaboration(s)	On behalf of its shareholder Justus-Liebig-Universität Giessen, TransMIT GmbH is looking for cooperation partners or licen-sees for further development in Germany, Europe, US, and Asia.
Intellectual property status	__Granted patent: Germany, USA Patent already applied for: China, Japan, South Korea, Europe (EP)
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Research & Development Agreement (s) Licensing
Company (source) name	**Justus-Liebig-Universität Gießen**
Address	**Erwin-Stein-Gebäude, Goethestraße 58, 35390 Gießen**
Contact details	**Contact person: Niklas Günther, M.A.** **Contact e-mail: niklas.guenther@transmit.de** **Website: www.transmit.de**

Recycling technology for mixed polymer waste to high performance polymer blends	
Stage of the development	Prototype available, Test data available Ready for commercialization
Where has this technology offer been published/introduced/ described before?	Introduced only together with potential customers Webpage: www.hpx-polymers.de , www.gaplast.de Tradefair: cosmetic business, Munich and others by Gaplast GmbH Patent
Non-Proprietary Description	**Short description of the technology:** Mixing technology for mixed polymer waste without loss in mechanical, chemical, optical performance **Innovative aspects:** Also mixed waste can be used for new products without performance losses **Economic advantages:** Good price-performance ratio, less raw material input needed (reuse) **Commercial advantages:** Exclusivity, new & sustainable material concept **Environmental advantages:** 60 – 80% reuse of raw materials for several times **Societal advantages:** Sustainable, saving resources
Value Proposition	Patent
Existing alternatives	No existing alternative known with same performance
Collaboration(s)	User: Gaplast GmbH (www.gaplast.de), producer: Silon GmbH (www.silon.eu) Raw material reuse of mixed polymer waste offered by Gaplast produced by Silon with our technology with additional adaption in material performance for reuse by Gaplast for new products
Asian connections	No
Intellectual property status	Granted patent - patent number/s: 102011054905.6 – Germany 12183300.8-1217 – Europe
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Licensing (exclusive, geographic/application specific) Outright Sale of business/technology
Prospects on international market?	Depends on demand/interest for sustainable raw material options and technical requirements
Please explain why can this technology be	Good price-performance ratio Technological know how is needed for applications

interesting for a Japanese investor?	Sustainable material + reduction of raw material input = future trend
Company (source) name	**HPX Polymers GmbH**
Address	**Ziegeleistr. 1**
Main activity	**Polymer Compounding, Polymer Processing**
Contact details	**Contact person: Dr. Dr. Uwe Boelz** **Contact e-mail: info@hpx-polymers.de** **Website: www.hpx-polymers.de**

Punching shear reinforcement system	
Stage of the development	**Commercially available in Germany**
Technological sector	Construction Technology & Architecture
Non-Proprietary Description	The novel punching shear reinforcement system consists of two variants of novel concrete reinforcement elements with steel sheets: L-shaped sheet metals with 1 or 2 stirrupsShort description of the technology:  **Z-shaped sheet metals:**  **Advantages:** More cost-effective prefabricated concrete components or higher maximum load-bearing capacity of concrete components using the abovementioned L- or Z-shaped sheet metals compared to using 1) open web girders or 2) double-headed dowels The “L-shaped sheet metals” variant requires less storage or transport space as open web girders or double-headed dowels. Furthermore, this variant allows for decisions to be made “on site” with regard to the thickness of the new concrete component, as stirrups of different heights are suitable to be combined with the L-shaped sheet metals.
Value Proposition	More cost-effective prefabricated concrete components or higher maximum load-bearing capacity of concrete components using the abovementioned L- or Z-shaped sheet metals compared to using 1) open web girders or 2) double-headed dowels

	The “L-shaped sheet metals” variant requires less storage or transport space as open web girders or double-headed dowels. Furthermore, this variant allows for decisions to be made “on site” with regard to the thickness of the new concrete component, as stirrups of different heights are suitable to be combined with the L-shaped sheet metals.
Existing alternatives	open web girders double-headed dowels
Collaboration(s)	University of Applied Sciences in Central Hesse is the patent owner, on behalf of them TransMIT GmbH is offering the entire product family together with the existing approval in Germany and the upcoming approval for the European Union, and the respective design software.
Intellectual property status	There are three patent families covering the USA, Canada, Europe, Japan and the BRIC states. Two PCT applications disclosed on 3 February 2012 resulted from this. Patents are expected to be issued for L and Z-shaped sheet metals in Europe first of all by the end of 2012. Several German designs have been registered.
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Licensing Purchase & Sale Agreement (s) TransMIT GmbH is looking for distribution partners with an established distribution network for the USA, Canada, Europe, Japan, and the BRIC states. An exclusive distribution and production license can be granted. The cost for approvals outside Europe would have to be incurred by the licensee. The inventors’ technical facility can offer support with regard to the respective tests and the further developments of the sheet metals according to the present invention. The purchaser would have to incur the costs resulting from this.
Prospects on international market?	The fields of application are: 1) punching shear 2) composites 3) transverse force and 4) material fatigue The customer groups are: a) producers of prefabricated concrete components (ceiling elements and other concrete components) and b) use of on-site mixed concrete. Also to be used in combination with so-called open web girders Trend: the market for prefabricated concrete components is growing worldwide, in particular in the BRIC states. With 8,000 production sites and 210,000 employees, the European industry for prefabricated concrete components earns revenue of approx. EUR 35 billion per year.
Company (source) name	**TransMIT**
Address	**Kerkrader Str. 3**

	D-35394 Giessen
Contact details	**Contact person: Dr. Peter Stumpf** **Contact e-mail: stumpf@transmit.de**

3.12 GREECE

Country introduction

Capital	Athens	**Official EU language(s)**	Greek
Geographical size	131 957 km²	**Political system**	parliamentary republic
Population	10 858 018 (2015)	**EU member country since**	1 January 1981
Population as % of total EU population	2.1% (2015)	**Currency**	Euro. Member of the Eurozone since 1 January 2001
Gross domestic product (GDP)	€ 176.023 billion (2015)	**Schengen area member**	Yes, Schengen Area member since 1 January 2000
Gross Domestic Expenditure on R&D (GERD) as % of GDP	0.84% (2014)		

The most important sectors of Greece's economy in 2014 were wholesale and retail trade, transport, accommodation and food services (26.3 %), public administration, defence, education, human health and social work activities (20.8 %) and real estate activities (18.5 %).
Greece's main export partners are Turkey, Italy and Germany while its main import partners are Russia, Germany and Iraq.

List of selected top three technologies:

1	Commercialization of an energy efficient and environmentally friendly multi-fuel power system with CHP capability, for stand-alone applications.	Helbio S.A., Hydrogen and Energy Production Systems
2	Commercialization of hydrogen generating systems for refueling station	Helbio S.A., Hydrogen and Energy Production Systems
3	High Temperature Membrane Electrode Assemblies (HT-MEAs) for use in high temperature proton exchange membrane (HT-PEM) fuel cells.	Advent Technologies

Commercialization of an energy efficient and environmentally friendly multi-fuel power system with CHP capability, for stand-alone applications.	
Stage of the development	Prototype available, Ready for Alpha testing
Where has this technology offer been published/introduced/ described before?	- International Hannover Messe, Germany - International Hydrogen and Fuel Cell Expo, Tokyo, Japan - National fairs - www.helbio.com - EU funded projects - Patents
Technological sector **According to the Field of science and technology classification**	2.7: Environmental engineering 2.4: Chemical engineering 1.4: Chemical sciences
Non-Proprietary Description	**Short description of the technology:** Primary objective of the proposed project is the commercialization of a highly innovative, energy efficient and environmentally friendly power production unit for decentralized power and heat generation. The unit is of nominal capacity of 5 kW electric power, while in the combined heat and power (CHP) mode, it can also produce up to 7 kW thermal energy in the form of hot water. The unit is a multi-fuel one and it can be operated with conventional fossil fuels (propane/LPG and Natural gas (NG)) or Biogas (BG). The device is able to convert the fuel into electrical and thermal power by means of a fuel processor which converts the fuel and water into hydrogen and a Proton Exchange Membrane (PEM) fuel cell. The unit is equipped with a power management system, delivering electrical energy in the form required (DC or AC, grid connected or stand alone), depending on application. It has the ability to operate in the range of 50-100% of its nominal capacity. Its electrical efficiency is greater than 35% (based on LHV), while total efficiency exceeds 85%. **Innovative aspects:** The proposed system is based on highly innovative and efficient technologies (hydrogen production, fuel cells). **Economic advantages:** Low operating and maintenance costs, high efficiency, small payback period. **Commercial advantages:** Increase competences, New and efficient product. **Environmental advantages:** Low CO2 equivalent, nearly zero emissions of pollutants, use of bio-fuels, high efficiency **Societal advantages:**

	Awareness for hydrogen and fuel cell technologies, efficient and novel technologies, creation new industries, increase employment
Value Proposition	Our technology proposes an alternative solution for power and heat generation, using hydrogen and fuel cells. Currently, the targeting market segment (remote or back-up power generation) is served by diesel or gasoline generators which rely on mature and relatively low cost technology. However, conventional gensets offer about half of the electrical efficiency (normally around 16%, in this power range), and present other significant drawbacks such as: high operational and maintenance costs, emission of large quantities of greenhouse gases (CO2, HCs) and atmospheric pollutants (SOx, NOx, CO, particulates), vibration and noise.
Existing alternatives	Currently, decentralized power production is mostly served by conventional diesel generators. The proposed system offers several advantages over the diesel gen-sets, specifically: - More than twice electrical efficiency (>35% vs ~16%) - Excellent performance on partial load - Lower operating and maintenance costs - 3 times lower CO2 emissions - 170 times lower NOx and HC emissions - 27 times lower CO emissions - Zero amounts of SOx - When biogas is used as feeding fuel, the carbon footprint of is zero. Additional to diesel gensets competitors or our system can be considered products operating with NG or LPG and based on the state of the art combustion technologies, both ICE and ECE. These are the latest efforts for conventional technology improvement, but still their performance is inferior to that of the proposed technology (25-28% electrical efficiency vs >35%).
Collaboration(s)	The proposed system is based on highly innovative and efficient technologies, which have been developed in recent years by Helbio S.A. However, the PEM fuel cell stack (which is a crucial peripheral of our system) is purchased by a third party. This party is our business partner with whom we have a supply agreement in power.
Asian connections	Until today we have had/having a couple of collaborations in Asia. In specific: - Helbio develops a 10 Nm3/h hydrogen generator for Kobelco, Japan, for demonstrations purposes. This project takes place within 2016. - Helbio purchases PSA (Pressure Swing Adsorption) systems from Sumitomo Seika, Japan, who is considered our business partner the last two years.

	- Helbio, develops and constructs three 3kW APU units for RST, Japan. This project takes place within 2016. - Helbio develops and construct one 5kW APU unit for Prudenso, India. This project takes place within 2016. - Helbio have a collaboration in an R&D project during 2012-2015 with Sun Yat-sen University, China.
Intellectual property status	Granted patent - patent number/s: 1.) Process for the production of hydrogen and electrical energy from reforming of bio-ethanol, **US 6,605,376 B2** 2.) Highly heat integrated fuel processor for hydrogen production, **PCT/GR2008/000028 - US 20100183487 A1** 3.) Highly heat integrated reformer for hydrogen production, **PCT/GR2008 /000029 - US 20100178219 A1** 4.) Heat Integrated Reformer with Catalytic Combustion for Hydrogen Production, **PCT/GR2012/000004 - US 20140369897 A1** 5.) Heat Integrated Compact Fuel Processor with Catalytic Combustion for Fuel Cell Applications, **PCT/GR2012/000011 - US 20150118123 A1** 6.) A fuel processor/fuel cell system for providing power to refrigerator at out-of-grid locations and a method of use thereof, **US 20120086385 A1**
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Licensing (exclusive, geographic/application specific) Purchase & Sale Agreement Outright Sale of business/technology Investmetn
Prospects on international market?	There are very attractive prospects for penetrating in with the proposed project in the international markets. We are targeting launching this product in certain market sectors, including telecommunications, sailing yachts and boats and truck (auxiliary power production) and CHP (combined heat and power production) for households. It is apparent that with targeting into the abovementioned markets the penetration of the product could be worldwide.
Please explain why can this technology be interesting for a Japanese investor?	The proposed product is based on the hydrogen and fuel cell technologies, in which Japan seems to present large interest. More than 40.000 residential CHP units estimated to have been shipped during 2014 in Japan, and several thousand units for backup power installed throughout Asia. The success of the Ene-Farm subsidy programme in Japan encouraged the government declaration that “hydrogen is expected to play a central role, as

	far as electricity and heat are concerned" in Japan's future energy system. The governmental plan is aiming for 1.4 million residential fuel cell units by 2020 and 5.3 million by 2030. Almost all of the fuel cell micro-CHP units installed globally are in Japan, which recently passed the 100,000 units milestone. With a typical sub-1 kW electrical power rating, they are mainly for domestic use. But the numbers are sufficiently large that fuel cells are now the biggest-selling micro-CHP technology worldwide. This was a result of the Ene-Farm initiative that brought together Japanese Fuel Cell developers and the Gas companies which distribute the product to their markets under a common brand for better consumer recognition. For example, these commonly branded units comprised, in 2014, PEM micro-CHP developed and manufactured by both Panasonic and Toshiba and SOFC micro-CHP units from Aisin.
Company (source) name	**Helbio S.A., Hydrogen and Energy Production Systems**
Address	**Stadiou Str., Patras Science Park**
Main activity	**Hydrogen and energy production**
Contact details	**Contact person: Xenophon Verykios, CEO** **Aris Basagiannis** **Contact e-mail: verykios@helbio.com , abasas@helbio.com** **Website: www.helbio.com**

Commercialization of hydrogen generating systems for refueling station	
Stage of the development	Developing Prototype
Where has this technology offer been published/introduced/ described before?	- www.helbio.com - EU funded projects - Patents
Technological sector **According to the Field of science and technology classification**	2.7: Environmental engineering 2.4: Chemical engineering 1.4: Chemical sciences
Non-Proprietary Description	**Short description of the technology:** Primary objective of the proposed project is the commercialization of hydrogen generators in the capacity range of 20-300 Nm3/h. These generators are based on an innovative and compact fuel processor capable to steam reform the feeding fuel (Natural Gas or Biogas) to a hydrogen mixture. The produced mixture is purified by the Pressure Swig Adsorption (PSA) unit, producing pure hydrogen. **Innovative aspects:** Compact and efficient reactor configuration: - Reformer could be 40 times less volume compared to an equivalent conventional reactor. - More than 5% higher efficiency compared to competing reformer technologies The reformer is able to work with raw biogas (no need for upgrade). **Economic advantages:** Low operating and maintenance costs, high efficiency, attractive payback period. **Commercial advantages:** Increase competences, New and efficient product, Deals with new industries (fuel cell cars, hydrogen refueling stations) **Environmental advantages:** Low CO2 equivalent, nearly zero emissions of pollutants, use of bio-fuels, high efficiency **Societal advantages:** Awareness for hydrogen and fuel cell technologies, efficient and novel technologies, creation new industries, increase employment
Value Proposition	Our technology proposes a solution mainly for decentralised hydrogen production in areas where small production plants of Natural Gas or Biogas exist. Currently, there are no exist

	commercially available units producing hydrogen, using the reforming process, at these capacity range (20-300 Nm3/h).
Existing alternatives	Currently, there are no exist commercially available units producing hydrogen, using the reforming process, at these capacity range (20-300 Nm3/h). The existing units are for larger capacities for very large reforming plants. There are some alternative technologies for hydrogen production, but these are based on more expensive technologies, i.e electrolysers. We believe that with the commercialization of fuel cell cars operating with hydrogen, there will be created the need for installing hydrogen refuelling stations in lot of areas.
Collaboration(s)	The proposed system is based on highly innovative and efficient technologies, which have been developed in recent years by Helbio S.A. However, the PSA system used for hydrogen purification is purchased by a third party. This party is our business partner and based on Japan (Sumitomo Seika).
Asian connections	Until today we have had/having a couple of collaborations in Asia. In specific: - Helbio develops a 10 Nm3/h hydrogen generator for Kobelco, Japan, for demonstrations purposes. This project takes place within 2016. - Helbio purchases PSA (Pressure Swing Adsorption) systems from Sumitomo Seika, Japan, who is considered our business partner the last two years. - Helbio, develops and constructs three 3kW APU units for RST, Japan. This project takes place within 2016. - Helbio develops and construct one 5kW APU unit for Prudenso, India. This project takes place within 2016. - Helbio have a collaboration in an R&D project during 2012-2015 with Sun Yat-sen University, China.
Intellectual property status	Granted patent - patent number/s: 1.) Process for the production of hydrogen and electrical energy from reforming of bio-ethanol, **US 6,605,376 B2** 2.) Highly heat integrated fuel processor for hydrogen production, **PCT/GR2008/000028 - US 20100183487 A1** 3.) Highly heat integrated reformer for hydrogen production, **PCT/GR2008 /000029 - US 20100178219 A1** 4.) Heat Integrated Reformer with Catalytic Combustion for Hydrogen Production, **PCT/GR2012/000004 - US 20140369897 A1** 5.) Heat Integrated Compact Fuel Processor with Catalytic Combustion for Fuel Cell Applications, **PCT/GR2012/000011 - US 20150118123 A1** 6.) A fuel processor/fuel cell system for providing power to refrigerator at out-of-grid locations and a method of use thereof, **US 20120086385 A1**

Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Licensing (exclusive, geographic/application specific) Purchase & Sale Agreement Outright Sale of business/technology Investmetn
Prospects on international market?	There are very attractive prospects for penetrating in with the proposed project in the international markets. Our main targeting market is the hydrogen refueling stations. Commercialization of fuel cell cars operating with hydrogen, will results in the need of installing hydrogen refueling stations in lot of areas, around the world.
Please explain why can this technology be interesting for a Japanese investor?	Japan is one of the pioneer countries in the innovative and emerging technologies. Automotive industries based on Japan have already developed their own hydrogen-fuel cell vehicles (FCV), which will be ready for launching in the market during the next couple of years. Thus, there will be the need for installing hydrogen refueling station all-around Japan. In short-term, the demand for hydrogen stations will be global, while the first companies which will enter into this market will have the main advantage worldwide, thus will have very good chances for expanding.
Company (source) name	**Helbio S.A., Hydrogen and Energy Production Systems**
Address	**Stadiou Str., Patras Science Park**
Main activity	**Hydrogen and energy production**
Contact details	**Contact person: Xenophon Verykios, CEO** **Aris Basagiannis** **Contact e-mail: verykios@helbio.com , abasas@helbio.com** **Website: www.helbio.com**

High Temperature Membrane Electrode Assemblies (HT-MEAs) for use in high temperature proton exchange membrane (HT-PEM) fuel cells.	
Stage of the development	Commercially available
Where has this technology offer been published/introduced/ described before?	This technology has been published on the Technology Transfer portal of the European Space Agency (ESA) 1. www.esa-tec.eu/space-technologies/from-space/novel-materials-and-systems-for-high-temperature-polymer-electrolyte-membrane-fuel-cells-ht-pem-fuel-cells The technology has been also presented in the technical and public forums of Hannover Messe Group Exhibit Hydrogen and Fuel cells. Links are given below: 1. www.h2fc-fair.com/hm16/exhibitors/advent.html (https://youtu.be/Pz2HyvdtyVQ) 2. www.h2fc-fair.com/hm15/exhibitors/advent.html (https://youtu.be/07FYkanlDvk) 3. www.h2fc-fair.com/hm14/exhibitors/advent.html (https://youtu.be/kgEULQdXqDg) The technology has been also presented in conferences and workshops. Recent links are given below: 1. www.ecs.confex.com/ecs/230/webprogram/Paper89603.html 2. www.3degis.iceht.forth.gr/index.php/programme
Technological sector According to the Field of science and technology classification	2.2 Electrical Engineering, Electronic engineering, Information engineering 2.4 Chemical engineering 2.5 Materials engineering 2.7 Environmental engineering
Non-Proprietary Description	**Short description of the technology:** These novel High Temperature Membrane Electrode Assemblies (HT-MEAs) are MEAs (core component of fuel cells) that incorporate a novel polymer high temperature membrane (electrolyte), which exhibits good mechanical properties, high thermal and oxidative stability, high doping ability, good acid management properties and high Proton conductivity values, making these MEAs ideal for intermediate temperature PEM fuel cells. **Innovative aspects:** The innovation is the polymer electrolyte itself, which possesses several technical advantages proving it to be a reliable solution for HTPEM systems and stacks. The main competitive advantage of this membrane is the ability to operate at higher temperatures (120^{o}C to 200^{o}C), utilizing low-grade hydrogen and elimination of the need for water to maintain membrane conductivity. **Economic advantages:** These MEAs provide a low cost path to commercial systems due to simplification of the final fuel cell system. **Commercial advantages:** The total fuel cell market is currently over 1.5B/year and growing approximately 30% each year. The

<table>
<tr><td></td><td>stationary market is steadily growing, and it is dominated by systems that are high temperature and powered by natural gas.
Environmental advantages: Fuel cells in general help in the reduction of greenhouse gas emissions and prompting alternative fuel options.</td></tr>
<tr><td>Value Proposition</td><td>The widespread use of fuel cells is prevented by the requirement of purified hydrogen as a fuel. This can be solved by using higher temperature fuel cells that can better tolerate CO in hydrogen feeds meaning that reformed natural gas or other carbon containing fuels like propane, biofuels, and military fuels can be used.
These MEAs can also be used for producing high purity hydrogen at pressure, by applying power to them in order to process an impure and dilute hydrogen stream. This will address the high cost for hydrogen production is storage and distribution.</td></tr>
<tr><td>Existing alternatives</td><td>The company is currently in direct competition with only a few other commercially achievable High Temperature PEM approaches for MEA production. Elcomax, Danish Power Systems and Fumatech are in a parallel manufacturing scale up and market development effort. All the above mentioned companies rely on an older polybenzylimidazole (PBI) type technology that pre-dates the BASF licensed technology, which due to the that membrane are limited to operation at 160oC. Advent can demonstrate both a more attractive material based on proprietary pyridine based technology (Advent TPS® family of polymers, membranes and MEAs), a superior approach to manufacturing, advanced gas diffusion electrodes manufactured on a roll coater, and manufacturing partnering to support scale up.</td></tr>
<tr><td>Collaboration(s)</td><td>This technology was developed under European projects such as FCH JU (Fuel Cells Hydrogen Joint Undertaking) projects and ESA funded projects.</td></tr>
<tr><td>Asian connections</td><td>Advent has agent contracts in Taiwan, Japan and China.
In addition, the Company independently sells MEAs to fuel cell manufacturers and to manufacturers of fuel cell sub-assemblies in Asia. The last two years there has been a significant increase of interest coming from China and Japan from automotive and combined heat and power sectors.</td></tr>
<tr><td>Intellectual property status</td><td>Granted patent - patent number/s:
<table>
<tr><th>Number</th><th>Country</th><th>Publ. Year</th></tr>
<tr><td>EP 2067199</td><td>EP</td><td>2014</td></tr>
<tr><td>JP 5324445</td><td>JP</td><td>2013</td></tr>
<tr><td>EP 2089377</td><td>EP</td><td>2013</td></tr>
</table>
</td></tr>
</table>

	<table><tr><td>CN 101536224</td><td>CN</td><td>2012</td></tr><tr><td>US 8247521</td><td>US</td><td>2012</td></tr><tr><td>AU 2007301545</td><td>AU</td><td>2012</td></tr><tr><td>US 7854862</td><td>US</td><td>2010</td></tr><tr><td>US 7842733</td><td>US</td><td>2010</td></tr><tr><td>US 7842775</td><td>US</td><td>2010</td></tr><tr><td>US 7786244</td><td>US</td><td>2010</td></tr><tr><td>US 7842734</td><td>US</td><td>2010</td></tr><tr><td>EP 2134768</td><td>EP</td><td>2010</td></tr><tr><td>US 7754843</td><td>US</td><td>2010</td></tr></table> Other forms of protection: Secret know-how
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Licensing Joint Venture Investment Other: • Joint further development • Testing of new applications The technology holder is seeking investment to develop manufacturing capacity to service a growing market. The investment will be used for: -Expanding the membrane operations -Expanding to membrane electrode assembly fabrication. -Establishing an electrode and catalyst centre with manufacturing capability in the United States. -Continue developing next generation materials and lower cost production processes that will allow a further expansion of the market. -Worldwide marketing efforts. This investment will bridge the scale of manufacturing needed for the next three to five years. The company is open to collaborate with components manufacturers and systems integrator

	companies especially in the area of regenerative fuel cells, H2 production via electrolysis and photo-electrolysis.
Prospects on international market?	This is a very promising technology since it is developed by a leading company in this field and it offers significant advantages for a variety of HTPEM Fuel cell applications including off the grid remote and backup power applications such as telecommunication towers and it can also be used in cost and energy efficient stationary residential applications.
Please explain why can this technology be interesting for a Japanese investor?	This technology is interesting for a Japanese investor because of the importance of the fuel cell industry for Japan. There are several Japanese companies that are pursuing the development of commercial fuel cell products and they are looking for solutions that can add value and cut costs for these products under development. The market is expected to grow along with the advancement of the technologies and the assistance by government regulations.
Company (source) name	**Advent Technologies**
Address	**Kifissias Av., 44, Maroussi**
Main activity	**Development of new materials and systems for energy applications**
Contact details	**Contact person:** Yiannis Geragotellis **Contact e-mail:** geragotellis@kinno.eu **Website:** www.advent-energy.com

3.13 HUNGARY

Country introduction

Capital	Budapest	**Official EU language(s)**	Hungarian
Geographical size	93 011 km²	**Political system**	parliamentary republic
Population	9 855 571 (2015)	**EU member country since**	1 May 2004
Population as % of total EU population	1.9% (2015)	**Currency**	Hungarian Forint HUF
Gross domestic product (GDP)	€ 108.748 billion (2015)	**Schengen area member**	Yes, Schengen Area member since 21 December 2007
Gross Domestic Expenditure on R&D (GERD) as % of GDP	1.37 (2014)		

The most important sectors of Hungary's economy in 2014 were industry (26.4 %), wholesale and retail trade, transport, accommodation and food services (18.5 %) and public administration, defence, education, human health and social work activities (17.5 %). Hungary's main export partners are Germany, Austria and Romania while its main import partners are Germany, Austria and Russia.

List of selected top three technologies:

1	Containered railway weed control system	G&G Plant Protection and Trade Ltd.
2	Dairy cattle pH rumen bolus with revolutionary opto-chemical pH-metering sensor.	moow.farm Kft
3	RICENUT-INNO technology, a complex 3 part technology that can increase rice yield by 14-20%	Agrogeo

<table>
<tr><th colspan="2">Containered railway weed control system</th></tr>
<tr><td>Stage of the development</td><td>Commercially available in Hungary and Europe</td></tr>
<tr><td>Where has this technology offer been published/introduced/ described before?</td><td>IPI Singapore: Computer-Operated Technology for Chemical Weed Control on Railroads

InnoTrans 2012, Berlin: Exhibitor List (page 17)</td></tr>
<tr><td>Technological sector According to the Field of science and technology classification</td><td>2.2 Electrical engineering, 2.3 Mechanical engineering</td></tr>
<tr><td>Non-Proprietary Description</td><td>A railway weed control system with real time weed recognition and spot spraying, documentation, built into standard ISO containers (20+40 feet) for mobility and flexibility.</td></tr>
<tr><td>Value Proposition</td><td>This technology offer is a complete railway maintenance equipment. Contrary to the conventional equipment, this system is offering modern, online weed detection and weed spot treatment at the same time, thus having a huge environmental advantage and cost effectiveness, due to less applied chemicals and water. An average of 50-70% saving can be achieved, depending on weed density. The system is built into two standard ISO containers, a 40’ and a 20’ long ones, equipped with the necessary technology, tanks, pumps and nozzle frames, requiring only two people to operate. The container design provides the whole structure flexibility and mobility.</td></tr>
<tr><td>Existing alternatives</td><td>Several weed sprayer technology available on the market. The most advanced competitor technologies use GIS, GPS data and weed maps to effective track treatment and spray continuously the whole track bed. The existing alternatives of our technology are not capable to combine the herbicides and spray the weed spots by one or given combinations of four herbicides in real time way. Our container technology is easy to convert a simple van or railway flat wagon to a special weed killer sprayer machine.</td></tr>
<tr><td>Collaboration(s)</td><td>NO</td></tr>
<tr><td>Asian connections</td><td>NO</td></tr>
<tr><td>Intellectual property status</td><td>Granted patent - patent number/s:
<table>
<tr><th>Number</th><th>Country</th><th>Application date</th></tr>
<tr><td>P9803004</td><td>Hungary</td><td>1998.12.22</td></tr>
<tr><td>P0202205</td><td>Hungary</td><td>2002.07.05</td></tr>
<tr><td>HU3056 (U)</td><td>Hungary</td><td>2005.04.29</td></tr>
<tr><td>CN1298218</td><td>China</td><td>2007.02.07</td></tr>
<tr><td>EP1521885</td><td>Europe (EPO)</td><td>2009.05.06</td></tr>
<tr><td>AT430841</td><td>Austria</td><td>2009.05.15</td></tr>
<tr><td>US2009226036</td><td>USA</td><td>2009.09.10</td></tr>
<tr><td>ES2327823</td><td>Spain</td><td>2009.11.04</td></tr>
</table></td></tr>
</table>

	WO2004005625 | WIPO | 2004.01.15 US8107681 | USA | 2012.01.31 **JP5188957 | Japan | 2013.04.24** HRP20080580 | Croatia | 2008.12.31 ES2314909 | Spain | 2009.03.16 EP1875005 | Europe (EPO) | 2008.08.13 AT404738 | Austria | 2008.08.15
Is it possible to file Japanese patent application? (Select an option, mark it with X or underline.)	Yes, Japanese patent granted.
Your commercialization objectives	Licensing (exclusive; nonexclusive; geographic/application specific)
Prospects on international market?	Yes
Please explain why can this technology be interesting for a Japanese investor?	The company looking for such investors, in-licensee or companies in APAC region (Mainly in Japan and China) who would like to in-license and use/provide service and/or distribute our technology. **Business and Commercial advantages:** No similar technology in the region therefore the market is absolutely free to the in licensee company. The technology is guarantee the high technological and market benefit.
Company (source) name	**G&G Plant Protection and Trade Ltd.**
Address	**H-6726 Szeged, Torockói str. 3/B.**
Main activity	**Supplementary overland transport services and special railway machinery**
Contact details	**Contact person:** Mr. Bence Molnár **Contact e-mail:** iroda@gesgkft.hu **Website:** http://www.gesgkft.hu/gg/

Dairy cattle pH rumen bolus with revolutionary opto-chemical pH-metering sensor.	
Stage of the development	Prototype Available
Where has this technology offer been published/introduced/ described before?	Hungarian Innovation Techshow http://index.hu/tech/2015/05/27/greatest_hits_startup_innovacio_budapest_ijgyarto_istvan/ The Budapest New Technology Meetup Group http://www.meetup.com/newtech-42/events/219760096/ Pannon Breeding Agro Startup Forum http://www.agroinform.com/program_gazdasag/pannon-breeding-agrar-startup-forum-23141 Digital Factory incubator program http://digitalfactory.vc/moow-rumen-bolus/ 18-19 May, Return on Innovation, 2nd INTL eDIGIREGION Conference in Bucharest https://edigiregion.eu/roinnov-agenda-1819-may-return-o
Technological sector **According to the Field of science and technology classification**	4.2 Animal and Dairy science 4.3 Veterinary science 1.4 Chemical science
Non-Proprietary Description	**Short description of the technology:** The opto-electric sensor reliably measures the rumen pH level for 3 years without recalibration. The bolus transmits the pH and temperature data to the base station via radio frequency. The base station collects and sends the data to the cloud-based database and to the cross platform dashboard via internet connection. The professionals (caretakers, vets, nutritionists and scientists) can monitor data in order to take the necessary steps. In case of critical values notifications can be sent immediately to the mobile device of the responsible person. **Innovative aspects:** We developed a revolutionary opto-chemical pH-metering sensor, which can measure pH level without recalibration up to 3 years, and can be used in difficult conditions. The working principle is based on a patented polymer, which changes according to the pH level. We monitor these changes with an electro-optical sensor. It can be used in dirty environments or working fermenters, between 5-50 oC temperature. The dimensions of the sensor are under 20x20mm, which makes it suitable for a large number of applications. The form factor of the

	sensor can be flexible: it can be modified according to the application needs. **Economic advantages:** The 3 % cost increment with the bolus results in 19 % revenue growth in total which is a profitable investment for the farmer. Additionally the other costs will be reduced further because of less veterinary expenses and better fodder usage in case of healthier cows. **Commercial advantages:** Our products lifetime is up to 3 years without recalibration and the end user price is under 100 Eur. Competitor products lifetime is short (3-4 months) and they are costly. **Environmental advantages:** With this tehcnology we can increase milk yield and improve efficiency of the dairy cattle segment.
Value Proposition	Dairy cattle milk production can drop unexpectedly by 20 %. Poor fodder quality or protein overdose can cause this. The most common symptom is the bad pH level of the rumen which occurs already 1-2 days before the drop, and it needs several weeks of treatments and veterinary attention to restore it. This can be prevented by monitoring the rumen using our bolus.
Existing alternatives	They are pH rumen boluses using classic glass- or gel electrode technology. These products lifetime is short (3-4 months) and they are costly. In the last 70 years there was no significant innovation in the pH metering technology. The industry still use the classic glass- and gel-electrode pH sensors which were developed decades ago. These electrodes are expensive, can break easily and are also subject to accumulation of materials, which can foul the electrode resulting in erroneous pH readings. These devices also need frequent calibrations with is not possible intra-ruminal. Our products lifetime is up to 3 years without recalibration and the extremely cost effective compared with traditional technologies.
Collaboration(s)	Yes. The patented opto-chemical sensor is developed by Hungarian University. The patent is exclusively licensed by our company.
Asian connections	NO
Intellectual property status	Patent applied: P1500285 - Hungary
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Licensing (exclusive; nonexclusive; geographic/application specific) Purchase & Sale Agreement

	Outright Sale of business/technology
Prospects on international market?	This is an enormous market with a lot of potentials and also there are huge possibilities to increase the yield of the farms. There are 260m+ cows worldwide making 704m tones milk annually. Potential markets are Europe, USA, Canada, Japan.
Please explain why can this technology be interesting for a Japanese investor?	In addition to the rumen bolus we are continuously seeking for the different industries, where our world novelty sensor technology can be applied. Presently, the global pH meters market generates about $750 million annually (per Frost & Sullivan independent analysis).
Company (source) name	**moow.farm Kft**
Address	**Király sor 30. , 8000 Székesfehérvár, Hungary**
Main activity	**Rumen bolus and monitoring system development for the dairy cattle industry**
Contact details	**Contact person: Balázs Weibel** **Contact e-mail: balazs.weibel@moow.farm** **Website: moow.farmContact e-mail:** iroda@gesgkft.hu

RICENUT-INNO technology, a complex 3 part technology that can increase rice yield by 14-20%	
Stage of the development	Prototype Available
Where has this technology offer been published/introduced/ described before?	https://prezi.com/hq33qg6n_rp2/ricenut-inno-technology/
Technological sector According to the Field of science and technology classification	4.1 – Agriculture, Forestry, Fisheries 4.4 - Agricultural biotechnology
Non-Proprietary Description	**Short description of the technology:** The technology is divided into 3 parts: • Slow-release organic fertilizer derived from agricultural biogas digestate to provide macro- micronutrient in a well-balanced form that plays an important role in minimizing of nutrient runoff. • Certificated microbiological product to promote plant growth and to suppress soil-borne plant pathogens. • Silicon-based foliar fertilizer to create mechanical defense against panicle and leaf blast fungal disease. **Advantages:** • All technological elements are ready to use in ecological or integrated rice management, rice-aquaculture system. • Efficiency of the complex technology against rice pathogens: Rhizoctonia solani, Pyricularia grisea, Fusarium spp. Xanthomonas oryzae pv. Oryzicola. • Effective slow release NPK source originated from animal manure or biogas digestate **Technology goals:** • Suppress pathogens and to lower dose of synthetic fertilizers and pesticides. • Obtain profitable yield level depending on aptitude of the production site • Get more than 200-400 EUR surplus for 1 hectare.
Value Proposition	The globally unique technology ensures safe and environmentally friendly nutrition and conditioning of rice (Oryza sativa) using slow-release organic fertilizers, plant growth promoting effective microbes and silicon-based foliar fertilizer.
Existing alternatives	There is no similar complex rice cultivation method available.
Collaboration(s)	Yes, it was a collaboration project
Asian connections	Yes

Intellectual property status	Patent already applied in Hungary 13.07.2016
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Research & Development Agreement (s) Licensing Purchase & Sale Agreement (s)
Prospects on international market?	Rice is the main food source for half of the world's population. In most Asian countries there is a 3-5 ton rice yield instead of the potential value of 8-10 tons. Target markets: Hungary, Italy, Egypt, India, China, Vietnam, Indonesia, Brazil
Company (source) name	**Agrogeo Ltd**
Address	**Wesselényi u. 1/A , Kecskemét, H-6000 Hungary**
Main activity	**Environmental and agricultural research and development**
Contact details	**Contact person: Tamás Szolnoky** **Contact e-mail: agrogeo@mail.opticon.hu** **Website: http://www.agrogeo.hu/**

3.14 IRELAND

Country introduction

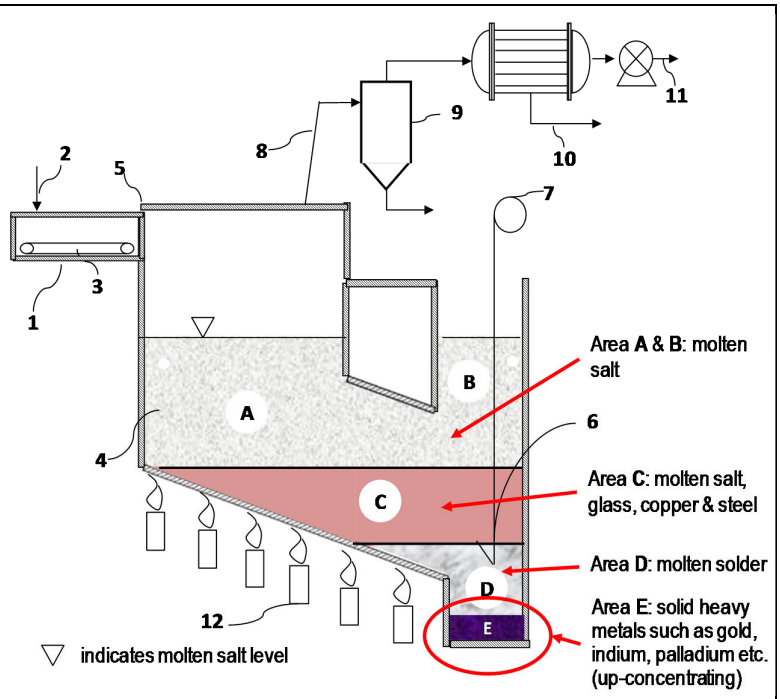
Capital	Dublin	**Official EU language(s)**	Irish, English
Geographical size	69 797 km²	**Political system**	parliamentary republic
Population	4 628 949 (2015)	**EU member country since**	1 January 1973
Population as % of total EU population	0.9% (2015)	**Currency**	Euro. Member of the Eurozone since 1 January 1999
Gross domestic product (GDP)	€ 214.623 billion (2015)	**Schengen area member**	No, Ireland is not a member of the Schengen Area
Gross Domestic Expenditure on R&D (GERD) as % of GDP	1.5% (2015)		

The most important sectors of Ireland's economy in 2014 were industry (22.4 %), public administration, defence, education, human health and social work activities (17.5 %) and wholesale and retail trade, transport, accommodation and food service activities (15.5 %). Ireland's main export partners are the US, the UK and Belgium, while its main import partners are the UK, the US and Germany.

List of selected top three technologies:

1	Recycling of waste printed circuit boards for metals (copper, gold, solder, and precious and critical metals)	Composite Recycling Ltd
2	Example based art creation through deep machine learning	Artomatix LTD
3	Digital Music Distribution Software	Evara

Recycling of waste printed circuit boards for metals (copper, gold, solder, and precious and critical metals)	
Stage of the development	Developing Prototype Prototype Available
Where has this technology offer been published/introduced/ described before?	1. CRL invented, developed the **PCBRec** to its current status and owns 100% the IP having filed a PCT patent application in 2014 (WO 2014/167139 A2). It received a positive, preliminary opinion from the British and European Patent offices i.e. all of the important claims were deemed novel. These official search reports confirm our own "Freedom to operate" searches, which revealed no issues with other patented process, confirming our leadership in the field. Hence, in February 2015, CRL filed for national patent protection in the US, Canada, Europe, Australia and Japan. 2. M. Sousa-Gallagher, F. Riedewald, Waste printed circuit board pyrolysis with simultaneous sink-float separation of glass and metals by contact with molten salt - a laboratory investigation, Birmingham May 2015, PYRO 2014. 3. F. Riedewald, M. Sousa-Gallagher, Novel waste printed circuit board recycling process with molten salt, MethodsX, (2015) 2 100-106 (downloadable from intenet)
Technological sector **According to the Field of science and technology classification**	Recycling of printed circuit boards and other composite plastics including pure plastics
Non-Proprietary Description	**Short description of the technology:** At the core of the **PCBRec** technology lays the innovative, patented, U-shaped reactor containing molten salt as shown in Figure 3. Vapours are not emitted from leg B allowing continuous access to leg B, as the molten salt seals leg B from the pyrolysis chamber. The basic chemistry underpinning the **PCBRec** process is pyrolysis, which has shown to have great potential as a solution to WPCBs, for instance, because it is self-sustaining by providing energy from the non-condensable gases (methane, propane). The **PCBRec** process operates as follows:



1. PCBs are added to charging vessel 1.
2. Charging vessel 1 is inerted with nitrogen 2.
3. The PCBs are charged with conveyor belt 3 into separation / pyrolysis liquid 4 (molten salt at 350-450°C). The PCBs decompose and separate into vapour, glass, metals and other materials.
4. The light solids such as glass build up in chamber 5 in area C below the molten salt and are recovered by removal device 6-7.
5. The vapours from the PCB resin decomposition are continuously removed from the chamber 5 by line 8; entrained solids are removed by cyclone 9, the vapours are condensed to pyrolysis oil (P-oil) 10. The non-condensable gases (methane, propane etc.) 11 may provide energy 12 for the process.
6. The solder composed of lead, zinc, tin etc. molten at the operating temperatures collects in area D as it is denser than the molten salt. The solder is removed for further processing

Figure 3. On the **PCBRec** metal recovery/concentration

by a third party (e.g. Johnson Matthey).

7. Stainless steel and copper accumulate above D as solids and are removed intermittently with removal device 6-7.
8. Gold, indium, palladium and other dense metals settle in area E where they can be removed by a drain or by removal device 6-7. **Note**: In touch screens indium is present as Indium Tin Oxide (ITO referred to as indium here) having a density of 7.1 kg/m^3 and will, therefore, settle below the solder phase as shown in Fig. 3.

	Innovative aspects: Novel aspects which set the patent-pending **PCBRec** technology apart from competing technologies are: • Ability of the **PCBRec** process to recycle WPCBs without prior shredding / granulating. • With low residence times of 20 min, the capital expenditure for any given throughput is minimised. • Solder separates to the bottom of the chamber for recovery, copper to the op as shown in Fig. 3. • U-shaped reactor, simple, no moving parts. • No scale-up issues (doubling the surface area of the molten salt doubles throughput – such simple scale up is not possible with other solutions). • Existing, proven technologies are used to produce the individual metals (copper, steel, solder) or up-concentrated ones (indium, gold, silver, rare earths etc.) from the **PCBRec** as schematically shown in Figure 4. **Economic advantages:** The process has an IRR of over 25%. **Environmental advantages:** Every year about 400,000 tons of WPCBs are generated in Europe of which some 90% are land filled or incinerated. PCBs are used in almost all electronic equipment such as televisions, computers or mobile phones. Hence **PCBRec** is an important contribution of solving a large EU and global solid waste problem having global commercial potential. Moreover the widespread adaption of the **PCBRec** process would also result in a reduction of leachate (e.g. lead) from landfills and a reduction of CO_2 emissions as metal recycling requires less energy than the extraction and processing of ore
Value Proposition	The **unique selling points** of the **PCBRec** technology include: • Economic • High yield of > 95%, exceeding current technologies • Ability to treat whole WPCBs eliminating the costly process operations of shredding and/or granulating. • Highly efficient treatment due to direct heat transfer with molten salt (20 min rather than hours to days), as the theoretically fastest heat transfer condition has been reached. • Only process capable of recovering indium and other critical metals, offering target users an additional revenue stream. This, however, must first be shown on a demonstration scale process.
Existing alternatives	WPCB recycling via pyrolysis is a self-sustaining process by providing heat from the combustion of the non-condensables. PCB pyrolysis plants are generally indirectly heated reactors, commonly rotary kilns. Examples of commercial and semi-

	commercial scale PCB pyrolysis systems show that small scale batch reactors and continuous rotary kiln reactors have been developed to commercial scale. However the economic viability of these plants is limited. Reasons why these plants are uneconomical include their long processing times of 2-4 hours and difficulties with scale up. The use of reactive salts or molten salt oxidation (MSO) has been proposed using molten NaOH-KOH. Only pure nickel, an expensive material, is suitable to withstand the corrosive nature of molten NaOH-KOH for long. The **PCBRec** process, on the other hand, uses inert, non-reactive LiCl-KCl and the material of construction of the chamber is common 316L stainless steel. Moreover in MSO most of the metals present in PCBs react with the salt making subsequent metal recovery more difficult.
Collaboration(s)	We have not entered any collaborations as yet.
Asian connections	We have no Asian connections.
Intellectual property status	CRL invented, developed the **PCBRec** to its current status and owns 100% the IP having filed a PCT patent application in 2014 (WO 2014/167139 A2). It received a positive, preliminary opinion from the British and European Patent offices i.e. all of the important claims were deemed novel. These official search reports confirm our own "Freedom to operate" searches, which revealed no issues with other patented process, confirming our leadership in the field. Hence, in February 2015, CRL filed for national patent protection in the US, Canada, Europe, Australia and Japan.
Is it possible to file Japanese patent application?	Yes, already applied for
Your commercialization objectives	Licensing Joint Venture Investment
Prospects on international market?	Significant regulatory drivers exist for the further development of the PCBRec technology in form of the WEEE Directive and the general drive towards the circular economy. In 2012 the WEEE Directive was re-issued (2012/19/EU) with a greater emphasis on recycling, as the recycling rate achieved was disappointing as acknowledged by the EU: only about a third of the electrical and electronic waste is treated in line with the Directive and the other two thirds are going to landfill or potentially sub-standard treatment sites in or outside the EU, India, Africa or China. Many US states, Canada, Australia, Japan and other countries legislate WEEE similar to Europe, turning the PCBRec process into a global business opportunity.

Please explain why can this technology be interesting for a Japanese investor?	This is a global opportunity with a patented process, which is radically new compared to other processes.
Company (source) name	**Composite Recycling Ltd**
Address	**CIT Campus, Bishopstown, Cork, T12Y275, Ireland**
Main activity	**Development of composite plastic recycling processes (this descriptions relates to printed circuit board (PCB) recycling)**
Contact details	**Contact person: Frank Riedewald** **Contact e-mail: frank.riedewald@comp-recycling.com** **Website: www.crlltd.com**

Example based art creation through deep machine learning By automatically creating variants of 3D assets based on inputs provided by 3D artists	
Stage of the development	Commercially available, where: artomatix.com
Where has this technology offer been published/introduced/ described before?	From most recent news articles to oldest: europa.eu Enterprise Ireland - SME phase 2 article creatifi.eu artomatix.com - SME award press release techcrunch.com venturebeat.com siliconrepublic.com
Technological sector **According to the Field of science and technology classification**	1.2 - Computer and information sciences
Non-Proprietary Description	**Short description of the technology:** Example based art creation through deep machine learning **Innovative aspects:** Cloud-based: accessible globally and across platforms through plugins to the most popular 3D software (e.g. Unity 5, Unreal Engine 4, etc) **Economic advantages:** By automatically creating variants of 3D assets based on inputs provided by 3D artists, the Artomatix Suite allows 3D studios to benefit from significant cost savings in wages, hardware, outsourcing, 3D software solutions and other related costs. **Commercial advantages:** We provide disruptive and ground-breaking 3D content creation offer. By providing the help of an artificial intelligence able to create infinite variants of 3D models, Artomatix has the potential to foster an enduring revolution in how 3D content is generated, globally and across many industries: Entertainment, VR/AR, Pre-visualisation, Industrial design, 3D printing. **Environmental advantages:** Reduction in asset creation time = reduction in all associated business running costs on huge scale (lighting, heating, electronics power usage, etc) **Societal advantages:** - Enriches our digital experiences: In years coming, it will be important to experience the same wealth of diversity in our digital

<table>
<tr><td></td><td>experiences as we have evolved to encounter in real life. - Lowers the barrier that individuals need to meet to express their creativity; democratising the 3D content creation industry.</td></tr>
<tr><td>Value Proposition</td><td>Artomatix revolutionises the way 3D art is created. Instead of designing a brick wall pixel by pixel for a videogame, one could take a photo of a brick wall with their phone and Artomatix will extrapolate the rest, imagining a new ‘virtual’ brick wall. Artomatix is offering this ‘virtual painter’ as a cloud-based SaaS that can increase the industries art asset production capacity from 69 million assets in 2016 to 240m+ by 2022. The Artomatix Suite reduces the average 3D asset time by 30%, while contributing to an increase in the average 3D asset quality.</td></tr>
<tr><td>Existing alternatives</td><td>Traditional procedural tools.

Shortcomings: they’re either very efficient but focused on niche use cases (SpeedTree: trees generation), or they’re versatile but require time and additional skill sets to generate results (Substance Designer: a detailed texture).

3D artist’s dilemma: spend time/energy/resources mastering niche procedural tools – which are inefficient and have limited offerings – or become extremely versed in more generalist procedural tools (Substance Designer) at the expense of their artistic skills: this solution involves creating art algorithmically through graph based programming instead of facilitating the expression of their talent. This 51 minutes tutorial explaining the creation of a single leaf speaks volumes.

The Artomatix Suite is “procedural 2.0” - it generates 3D meshes and full-PBR textures from smartphone scans, and helps apply these textures in any environment – it creates 3D content algorithmically while being applicable to all kinds of 3D assets without turning artists into programmers.</td></tr>
<tr><td>Collaboration(s)</td><td>No</td></tr>
<tr><td>Asian connections</td><td>No</td></tr>
<tr><td>Intellectual property status</td><td>Patent already applied for
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>62/383,283</td><td>USA</td><td>September 2nd 2016</td></tr>
</table></td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes</td></tr>
<tr><td>Your commercialization objectives</td><td>Licensing

Purchase & Sale Agreement (s)

Outright Sale of business/technology</td></tr>
</table>

Prospects on international market?	- Every major game studio globally (E.A, Konami, Sony, Ubisoft, Rockstar, Bethesda Softworks, Blizzard Entertainment, Activision, etc) - Licensing to game engines (Unity, Unreal, Crytek, Amazon Lumberyard, etc) - Further down the line, to the film industry (Warner Brothers, MGM, Universal, Paramount, 20th Century Fox, etc)
Please explain why can this technology be interesting for a Japanese investor?	**3D represents a vibrant €128 billion global industry (2016) poised for spectacular growth.** By 2022, the 3D market will represent €282 billion, a 2.5x increase from current levels. Importantly, this growth is a testimonial to the central role 3D plays in numerous high-profile industries: Entertainment (Animation, Visual effects, videogames), Virtual and Augmented reality (VR/AR), Pre-visualisation (Architecture, Online retail), Industrial design and 3D printing. **Studios creating 3D content are already at capacity** and are challenged to produce the current market demands. As 3D submarkets expand, the need for 3D content increases exponentially, both in terms of quantity and of quality. To address this challenge, 3D studios need to have access to services that sustainably reduce the time their 3D artists spend on creating high quality 3D assets, or else this growth opportunity will only benefit them at the expense of their profitability. We should be considered interesting to a Japanese investor as we are in the unique position to be able to provide a viable solution globally.
Company (source) name	**Artomatix LTD**
Address	**Artomatix Ltd, Dublin Institute of Technology Grangegorman, The Greenway Hub GW116, Dublin, D7, Ireland**
Main activity	**Cloud-based SAAS**
Contact details	**Contact person: Geoff O'Donoghue** **Contact e-mail: geoff@artomatix.com** **Website: www.artomatix.com**

Digital Music Distribution Software (Fully Automated, Do-It-Yourself, White Label)	
Stage of the development	Ready for Betta Testing Test Data Available
Where has this technology offer been published/introduced/ described before?	Europe, North America, South America, Caribbean www.eveara.com https://drive.google.com/open?id=0BzInB7N-_MCcdmhLaHVVRWJ0TkU
Technological sector **According to the Field of science and technology classification**	Technology, Software, Internet, Digital Distribution
Non-Proprietary Description	**Short description of the technology:** Fully automated do-it-yourself (white label) digital music distribution solution. **Innovative aspects:** Fully automated, do-it-yourself, white label. **Economic advantages:** Cuts out the middle-man. **Commercial advantages:** The most efficient way to distribute music. **Environmental advantages:** Replaces physical distribution. **Societal advantages:** Connects music content rights owners such as musicians, producers, labels, SMEs, enterprises, amateurs, as well as professionals directly with all relevant music services such as Amazon, Apple, Deezer, Google, KKBOX, Melon, QQ, Rhapsody, SoundCloud, Spotify, Tidal, etc. https://drive.google.com/open?id=0BzInB7N-_MCcdmhLaHVVRWJ0TkU
Value Proposition	The music industry is going through its biggest transition ever. Today we have about 45 million tracks digitally available, however, the true potential are a few billion. We are going to make these billions of tracks digitally available as well. Other aspects: We will be generating a lot of very valuable data as we will be able to analyze music consumption from a-z, from the very beginning to the very end. https://drive.google.com/open?id=0BzInB7N-_MCcdmhLaHVVRWJ0TkU
Existing alternatives	E.g. BelieveDigital, CDBaby, Ditto, Distrokid. However, we believe that we have the best solution in place, plus we are the only WHITE LABEL provider which is our USP.
Collaboration(s)	No.
Asian connections	No.

Is it possible to file Japanese patent application?	Not sure
Your commercialization objectives	Licensing Joint Venture Purchase & Sale Agreement (s) Outright Sale of business/technology Investment New company formation
Prospects on international market?	Worldwide.
Please explain why can this technology be interesting for a Japanese investor?	Japan is one of the largest and most interesting music markets therefore our solution can be extremely valuable for Japanese partners and/or investors.
Company (source) name	**EVEARA Limited**
Address	**16A West Beach, Cobh, Cork, Ireland**
Main activity	**Technology, Internet, Software, Digital Distribution**
Contact details	**Contact person: Levent Karahan (Founder & Chief Executive Officer)** **Contact e-mail: lk@eveara.com** **Website: www.eveara.com**

3.15 ITALY

Country introduction

Capital	Rome	**Official EU language(s)**	Italian
Geographical size	302 073 km²	**Political system**	parliamentary republic
Population	60 795 612 (2015)	**EU member country since**	1 January 1958
Population as % of total EU population	12% (2015)	**Currency**	Euro. Member of the Eurozone since 1 January 1999
Gross domestic product (GDP)	€ 1.636 trillion (2015)	**Schengen area member**	Yes, Schengen Area member since 26 October 1997
Gross Domestic Expenditure on R&D (GERD) as % of GDP	1.29% (2014)		

The most important sectors of Italy's economy in 2014 were wholesale and retail trade, transport, accommodation and food services (20.1 %), industry (18.5 %) and public administration, defence, education, human health and social work activities (17.2 %).
Italy's main export partners are Germany, France and the US while its main import partners are Germany, France and China.

List of selected top three technologies:

1	In-K Strain System: A turnkey, low cost, wireless Structural Health Monitoring Solution (Employing ultraflexible strain sensors based Carbon Nanotube ink, able to measure strain, temperature, tilt and seismic activity)	InSensus Project srls
2	EggPlant – not wasting life	EggPlant Srl
3	Smart multifunctional silica-based nanoparticles for Targeted Therapy	NANOSILICAL DEVICES s.r.l.

In-K Strain System: A turnkey, low cost, wireless Structural Health Monitoring Solution (Employing ultraflexible strain sensors based Carbon Nanotube ink, able to measure strain, temperature, tilt and seismic activity)	
Stage of the development	Prototype Available Our In-Star Strain System, based on composite materials, is already marked ready, commercialization to start in 2017.
Where has this technology offer been published/introduced/ described before?	our website (www.in-sensus.com), Website of EC dedicated to SME Intrument winners (http://cordis.europa.eu/project/rcn/205088_en.html), Tech Marketplace (www.tech-marketplace.com), , sponsor at 7th International Conference on Structural Health Monitoring of Intelligent Infrastructure (http://www.shmii2015.org/sponexhibitors.html)
Technological sector According to the Field of science and technology classification	2.2 - Electrical engineering, Electronic engineering, Information engineering
Non-Proprietary Description	The In-K Strain System gives a valid response to **the growing need for cost effective, easy to handle and remote Stuctural Health Monitoring technology** to increase the resilience and security of Civil Infrastructure and buildings, to reduce maintenance costs and to simplify remaining live prediction. The In-K Strain Sensor is a next generation strain sensor, realized in carbon nanotubes and elastic composite material. It can be easily applied to almost any surface. The In-K Strain Sensor is the heart of the In-K Strain System, an innovative Sensor System able to reduce sensibly the cost of Structural Integrity Monitoring. Four main values, **strain, temperature, tilt** and **seismic activity** (further values are easily integrable) are measured by the sensor system that is **easy to implement in any life stage** of the infrastructure, that needs **no wiring** and reports in **real time** and **wirelessly** to a **GUI** (graphical user interface) where the operator has a **on-a-glance information** of the structural integrity of the infrastructure. The advantages of using printed carbon nanotube ink in the sensor realization are multiple: lower production and raw material cost, sensible shortening of sensor production time, perfect repeatability, extreme flexibility in sensor size, easy printing of bi- and tri-axial sensor elements. Please have also a look at our website www.in-sensus.com where our technology and the different elements of our SHM Systems are explained.
Value Proposition	**Infrastructure** provides the **means for our society to function.** But **aging structures** are subject to inevitable and progressive decay of their resistant capacity, which ultimately may lead to sudden, unpredicted **structural failure**. Moreover, infrastructure

	may be subject to **unexpected, traumatic events**, so as **earthquakes** or **explosions**, which may be of such intensity to **compromise the structural integrity** of recent constructions and heritage buildings alike. In this context **Structural Health Monitoring (SHM)** is a term increasingly used to describe the possible implementation of a range of automated monitoring systems able to assist operators and inform about the **'fitness for purpose'** of structures under gradual or sudden changes to their state. Moreover, the **infrastructure of the future** is being often envisioned as having the ability to monitor its own health through a complex **network of sensors** that, in **real time**, will be able to **provide information of its structural integrity** and, if necessary, **activate corrective actions**. A significant challenge in developing SHM strategies for civil infrastructure is that every structure is unique, which, translated into practice, means **custom projects = high costs**. Today's state of the art solutions are very difficult and expensive to implement, most need to be placed during construction process and are little to not suitable for retrofit installations, hence to date **only a small part of infrastructures is monitored** through SHM. The **In-K Strain System** offers a completely new approach to SHM as it is a **standard, low cost and stand-alone solution** able to adapt to custom projects. Thanks to the **reduced costs** of our sensor system, SHM will be affordable for application on a large number of targets, up to date without continuous structural control. With **growing numbers** of installations a large amount of data sets will be collected, giving **insight** into **material and structure behavior** as well as **geophysical trends**. These **Big Data** will be available for better prevention.
Existing alternatives	To date, state of the art in detecting deformation is mainly based on: ▪ Optical fibers: very expensive solution that must be designed at the same time with the structure requires a very cumbersome hardware and is fragile during installation. ▪ Constantan strain gauges: a conventional sensor very difficult to install correctly on the field, because of small size and fragile wiring; for this reason they are used much more in the mechanical industry and automotive than in buildings and infrastructure SHM. ▪ Vibrating wire strain gauges: very rugged sensor, but bulky and to be incorporated in the structure during construction however; the wiring to the sensor remains a weak point after installation.

<table>
<tr><td></td><td>

Crack monitoring by disposable mechanical sensors: very limited solution, just a form of post-damage control.
Periodic visual inspection by technicians: very expensive method that only randomly detects deformations at the initial stages.

Overcoming the limitations of the existing SHM solutions was the reason for the development of the In-K Strain System. Also, the Sensor System can be applied to materials which to date represent great technical challenges for SHM, for example rods and cables of suspension bridges or carbon fiber structural reinforcements. The same goes for retrofit installations, which, to date, are very challenging for SHM projects as most deformation sensors need to be integrated into the construction material. The In-K Strain System is able to solve this criticality in an easy and cost-effective way, thus increasing the resilience of our cities to physical threats.
</td></tr>
<tr><td>Collaboration(s)</td><td>The core technology is entirely proprietary and patented. Important collaboration with SAATI for composite material and resin development, with MASTIKOL for adhesive formulation and Politecnico of Torino for testing.</td></tr>
<tr><td>Asian connections</td><td>No</td></tr>
<tr><td>Intellectual property status</td><td>Granted patent - patent number/s:
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>IT1410892</td><td>Italy</td><td>13.04.2012, granted since 25.09.2014</td></tr>
<tr><td>IT1420141</td><td>Italy</td><td>11.10.2013, granted since 22.12.2015</td></tr>
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Patent already applied for
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>EP 14796287.2</td><td>EPO</td><td>10.10.2014</td></tr>
<tr><td>US 15/028077</td><td>USA</td><td>10.10.2014</td></tr>
<tr><td>TO2015U000046</td><td>Italy</td><td>10.04.2015</td></tr>
<tr><td>PCT/IB2016/051922</td><td>PCT</td><td>10.10.2014</td></tr>
</table>
</td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes</td></tr>
<tr><td>Your commercialization objectives</td><td>Licensing (geographic/application specific)

Joint Venture</td></tr>
</table>

	Purchase & Sale Agreement (s) Investment
Prospects on international market?	Yes, in Italy, Switzerland, Germany, UAE, USA
Please explain why can this technology be interesting for a Japanese investor?	Japan is without any doubt the wolrd's leading country in earthquake engineering. But also Japan faces important problems related to aging infrastructure. The Japanese Ministry of Land, Infrastructure and Transport does estimate that the amount of investment to public facilities will be 70% for maintenance and renew compared to only 20% for new structures. By the year 2036 more than 100,000 bridges will reach age 50 and be in need of important maintenance intervention. The situation is equal to wore in the USA and in Europe. Efficient SHM solutions are able to reduce in an important way life cycle costs of infrastructure and the In-K Strain System is an innovative solution able to overcome the manifold limits of the today's state of the art SHM solutions.
Company (source) name	**InSensus Project srls**
Address	**Corso Matteotti 36, 10121 Torino (TO), Italy**
Main activity	**Development, production and sales of innovative Structural Health Monitoring Sensors and Systems**
Contact details	**Contact person: Melanie Diziol** **Contact e-mail: diziol@in-sensus.com** **Website: www.in-sensus.com**

EggPlant – not wasting life	
Stage of the development	Developing Prototype
Where has this technology offer been published/introduced/ described before?	Publication: Carofiglio et al., Complete Valorization of Olive Mill Wastewater through and Integrated Process for Poly-3-hydroxybutyrateProduction, Journal of Life Sciences, 9 (2015) 481-493 2015. Events: 2016 Forum on Industrial Biotechnology and Bioeconomy (IFIB2016) https://www.b2match.eu/ifib2016 2015 April, 8th International Conference on bio-based materials http://www.biowerkstoff-kongress.de/ 2015 PLAST http://www.plastonline.org/ 2015 Bio International Convention http://convention.bio.org/home.aspx
Technological sector According to the Field of science and technology classification	2.5 Material engineering 2.7 Environmental engineering 2.8 Environmental biotechnology 2.9 Industrial biotechnology 4.4 Agricultural Biotechnology
Non-Proprietary Description	Short description of the technology: EggPlant reuses wastewater coming from agro-food industry to make PHA (polyhydroxyalkanoates) bioplastic, through a 0 waste process. EggPlant counts on a proprietary patent pending technology, based on two fundamental processes: a multi-step membrane filtration of wastewater for the complete recovery of valuable components and a bacterial production of polyhydroxyalkanoates (PHAs), i.e. the bioplastic, from the highly carbon-rich concentrate residues from the first step. In the first process the wastewater is filtered through consecutive cross flow micro, ultra -UF-, nano-filtration -NF- and reverse osmosis RO. The NF-concentrate contains high added value compounds (e.g. polyphenols, proteins) that can be readily commercialized. Moreover ultra-pure clean water is recovered. The final concentrate contains useful nutrients (mainly sugars) for selected bacteria, which grow and accumulate PHAs. The PHAs produced are finally extracted and isolated in high purity. EggPlant solution allows a significant cost reduction, a geographical scalability and an increase of productivity in respect to the current available technologies. Besides EggPlant unique technical and business advantages are: adaptability to a variety of wastewater, standard PHA output, wastewater complete

	valorization (value-added products recovery, i.e. pure water, proteins, etc.), reduction of fermentation volume and costs, totally green and 0waste process. **Innovative aspects:** Complete valorization of waste and production of bioplastic, 100% biodegradable and bio-derived **Economic advantages:** Revenue from wastewater disposal and production and sell of bioplastic **Commercial advantages:** High scalability (wastewater from agro-food industry worldwide) **Environmental advantages:** Totally green and zero waste process **Societal advantages:** Production of bioplastic from wastewater (not edible – food sources). Full treatment and valorization of waste
Value Proposition	EggPlant faces two big environmental and social problems: food industrial wastewater (e.g. cheese whey, palm oil, candy, fruit juice, olive mill etc.) disposal and the pollution deriving from hydrocarbons-based plastics. EggPlant permits the complete valorization of waste generating bio-plastic nullifying the polluting components of wastewater. EggPlant has a 2-side business approach: wastewater disposal service and the bioplastic production and sales. Other short term revenue streams derive from the sales of side products (e.g. pure water, proteins, polyphenols, etc.) extracted through the filtration.
Existing alternatives	PHA bioplastic is manufactured with two main different approaches: a first one is starting from edible/natural resource and a second one, more sustainable, from waste streams. Bigger and older companies follow the first unsustainable approach, using food related raw materials, agricultural products and natural resources like sugar cane, corn, crops, etc. Moreover the high cost of the raw material negatively affects the price of final PHA (about 23%), which is too expensive to compete with traditional plastics. The second approach is followed by younger companies is more sustainable for the future using local low and nearly zero-cost raw material. EggPlant is the unique company that produces PHA with standard chemo-physical characteristics from organic variable wastewater. Besides EggPlant provides a game changing solution that permits to reducing the volume of fermentation (about 75%) and increasing PHA production capacity (>28%) compared than other PHA producer companies
Collaboration(s)	EggPlant developed its technology in strict collaborations with a number of stakeholders interested in wastewater treatment and bioplastic sectors (i.e. universities, research centers, companies, etc.). The IP (2 patent pending at PCT stage) is completely owned of EggPlant.

<table>
<tr><td>Asian connections</td><td>No</td></tr>
<tr><td>Intellectual property status</td><td>Patent already applied for
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>TO2014A000786
PCT/EP2015/071793</td><td>Italy
PCT countries</td><td>01/10/2014
22/09/2015</td></tr>
<tr><td>4201.3001
PCT/EP2016/059450</td><td>USA
PCT countries</td><td>27/04/2015
27/04/2016</td></tr>
</table></td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes</td></tr>
<tr><td>Your commercialization objectives</td><td>Licensing

Joint Venture

Outright Sale of business/technology

Investment</td></tr>
<tr><td>Prospects on international market?</td><td>The global availability of food wastewater and the strong flexibility of EggPlant process (Variable input – Standard output) are key competitive advantages in PHA market. EggPlant counts to bring the technology solution to the market establishing new business collaborations at different levels.</td></tr>
<tr><td>Please explain why can this technology be interesting for a Japanese investor?</td><td>Asia-Pacific region is one of the main PHA production area in the world. PHA manufacturing companies such as Kaneka Corporation - J and Tianjin GreenBio Materials – CHN are market leader in PHA landscape. So far these companies have developed technologies that are based on the use of edible resources as raw materials (high costs and LCA, ethical matters). EggPlant technology could represent a valuable and sustainable solution for producing PHA from locally available wastewater streams allover the Asian continent in specifically in Japan (efficient, effective, sustainable solution).</td></tr>
<tr><td>Company (source) name</td><td>EggPlant Srl</td></tr>
<tr><td>Address</td><td>Via Don Minzoni, 27 – 70044 Polignano a Mare (BA)</td></tr>
<tr><td>Main activity</td><td>Bioplastic production</td></tr>
<tr><td>Contact details</td><td>Contact person: Vito Emanuele Carofiglio
Contact e-mail: vitoemanuele@eggplant.it
Website: www.eggplant.it</td></tr>
</table>

Smart multifunctional silica-based nanoparticles for Targeted Therapy	
Stage of the development	Developing Prototype
Where has this technology offer been published/introduced/ described before?	- **Two patent applications** (**one European**, *EP2001514*, about to be granted and **one PCT** application, *PCT/IT2016/000111*) protect our technology - 5/11/2015 **BIOVARIA**, Munich Edition 2015 (https://www.biovaria.org/uploads/tx_biotechnologies/M2_Luigi_PasquaBioVariaPresentation.pdf; https://vimeo.com/128579386) - 10/21/2015 **SMAU (**laboratory of innovation and a market-place for business opportunities), Milan (Italy) (http://www.smau.it/milano15/) - 4/20/16 **BIOINITALY INVESTMENT FORUM & INTESA SANPAOLO STARTUP INITIATIVE:** NanoSiliCal Devices was selected as one of the best Italian biotech startups, so to be admitted until to the third and last phase of Arena meeting in Milan. - 7/11/16 **NANOSILICAL DEVICES IS CURRENTLY BENEFICIARY OF THE EUROPEAN FUNDING** "**SME INSTRUMENT PHASE I**" (**H2020**) titled "*Smart Multifunctional silica-based Nanoparticles for Targeted Therapy*" for the topic "***Supporting innovative SMEs in the healthcare biotechnology sector***" **PUBLICATIONS** Pasqua L., Leggio A., Sisci D., Andò S., Morelli C. Mesoporous silica nanoparticles in cancer therapy: Relevance of the targeting function. Minireviews in Medicinal Chemistry, 16, 2016, 743-753 Ceresa, C., Nicolini, G., Rigolio, R., Bossi, M., Pasqua, L., Cavaletti, G. Functionalized mesoporous silica nanoparticles: A possible strategy to target cancer cells reducing peripheral nervous system uptake Current Medicinal Chemistry, 20, 2013, 2589-2600 C. Morelli, P. Maris, D. Sisci, E. Perrotta, E. Brunelli, I. Perrotta, M. L. Panno, A. Tagarelli, C. Versace, M. F. Casula, F. Testa, S. Ando, J. B.Nagy, Pasqua L. (2011). PEG-templated mesoporous silica nanoparticles exclusively target cancer cells. NANOSCALE, vol. 3, p. 3198-3207, ISSN: 2040-3364, doi: DOI: 10.1039/c1nr10253b

	Pasqua L. , Cundari S. , Cavaletti G. , Ceresa C. , " Recent Development, Applications, and Perspectives of Mesoporous Silica Particles in Medicine and Biotechnology". Current Medicinal Chemistry, 2009, Vol. 16, n. 23, pp. 3054-3063. Pasqua L. , Morelli C. , Testa F. , Sisci D. , Brunelli E. , Nagy J. B. , Aiello R. , Ando' S. , Mesoporous Materials: Properties, Preparation and Applications. Burness L. T. , Cap. Chapter 13, " Hybrid Mesoporous Silica: A Preliminary Attempt to Engineer a drug Targeting Device", Hauppauge (NY, USA): Nova Science Pub. Inc.. 2009. pp. ---. Pasqua L. , Testa F. , Aiello R. , Cundari S. , Nagy J.B. , " Preparation of bifunctional hybrid mesoporous silica potentially useful for drug targeting". Microporous and Mesoporous Materials, 2007, 103, pp. 166-173.
Technological sector **According to the Field of science and technology classification**	Engineering and technology: Nano-technology Medical and Health sciences: Medical biotechnology
Non-Proprietary Description	**Short description of the technology:** NanoSiliCal Devices (NSD) produces Mesoporous Silica Nanoparticles (MSNs) loaded with an antineoplastic drug and functionalized with a targeting function able to selectively recognize a tumor marker on cell surface. The system allows the drug to be delivered directly to the tumor site, sparing healthy tissues from the toxic effects of the drug. MSNs are highly versatile and can be custom engineered. **Innovative aspects:** • ***Drug t*oxicity** will be reduced through drug conjugation to MSNs. • Reformulation through MSNs can renew Intellectual Property of **expiring drug patents**. **Economic advantages:** Patient non-adherence is responsible for $290B in avoidable medical costs annually, 10% of all hospitalizations, and an average per drug loss of 36% of potential sales. NSD can address this problem. Other advantages: reduced formulation development costs; possibility to access the accelerated regulatory pathway to go to market. **Commercial advantages**: The novel drug delivery is greatly advantageous to the market participants, and can extend the patent life of the drugs, thereby maintaining or increasing the

	return on investment. Furthermore, it becomes difficult for others to introduce a “me-too” product in the market. **Environmental advantages:** Nanoparticles preparation procedures are conducted at room temperature, and employing in many cases water as solvent. **Societal advantages:** - improved patient adherence - reduced side effects - improved disease management
Value Proposition	NSD offers significant value to the medical community and to our partners: • Improving patient adherence; • Improving therapeutic efficacy and reducing side effects for patients; • Life extension of marketed drugs close to off patent; • De-risking of Phase I and Phase II clinical trials; • Reducing formulation development costs.
Existing alternatives	NanoSiliCal Devices competitive advantage is a patented technology that has a versatile application in controlled release and/or targeted delivery. Three direct competitors have been identified: 1) Formac Pharmaceuticals (Belgium) specialized in drug delivery of low-solubility drugs, using oral solid formulations based on mesoporous silica. 2) Nanologica AB (Sweden), developing nanoporous silica for drug delivery and chromatography. 3) Leonardo Biosystems (Texas), developing a system with silica nanoparticles for treatment of metastasis, able to concentrate in the proximity of tumor cells. None of these companies can access the MSN technology of NanoSiliCal Devices. Their products could protect the drug from degradation due to organic fluids but are not targeted. MSNs are highly versatile and can be custom engineered to satisfy customer needs. Our use of nanomaterials and manufacturing processes with long track records gives us an advantage over companies using novel chemistries and/or novel manufacturing processes to achieve long- acting release.
Collaboration(s)	NanoSiliCal Devices has addressed its experimental activity on MSN-FOL-BTZ (bortezomib) in myeloma cells and animal models, since Millennium Takeda (the producer of VELCADE, i.e. bortezomib) is interested in these results (bortezomib patent is about to expire)
Asian connections	No.

<table>
<tr><td>Intellectual property status</td><td>Patent already applied for
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>EP2001514A1</td><td></td><td>03/17//2006</td></tr>
<tr><td>PCT/IT2016/000111</td><td></td><td>04/29/2015</td></tr>
</table></td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes</td></tr>
<tr><td>Your commercialization objectives</td><td>Research & Development Agreement (s)

Licensing

Joint Venture</td></tr>
<tr><td>Prospects on international market?</td><td>Our technology can refer to multiple GLOBAL markets. On one hand, Drug delivery systems (DDS) (US$225B in 2020, CAGR 5%), Nanotechnology based DDS (NDDS) ($44.5 B by 2019, CAGR 23%), NDDS in cancer therapy ($ 3,655.3 M in 2013 to $ 15,984.2 M in 2020, CAGR 23.7%). On the other hand, the Oncology drugs market ($111.9B by 2020, CAGR 7,1 %), with Multiple myeloma treatment market ($8.9B by 2021, CAGR 4.6%), as the niche market for our 1st product (MSN-FOL-BTZ (bortezomib)).</td></tr>
<tr><td>Please explain why can this technology be interesting for a Japanese investor?</td><td>This technological approach represents a disruptive innovation because it can be applied for the most part of classical chemotherapeutic agents and for several kinds of cancer. It improves prognosis and life conditions of cancer patients.</td></tr>
<tr><td>Company (source) name</td><td>NANOSILICAL DEVICES s.r.l.</td></tr>
<tr><td>Address</td><td>Via Pietro Bucci Cubo 44A, RENDE 87036, Italy</td></tr>
<tr><td>Contact details</td><td>Contact person: Luigi Pasqua (CEO)
Contact e-mail: info@nanosilicaldevices.it ;
luigi.pasqua@nanosilicaldevices.it
Website: www.nanosilicaldevices.com</td></tr>
</table>

3.16 LATVIA

Country introduction

Capital	Riga	**Official EU language(s)**	Latvian
Geographical size	64 573 km²	**Political system**	parliamentary republic
Population	1 986 096 (2015)	**EU member country since**	1 May 2004
Population as % of total EU population	0.4% (2015)	**Currency**	Euro. Member of the Eurozone since 1 January 2014
Gross domestic product (GDP)	€ 24.378 trillion (2015)	**Schengen area member**	Yes, Schengen Area member since 21 December 2007
Gross Domestic Expenditure on R&D (GERD) as % of GDP	0.68% (2015)		

The most important sectors of Latvia's economy in 2014 were wholesale and retail trade, transport, accommodation and food services (25.3 %), industry (16.4 %) and public administration, defence, education, human health and social work activities (15.1 %).
Latvia's main export partners are Lithuania, Russia and Estonia while its main import partners are Lithuania, Germany and Poland.

List of selected top three technologies:

1	Engineering and production of fish processing machinery	Peruza
2	Recycling of rubber products	Rubber Products
3	Anti-reflective and other high quality coatings on glass and acrylic	Groglass

Engineering and production of fish processing machinery	
Stage of the development	Ready for commercialization
Where has this technology offer been published/introduced/ described before?	Similar equipment is developed for Latvian and Croatian processors of fish World Seafood Processing fair 2016 in Brussels https://www.youtube.com/watch?v=0uFQByhi3YE
Technological sector According to the Field of science and technology classification	Automation using the servo drive
Non-Proprietary Description	**Innovative aspects:** replacement of hand work **Economic advantages:** High efficiency **Commercial advantages:** Fast payback **Environmental advantages:** Allow to keep freshness of the product by high speed of processing, limitation of bacterial impact **Societal advantages:** Release operators from monotone work in high humidity conditions
Value Proposition	Technology of autonobbing can be the key for lack of working hands for low paid operations. It can give the possibility to reduce the operation space.
Existing alternatives	Actually to get the same end product is necessary to employ 8 to 10 operators to reach the same capacity. Experience in Lavia say , that with autonobbing machine still is necessary only 2 operators.
Collaboration(s)	Equipment is developed only by PERUZA engineers, tested at industrial conditions on partners site
Asian connections	Since 2011 it was started relationships with Shoei Industries in Japan for investigation of market needs.
Intellectual property status	Patent already applied In Russia (2015)
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Research & Development Agreement (s) Purchase & Sale Agreement (s) Investment
Prospects on international market?	South Asia market
Please explain why can this technology be interesting for a Japanese investor?	According latest observations in Japanese fish industry it is still a lot of hand work
Company (source) name	**PERUZA**

Address	**Lejasrandoti, Mucenieki,Ropazu novads, LV**
Contact details	**Contact person: Arnis Petranis** **Contact e-mail: peruza@peruza.lv** **Website: www.peruza.lv**

Recycling of rubber products	
Stage of the development	Commercially available worldwide
Where has this technology offer been published/introduced/ described before?	European Patent Office database Exhibition Reifen No.1 tires and more, Essen, Germany Webpage: www.rubber-products.net
Technological sector **According to the Field of science and technology classification**	2.5. Engineering and technology / Materials engineering
Non-Proprietary Description	**Innovative aspects:** Recycled rubber is converted into a new type of high-quality devulcanized rubber products. **Economic advantages:** Produced Next Generation Rubber (NGR) is new component of rubber composition, which replaces expensive materials (e.g., rubber, carbon etc.), which leads to better quality of the final product and substantially reduced cost. **Commercial advantages:** NGR technology is available for licensing. By investing in the production of NGR, investment pays off for 30 - 36 months. **Environmental advantages:** Rubber Products LTD is focused on reduction of discrepancy between high growth in demand of rubber, low production from recycling industry and high volumes of accumulated rubber waste.NGR is 100% environmentally safe. No dangerous chemicals are used and no hazardous emissions during production. **Societal advantages:** NGR compounds decrease the price of rubber products to end consumer by up to 30%
Value Proposition	The biggest problem is the disposal of waste rubber devulcanization without sacrificing quality and without increasing the cost of raw materials. Next Generation Rubber technology helps to Recycle the world's stock of rubber & tire waste, Reuse recycled rubber in production of new products without sacrificing quality, Reduce world consumption of oil and rubber trees.
Existing alternatives	The largest companies with competing solutions currently produce recycled rubber with technology that yields lower quality rubber suitable for low quality material production. Rubber Products Ltd estimates that only one of the companies produces more than 10 000 tons of product yearly. Taking into account the growing increase of rubber products, even if the existing

<table>
<tr><td></td><td>companies increase their production amount, the market will still be open for new rubber manufacturers. Another advantage of Rubber Products Ltd regarding licensing is company's offered 'full-service-pack' of licensing, which includes not only selling the license but also technical support and tailoring of equipment for licensed company, sharing of 'know-how' and maintenance support.</td></tr>
<tr><td>Collaboration(s)</td><td>Elastomer Research testing B.V. in The Netherlands; Baltijas Gumijas Fabrika (Baltic Rubber Factory in Latvia); Engineering Institute of Polymer Materials and Dyes in Poland; Kaunas University of technology in Lithuania; Riga Technical University in Latvia; DURAM rubber products in Israel; Belarusian State Technological University; Cooperation with LIAA (Investment and Development Agency of Latvia) in the program Rubber Products LTD global marketing activities in EU and CIS countries.</td></tr>
<tr><td>Asian connections</td><td>No</td></tr>
<tr><td>Intellectual property status</td><td>Granted patent - patent number/s:
<table>
<tr><th>Number</th><th>Country</th><th>Application date</th></tr>
<tr><td>WO 2015/083109 A1</td><td>worldwide</td><td>11 June 2015</td></tr>
<tr><td>PCT/IB2014/ 066580</td><td>European Union</td><td>30 June 2016</td></tr>
</table></td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes</td></tr>
<tr><td>Your commercialization objectives</td><td>Research & Development Agreement (s)

Licensing

Joint Venture

Purchase & Sale Agreement (s)

Outright Sale of business/technology

Investment

New company formation</td></tr>
<tr><td>Prospects on international market?</td><td>The tire manufacturing industry is the largest consumer of raw rubber material and the producer of rubber materials in the world. NGR products offer producers a competitive advantage by reducing price of production, while also allowing for recycled rubber products to be reused instead adding to the already large amount of rubber waste. Bringing NGR products to the market, will also help achieve the European Innovation Union initiative for smart, sustainable, and inclusive growth.</td></tr>
</table>

Please explain why can this technology be interesting for a Japanese investor?	The production volume of automobile tires decreased by 5.4% to 151.82 million tires in 2015 in Japan according to Ministry of Economy. But still the amount is very big so waste and environmental actual problem that needs to be sold. NGR is produced from waste tires and can be added to fresh rubber compound that is cheap, green and effective.
Company (source) name	**Rubber Products LTD**
Address	**Jurkalnes street 15, Riga LV 1046, Latvia**
Main activity	**Rubber waste recycling, development of new technologies**
Contact details	**Contact person: Igor Jevmenov** **Contact e-mail: i.jevmenov@rubber-products.net** **Website: www.rubber-products.net**

Groglass makes anti-reflective and other high quality coatings on glass and acrylic	
Stage of the development	Commercially available **from Groglass SIA**
Where has this technology offer been published/introduced/ described before?	Additional information and references are available in the home page of Groglass® : http://groglass.com/references http://groglass.com/about General explanatory information is available in the corporate video: https://youtu.be/qQdNLW7apqk
Technological sector **According to the Field of science and technology classification**	Nano-technology
Non-Proprietary Description	**Short description of the technology:** Regular glass is coated with multi-layer molecular thin films with a total thickness equal to ~1/400th to achieve an effect of virtually "invisible" glass. The anti-reflective coating allows Artglass™ and Sapphire™ products to achieve the highest level of transparency and UV-protection. **Innovative aspects:** Artglass™ and Sapphire™ reduces unwanted residual reflections to < 1%. This is 8 times less than regular glass. Artglass™ increases the transmission of light by 8%, allowing it to reach >98%, thus enhancing the true and undistorted colours of any item behind the glass. In the meantime Artglass™ and Sapphire™ can undergo the same processing as ordinary glass: cutting, edgework, gluing, and printing. **Economic advantages:** The anti-reflective products offered by Groglass® are suitable for various applications and can help to generate profit to companies representing various sectors. **Commercial advantages:** The product is easy to promote and the added value is obvious and self-explanatory once marketing materials such as a comparison frame (example below) is presented.

	 **Environmental advantages:** Manufacturing process does not leave harmful effect on the environment – it is run on electricity and does not involve emission of contaminants into the natural environment. **Societal advantages:** Value added glass such as Artglass™ can be used to make showcases for exhibiting national treasures and to help enhance the value and beauty of displayed objects (paintings, artifacts and valuables) perceived by the viewer.
Value Proposition	Artglass™ glass and acrylic products ensure the best visibility and the lowest reflection along with high durability. Anti-reflective Acrylic is perfectly suited to protect valued items during increased seismic activity because it is approximatelly 20 times more durable and two times lighter than glass.
Existing alternatives	There are only a few companies worldwide producing similar products. However the recently developed technology of Groglass® allows to offer the highest quality cost efficient products, a powerful combination possible due to a very efficient production process achieved by a modern technology. Groglass® utilizes a technology which can be described as currently the worlds largest vertical double sided magnetron sputtering machine where Anti-Reflective metal oxide coating is applied on one or both glass surfaces in a single manufacturing step.
Collaboration(s)	Various companies and institutions across the world, more information available in the web page: http://groglass.com/cooperation
Asian connections	Groglass® has distributing and processing partners in China, Singapore, South Korea, India and Thailand for a duration of two to five years.
Intellectual property status	Granted patent
Is it possible to file Japanese patent application?	No

Your commercialization objectives	Purchase & Sale Agreement (s) **of its coated products**
Prospects on international market?	Artglass™ already is the preferred choice for many glass industry professionals worldwide such as museums, art galleries, design stores, television, electronic display and top quality refrigerator producers. Sapphire™ anti-reflective glass can also be used for refrigerators in shopping centers – it can increase the energy efficiency while providing great transparency of groceries or other products behind the glass. Such a solution is becoming increasingly popular in great economies of Europe, for example Germany.
Please explain why can this technology be interesting for a Japanese investor?	Anti-reflective Acrylic is perfectly suited to protect valued items during increased seismic activity because it is approximatelly 20 times more durable and two times lighter than glass. Japan is a manufacturer of various electronic devices – Sapphire™ is suitable to be used for electronic displays in private or commercial areas, for example train stations.
Company (source) name	**Groglass SIA**
Address	**Katlakalna 4b, Riga, LV-1073**
Main activity	**Development and manufacturing of anti-reflective and other high-performance coatings on glass and acrylic.**
Contact details	**Contact person: Kristine Strautane** **Contact e-mail: kristine@groglass.com** **Website: www.groglass.com**

3.17 LITHUANIA

Country introduction

Capital	Vilnius	**Official EU language(s)**	Lithuanian
Geographical size	65 286 km²	**Political system**	parliamentary republic
Population	2 921 262 (2015)	**EU member country since**	1 May 2004
Population as % of total EU population	0.6% (2015)	**Currency**	Euro. Member of the Eurozone since 1 January 2015
Gross domestic product (GDP)	€ 37.124 billion (2015)	**Schengen area member**	Yes, Schengen Area member since 21 December 2007
Gross Domestic Expenditure on R&D (GERD) as % of GDP	0.95% (2013)		

The most important sectors of Lithuania's economy in 2014 were wholesale and retail trade, transport, accommodation and food services (32.7 %), industry (23.6 %) and public administration, defence, education, human health and social work activities (13.9 %). Lithuania's main export partners are Russia, Latvia and Poland while its main import partners are Russia, Germany and Poland.

List of selected top three technologies:

1	Method and equipment of steel rope quality diagnostics	VIlnius Gediminas Technical university
2	Silicon Carbide and Gallium Nitride wafers scribing / dicing technology and optical engine.	Evana Technologies, Ltd.
3	Very large deployable VHF or UHF antenna array for nanosatellites	Vilnius University

METHOD AND EQUIPMENT OF STEEL ROPE QUALITY DIAGNOSTICS	
Stage of the development	Tested in the lab (proof of concept) Developing Prototype;
Where has this technology offer been published/introduced/ described before?	R&D conferences, introduction to embassies of other countries, exhibitions (national, international: LT, CIFTIS), during the foreign business visits
Technological sector **According to the Field of science and technology classification**	Mechanical engineering
Non-Proprietary Description	**Short description of the technology:** Aim of invention – to create new non-destructive method of steel rope diagnostics, intended to use it during equipment exploitation or for independent rope diagnostics; to define necessary additional equipment (in addition to standard) for this method implementation. There is presented method of steel rope non-destructive diagnostics and equipment for its realization, base on automatic determination of broken wires on diagnosed rope surface. Broken wires are searched in each rope fragment separately, sequentially checking all length of rope. In each fragment of rope, after clamping rope near end of fragment, using vibrator, transverse vibrations of rope is excited; this causes rotational vibration of rope and thus rotational vibrations of endings of broken wires. Frequency of vibrations is adjusted so, that vibration would occur in resonant frequency zone of clamped fragment of rope, for example, lowest rotational vibration resonant frequency. These vibrations cause intensive vibrations of end of broken wires, which are registered using special sensor set. This sensor set has shape of ring and sensitive surface of sensors are turned to internal side and covers rope with small gap. **Innovative aspects:** This method allows simply, using cheap and simple equipment to control one of key rope security parameter – broken wires of rope surface in rope, which is mounted in equipment, for example, loaded by lift cabin or in separated rope. This method differs from existing methods so, that broken wires on rope surface are found by dividing rope into control fragments, tensing the fragment by static force and performing diagnostic measurements in every diagnostic fragment of rope sequentially. In every diagnostic rope fragment, tensioned by static force, rope rotational – transverse resonant vibrations are excited using vibrator. In order to achieve this, in to places rope is attached

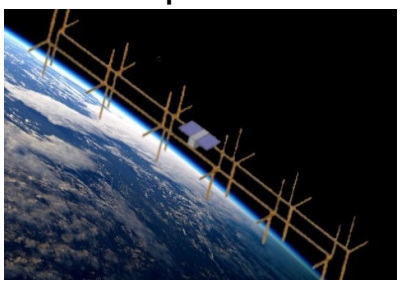
	tightly to stiff vibrator body using special clamps. Thus vibrations or rope take place only in small fragment between rope connections to vibrator frame. Resonant vibrations of rope creates transverse vibrations of broken ropes on rope surface. These vibrations are registered by original set of sensors; internal surface of sensor set has shape of inner ring surface. This ring surface covers rope with tiny gap. During measurement sensor set is moved along rope fragment axis of symmetry and vibrating broken wires inducts signal in set of sensors. Presence of signal informs about presence of broken wires in sensor position of rope fragment. After measurement of fragment, next fragment is diagnosed. **Economic advantages:** This invention is intended to use for diagnostics of various ropes in lifting equipment. Proposed method is based on obtaining fact of broken rope wires on rope surface. To achieve this rope is tensed by permanent axial load, rope is excited by transverse vibrations using vibrator, which are inducing transverse rotational vibrations. Oscillations of free ends of broken wires are measured by set of sensors and after signals are processed, presence and positions of broken wires are detected. Vibrator for rope excitation and set of sensors are mounted on special frame, which is tightly clamped on rope and separated fragment of rope, where vibrations are excited, set of sensors are moved along tested rope fragment. Procedure is repeated in next fragment of rope until all length of rope is tested. **Commercial advantages:** Method not sensitive to the magnetic features and can be used in the wet conditions as well as in the places, classic methods or rope control are too expensive (X-ray equipment). **Environmental advantages:** Not use any chemical components, not polluting at all.
Existing alternatives	There are known methods of rope diagnostics: 1) measuring of diameter decrease of rope during exploitation; 2) search of broken wires in rope manually. Decrease of rope diameter, used in first mentioned method is indicative, but not sufficient to perform reliability diagnostics, while this not revealed presence and amount of broken wires in the rope. Broken wires, loose from one side and unite with the rest of rope in the other end sticks out from rope surface and decrease rope strength characteristics. Without demounting rope from equipment, there is difficult to decide about rope strength and reliability. This can cause dangerous decreasing of
Intellectual property status	Granted patent in Japan. Patent already applied in South Korea

Is it possible to file Japanese patent application?	Yes, Already granted
Your commercialization objectives	Research & Development Agreement (s) Licensing
Prospects on international market?	This method can develop new business possibilities on rope control, where permanent monitoring is not available. Periodic rope check is necessary for many objects – elevators, technological equipment, loading equipment.
Please explain why can this technology be interesting for a Japanese investor?	Marine implementation, rope systems in the building, telecommunication masts, etc. Japan has possibilities in developing electronic equipment and implementing it inside country and possible export
Company (source) name	**VIlnius Gediminas Technical university**
Address	**Sauletekis ave. 11-302, Vilnius**
Main activity	**Research and study**
Contact details	**Contact person: Vilma Puriene** **Contact e-mail: vilma.puriene@vgtu.lt** **Website: www.vgtu.lt**

Silicon Carbide (SiC) and Gallium Nitride (GaN) wafers scribing / dicing technology and optical engine.	
Stage of the development	Ready for commercialization
Where has this technology offer been published/introduced/ described before?	Laser World of Photonics 2015, Munich. http://evanatech.com/technologies/silicon-carbide-wafer-scribing-dicing http://evanatech.com/technologies/gold-silicon-carbide-wafer-scribing-dicing http://digital.industrial-lasers.com/industriallasers/20160910/?pm=2&u1=friend&pg=24#pg24
Technological sector **According to the Field of science and technology classification**	1.3: Physical sciences 2.2: Electrical engineering, Electronic engineering, Information engineering 2.3: Mechanical engineering 2.5: Materials engineering
Non-Proprietary Description	**Short description of the technology:** Fast laser scribing technology for SiC and GaN wafers. With high quality cut profile of separated chips of devices. For rising market of very promising new electronic material SiC ang GaN. **Innovative aspects:** Currently available dicing speed is 10-20mm/sec, with high energy consumption and high running costs for tools. We are providing dicing speed 300mm/sec, with low energy laser and almost zero running costs for tools. **Economic advantages:** Our technology and tools makes much faster development of a new material based semiconductor devices industry. New opportunities for technologies development in a very broad range of sciences makes cheaper new high-tech products. **Commercial advantages:** Throughput of the systems based on our technology are higher more than 5 fold and running costs are lower more than 5 fold. **Environmental advantages:** Our technology requires much less energy and consumption materials to achieve desired result compare with current available technologies. **Societal advantages:** Require education, and technical skills, less hard physical work. The result of our technology implementation will generate new technologies and new kind of activities and society new skill and knowledge development.
Value Proposition:	Our technology is going to solve hard materials (like SiC and GaN) dicing problems: makes technology process much faster, efficient, cheaper. Compare with current technologies that are slow, energy and consumption materials recipient.

Existing alternatives	Dicing SiC and GaN wafers with diamond saw: dicing speed is about ~10 mm/sec. Diamond saw (price ~$100 per saw) average consumption is one saw per wafer. So running costs are very high. Dicing SiC and GaN wafers with high power laser to achieve full cut of the material: dicing speed is about ~20mm/sec; high power consumption (high power laser necessary); laser cooling water consumption; wafer and devices on it heating and microchip electronics destruction high probability; big "street" width between devices – low device density on the wafer.
Collaborations	No. Just inquires for demonstration from a couple of potential customers.
Asian Connections	Yes. Inquiries for demonstration. Period 2012-2016. Personally, I was working in Japan in 1999-2011. I have 8 patents granted in Japan.
Intellectual property status	Patent already applied for: WO2016059449 – WIPO - 2013-10-13 PCT/IB2015/054143 – WIPO - 2015-06-01 104133450 – Taiwan - 2015-10-13 105117020 – Taiwan - 2016-05-31 PCT/IB2015/053486 – WIPO - 2016-06-14 PCT/IB2016/054183 – WIPO - 2016-07-13
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Research & Development Agreement (s) Licensing Joint Venture Purchase & Sale Agreement Outright Sale of business/technology Investment New company formation
Prospects on international market?	Wide: US, EU, Japan, China, Taiwan, S.Korea.
Please explain why can this technology be interesting for a Japanese investor?	In japan there are 10-15 companies that are working on development of electronics based on both substrates, for SiC: • Fuji Electric; Mitsubishi Electric; ROHM Semi; Renesas; Shixon; HAST Co; Nippon Steel Corporation; Bridgestone Co.; HOYA Advanced semiconductors; Toshiba; Matsushita Electric Industrial; Showa Denko; Sumitomo Mitsubishi Silicon Corporation; and for GaN: • Fujitsu; Mitsubishi Electric.

	Very promising market for new devices is growing worldwide.
Company (source) name	**Evana Technologies, Ltd.**
Address	**Mokslininku 2A, 120**
Main activity	**Laser processing technologies for hard materials development and tools supporting these technologies development and manufacturing.**
Contact details	**Contact person: Dr. Egidijus Vanagas** **Contact e-mail: vanagas@evanatech.com** **Website: http://evanatech.com/**

Very large deployable VHF or UHF antenna array for nanosatellites	
Stage of the development	Tested in the lab (proof of concept)
Where has this technology offer been published/introduced/ described before?	Not public introduced before
Technological sector [According to the Field of science and technology classification]	Engineering and technology Communication engineering and systems Code: 2.2
Non-Proprietary Description	**Short description of the technology:**  The number of applications of one-way or two-way communication between devices on earth and satellites in space are increasing. Applications of satellite communication often have one common problem: as the number of devices on earth increases, the signals of these devices overlap in time and thus signal reception from space becomes impossible. The concept that we propose has the following advantages: 1. Antenna beam will be electrically steerable and capable of forming multiple beams. 2. Retracted antenna will be small enough to fit in a small nanosatellite such as a CubeSat. 3. An antenna with two perpendicular polarizations can be implemented 4. The proposed design allows for an antenna that will resist rotation and even stabilize itself. 5. The proposed design minimizes use of building material as it is a “monopole” antenna. **Innovative aspects:** Invention is based on 2 approaches. • Antenna array is “monopole”. It provides almost the same radiation pattern as dipole array, but requires less material, because a second branch of dipole is eliminated. As a second dipole branch operates

	support structure. By adding second set of monopoles in opposite direction and exciting in proper phases, we can achieve an additional 2dB gain. Thus, the monopole approach antenna provides higher gain using less material. • Antenna is made from spring tape. It compactly rolled up in the stowed position. During deployment, monopoles extend from supporting tape. **Economic advantages:** It is possible to fit antenna into very small satellites, thus significantly reducing costs of space missions. It provides to use less expensive LEO satellites for communication services. **Commercial advantages:** Opportunity to create new services on earth. More devices could operate at the same time. **Environmental advantages:** Our technology requires less (4-20 times) power on earth side equipment, consequently smaller battery and equipment. **Societal advantages:** Technology could be used for social-related activities as Internet, IoT or communications services providing in global scale. This is a game-changing improvement for nanosatellite systems. Commercial usage of described antennas would allow for breakthrough in nanosatellite applications.
Value Proposition	Our technology solves message collision problem of multiple devices on Earth. Thus more devices could be used. Due to high directivity of our antenna, radiation power of devices can be significantly decreased.
Existing alternatives	1. One of possible solutions to a signal collision problem is the usage of high directivity antennas. Such solution was used in AISAT mission by DLR. Solution used by DLR has some disadvantages: • The antenna was not steerable electronically • In the stowed state antenna is too large for cubesat. • Circular polarization antenna provides 3dB loss when receiving signal with linear polarization. • Due to asymmetry, atmospheric drag constantly rotates antenna. 2. Similar issues have emerged in the ICARUS project which is aimed at monitoring small birds from space (http://icarusinitiative.org/sites/default/files/ICARUS%20SP%20Datasheet%20A3%20(2).pdf). In this project antennas will be mounted at the ISS and will weigh tens of kilograms. In contrast, antennas proposed here are estimated to be less than 2 kg in weight.
Collaboration(s)	No

<table>
<tr><td>Asian connections</td><td>1.Towards organic laser transistor (Laser-OTFT) Scientific area & field Physics & Technology Physics & Chemistry Duration 2015-2017 Budget of Lithuanian partner, EUR 79 881 Prof. Saulius Juršėnas Vilnius University Prof. Chihaya Adachi Kyushu University
2. Dielectric and Piezoelectric Enhancements of New Nanostructured Ceramics with High-density Artificially-made Extrinsic MPB Structures (eMIC) Scientific area & field Physics & Technologies Physics & Material engineering Duration 2016-2018 Budget of Lithuanian partner, EUR 79 848, Dr. Maksim Ivanov Vilnius University Prof. Satoshi Wada University of Yamanash.
3. Ultra-broadband dielectric spectroscopy of relaxor ferroelectrics (UDIS) Scientific area & field Physics & Technology Physics & Material engineering Duration 2016-2018 Budget of Lithuanian partner, EUR 73 953, Prof. Jūras Banys Vilnius University Prof. Seiji Kojima University of Tsukuba.
4. Fabrication of low crystalline calcium phosphate and its initial in vivo evaluation for artificial bone substitutes with higher osteoconductivity (KALFOS) Scientific area & field Physics & Biomedicine Chemistry Duration 2015-2017 Budget of Lithuanian partner, EUR 79 983 Dr. Prof. Aivaras Kareiva Vilnius University Prof. Kunio Ishikawa Kyushu University</td></tr>
<tr><td>Intellectual property status</td><td>Patent already applied for
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>PCT/IB2016/ 052438/</td><td>Not chosen yet due to PCT</td><td>2016/05/24</td></tr>
<tr><td>2015 034</td><td>Lithuania</td><td>2015</td></tr>
</table></td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes</td></tr>
<tr><td>Your commercialization objectives</td><td>Licensing

Outright Sale of business/technology</td></tr>
<tr><td>Prospects on international market?</td><td>Usually space applications are global and international in its nature.</td></tr>
<tr><td>Please explain why can this technology be interesting for a Japanese investor?</td><td>Japan is moving forward in space applications and has own space agency JAXA.</td></tr>
<tr><td>Company (source) name</td><td>Vilnius university</td></tr>
<tr><td>Address</td><td>3 Universiteto St, LT-01513 Vilnius, Lithuania</td></tr>
<tr><td>Main activity</td><td>Academia</td></tr>
<tr><td>Contact details</td><td>Contact person: Saulius Rudys
Contact e-mail: rudys@elmika.com
Website: http://www.vu.lt/</td></tr>
</table>

3.18 LUXEMBOURG

Country introduction

Capital	Luxembourg	**Official EU language(s)**	French, German
Geographical size	2 586 km²	**Political system**	parliamentary constitutional monarchy
Population	562 958 (2015)	**EU member country since**	1 January 1958
Population as % of total EU population	0.1% (2015)	**Currency**	Euro. Member of the Eurozone since 1 January 1999
Gross domestic product (GDP)	€ 52.112 billion (2015)	**Schengen area member**	Yes, Schengen Area member since 26 March 1995
Gross Domestic Expenditure on R&D (GERD) as % of GDP	1.26% (2014)		

The most important sectors of Luxembourg's economy in 2013 were the financial and insurance activities (26.9 %), wholesale and retail trade, transport, accommodation and food services (17.4 %) and public administration, defence, education, human health and social work activities (16.1 %).
Luxembourg's main export partners are Germany, France and Belgium while its main import partners are Belgium, Germany and France.

List of selected top three technologies:

1	Compact, high output, long-living neutron generators	Gradel sárl, specifically NSD-Gradel-Fusion Department
2	Adaptive Headlight for Motorcycles	Quality Electronics Design
3	Intelligent Sensor (for an Adaptive Headlight for Motorcycles)	Quality Electronics Design

Compact, high output, long-living neutron generators	
Stage of the development	Commercially available Other development stage: Neutron generators regularly upgraded (R&D) + applications targetted where our neutron generators are used to solve a specific task (e.g. radiography or elemental analysis)
Where has this technology offer been published/introduced/ described before?	Our website(s), neutron generator workshops and conferences, marketing brochures: www.gradel.lu www.nsd-fusion.com
Technological sector	IPC: H05H 7/06; H05H 15/00; G01V 5/10; G01N 23/05; G01N 23/09; G01N 23/10; G01N 23/221; G01N 23/222 CPC: G01T 1/166; G01T 1/167; G21B 3/006; H05H 1/03; H05H 2001/2431; H05H 5/047; H05H 2245/125; H05H 2277/10;
Non-Proprietary Description	**Short description of the technology:** Neutron generator based on Inertial Electrostatic Confinement where ions are generated by “glow discharge” and radially accelerated towards the plasma in the center where they collide with other ions. Contrarily to our competitors’ technologies, our target (the plasma) is not solid but gaseous. **Innovative aspects:** Our neutron generators have the highest life-time among similarly sized neutron generators (with similar neutron output). Reason is: our target is not solid, but gaseous, hence its degradation is almost zero. **Economic advantages:** Lighthouse technology based on nuclear fusion (=inherently safe) instead of nuclear spallation (as in nuclear plants). Market for pure neutron generator systems primarily driven by public research entities, hence small. Therefore, revenue increase possible at short term by application development (radiography and/or PGNAA). Larger revenue increase in mid-term by application to production of fast decaying medical isotopes. If done at end customer’s site (hospitals) then market opportunities huge (scalable business). Largest revenue increase expected with further increase of neutron output required for BNCT – Boron Neutron Capture Therapy, a very promising anti-cancer therapy. Given the small and compact dimensions of our neutron generators, those radiation treatments can be offered at any hospital (scalable business). **Commercial advantages:** Lowest lifecycle costs with smallest maintenance requirements gives our neutron generator technology clear advantages and a unique selling point. It is only since very recently that we reached neutron output levels that are at the same level as our direct

	competitors (Sodern from EADS and Adelphi in USA). Thermofisher and PhoenixLabs are not direct competitors. **Environmental advantages:** No Californium radioisotope required, can be switched off when not required. Environmental foot print is small compared to competitors' technologies. **Societal advantages:** Short term: PGNAA (Prompt Gamma Neutron Activation Analysis) is a wide-spread elemental analysis methodology applied e.g. in online mineral analysis. The same method can be applied to fast and cost effective detection of soil contamination. Hence, contaminated regions can be screened faster and cheaper, hence the overall de-contamination process is faster and cheaper. Mid term: Production of fast decaying medical isotopes at practically any hospital reduces the costs of the treatment and reduces the waiting lists. Long term: If output increased further, then application as highly promising anti-cancer treatment possible (BNCT – Boron Neutron Capture Therapy). Especially interesting since neutron source is very compact and mobile, hence BNCT can be offered at almost all hospitals (as in case of medical isotope production), not just next to e.g. large particle accelerator. In any case, our technology needs some more years of R&D to reach the required neutron output levels.
Value Proposition	The pure neutron generator (together with power supply) delivers only neutrons. In combination with a proper detection and data analysis system two applications are possible: Neutron radiography / tomography for the non-destructive testing of bulk material, and Prompt Gamma Neutron Activation Analysis (PGNAA) for bulk elemental analysis. The former can be used to overcome the screening limitations of X-ray which do not penetrate deeply. This can drastically reduce costs when screening e.g. complex systems which do not need to be disassembled before and re-assembled after screening. The latter (PGNAA) is used for online mineral analysis and fast soil screening (contamination), but can also be used e.g. in security screenings.
Existing alternatives	In the field of neutron radiography alternatives exist but only at few places located next to high output neutron sources (like spallation sources or particle accelerators). This makes it very difficult to develop a truly scalable business model. In the field of PGNAA alternatives are based either on Ca-252 radioisotope (which is produced only in USA as side product of Plutonium production) which is constantly emitting radiation and with steadily rising prices, or on target based neutron sources with much higher life cycle costs (each replenishment costs about 30-50% of original investment) and much lower life times (several

	hundred – several thousand hours depending on neutron output). These applications equipped with our neutron generators allow the increase the industrial range of application due to the lower lifecycle costs and significantly lower off-times and maintenance cycles.
Collaboration(s)	Our neutron sources have been developed by NSD-Fusion GmbH which was acquired by Gradel sárl in 2012, and since then by Gradel. Hence, the neutron generators can be considered an own development. For the neutron radiography / tomography we are preparing an experimental proof of concept with a partner who has developed a unique high fidelity imaging system (detector and camera).
Asian connections	NSD-Fusion GmbH sold many years ago an early prototype to a South Korean company and provided support in the following years. Hanshin Engineering is ours sales contact in South Korea. In India, our sales partner is Anatech Instruments. Currently we are preparing an offer for a request which will have an expected value of ~1 Mio €.
Intellectual property status	4 Patent granted: WO 2003019996 A1 WO 2008148525 A1 US 20080089460 A1 WO 1998019817 A1
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Licensing Purchase & Sale Agreement Outright Sale of business/technology Investment (We are considering multiple options)
Prospects on international market?	All applications be it elemental analysis (PGNAA) or radiography / tomography, or medical, are generally not limited by geographical means. There a very few constraints regarding delivering neutron generators to specific countries (e.g. North Korea) or to specific entities (Indian government prohibited, Indian companies allowed).
Please explain why can this technology be interesting for a Japanese investor?	Very recently we reached a product quality (life time + life cycle costs +output) that makes us highly competitive. Key is the attachment to an application. We believe that Japanese investors can help us with that and earn money with us. The mentioned applications and social impacts (see above) on short, mid, and

	long terms show that investing in this technology can be used to do good to people while earning money.
Company (source) name	**Gradel sárl, specifically NSD-Gradel-Fusion Department**
Address	**6 Z.A.E. Triangle Vert, L-5691 Ellange**
Main activity	**In NSD: Neutron Generators, Space Propulsion, Plasma Modelling**
Contact details	**Dejan Petkow (Dr.-Ing.)** **T: +352 39 00 44 53** **E: d.petkow@gradel.lu**

Adaptive Headlight for Motorcycles	
Stage of the development	Prototype available
Where has this technology offer been published/introduced/ described before?	The technology has been patented worldwide, including Japan. So the technology is or will be published through the patent offices.Patent application: 2013-524411 (final version to be published yet) Examinator: Norimasa IWASAKI https://worldwide.espacenet.com/publicationDetails/originalDocument?FT=D&date=20130902&DB=&locale=en_EP&CC=JP&NR=2013534192A&KC=A&ND=5
Technological sector	2. Engineering and Technology 2.2 Electrical and electronic engineering
Non-Proprietary Description	**Short description of the technology:** Adaptive Headlight for motorcycles, scooters and bicycles **Innovative aspects:** Reliable, easy and simple to solve a complex problem **Economic advantages:** Innovative and the market is looking for it now. **Commercial advantages:** A commercial good solution does not exist yet. This is a unique solution that works and that increases safety tremendously. **Environmental advantages:** It allows people with little money to ride a two-wheeler to go to work safely when it is still dark, instead of having the need to buy a car. **Societal advantages:** Increases the safety drastically. Reduces the risk for accidents.
Value Proposition	Today the problem of a good working adaptive headlight has not been solved yet. The problem is complex in terms of calculations, control and mechanics. Several projects failed so far. The proposed technology offers a simple mechanical solution with reduced cost, increased reliability and better control in a high stress environment (high accelerations). The existing prototype is mounted onto a Yamaha XJ600N and works fine on curvy roads. A unique feature is the fact that it can be mounted on a naked bike or a touring bike.
Existing alternatives	Existing alternatives use LEDs that switch on and off. Most of the time the light spot is not on the road where it should be (not illuminating the road where the driver needs to see the road) and it does not give the natural feeling you get with the proposed solution. Other problems related to the adaptive headlight is the fact that most control systems are too slow, so the light comes too late and not in the right position where it should be.
Collaboration(s)	No

Asian connections	Yes. In the nineties I was the business development manager of LMS (today a Siemens company) for 6.5 years for Asia. I visited P.R. China, Taiwan, South Korea, India, Malaysia, and Japan) during many occasions. In the recent years I visited P.R. China and the Philippines for business again. I also sold our Gnostic64 test system to P.R. China in the recent years.
Intellectual property status	Patent granted: US 9,028,117 B2 (USA) 10/56641 (France) Patent applied: 11 743 063.7 (EU) 201180039831.4 (China) 2013-534192 (Japan) 754/DELNP/2013 (India)
Is it possible to file Japanese patent application?	Yes, already done and received positive answer. We expect to receive the patent in the next coming months.
Your commercialization objectives	Licensing (Nonexclusive) Open for discussion. There might be some alternatives. It depends on the proposal.
Prospects on international market?	Yes, OEMs and the manufacturers of headlight systems
Please explain why can this technology be interesting for a Japanese investor?	A couple of years ago the Japanese government invested a research project to develop an adaptive headlight to increase the safety on a motorbike. Unfortunately this did not result into a commercial solution. Also Japanese motorbike manufacturer(s) invested in the development of an adaptive headlight. The solution was too complex, too expensive and was not reliable. The proposed patented solution is reliable, has a reduced cost and can be built with increased reliability for motorbikes. In the meantime competitors (USA and EUR) introduce, what they call “adaptive headlights”, but the proposed solutions are just marketing tools. They do not increase safety and do no help the driver of the motorbike in the dark. Most of the time these are LEDs that switch on and off, not delivering the expected result.
Company (source) name	**Quality Electronics Design S.A.**
Address	**32, rue des Romains**
Main activity	**Engineering**
Contact details	**Contact person: Ben Haest** **Contact e-mail: ben.haest@qed.lu** **Website: www.qed.eu.com**

Intelligent Sensor (for an Adaptive Headlight for Motorcycles)	
Stage of the development	Concept, Prototype available
Where has this technology offer been published/introduced/ described before?	For the development of the patented adaptive headlight of QED, a control system has been developed. The control system contains the required gyro sensors, a microprocessor and the control software. The software has been kept secret as calculations as such cannot be patented. The calculations are unique and solve the problem to have a fast and accurate control of the adaptive headlight. The proposed solution is the advanced concept of the existing prototype.
Technological sector	2. Engineering and Technology 2.2 Electrical and electronic engineering
Non-Proprietary Description	**Short description of the technology:** Intelligent Sensor for the Adaptive Headlight for motorcycles, scooters and bicycles. The sensor includes the gyro and the calculations for all types of motorbikes. **Innovative aspects:** A unique concept of a gyro sensor and the required calculations to control an adaptive headlight. **Economic advantages:** Innovative and the OEMs and headlight manufacturers have a problem to control fast and accurately. **Commercial advantages:** The proposed solution offers the opportunity for mass production to make it cheap for the OEMs to put an adaptive headlight on their motorcycle or scooter. It eliminates massive development costs for the OEMs and sullpiers. **Environmental advantages:** It allows people with little money to ride a two-wheeler to go to work safely in the dark, instead of having the need to buy a car. **Societal advantages:** Increases the safety drastically. Reduces the risk for accidents.
Value Proposition	Today every manufacturer of a headlight who wants to develop an adaptive headlight starts the development of a sensor and/or control system for every new design again. This makes it very costly. In most cases the control system is also too slow and too complex. The proposed solution is a control unit, including the gyro that is universal and can be mounted into every motorcycle. In this way the solution can be mass produced which makes it much cheaper and the OEM can tune the behavior of the headlight.
Existing alternatives	None
Collaboration(s)	No
Asian connections	Yes. In the nineties I was the business development manager of LMS (today a Siemens company) for 6.5 years for Asia. I visited P.R. China, Taiwan, South Korea, India, Malaysia, and Japan)

	during many occasions. In the recent years I visited P.R. China and the Philippines for business again and sold a number of systems in Asia.
Intellectual property status	None
Is it possible to file Japanese patent application?	YES, depending what the patent should apply for. I prefer to sign an NDA first and discuss the opportunities with the potential partner.
Your commercialization objectives	Licensing (Nonexclusive) New company formation Open for discussion. I want to protect the know-how by starting a new company or legal form that guarantees the secrecy. Licensing at this stage, just for the calculations and control algorithms, is not possible.
Prospects on international market?	Yes, OEMs and the manufacturers of headlight systems
Please explain why can this technology be interesting for a Japanese investor?	A solution does not exist in the market. It is a new idea that makes it easier and cheaper to put an adaptive headlight on a two-wheeler (motorcycle, scooter, …). It solves a problem that all OEMs have which makes them very much dependent on the competence and know-how of the headlight manufacturer. The proposed solution solves that: the OEM becomes independent of the supplier and creates new opportunities to implement an adaptive headlight. A good selling motorcycle has a production of maybe 10k units, limiting also the production of the adaptive headlight and sensor/control unit. The proposed solution is universal (fits on all motorcycles) and opens the door to mass production of 100k units and more, making it cheaper and accessible to all OEMs and models of motorcycles.
Company (source) name	**Quality Electronics Design S.A.**
Address	**32, rue des Romains**
Main activity	**Engineering**
Contact details	**Contact person: Ben Haest** **Contact e-mail: ben.haest@qed.lu** **Website: www.qed.eu.com**

3.19 MALTA

Country introduction

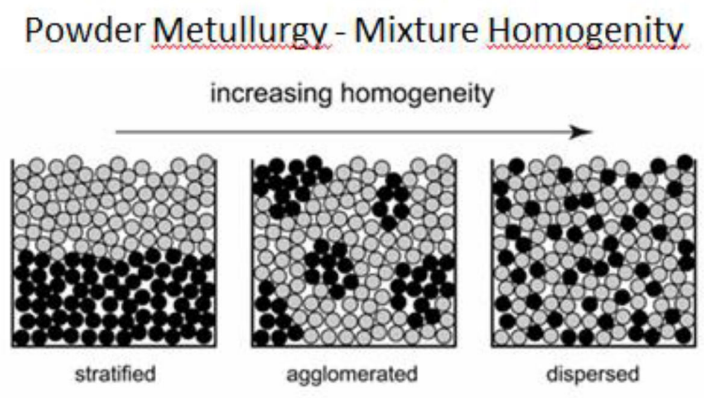
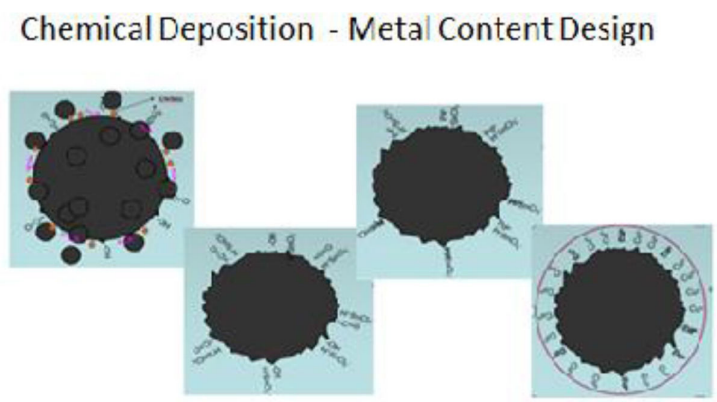
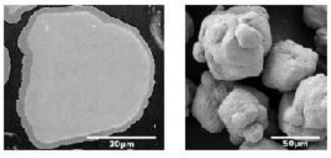
Capital	Valletta	**Official EU language(s)**	Maltese, English
Geographical size	315 km²	**Political system**	parliamentary republic
Population	429 344 (2015)	**EU member country since**	1May 2004
Population as % of total EU population	0.1% (2015)	**Currency**	Euro. Member of the Eurozone since 1 January 2008
Gross domestic product (GDP)	€ 8.796 billion (2015)	**Schengen area member**	Yes, Schengen Area member since 21 December 2007
Gross Domestic Expenditure on R&D (GERD) as % of GDP	0.85% (2014)		

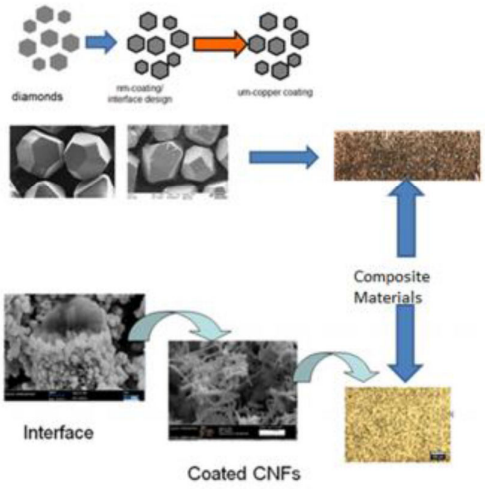
The most important sectors of Malta's economy in 2014 were wholesale and retail trade, transport, accommodation and food services (22.3 %), public administration, defence, education, human health and social work activities (19.4 %) and industry (12.3 %).
Malta's main export partners are Germany, Hong Kong and France, while its main import partners are Italy, the US and the UK.

List of selected top three technologies:

1	Powder Alloys (metal coated powders for alloys)	IMA Engineering Services Limited

Powder Alloys (metal coated powders for alloys)	
Stage of the development	Commercially available
Where has this technology offer been published/introduced/ described before?	Malta Innovation Scientific Award – 2015 (March 2016)
Technological sector	Powder Metallurgy
Non-Proprietary Description	**Short description of the technology:** Additive Manufacturing (AM) uses a laser sintering process to build up components layer by layer using materials which are available in fine powder form. **Innovative aspects:** The use of new matrix alloys or compositions with improved properties for the MMCs (e.g. Tunsten-Copper , Molebdenum-Copper Alloys , Aluminium-Scandium alloys, Ti-GUM alloy, nanostructured matrix materials,..) The use of new types of reinforcements (e.g. hard particles such as AlMgB14, complex metallic alloys such as quasicrystals, fillers with strong negative thermal expansion such as ZrW2O8 or various nanofillers such as carbon nanotubes or nanodiamonds) The use of surface modified/coated reinforcements which allows a design of the interface between the metal and the reinforcement The use of advanced manufacturing techniques for matrix materials, reinforcements and to realised designed interfaces by applying of coatings on reinforcements. The development of hybrid metal matrix composites consisting of micron sized filler materials embedded in a nano-reinforced matrix The development of advanced concepts (including “sensing” and health monitoring of the composites, integration of energy absorption materials,..) **Commercial advantages:** Tailor made metal powders for optimum product properties from DMLS (Direct Metal Laser Sintering) using Additive Manufacturing **Environmental advantages:** Material can be used to its full extent eliminating wastage. Lightweight alloys can be used with increased strength characteristics reducing fuel consumption and therefore C02 emissions. **Societal advantages:** Lower travelling expenses and improved air quality.

Value Proposition	 Current technology  Proposed technology
Existing alternatives	Current technology makes use of admixing metal powders for alloying. Due to varying densities , flowability and morphology of the micron sized particles which need to be mixed the homogeneity of the material is at risk. In the sintered material results in locations with impaired characteristics which could be potential points of material failure. Also , during sintering the powder around the sintering zone is subjected to heat treatment and cannot be used for subsequent processing. The proposed technology provides particles which are quasi identical within the particle distribution size offering homogeneous distribution and flowability resulting in materials with increased reliability.  

	This gives the advantage of easy to handle powders, no separation during mixing operations, constant homogeneity throughout the whole processing, admixing of metals to finetune the composition (and bulk properties) would be possible and easy to perform. Flowability would be much increased and stable. Building Metal matrix Composites 
Collaboration(s)	The technology was developed in-house and collaboration with RHP Technology in Austria was to carry out sintering processes and characterization.
Asian connections	No
Intellectual property status	Trade Secret
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Investment Purchase & Sale Agreement Licensing Joint Venture New company formation Outright Sale of business/technology
Prospects on international market?	There is currently a 30% year on year growth of the additive manufacturing technologies. The aerospace industry is a key growth market for Additive Manufacturing. Engine and turbine parts as well as cabin interior components are typical applications for Additive Manufacturing. Functional components with complex geometries and defined aerodynamic properties Manufacture-

	specific adaptations and small production runs without the costs related to set-up and tooling costs. Lightweight design: Intelligent lightweight structures combining high strength with a weight reduction of 40–60%. The material savings translate into more flexibility in design and engineering. As a result, there is significantly less fuel and emit less carbon dioxide. Tool-less production: Conventional manufacturing carries high tool costs with little flexibility in design changes. Green Technologies are required that use less energy in processing and no waste of raw materials. This is where the benefits of additive manufacturing technology come to the fore can be manufactured quickly and costeffectively. Material and weight savings lower fuel consumption and CO2 emissions.
Please explain why can this technology be interesting for a Japanese investor?	Additive Manufacturing is the cutting edge technology in component manufacturing. Investment at a rapid growth is being currently made worldwide in this technology by various sectors mainly in the aerospace and bio-medical fields. This growth has to be led by new applications which can be provided by state of the art metal powders as being proposed here. The technology can be marketed in Japan/Asia while providing a manufacturing base for metal powders for these regions.
Company (source) name	**IMA Engineering Services Limited**
Address	**B27C Bulebel Industrial Estate**
Main activity	**Electroplating and Coatings**
Contact details	**Contact person: Ing.Michael Attard** **Contact e-mail: imaeng@go.net.mt**

3.20 THE NETHERLANDS

Country introduction

Capital	Amsterdam	**Official EU language(s)**	Dutch
Geographical size	41 542 km²	**Political system**	parliamentary constitutional monarchy
Population	16 900 726 (2015)	**EU member country since**	1 January 1958
Population as % of total EU population	3.3% (2015)	**Currency**	Euro. Member of the Eurozone since 1 January 1999
Gross domestic product (GDP)	€ 678.572 billion (2015)	**Schengen area member**	Yes, Schengen Area member since 26 March 1995
Gross Domestic Expenditure on R&D (GERD) as % of GDP	2% (2014)		

The most important sectors of the Netherlands' economy in 2014 were public administration, defence, education, human health and social work activities (22.4 %), wholesale and retail trade, transport, accommodation and food services (19.8 %) and industry (16.9 %).
The Netherlands' main export partners are Germany, Belgium and the UK, while its main import partners are Germany, China and Belgium.

List of selected top three technologies:

1	Subsea Sonic sampling including LIBS in-line grade scanning	Eijkelkamp SonicSampDrill
2	Innovative micro steam turbine (Green Turbine)	Green Turbine

Subsea Sonic sampling including LIBS in-line grade scanning	
Stage of the development	Developing Prototype
Where has this technology offer been published/introduced/ described before?	Subsea Sonic sampling was introduced in the field of alluvial diamond exploration and LIBS technology was offered for on-land mining bulk sorting purposes www.sonicsampdrill.com
Technological sector According to the Field of science and technology classification	Civil, environment and mining technology
Non-Proprietary Description	**Short description of the technology:** Subsea sampling (e.g. from a jack-up barge or ROV) and in-line grade scanning with LIBS (Laser Induced Breakdown Spectrometry) **Innovative aspects:** high quality sonic sampling near-shore and off-shore and high speed scanning of samples for fast decision making **Economic advantages:** increasing area of use; significant reduction of time between sampling and interpretation of results; reduction of cost per sample; increase of efficiency **Commercial advantages:** increase of turn-over (world-wide sales, rental and services) **Environmental advantages:** less movements of samples to laboratory, efficient exploration program leads to minimum impact on environment **Societal advantages:** improvement of working environment, high skilled personnel
Value Proposition	Subsea sampling is a very costly and environmental sensitive operation
Existing alternatives	Conventional rotation drill rigs, less efficient sampling cycle, low to medium quality sample, time consuming logistics samples to laboratory, very long lead time for decision making
Collaboration(s)	Yes, LIBS technology in cooperation with TNO and Spectral Industries, The Netherlands
Asian connections	Sonic drill rigs are sold in Asia/Japan
Intellectual property status	Other forms of protection
Is it possible to file Japanese patent application?	Yes

Your commercialization objectives	Research & Development Agreement (s) Licensing Investment
Prospects on international market?	World wide sales
Please explain why can this technology be interesting for a Japanese investor?	High end solutions for civil, environmental and mining applications
Company (source) name	**Eijkelkamp SonicSampDrill**
Address	**Uitmaat 8, 6987 ER Giesbeek**
Main activity	**Design, Engineering, Build, Assemble, Test and Deliver Sonic Drill Rigs**
Contact details	**Contact person:** Fons Eijkelkamp **Contact e-mail:** f.eijkelkamp@eijkelkamp.com **Website:** www.sonicsampdrill.com

<table>
<tr><th colspan="2">Development and production of innovative micro steam turbine (Green Turbine)</th></tr>
<tr><td>Stage of the development</td><td>Commercially available worldwide</td></tr>
<tr><td>Where has this technology offer been published/introduced/ described before?</td><td>On our website, at various publications, master thesis Eindhoven University, white papers etc.
www.greenturbine.eu, www.ae-magnetics.nl, www.gonextgrid.com</td></tr>
<tr><td>Technological sector</td><td>Power generation, Rankine cycle turbines</td></tr>
<tr><td>Non-Proprietary Description</td><td>Innovative aspects: impuls type (de Laval) steam turbine with 2 stages and counter rotating wheels. Direct drive high speed PM generators
Economic advantages: relatively low cost, low weight, low footprint, low maintenance, high efficiency. First available low power /high efficiency steam turbine
Commercial advantages: see above Environmental advantages: Steam can be generated by waste heat, sun power, or bio mass.
Societal advantages: Makes it possible to use small scale utilisation of waste heat, CHP and bio mass applications. This makes decentralised power generation possible.</td></tr>
<tr><td>Value Proposition</td><td>Affordable bio fuel based microchip Use of waste heat to power with internal combustion engines, increasing efficiency of those engines with 10 – 20 %Especially on board ships</td></tr>
<tr><td>Existing alternatives</td><td>Small scale steam turbines in our power range (1.5 to 30 kWe) do not exist.
Waste heat utilisation at this moment can only be done with (very) large steam turbine. This makes it impossible to exploit small to medium scale waste heat sources.
Existing steam turbines of 500 kWe in condensing mode have an efficiency of about 10%
Our green turbines of 15 kWe have an efficiency of 12 %. our small 1.5 kWe turbine has 10% efficiency</td></tr>
<tr><td>Collaboration(s)</td><td>We co-operate very closely with AE Magnetics. They make high speed PM generators and host our test site. Also manufacturing of the Green Skid (a plug and play installation of the 15 kW GT) is done at AE.</td></tr>
<tr><td>Asian connections</td><td>We source our grid coupled inverters from Ginlong Technologies (China)</td></tr>
<tr><td>Intellectual property status</td><td>__Granted patent - patent number/s:
<table>
<tr><th>Number</th><th>Country</th><th>Application date</th></tr>
<tr><td>883584,6</td><td>NL, GER,FR, UK</td><td>2013</td></tr>
<tr><td>12/681,098
2008307818</td><td>US
AUS</td><td>2014
2014</td></tr>
</table>
Other forms of protection :European Trade Mark “Green Turbine</td></tr>
</table>

Is it possible to file Japanese patent application?	No
Your commercialization objectives	Licensing (geographic/application specific)
Prospects on international market?	Sales are international
Please explain why can this technology be interesting for a Japanese investor?	There is increasing stress for CO2 reduction world wide, Japan has also a need for other types of power generation in place of nuclear power
Company (source) name	**Green Turbine BV**
Address	**Dorpstraat VO Steenstraat 128 3732HL de Bilt NL**
Main activity	**Manufacture/sales micro steam turbines**
Contact details	**Contact person: Jan Post** **Contact e-mail: info@greenturbine.eu** **Website: www.greenturbine.eu**

3.21 POLAND

Country introduction

Capital	Warsaw	**Official EU language(s)**	Polish
Geographical size	312 679 km²	**Political system**	parliamentary republic
Population	38 005 614 (2015)	**EU member country since**	1 May 2004
Population as % of total EU population	7.5%% (2015)	**Currency**	Polish Zloty PLN
Gross domestic product (GDP)	€ 427.737 billion (2015)	**Schengen area member**	Yes, Schengen Area member since 21 December 2007
Gross Domestic Expenditure on R&D (GERD) as % of GDP	0.94% (2014)		

The most important sectors of Poland's economy in 2014 were wholesale and retail trade, transport, accommodation and food services (27.1 %), industry (25.1 %) and public administration, defence, education, human health and social work activities (14.3 %).
Poland's main export partners are Germany, UK and the Czech Republic while its main import partners are Germany, Russia and China.

List of selected top three technologies:

1	Ultrasonic method for enhancing the efficiency of microbiological protein expression systems	BBH Biotech Polska sp. z o.o.
2	Mechanical vehicle – Torqway Sport, manually powered. Hybrid vehicle – hybrid S-TORQ – manually powered vehicle with electric support	Torqway Ltd.
3	Current collector for electric buses	EC Engineering Sp. z o.o.

Ultrasonic method for enhancing the efficiency of microbiological protein expression systems	
Stage of the development	Developing Prototype
Where has this technology offer been published/introduced/ described before?	Hello Tomorrow – Paris, France http://summit.hello-tomorrow.org/ Bionection 2014 – Dresden, Germany http://www.bionection.com/
Technological sector According to the Field of science and technology classification	Industrial biotechnology Code 2.9
Non-Proprietary Description	**Short description of the technology:** Enhanced recombinant protein production that increases the yield of proteins produced by bacteria **Innovative aspects:** A unique solution using ultrasounds instead of chemical or biological additives **Economic advantages:** Higher yield from the same bioprocess. Same volume of production, but higher concentration of product. **Commercial advantages:** Increased yield makes the product cheaper to produce – it can be sold for a lower price to gain advantage on the market against the competitors **Environmental advantages:** The increased yield comes from an innovative technology, not chemical and/or biological additives **Societal advantages:** There is a possibility of cheaper drugs on the market
Value Proposition	The global market of recombinant proteins (e.g. novel drugs) is worth 194 billion US dollars. Currently about 25% of this market are proteins produced by microorganisms. One of the most significant problems in their production is that a part of the product gets stuck inside microogranisms' cells, between their inner membrane and outer wall, becoming a production loss. Our method enables to reclaim those proteins by treating microorganisms with carefully adjusted sound waves. This procedure temporarily destabilizes cells, enabling the stuck proteins to escape to production medium without cells' disintegration and hence – increasing the income and avoiding raised production costs.
Existing alternatives	There are about half a dozen teams in the world dealing with issues of the effect of sound stimulus on bacterial metabolism, working mostly in New Zealand, EU and China. However, they are mainly university

	research teams which focus on the phenomenon from biochemical point of view, and not seek a business application. The only potential competitors are our potential clients. According to the information provided by some of them on BIO International Convention 2015, pharmaceutical companies possess their own R&D teams that help them improve their production. The main real competitive solution is to further modify the microbial genome to improve secretion mechanism or protein production efficiency. However, this path is expensive, time-consuming, and in many cases unstable. Furthermore, companies need to protect those modifications with patents which generates additional costs (which is counted in tens of millions of dollars and years of research).
Collaboration(s)	The core of the technology was developed by BBH Biotech team only. Currently the technology is being upgraded in collaboration with our early adopter – a protein producing company from Sweden.
Asian connections	No.
Intellectual property status	Other forms of protection: Trade secret and know-how
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Licensing (nonexclusive) Joint Venture
Prospects on international market?	Recombinant protein market is a growing, medium volume market. TAM value increased from 40 billion dollars in 2004, through nearly 60 billion in 2010 and estimated value of over 80 billion in 2016, its growth rate is on quite high level of approximately 8,3% annually (source: Bio-Tech Consulting Sp. z o.o., Poland). This trend continues and the market will grow, as the new generation drugs, which are the future of medicine, are based on biopharmaceuticals including recombinant proteins (source: http://www.biopharminternational.com/future-biopharma). On our trip to the U.S. on BIO International Convention 2015 several companies such as ThermoFisher Scientific, Pfenex, Menarini Biotech, Xbrane and few others indicated such problem and desire to acquire our technology.
Please explain why can this technology be interesting for a Japanese investor?	Right now our technology is focused on two expression systems: bacterial - *Escherichia coli* and yeast - *Pichia pastoris*. Which, as it can be seen in Figure 3 represent roughly 25% of the protein production market. By quick calculation this gives us around 217 companies in Europe and the USA with total value of SAM 48,5 billion dollars. Given that *Pichia pastoris* can act as yeast model for further expanding of the technology we will be able to develop USONIPRO technology for yeast strain such as *Saccaromyces cerevisiae* and *Hansenula polymorpha* which will increase the

	value of our SAM by additional 12% giving us a total market of 320 companies, ergo 71,8 billion US dollars. With estimated total SOM at 10% of SAM it will give BBH Biotech Polska possible future revenue of 6,6 billion US dollars. Gaining 0,4% of SOM in the first 3 to 5 years will give our company turnover of 24,2 million euro.
Company (source) name	**BBH Biotech Polska sp. z o.o.**
Address	**Ul. Rubież 46H, 61-612 Poznań, Poland**
Main activity	**Microbiology and Industrial microbiology**
Contact details	**Contact person: Leszek Broniarek** **Contact e-mail: leszek.broniarek@bbhbiotech.com** **Website: www.bbhbiotech.com**

Mechanical vehicle – Torqway Sport, manually powered . Hybrid vehicle – hybrid S-TORQ – manually powered vehicle with electric support	
Stage of the development	Developing Prototype Prototype Available
Where has this technology offer been published/introduced/ described before?	1. International Invention Fares (awarded with gold medals and title of "The Best Invention from Europe 2014" in USA-INPEX) 2. Publications and TV programmes: http://gadzetomania.pl/1729,torqway-polski-segway-z-torunia-cudze-chwalimy-wlasne-ignorujemy http://torun.wyborcza.pl/torun/1,35576,16474355,Torqway___wynalazek_z_Torunia_rusza_na_podboj_swiata.html https://pl-pl.facebook.com/torqway https://vimeo.com/102911541 https://www.youtube.com/watch?v=u6mfc8RnAb4 http://innpoland.pl/115273,czy-torqway-z-polski-ma-wieksze-szanse-na-sukces-od-segwaya http://pojazdy.info.pl/torqway http://www.pomorska.pl/wiadomosci/torun/art/6438764,najlepszy-wynalazek-z-europy-jest-z-torunia-torqway-jedzie-na-dwoch-duzych-i-malych-kolkach-na-podboj-swiata,id,t.html http://natemat.pl/114373,swiat-czeka-z-niecierpliwoscia-na-polski-wynalazek https://www.youtube.com/watch?v=BNSFFnEraes https://www.youtube.com/watch?v=3HY8J7cPMCs http://vod.tvp.pl/szukaj?keywords=torqway&page=1 http://torun.wyborcza.pl/torun/1,48723,16882456,Jak_dziala_nowatorski_pojazd_torqway__Przekonaj_sie.html?disableRedirects=true
Technological sector **According to the Field of science and technology classification**	2.3 Mechanical engineering (according to OECD)
Non-Proprietary Description	**Short description of the technology:** Creating new category of personal transport where the vehicle is powered by the movement of user's arms, supported by electric engine. **Innovative aspects:** Thanks to the innovative gears mounted inside each driving wheel, the movement of the levers is converted into a one-way rotary motion regardless of whether the levers are being pushed forward or pulled backwards (under EPO and PCT patents) This makes every movement productive in powering the vehicle forward. Innovative solution to **join mobility and exercise.**

<table>
<tr><td></td><td>Economic advantages: Torqway meets all the criteria of healthy and environmentally friendly lifestyle

Commercial advantages: The aim of this project is to prepare for commercialization of the hybrid S-TORQ equipped with an additional electric drive to provide extra power when driving uphill or in difficult terrain conditions (like an e-bike).

Environmental advantages: Fully green vehicle concerning all ecological aspects of city life.

Societal advantages: There are numerous conditions which can affect a person’s ability to walk unassisted and severely limit their independence and quality of life. Patients in rehabilitation and the elderly are two groups with specific needs for innovative solutions to join mobility and exercise in a way which is practical, safe and fun.</td></tr>
<tr><td>Value Proposition</td><td>Nordic driving. It gives possibility to exercise outside while transporting ourselves. Activates all body parts in calm and safe way. This vehicle solves problem of people with limited mobility (numerous healthy problems).</td></tr>
<tr><td>Existing alternatives</td><td>There are many e-vehicles on the market but none of them offers additional value to the mobility. We offer improvement of our health, body strength and coordination. Moreover, the vehicle is safe and allows to train people at all ages.</td></tr>
<tr><td>Collaboration(s)</td><td>No.</td></tr>
<tr><td>Asian connections</td><td>No, we haven’t collaborated yet with partners form Asia.
We have one client from Japan that considers cooperation in distribution in Japan.</td></tr>
<tr><td>Intellectual property status</td><td>Granted patent - patent number/s:
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>P.396764</td><td>Poland</td><td>09.07.2015</td></tr>
<tr><td>NO.12806184.3</td><td>EPO</td><td>20.11.2015</td></tr>
<tr><td>US9,428,244B2</td><td>USA</td><td>30.08.2016</td></tr>
<tr><td>21930N-DE</td><td>GERMANY</td><td>31.05.2016</td></tr>
</table>
Patent already applied for
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>EP2771232</td><td>SPAIN</td><td>28.07.2016</td></tr>
<tr><td>EP12806184.3</td><td>FRANCE</td><td>14.03.2016</td></tr>
<tr><td>2014534926</td><td>JAPAN</td><td>06.02.2016</td></tr>
<tr><td>201280051428.8</td><td>CHINA</td><td>05.08.2016</td></tr>
</table></td></tr>
</table>

	Other forms of protection: “TORQWAY” Trademark, number Z.392003, dated on 25.10.2011 in the Polish Patent Office
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Licensing (exclusive) Purchase & Sale Agreement (s)
Prospects on international market?	Gaining global markets in countries like Germany, Netherlands, Sweden, Japan and USA.
Please explain why can this technology be interesting for a Japanese investor?	An investor might be the first company that provides this unique product to the global markets. Moreover an investor may launch completely new solution on the markets such as healthy, green mobility. Furthermore, our patented mechanism might be found interesting itself.
Company (source) name	**Torqway Ltd.**
Address	**Ul. Roslinna 19, 87-100 Toruń**
Main activity	**Construction, production and sale of Torqway.**
Contact details	**Contact person: Agata Ratajczak** **Contact e-mail: agata.ratajczak@torqway.com** **Website: www.torqway.com**

<table>
<tr><th colspan="2">Current collector for electric buses</th></tr>
<tr><td>Stage of the development</td><td>Ready for Betta Testing

Test Data Available</td></tr>
<tr><td>Technological sector
According to the Field of science and technology classification</td><td>Code: 2.2 –
Description: Electrical engineering, Electronic engineering, Information engineering
Code: 2.3
Description: Mechanical engineering</td></tr>
<tr><td>Non-Proprietary Description</td><td>The proposed by EC Engineering solution is a response to electric busses market needs. Its new field of development, there is few solutions solving the problem of battery charging on the market. Present and most popular way of battery charging are based on manual plug with a charger.
Our system is an automatic current collector for electric buses designed for fast charging and it makes possible to charge the battery during short pauses at bus stops in the city.
It consist of the current collector mounted on the bus roof and station build at the terminal station or buses stop.
This solution promotes the use of electric buses, and It helps to resolve the problem of smog in agglomerations.</td></tr>
<tr><td>Value Proposition</td><td>Electric busses with manual plug in charging system has current limit of 50A (common solution) and max 200A. With our fast charging system it is possible to charge with current up to 1000A and more. Connection is automatic, fast and safe. System saves time necessary for charging.</td></tr>
<tr><td>Existing alternatives</td><td>On Polish market there is no other producer.
In Europe : Shunk, ABB, Siemens.
Advantage of our system:
-Fastest connection time
-Biggest tolerances of Bus stopping and charging place
-Resistant to bus movement during charging(bus kneeling)</td></tr>
<tr><td>Collaboration(s)</td><td>No</td></tr>
<tr><td>Asian connections</td><td>No</td></tr>
<tr><td>Intellectual property status</td><td>Patent already applied for
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>P.411251</td><td>Poland</td><td>02.2015</td></tr>
</table></td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes</td></tr>
<tr><td>Your commercialization objectives</td><td>Research & Development Agreement (s)

Licensing

Joint Venture

Purchase & Sale Agreement (s)</td></tr>
</table>

	Investment
Prospects on international market?	Electrical basses are more and more popular in big agglomerations around the world. Key issue is efficient and safe charging systems.
Please explain why can this technology be interesting for a Japanese investor?	The electric vehicle market is in rapid growth phase. Currently are searched solutions that can become a standard, our system is one of the proposition that solves many of the problems faced by other manufacturers.
Company (source) name	**EC Engineering Sp. z o.o.**
Address	**Opolska 100, 31-323 Krakow**
Main activity	**R&D, Production**
Contact details	**Contact person: Michał Lasiewicz** **Contact e-mail: mlasiewicz@ec-e.pl** **Website: www.ec-e.pl**

3.22 PORTUGAL

Country introduction

Capital	Lisbon	**Official EU language(s)**	Portuguese
Geographical size	92 226 km²	**Political system**	semi-presidential republic
Population	10 374 822 (2015)	**EU member country since**	1 January 1989
Population as % of total EU population	2% (2015)	**Currency**	Euro. Member of the Eurozone since 1 January 1999
Gross domestic product (GDP)	€ 179.379 billion (2015)	**Schengen area member**	Yes, Schengen Area member since 26 March 19995
Gross Domestic Expenditure on R&D (GERD) as % of GDP	1.287% (2014)		

The most important sectors of Portugal's economy in 2014 were wholesale and retail trade, transport, accommodation and food services (25.1 %) and public administration, defence, education, human health and social work activities (20.5 %) and industry (17.0 %).
Portugal's main export partners are Spain, France and Germany while its main import partners are Spain, Germany and France.

List of selected top three technologies:

1	Industrial process technology based on pulsed power electronics	EnergyPulse Systems, EPS
2	Fluorescent compounds, methods of manufacturing and uses thereof	University of Aveiro
3	Low Cost Minimum Quantity of Lubricant System	University of Aveiro

Industrial process technology based on pulsed power electronics	
Stage of the development	Ready for commercialization Commercially available, where: Germany & Poland & Portugal & CERN & Spain
Where has this technology offer been published/introduced/ described before?	Fairs Conferences Websites Summits
Technological sector **According to the Field of science and technology classification**	Electronic engineering Power electronics
Non-Proprietary Description	**Short description of the technology:** EPS works in pulsed power science and technology, where energy is stored in a relatively long time (e.g. ms) and then release to a load in very controllable short (e.g. µs) repetitive positive and/or negative pulses of high peak power and low average power, being an efficient way to deliver energy in order to enhance a process or a product. **Innovative aspects:** We use off-the-shelf mass-produced semiconductors assembled in modules, mounted in very flexible topologies, allowing flexible and totally controlled pulse voltage to achieve intended results. The modulators are connected to a transducer; where pulses are applied to materials, through a cable so as to achieve greater flexibility, size reduction allowing easy installation and usage in an industrial environment. **Economic advantages:** Low CapEx and maintenance costs with easily available spares, and energetically efficient. **Commercial advantages:** Focus on clients' needs through partnership with equipment manufacturers and/or industries in a myriad of sectors. **Environmental advantages:** Our technology delivers strictly the needed energy for each process, enhancing other environmental advantages such as reduction of water usage in industrial processes. **Societal advantages:** Pulsed power is increasing the welfare of society by decreasing *eg* food processing impact on food quality and increase environment protection.
Value Proposition	Water treatment: removal of micro pollutants and harmful biological agents, from surface and waste-water.

	Food processing: Minimum processing foods. Decrease the chemical and heat load in food processing increasing food quality and energy efficiency Health & medical applications: Decrease the secondary effects and improve patient life quality in carcinoma treatments. Metal processing: high speed metal forming with increased efficiency for the cable industry Oil&Gas: separation of water in oil emulsions through compact and efficient physical methods. Electrocoalescence technology. EPS has significant experience and know-how in applying this technology in the industrial sector.
Existing alternatives	**Water treatment**: UV lamps are the competing technologies. The maintenance costs as well as the investment cost are higher and have limited efficacy due to the limited action range in polluted water. Energy running costs are higher. Pulse power technology is an advanced oxidation method with very efficient ozone production and H2O2. **Food processing**: the competing technologies are heat and chemicals (*eg* enzymes), which have a negative impact on the food quality. High Pressure processing is a competing technology in microbial inactivation. It does not need a sterilized packing line as the pressure is applied packed products, but required very high energy consumption (hence running costs), requires a much greater CapEx investment, and processes in batch (while our system processes online) which limits the processing capacity. Electroporation by pulsed electric fields is a far more compact, requires far less CapEx investment, is modular (hence responds to small, medium and big size factories), with very low heat load and permits processing high quantities online. **Cancer treatment**: Electroporation allows for localized treatment. In carcinoma treatments it competes with surgery when it is possible a physical separation of the limb. **Oil & Gas**: Electroalescence through AC and DC have process limitations and are less efficient. **Regarding competing pulsed power technologies**: Others modulators with transformers to achieve the desirable high voltage pulses, but: - use of oil cooling systems to insulate high-voltage; - bigger size and heavy systems; - flexibility limitations in terms of pulse width and frequency. In addition, spark gaps are used instead of semiconductors because of their ability to withstand high voltage and current but theses switches have low efficiency, are cumbersome and with low flexibility.
Collaboration(s)	The technology comes from R&D by Professor Luis Redondo. The R&D in applications was developed by EPS.
Asian connections	Bioelectrics consortium

	Kumamoto University, Japan Water treatment Fudan University, Xangai/China
Intellectual property status	Granted patent in Portugal.
Your commercialization objectives	Joint Venture New company formation
Prospects on international market?	Our main target markets are industries in the CleanTech and Food sectors. We target developing economies where new factories are being built/upgraded to increase production and product quality driven by the population increase and/or the consumer increase in life style, but also the mature economies where the increased competition and the rising trend for quality and safe environment are the drivers for new clean technologies.
Please explain why can this technology be interesting for a Japanese investor?	We anticipate the trends in Japan (and other Asian key markets) are aligned with what is said in the preceding answer.
Company (source) name	**EnergyPulse Systems, EPS**
Address	**Estrada do Paço do Lumiar, Pólo Tecnológico de Lisboa, Lote 3** **1600-546 Lisboa** **Portugal**
Main activity	**EPS researches, develops, produces and sells pulsed power modulators based on state-of-the-art, highly efficient semiconductors, assembled in very flexible and modular topologies, designed to add value to a myriad of industries, in the environmental, food, oil & gas, medicine, materials sectors.**
Contact details	**Contact person: Marcos Pereira** **Contact e-mail: marcos.pereira@energypulsesytems.com** **Website: http://www.energypulsesystems.pt**

Fluorescent compounds, methods of manufacturing and uses thereof	
Stage of the development	Tested in the lab (proof of concept)
Where has this technology offer been published/introduced/ described before?	Innoget
Technological sector **According to the Field of science and technology classification**	1.6 – Biological Sciences 3.4 - Health biotechnology
Non-Proprietary Description	**Short description of the technology:** A group of researchers from a Portuguese university developed a family of new fluorophores to be used in biological imaging, either in cells or in entire organisms, in fluorescence microscopy techniques, including live cell imaging. The fluorophores are not toxic to cells and organisms, and light up cells by binding to organelles such as the Golgi apparatus, nucleus, and particularly lipid droplets. Importantly, the fluorophores change colour with the polarity of the environment. The university is looking for companies that would be interested in developing this technology further through partnership, or in commercializing the probes through licensing or acquisition of the patent. **Innovative aspects:** The invention presents several advantages compared with the existing probes: - Very low price of production; - Easy to synthesize and scale up; - Very easy to use (simple protocol); - Very low toxicity to eukaryotic cells, which allow live cell imaging over an extended period of time; - Large Stokes'shift, and as a consequence a good signal to noise ratio; - Selective localization in cellular organelles, depending on the fluorophore and cell type; - High affinity to lipid droplets; - Changes colour with the polarity of the environment (solvatochromism); - Blue-shifts with the increase of hydrophobicity (in opposition to Nile Red); - Can be used with blue emitting dyes as counterstaining; - In zebrafish larvae, differentially stain bones and muscular cells.
Value Proposition	This technology increases the specific marking and visualization of subcellular structures in pharmaceutical and molecular and cellular

<table>
<tr><td></td><td>biology research fields. This cellular markers are easy to prepare, have low toxicity and high stability.</td></tr>
<tr><td>Collaboration(s)</td><td>No</td></tr>
<tr><td>Asian connections</td><td>No.</td></tr>
<tr><td>Intellectual property status</td><td>Patent already applied for<table><tr><td>Number</td><td>Country</td><td>Application date</td></tr><tr><td>109330</td><td>Portugal</td><td>18.04.2016</td></tr></table></td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes</td></tr>
<tr><td>Your commercialization objectives</td><td>Research & Development Agreement (s)

Licensing</td></tr>
<tr><td>Prospects on international market?</td><td>The market for laboratory reagents is huge and is growing. In the US only, it is expected to represent $35b by the end of 2016, with an annual growth rate of 8%. This growth rate is also observed in cellular markers market.</td></tr>
<tr><td>Company (source) name</td><td>University of Aveiro</td></tr>
<tr><td>Address</td><td>UATEC Campus Universitário de Santiago, 3810-193 Aveiro, Portugal</td></tr>
<tr><td>Main activity</td><td>Teaching and Researching</td></tr>
<tr><td>Contact details</td><td>Contact person: José Paulo Rainho
Contact e-mail: rainho@ua.pt
Website: www.ua.pt/uatec</td></tr>
</table>

Low Cost Minimum Quantity of Lubricant System	
Stage of the development	Prototype Available
Where has this technology offer been published/introduced/ described before?	Innoget
Technological sector **According to the Field of science and technology classification**	2.3 – Mechanical engineering
Non-Proprietary Description	**Short description of the technology:** A group of researchers from a Portuguese university has developed a system of "Minimal Quantity of Lubricants" (MQL) fully functional and automated. MQL refers to the use of a low lubricant flow (10 to 100 mL / hr) through a high pressure fluid (compressed air). This system is an alternative to most lubrication systems used in machining operations, with both economically and ecological level advantages, contributing to sustainable manufacturing. Cutting fluids have been used in machining in order to enhance productivity, gaining such importance that, in many cases, became essential to achieve quality standards. In order to reduce costs and preserve the environment lubricants became imperative to develop low-cost systems using minimal amount of cutting fluid during machining operations. This low cost MQL system, developed within a public university, is fully functional and automated, uses a pressure regulator valve, a solenoid valve and implements an innovative stepper motor system coupled to a peristaltic pump head for controlling the lubricant flow that is supplied from the container. Thus the system allows a highly focused spray cloud preventing dispersion of small droplets of lubricant using a needle to introduce lubricant to the compressed air. **Innovative aspects:** Currently there are numerous MQL systems on the market, but their high cost contributes to their little use in machining. The present invention proposes an innovative system, using a peristaltic pump for flow control, which allows the overall system cost to be only a small fraction of the cost of the current existing systems. Furthermore, this invention avoids the use of the large reservoirs found in other solutions, thus reducing the system size and avoiding the use of various components. Thus, the hose pump and a single needle (syringe) can replace the system found on the market at low cost.
Value Proposition	MQL offers its industrial user the possibility to significantly increase the lubrication's efficiency of industrial equipment, decreasing costs and increasing environmental protection.

<table>
<tr><td></td><td></td></tr>
<tr><td>Collaboration(s)</td><td>No.</td></tr>
<tr><td>Asian connections</td><td>No.</td></tr>
<tr><td>Intellectual property status</td><td>Patent already applied for
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>108233</td><td>Portugal</td><td>18.02.2015</td></tr>
</table></td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes</td></tr>
<tr><td>Your commercialization objectives</td><td>Research & Development Agreement (s)

Licensing

Purchase & Sale Agreement (s)</td></tr>
<tr><td>Prospects on international market?</td><td>The market of this technology is the industrial equipment manufacturers in the field of lubrication and industrial cooling and machine tool accessories</td></tr>
<tr><td>Company (source) name</td><td>University of Aveiro</td></tr>
<tr><td>Address</td><td>UATEC Campus Universitário de Santiago, 3810-193 Aveiro, Portugal</td></tr>
<tr><td>Main activity</td><td>Teaching and Researching</td></tr>
<tr><td>Contact details</td><td>Contact person: José Paulo Rainho
Contact e-mail: rainho@ua.pt
Website: www.ua.pt/uatec</td></tr>
</table>

3.23 ROMANIA

Country introduction

Capital	Bucharest	**Official EU language(s)**	Romanian
Geographical size	238 391 km²	**Political system**	semi-presidential republic
Population	19 870 647 (2015)	**EU member country since**	1 January 2007
Population as % of total EU population	3.9% (2015)	**Currency**	Romanian Leu RON
Gross domestic product (GDP)	€ 160.353 billion (2015)	**Schengen area member**	No, Romania is not a member of the Schengen Area
Gross Domestic Expenditure on R&D (GERD) as % of GDP	0.38% (2014)		

The most important sectors of Romania's economy in 2014 were industry (27.3 %), wholesale and retail trade, transport, accommodation and food services (17.9 %) and public administration, defence, education, human health and social work activities (10.3 %).
Romania's main export partners are Germany, Italy and France while its main import partners are Germany, Italy and Hungary.

No technologies to be listed.

3.24 SLOVAKIA

Country introduction

Capital	Bratislava	**Official EU language(s)**	Slovak
Geographical size	49 035 km²	**Political system**	parliamentary republic
Population	5 421 349 (2015)	**EU member country since**	1 May 2004
Population as % of total EU population	1.1% (2015)	**Currency**	Euro. Member of the Eurozone since 1 January 2009
Gross domestic product (GDP)	€ 78.071 billion (2015)	**Schengen area member**	Yes, Schengen Area member since 21 December 2007
Gross Domestic Expenditure on R&D (GERD) as % of GDP	0.89% (2014)		

The most important sectors of Slovakia's economy in 2014 were industry (24.7 %), wholesale and retail trade, transport, accommodation and food services (22.4 %) and public administration, defence, education, human health and social work activities (14.5 %). Slovakia's main export partners are Germany, the Czech Republic and Poland while its main import partners are Germany, the Czech Republic and Austria.

List of selected top three technologies:

1	NanoScreen: Portable device for pre-screening of Persistent Organic Pollutants –POPs- in food products and water	Saftra Photonics
2	Witikon - fully automated 3D digitization of cultural heritage artefacts	EDICO

NanoScreen: Portable device for pre-screening of Persistent Organic Pollutants – POPs- in food products and water	
Stage of the development	Developing Prototype
Where has this technology offer been published/introduced/ described before?	Not promoted by now
Technological sector **According to the Field of science and technology classification**	1.3 Physical sciences
Non-Proprietary Description	**Short description of the technology:** • a portable nano-optical sensing chip for pre-screening purpose that detects if any food matrix or water is contaminated with persistent organic pollutants (POPs). • a rapid method (10 minutes) to detect presence of the most important POPs eventually present in food, carrying out an in-situ analysis for less than 100€ per sample **Innovative aspects:** • In first place, it is applied a technic called Surface Enhanced Raman Spectroscopy (SERS). The nanoparticles are accurately placed in the chip in order to enhance the electron oscillations in metals (plasmons). This way, the spectroscopic signal of molecules is enhanced several orders of magnitude, detecting a single molecule. • Secondly, the nanoparticles are functionalized with specific organic compounds which will act as anchors to selectively absorb the target pollutant in the nanoparticle surface. **Economic advantages:** • Cost savings up to 30 times per equipment and 10 times per analysis (in comparison to standard methods) **Commercial advantages:** • **Opens a new market**: fast (minutes) but top-reliable screening instruments able to analyse in situ complex samples is an emerging process innovation opportunity of any certified labs addressed by NanoScreen; **Environmental advantages:**

	• environmental and food monitoring of POPs pesticides + PCB • more specifically, we want to address initially towards drinkable water and dairy products since these samples will not require any pre-treatment to produce a testing matrix. **Societal advantages:** • The NanoScreen project challenges also way how the safety analyses are performed. Nowadays only a small amount of samples (food, drinks, water) is selected for analysis in certified laboratories. This may lead to serious threats (accident, terrorism, contamination) to health of the consumers. In contrast, • NanoScreen will enable a continuous self-control of producers by decreasing the price-per-analysis 10 times. E.g. every water provider can perform self-testing on hourly-basis with a possibility to react in minutes from the test start. • Similarly, NanoScreen will become affordable for developing countries (Africa, Asia) where threats are most serious and resources are scarce.
Value Proposition	• Portable Nano-Optical Sensing Device for pre-screening POPs in milk and water • In situ simple analysis with lowest unit price (99 EUR), fastest procedure (10 min) and simultaneous detection of several POPs in one device (multiplexing)
Existing alternatives	• Disruptive concept – opens a new market of pre-screening methods in persistent organic pollutants • (the state-of-the-art alternatives have a different procedure) • Technology with a potential to reach other domains – explosive, poisons, doping…
Collaboration(s)	• No
Asian connections	• Several relationships built by now, but covered by NDA.
Intellectual property status	Patent not yet applied
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Research & Development Agreement (s)

	Licensing (nonexclusive; geographic/application specific) Joint Venture Purchase & Sale Agreement (s) Investment
Prospects on international market?	• Yes – after prototyping of the device (2017) we would like to enter international market in 2018 with focus on the EU, USA, JAPAN, India and Africa
Please explain why can this technology be interesting for a Japanese investor?	• Existing business plan • Technology excellence • RoI 3.25 (2016-2023)
Company (source) name	**Saftra Photonics, s.r.o.**
Address	**Jesenna 5, 040 01 Kosice, SLOVAKIA**
Main activity	**Bio-Photonics**
Contact details	**Contact person: prof. Pavol Miskovsky** **Contact e-mail: pavol.miskovsky@upjs.sk** **Website: http://www.saftra-photonics.org**

Witikon - fully automated 3D digitization of cultural heritage artefacts	
Stage of the development	Commercially available in: Slovakia
Where has this technology offer been published/introduced/ described before?	- Over 80 museums in Slovakia use 2 Witikon devices for digitization, over 100.000 collection items digitized - www.witikon.eu - 2+3D Photography 2014, Rijsk Museum, Amsterdam - MUTEC 2014, Leipzig, - Museum and Heritage 2013, London Museum and the web 2015, Los, Angeles, USA - Kulturbetrieb, Fourth Issue, November-2015, Germany
Technological sector **According to the Field of science and technology classification**	1.2 Computer and information sciences 2.2. Electrical engineering, Electronic engineering, Information engineering 2.3 Mechanical engineering 6.1 History and Archaeology 6.4 Arts (arts, history of arts, performing arts, music)
Non-Proprietary Description	**Innovative aspects:** Fully automated, ONLY available HIGH PRODUCTIVITY solution for 3D mass digitization of cultural heritage artefacts on the global market with an extensive track record of mass digitization: - Scan up to in 100 objects in 24 hours generating 100×288=28800 photos! - Scan objects of different sizes ranging from 5 cm to 3 meters - Create highest quality photography using PHASE ONE medium format DB with up to 100 MPix - Create highest quality 360° photography, which can be viewed by everyone not requiring special hardware and software - Generate photorealistic 3D models consisting of 50+ million triangles effortlessly **Commercial advantages:** - possibility for museums to boost their business model by selling 3D printed artefacts and 3D moulds - online presence triggers and increases the physical visits to the museums **Societal advantages:** - maximizing access to cultural heritage artefacts globally - protection against destruction of cultural heritage - digital preservation of cultural heritage
Value Proposition	- greater accessibility of cultural heritage to public and expert audiences

	- providing online access to cultural heritage artefacts which are stored only in depos and cannot be shown because of lack of physical space (approx.. 90 percent of objects) - protection against destruction of cultural heritage due to war and weather condition - protection against falsification - greater sharing online for research – objects which are fragile or not possible to transport
Existing alternatives	Existing alternative are not able to produce the desired quality – the optical and geometrical resolution guaranteeing the authenticity of the colours and the textures required by the cultural heritage institutions. The only alternative is manual photogrammetry, which with a slightly lower precision can generate the desired result, however at a much longer timeframe, capturing time in several hours per object instead of 6 minutes.
Collaboration(s):	- Phase One - the world best photography http://industrial.phaseone.com/ - Slovak National Museum – leading institution in Slovakia http://www.snm.sk/ - Capturing Reality – the best photogrammetry libraries https://www.capturingreality.com/
Asian connections	none
Intellectual property status	Patent not yet applied for
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Licensing (exclusive; nonexclusive; geographic/application specific) Joint Venture Purchase & Sale Agreement (s) Outright Sale of business/technology
Prospects on international market?	Yes, the largest cultural heritage institutions in Europe - Natural Histroy museum in London, UK - British Museum in London, UK - Victoria Albert Museum in London, UK - Rijsk Museum, Amsterdam, Netherlands - Louvre, France, - Natural history museum in Berlin, Germany - Museo Nazionale Romano at Palazzo Massimo, Italy

	- Kunshistorisches Museum, Albertina, Belveder – Vienna, Austria USA – Smithonian, Getty Australia - Powerhouse, Sydney
Please explain why can this technology be interesting for a Japanese investor?	Witikon is currently the ONLY available HIGH PRODUCTIVITY solution for 3D mass digitization of cultural heritage artefacts on the global market
Company (source) name	**EDICO SK, a.s. (publicly limited company)**
Address	**Matusova 12, 81104, Bratislava, Slovakia**
Main activity	**2D and 3D digitization for cultural heritage and industrial companies**
Contact details	**Contact person: Mira Silanova** **Contact e-mail: mira.silanova@witikon.eu** **Website: www.witikon.eu**

3.25 SLOVENIA

Country introduction

Capital	Ljubljana	**Official EU language(s)**	Slovenian
Geographical size	20 273 km2	**Political system**	parliamentary republic
Population	2 062 874 (2015)	**EU member country since**	1 May 2004
Population as % of total EU population	0.4 % % (2015)	**Currency**	Euro. Member of the eurozone since 1 January 2007
Gross domestic product (GDP)	€ 38.543 billion (2015)	**Schengen area member?**	Yes, Schengen Area member since 21 December 2007.
Gross Domestic Expenditure on R&D (GERD) as % of GDP	2.39 (2014)		

The most important sectors of Slovenia's economy in 2014 were industry (27.1 %), wholesale and retail trade, transport, accommodation and food services (20.4 %) and public administration, defence, education, human health and social work activities (17.0 %). Slovenia's main export and import partners are Germany, Italy and Austria.

List of selected top three technologies:

1	Advanced GEM in-wheel electric propulsion for Light Electric Vehicles using innovative multiphase modular technology	GEM motors d.o.o.
2	Contact-free medical image navigation during surgery by using simple gestures.	Adora Med Ltd
3	Torque Vectoring Platform (TVP) for electric driven vehicles with one motor per wheel configuration	EXOR EVS d.o.o.

Advanced GEM in-wheel electric propulsion for Light Electric Vehicles using innovative multiphase modular technology	
Stage of the development	Prototype Available Ready for Betta Testing
Where has this technology offer been published/introduced/ described before?	eCarTec 2014, 2015 SPS Drives 2015 LEVS Barcelona 2016
Technological sector **According to the Field of science and technology classification**	2. Engineering and technology 2.2 Electrical engineering, Electronic engineering, Information engineering
Non-Proprietary Description	**Short description of the technology:** GEM in-wheel drive integrates the electric motor, the controller and the wheel into one unit – fully integrated in-wheel drive. **Innovative aspects:** This integrated design is possible only with unique patent pending multiphase motor design. **Economic advantages:** The GEM in-wheel motor exhibits all advantages required by the market and yet represents cost-competitive solution due to undemanding production, lower number of parts and lighter construction **Commercial advantages:** High quality Good performance High system efficiency Fast response to customer needs Low voltage operation Compact motor design and simple interfaces **Environmental advantages:** Clean, quiet and eco-friendly solution with zero emissions. **Societal advantages:** Enhance electric mobility solution in urban areas with simple.
Value Proposition	Advanced and fully integrated electric propulsion in the wheel for Light electric vehicles. Simple for mounting, complete electric drive solution saving space for batteries, modular concept allows different power levels and fast customization, nondemanding production technology, higher efficiency and regenerative breaking increasing driving range

<table>
<tr><td>Existing alternatives</td><td>Standard solution with central electric motor with transmission: complex, heavy and rather expensive solution with minor market share.
Standard wheel motor with external solution: rather simple and cost effective solution, requires more space, high EMI and more complex solution to our fully integrated solution</td></tr>
<tr><td>Collaboration(s)</td><td>No, complete in-house development of new technology.</td></tr>
<tr><td>Asian connections</td><td>Not yet with Japan.</td></tr>
<tr><td>Intellectual property status</td><td>Granted patent in Slovenia in June 2014

Patent already applied for
<table>
<tr><td>Country</td><td>Application date</td></tr>
<tr><td>EU</td><td>Dec. 2015</td></tr>
<tr><td>USA</td><td>Dec. 2015</td></tr>
<tr><td>Japan</td><td>Dec. 2015</td></tr>
<tr><td>Korea</td><td>Dec. 2015</td></tr>
<tr><td>India</td><td>Dec. 2015</td></tr>
<tr><td>China</td><td>Dec. 2015</td></tr>
<tr><td>Russia</td><td>Dec. 2015</td></tr>
</table>
Other forms of protection: trademark, secret know-how, winding technology</td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes</td></tr>
<tr><td>Your commercialization objectives</td><td>Research & Development Agreement (s)

Licensing

Joint Venture

Purchase & Sale Agreement (s)

Outright Sale of business/technology

Investment</td></tr>
<tr><td>Prospects on international market?</td><td>Global market of electric vehicle is in exponential growth.</td></tr>
<tr><td>Please explain why can this technology be interesting for a Japanese investor?</td><td>Advanced, efficient, cost-efficient and smart solution for future light electric vehicles in Japan.</td></tr>
<tr><td>Company (source) name</td><td>GEM motors d.o.o.</td></tr>
<tr><td>Address</td><td>Ljubljanska cesta 45</td></tr>
<tr><td>Main activity</td><td>Development and production of innovative electric motors</td></tr>
<tr><td>Contact details</td><td>Contact person: Simon Mandelj
Contact e-mail: simon.mandelj@gemmotors.si
Website: www.gemmotors.si</td></tr>
</table>

Contact-free medical image navigation during surgery by using simple gestures.	
Stage of the development	Ready for commercialization Commercially available in EU, Middle East
Where has this technology offer been published/introduced/ described before?	Our website: www.adora-med.com Microsoft Imagine Cup Worldwide Finals, Moscow, 2013: 2nd place. Exhibited at Medica 2015 (Dusseldorf), WATCH Society Conference 2015 (Dubai) and Arab Health 2016 (Dubai) show. Presented to selected hospitals in Slovenia, Croatia, Austria, Ireland, Portugal, Saudi Arabia, Kuwait, Taiwan and China.
Technological sector **According to the Field of science and technology classification**	2.6 Medical engineering
Non-Proprietary Description	**Short description of the technology:** ADORA Assistant™ enables a surgeon touch-less control of the patient scans in the operation room by using simple gestures, without having to touch the non-sterile devices, leaving the OR or asking for help of nonsterile nurse. The system consists of gesture sensors (Bluetooth armband) and a special software converting gestures to commands. It uses 5 basic hand gestures which surgeons usually master in 15 minutes. **Innovative aspects:** Touchless gesture based control of medical images. **Economic advantages:** - Reduced chance of patient's infections. An average cost of a daily stay of the hospitalized patient is estimated to $8,000. - Reduced time of operation by up to 20%. - Reduced costs of disinfecting material used during the operation. - Better ROI of operations. **Commercial advantages:** Novel high technology solution with nearly no competition. **Environmental advantages:** Savings on disinfection and sterilization materials, less water used. **Societal advantages:** Better healthcare and patient care begins by improving the well-being of doctors. ADORA is being built and developed with the one goal in mind: To help surgeons before, during and after surgery process.
Value Proposition	ADORA is tailored for surgeons and their teams. With no need for a surgeon to leave the patient, chances for a surgical site

	infection get drastically reduced. Post operational or “nosocomial” infections are very expensive for healthcare providers, according to EU report data 700.000.000 € per year. An average of 30% infections in EU hospitals can be traced back to SSI infection, infections that occurred during surgery and prolong recovery time by an average of 12-16 recovery days. By using contact-free user interface we reduce overall surgery time and anesthesia time for patients and save valuable staff and operational costs.
Existing alternatives	For a surgeon viewing medical images in a sterile environment is a challenging task. It is often delegated to an assistant or performed directly by the surgeon with an interaction device wrapped in a sterile plastic sheath or even located out of sterile environment. This process is time-consuming, inefficient and increases the chances for surgical site infections. Direct competitors Tedcas, Therapixel and Gestsure use camera or IR sensor to recognize gestures. Using a camera, the user has to be in the spectrum; passing people interfere with the signal and device has limited action area. Sensor works only 1- 5 meters from the camera. IR sensors: they work 0.5 meter from the sensor, user has to leave the operational field. With Adora, user can stay at the patient, using simple gestures to get the information needed. The computer can be distant up to 10 meters or even in the next room.
Collaboration(s)	Adora solutions were developed in collaboration with surgeons from University Medical Centre in Maribor, Slovenia.
Asian connections	A commercial agent in Taiwan Since March 2016.
Intellectual property status	Patent not yet applied for Other forms of protection: Trademark and trade secret.
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Research & Development Agreement (s) Licensing Joint Venture Purchase & Sale Agreement (s) Outright Sale of business/technology Investment New company formation

Prospects on international market?	Targets are technologically better equipped hospitals in EU, USA, Asia and Middle East. Estimated numbers of target hospitals per regions are: ○ EU: 70,000 ○ USA: 45,000 ○ Asia: 40,000 ○ ME: 15,000 By gaining 10% of the targets we would get 17,000 customers worldwide with an average of 5 installations per customer, a total of 85,000 installations in the next 5 years.
Please explain why can this technology be interesting for a Japanese investor?	A high technology, yet user friendly solution in the medical devices field. Limited direct competition. Facilitating work of surgeons, reducing chances of surgical site infections and saving costs to healthcare institutions. Clients are hospitals open to invest in new technology.
Company (source) name	**Adora Med Ltd**
Address	**Ul. Škofa Maksimiljana Držečnika 6, SI-2000 Maribor**
Contact details	**Contact person: Damjan Rotar** **Contact e-mail: damjan@adora-med.com** **Website: www.adora-med.com**

Torque Vectoring Platform (TVP) for electric driven vehicles with one motor per wheel configuration	
Stage of the development	Test data available
Where has this technology offer been published/introduced/ described before?	Web site: www.exor-evs.com
Technological sector According to the Field of science and technology classification	2.2 Electrical engineering, Electronic engineering, Information engineering
Non-Proprietary Description	**Innovative aspects:** All-in-one modular and scalable solution comprising Anti-lock Braking System (ABS), Traction Control System (TCS) and Electronic Stability Program (ESP); Possibility to adapt TVP to individual vehicle drivetrains, be it 2/4 (front or rear drive), 3/3 or 4/4; Compatibility of the TVP with any kind of BEV and serial HEV, such as for urban cars, common cars, sport cars, working vehicles, all-terrain vehicle, trucks, buses, urban commercial vehicles, heavy duty vehicles; **Economic advantages:** Competitive price: simplification of the drivetrain and related vehicle gives us a total cost reduction of 30% or more per vehicle drivetrain in case of mass production; **Environmental advantages:** Lower energy demand in the production process due to notable downsizing the number of assembly parts compared to the conventional drivetrains (minimum 50% less parts thus minimum 50% of energy savings); Minimisation of mass and volume of BEV and serial HEV with one motor per wheel electric drivetrain, hence less energy consumption in the production process and during the exploitation;
Value Proposition	BEV (Battery Electric Vehicles) and serial HEV (Hybrid Electric Vehicles), currently available on the market, are technologically more complex than the conventional ICE (Internal Combustion Engine) vehicles, which together with limited battery capacity and high price reduces their market competitiveness. Our main focus lies in the development of an advanced component solution for BEV and serial HEV which reduces both the cost and the complexity and increases the efficiency of the new generation electric drivetrains and simplifies the effective mechanical, thermal and electrical integration into the vehicle.
Existing alternatives	CURRENT STATE OF THE ART of torque vectoring drive systems is very complex implementation of torque vectoring,

	realized by mechanical differential and set of wet and electromagnetic clutches and electrical locks. This is replaced by a microcomputer that executes a set of dynamic equations and applies results in form of commands to motors or any combination of one motor per wheel technology and is concentrated in an electronic TVP connected to a series of sensors and motor controllers. Our TVP-eNext presents a breakthrough component that will simplify the BEV and serial HEV drivetrain and will consequently reduce its complexity and energy consumption
Collaboration(s)	Faculty of electrical engineering, FER, Zagreb, Croatia
Asian connections	We're in contact with Asian companies with the goal of getting projects or strategic partnership.
Intellectual property status	Patent not yet applied. We researched in detail the IPR databases and we have freedom to operate Patent application also possible
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Licensing Outright Sale of business/technology Investment
Prospects on international market?	80 MIO new cars are produced every year globally. Predictions for electric car growth are very optimistic for next 10 years period, high growth is expected. We expect that also one motor per wheel configuration will come forward with market growth.
Please explain why can this technology be interesting for a Japanese investor?	Japan has strong automotive industry that has focus in electric vehicles. We expect that one motor per wheel configuration is to be applied first on trend setter automotive markets like Japanese is.
Company (source) name	**EXOR EVS d.o.o.**
Address	**Styrian Technology Park 20A, Pesnica pri Mariboru, SI-2211 Pesnica pri Mariboru**
Main activity	**Electric Vehicles Solutions**
Contact details	**Contact person: Matjaz Berce, M.Sc.** **Contact e-mail: matjaz.berce@exor-evs.com** **Website: www.exor-evs.com**

3.26 SPAIN

Country introduction

Capital	Madrid	**Official EU language(s)**	Spanish
Geographical size	505 944 km^2	**Political system**	parliamentary constitutional monarchy
Population	46 449 565 *(2015)*	**EU member country since**	1 January 1986
Population as % of total EU population	9.1 % *(2015)*	**Currency**	Euro. Member of the eurozone since 1 January 1999
Gross domestic product (GDP)	€ 1.081 trillion *(2015)*	**Schengen area member?**	Yes, Schengen Area member since 26 March 1995.
Gross Domestic Expenditure on R&D (GERD) as % of GDP	1.22 (2014)		

The most important sectors of Spain's economy in 2014 were wholesale and retail trade, transport, accommodation and food services (24.1 %), public administration, defence, education, human health and social work activities (18.6 %), and industry (17.5 %).
Spain's main export partners are France, Germany and Portugal while its main import partners are Germany, France and China.

List of selected top three technologies:

1	Spatially multiplexed spectrophotometry: fast spectro	Knowledge Innovation Market
2	Polymeric membranes. Lithium polymeric membrane based on a semi-crystalline fluorinated polymeric matrix and a non-ionic surfactant	INSTITUTO TECNOLÓGICO DE LA ENERGÍA
3	A clinically validated blood test for determining biological age for use in preventive and personalized medicine, for early detection of age-related diseases, in cancer, stem cells as well as for pharma and nutraceutical drug development, R&D and clinical trials	LIFE LENGTH

<table>
<tr><th colspan="2">Spatially multiplexed spectrophotometry:
Fast spectro</th></tr>
<tr><td>Stage of the development</td><td>Prototype Available</td></tr>
<tr><td>Where has this technology offer been published/introduced/ described before?</td><td>The technology is protected under a patent.
Preliminary discussions with potential licensees and investors have already shown a potential interest in the technology exploitation exists.</td></tr>
<tr><td>Technological sector
According to the Field of science and technology classification</td><td>Cancer cells analysis</td></tr>
<tr><td>Non-Proprietary Description</td><td>The idea is born out of the discrimination of cancer cells from healthy cells by novel physical biomarkers.
Develop the instrumentation for the investigation of cell mechanics, a tool-box of three converging technologies for the aim of discriminating cancer and healthy cells from their physical properties: AFM, label-free microscopy and nanomechanical sensors.
TRL de 6-7. Existing protoype.
The maturity of the technology is high. It can be produced a number of in a short period of time.</td></tr>
<tr><td>Value Proposition</td><td>This technology is a new label free optical technique named Spatially Multiplexed Spectrophotometry (SMS). The technique allows spectral characterization of surfaces with one order of magnitude better lateral resolution than actual spectrophotometers, and two orders of magnitude shorter analysis time.
This technique has been applied to the classification of cancer cells by their refractive index and their mechanical properties.
Improved resolution and throughput: due to a new concept for nano-spectrophotometry with one order of magnitude better lateral resolution.
Earlier diagnosis of cancer: This technology will allow scientists to advance in diagnosis, with two orders of magnitude shorter analysis time.</td></tr>
<tr><td>Existing alternatives</td><td>There are no equipment in the market that provide a spatial analysis of blood samples.</td></tr>
<tr><td>Collaboration(s)</td><td>The technology has been developed by a Spanish Research Center</td></tr>
<tr><td>Asian connections</td><td>None</td></tr>
<tr><td>Intellectual property status</td><td>Patent already applied for
<table>
<tr><th>Number</th><th>Country</th><th>Application date</th></tr>
<tr><td>WO 2016/055683 A1</td><td>WO</td><td>2016</td></tr>
</table>
</td></tr>
</table>

Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Research & Development Agreement (s) Licensing Joint Venture Investment New company formation
Please explain why can this technology be interesting for a Japanese investor?	This technology can be applied in the of cancer detection
Company (source) name	**Knowledge Innovation Market**
Address	**Pallars 179-185 08005 Barcelona (Spain)**
Main activity	**Technology Transfer and Innovation**
Contact details	**Contact person: Elisenda Casanelles** **Contact e-mail: ecasanelles@kimglobal.com** **Website: www.kimglobal.com**

Polymeric membranes. Lithium polymeric membrane based on a semi-crystalline fluorinated polymeric matrix and a non-ionic surfactant	
Stage of the development	Developing Prototype Prototype Available
Where has this technology offer been published/introduced/ described before?	European patent application nº EP2860790A1 https://worldwide.espacenet.com/searchResults?ST=singleline&locale=en_EP&submitted=true&DB=&query=EP2860790A1&Submit=Search
Technological sector **According to the Field of science and technology classification**	Chemical engineering
Non-Proprietary Description	**Short description of the technology:** Lithium polymeric membrane characterized in that it comprises a fluorinated and semi-crystalline polymeric matrix, a lithium salt and a non-ionic surfactant as a plasticizer. It falls within the field of devices for converting electric energy into chemical energy, or vice versa. It is used as an electrolyte and/or separator in lithium polymeric batteries. **Innovative aspects:** The polymeric membranes have better thermal, electrochemical and mechanical properties. For example, the conductivity is between 2.4 10-8 and 1.20-5 S cm-1 at 25 °C; and between 1.6 10-5 and 3.4 10-4 in the temperature range of 40-100 °C. **Economic and commercial advantages:** Low cost. **Environmental advantages:** Less volatile, less flammable and environmentally friendly. **Societal advantages:** Development of new energy sources as a possible alternative non-fossil energy sources.
Value Proposition	The lithium batteries that are currently available on the market use liquid electrolytes which consist of lithium salts dissolved in highly **flammable** solvents. This product substitutes the liquid carbonates used as a solvent in liquid batteries with a plasticizer in polymeric batteries, since it is necessary to use plasticizers that are less volatile, less flammable, environmentally friendly, and low cost.
Existing alternatives	At present, commercial systems use electrolytes based on organic carbonates such as, for example, ethylene carbonate (EC), diethyl carbonate (DEC) or ethylmethyl carbonate (EMC). The reason why this type of plasticizers is used is that they dissolve lithium salts in a sufficient concentration due to the high dielectric constant thereof, and they are electrochemically stable up to approximately 4 V. However, these carbonates are

<table>
<tr><td></td><td>flammable and volatile, which still causes serious safety problems in batteries and reduces the range of operability. See more info in https://worldwide.espacenet.com/searchResults?ST=singleline&locale=en_EP&submitted=true&DB=&query=EP2860790A1&Submit=Search</td></tr>
<tr><td>Collaboration(s)</td><td>Technlogy of own property although research developed within SOMABAT European Project (FP7): http://www.somabat.eu/</td></tr>
<tr><td>Asian connections</td><td>No</td></tr>
<tr><td>Intellectual property status</td><td>Patent already applied for
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>EP2860790A1</td><td>European</td><td>01/09/2014</td></tr>
</table></td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes</td></tr>
<tr><td>Your commercialization objectives</td><td>Research & Development Agreement (s)

Licensing</td></tr>
<tr><td>Prospects on international market?</td><td>We are interested in international markets as a commercial growth opportunity.</td></tr>
<tr><td>Please explain why can this technology be interesting for a Japanese investor?</td><td>Technology at worldwide level with interesting applications in polymer batteries development.</td></tr>
<tr><td>Company (source) name</td><td>Instituto tecnológico de la energía</td></tr>
<tr><td>Address</td><td>Avda. Juan de la cierva 24</td></tr>
<tr><td>Main activity</td><td>Research and development</td></tr>
<tr><td>Contact details</td><td>Contact person: VICENTE GAVARA (International Project Responsible)
ANDRÉS LLUNA (4.0 industry Responsible),
Contact e-mail: vicente.gavara@ite.es , andres.lluna@ite.es
Website: http://www.ite.es/</td></tr>
</table>

A clinically validated blood test for determining biological age for use in preventive and personalized medicine, for early detection of age-related diseases, in cancer, stem cells as well as for pharma and nutraceutical drug development, R&D and clinical trials	
Stage of the development	Commercially available globally
Where has this technology offer been published/introduced/ described before?	Life Length is the world leader in telomere diagnostics and measurements. We are Spain's only U.S. Federally certified "CLIA" laboratory and are also ISO 15189 accredited. We provide our Telomere Analysis Technology® (TAT®) test in 35 countries. See our website for media coverage, press releases, awards and more.
Technological sector **According to the Field of science and technology classification**	3.2 Clinical Medicine
Non-Proprietary Description	**Short description of the technology:** Telomere Analysis Technology® (TAT® for short) – the only technology in the world that measures telomeres at the chromosomal level, cell-by-cell producing outstanding clinical reports for doctors to assist patients to improve their health and reduce disease risk **Innovative aspects:** Incredibly sensitivity, reproducibility, and accuracy **Economic advantages:** Outstanding value/price relationship **Commercial advantages:** Easy for clients to incorporate and use **Environmental advantages:** No environmental issues **Societal advantages:** Enormously important in contributing to improving health and life spans in people worldwide
Value Proposition	Life Length's TAT is a crucial innovative biomarker for determining cellular health and hence biological age. Our test is being used by doctors in more than 35 countries as part of preventive and personalized medicine programs for patient risk stratification, early detection of age-related diseases including cardiovascular, diabetes, cancer, infertility among others and for monitoring the efficacy of life-style programs. Life Length's technology is also a powerful tool for pharma R&D, drug development and clinical trials.
Existing alternatives	There are no competing technologies commercially available that are capable of competing with Life Length's technology at this time. Older technologies such as qPCR, flow cytometry and TRF do not precise the granularity of individual telomere measurements nor the accuracy, reproducibility or scalability of TAT®. We can provide evidence and facts under NDA.

Collaboration(s)	The original technology was developed in Spain's most important scientific research center, the Spanish National Cancer Research Center, from which we licensed the basic technology in 2010.
Asian connections	Life Length already has a Japanese investor. Yamada Bee Farm and would be interested in being commercial operational in Japan. We are also in discussions with potential partners in Korea, China and Malaysia.
Intellectual property status	One granted patent in USA and other forms of protection.
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Research & Development Agreement (s) Licensing Joint Venture Investment
Prospects on international market?	Outstanding. We are a unique company in the world; unquestionable leader in our field.
Please explain why can this technology be interesting for a Japanese investor?	Already explained.
Address	**C/ Miguel Angel, 11 – 2º Madrid 28010 Spain**
Main activity	**Life sciences company operating in diagnostic and clinical medicine**
Contact details	**Contact person: Stephen Matlin** **Contact e-mail: smatlin@lifelength.com** **Website: www.lifelength.com**

3.27 SWEDEN

Country introduction

Capital	Stockholm	**Official EU language(s)**	Swedish
Geographical size	438 574 km2	**Political system**	parliamentary constitutional monarchy
Population	9 747 355 (2015)	**EU member country since**	1 January 1995
Population as % of total EU population	1.9 % (2015)	**Currency**	Swedish krona SEK
Gross domestic product (GDP)	€ 444.235 billion (2015)	**Schengen area member?**	Yes, Schengen Area member since 25 March 2001.
Gross Domestic Expenditure on R&D (GERD) as % of GDP	3.16 (2014)		

The most important sectors of Sweden's economy in 2014 were public administration, defence, education, human health and social work activities (24.5 %), industry (19.7 %) and wholesale and retail trade, transport, accommodation and food services (17.4 %).
Sweden's main export partners are Norway, Germany and the UK, while its main import partners are Germany, Norway and the Netherlands.

List of selected top three technologies:

1	Non-toxic biodegradable hydrocarbon heat transfer fluid	Avantherm AB
2	Triblade	Winfoor AB
3	Quartzene, a low cost aerogel like material	Svenska Aerogel AB

<table>
<tr><th colspan="2">Non-toxic biodegradable hydrocarbon heat transfer fluid</th></tr>
<tr><td>Stage of the development</td><td>Commercially available, where: Nordic countries</td></tr>
<tr><td>Where has this technology offer been published/introduced/ described before?</td><td>Through various company activeties with RnD-partners in Northern Europe
Product descriptions available through our web page www.avantherm.com.</td></tr>
<tr><td>Technological sector
According to the Field of science and technology classification</td><td>Mechanical engineering 2.3
Environmental engineering 2.7</td></tr>
<tr><td>Non-Proprietary Description</td><td>Short description of the technology:
Hydrocarbon alternative to water/glycol mixtures for cooling/heating
Innovative aspects:
Biodegradable, low viscosity at very low temperatures, non-corrosive
Economic advantages:
Longer service life for liquid and equipment
Commercial advantages:
Lower cost of ownership
Environmental advantages:
Biodegradable, non-toxic alternative
Societal advantages:</td></tr>
<tr><td>Value Proposition</td><td>Removal of heat for heating or cooling purposes is a general industrial problem in automotive, production, chemical, pharmaceutical, constuction, real estate and energy sectors. Our liquid products are used to transport heat efficiently and in an environmentally fiendly way.</td></tr>
<tr><td>Existing alternatives</td><td>The present solution is to use mixtures of glycol and water. In comparison our products are non-toxic, biodegradable, made from renewable sources, and non-corrosive. Our products have a much lower viscosity at very low temperatures, making it more efficient for heat transport, and at high temperatures the vapour preasure is much lower. Because of this the liquids can be used at much higher temperatures (up to 250 C) than liquids containing water.</td></tr>
<tr><td>Collaboration(s)</td><td>Yes:
Mainly with Royal Institute of Technology (KTH), Stockholm in part by R&D-grants from the Swedish government/EU.
Several organisations and companies have also been involved at various stages.</td></tr>
<tr><td>Asian connections</td><td>No</td></tr>
<tr><td>Intellectual property status</td><td>Granted patent - patent number/s:
<table>
<tr><th>Number</th><th>Country</th><th>Application date</th></tr>
<tr><td>534969C2</td><td>SE</td><td>May 25, 2010</td></tr>
</table>
</td></tr>
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<table>
<tr><td></td><td>_X Patent already applied for
<table><tr><td>Number</td><td>Country</td><td>Application date</td></tr><tr><td>2013532202A</td><td>JP</td><td>June 9, 2016</td></tr></table>
Also other forms of protection</td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Already</td></tr>
<tr><td>Your commercialization objectives</td><td>Research & Development Agreement (s)

Licensing (nonexclusive; geographic/application specific)

Purchase & Sale Agreement (s)</td></tr>
<tr><td>Prospects on international market?</td><td>As interest in rewnewable products grow we believe prospects are very good</td></tr>
<tr><td>Please explain why can this technology be interesting for a Japanese investor?</td><td>The technology is likely of interest to industry regardless of country.</td></tr>
<tr><td>Company (source) name</td><td>Avantherm AB</td></tr>
<tr><td>Address</td><td>PO Box 1132, SE-131 26, Nacka Strand</td></tr>
<tr><td>Main activity</td><td>Sales and development of renewable oil products</td></tr>
<tr><td>Contact details</td><td>Contact person: Per Wiklund
Contact e-mail: per.wiklund@avantherm.com
Website: www.avantherm.com</td></tr>
</table>

Triblade	
Stage of the development	Developing Prototype
Where has this technology offer been published/introduced/ described before?	www.winfoor.com www.wind-rotor-blades.com/
Technological sector **According to the Field of science and technology classification**	2.7
Non-Proprietary Description	**Short description of the technology:** The patent pending technology is a 3-in-1-blade that will reduce production cost and increase ease of transport while allowing rotor blades to be longer, stronger and much lighter than what is possible today. These are game changing improvements for the wind power industry. Triblade is a completely new designed for wind turbine rotor blade. Instead of a single rotor blade, each blade is split up into three parallel but slenderer blades. Together with supporting structure it makes up a truss (lattice) with very high stiffness and low mass. Using the same material as in standard blades the mass can be reduced by up to 80 % and at the same time making it possible to produce much longer blades than what is possible today. Triblade has been tested extensively through simulations and in wind tunnel. A Triblade rotor has also been installed on a wind turbine (see front page picture) and field tested under real conditions for functionality and power production. The test is a proof-of-concept and shows that the technology performs according to expectations. Reduce blade cost by up to 60 %. - Less material used. - Automated/streamlined production. - Transport in modules to reduce logistic cost
Value Proposition	Triblade is a new and ground-breaking technology for large scale wind turbine rotor blades that may disrupt the entire wind power industry.
Existing alternatives	To our knowledge there are no competitors with such a significant change in wind turbine blades technology as Triblade. Instead competitors are working on incremental improvements. Competitors working on blade inno-vations include LM Wind which is looking into using new materials to improve blade performance and incorporating advanced sensors to control the blades more accurately.

Collaboration(s)	Developed by Winfoor in cooperation with Lund University, Sweden.
Asian connections	No
Intellectual property status	Several patent applications. No approved patent yet.
Is it possible to file Japanese patent application?	Yes
Your commercialization objectives	Purchase & Sale Agreement (s) Investment
Prospects on international market?	Yes
Company (source) name	**Winfoor AB**
Address	**Åldermansgatan 2, 227 64 Lund**
Main activity	**Developing new technology for wind turbine rotor blades**
Contact details	**Contact person: Rikard Berthilsson** **Contact e-mail: rikard@winfoor.com** **Website: www.winfoor.com**

Quartzene, a low cost aerogel like material	
Stage of the development	Ready for commercialization
Where has this technology offer been published/introduced/ described before?	Academic theses and articles in scientific journals - "Preparation and evaluation of new nano-porous silica materials for molecular filtration and for core materials in vacuum insulation panels", Ebenezer Twumasi Afriyie, Dr thesis, March 2013, KTH Royal Institute of Technology, ISBN 978-91-7501-701-3 - "Robust and durable vacuum insulation technology for buildings", Peyman Karami, Dr thesis, December 2015, KTH Royal Institute of Technology, ISBN 978-91-7595-742-5 International & national conferences, e.g. - 10th Int. Conf. on Fundamentals of Adsorption, May 23 – 28, 2010, Awaji, Hyogo, Japan - 12th int. Conf. on Durability of Building Materials and Components, XII DBMC, 12-15 April, 2011, Porto, Portugal Partnership and/or lead role in European funded R&D&Innovation projects, e.g. - "H-House; Healthier Life with ECO-innovative Components for Housing Constructions", Grant Agreement 608893, 7th Framework Programme, CEC, EU, 2013 – Jan 2017, Collaborative Project, Sv Aerogel is partner - "SESBE; Smart Elements for Sustainable Building Envelopes", Grant Agreement 608950, 7th Framework Programme, CEC, EU, 2013 – August 2017, Collaborative project, Sv Aerogel is partner - E! Aerofilter – Filters for selective cleaning of air, Eureka/Eurostar, May 2016 – April 2018, Sv Aerogel is coordinator - Quartzene – Market uptake of the world´s first low cost aerogel-type nano-material, H2020-SMEINST-2-2015, SME-2 type of project, Sv Aerogel is sole partner and sole receiver of funds, May 2016 – April 2018 - .....
Technological sector **According to the Field of science and technology classification**	Process industry in the field of nano-porous predominantly silica based materials
Non-Proprietary Description	**Short description of the technology:** Environmentally friendly production of a low cost aerogel-type material to be used for improving properties of existing products in areas Thermal Insulation, Filtration of Gases and Liquids, and Coatings **Innovative aspects:** Svenska Aerogel AB provides a patented ambient pressure and drying water based technology to produce the aerogel-like material Quartzene®. The powder can be utilized

<table>
<tr><td></td><td>as ingredient material in various material matrixes, or as a filter medium. The Quartzene material comes out of the process as a hydrophilic powder, but can be made hydrophobic.

Commercial advantages: Quartzene can enhance various desired properties in the end product, such as improved thermal or acoustic isolation. These products can be blankets, boards, paper or concrete. It can improve surface properties such as improved chemical resistance, humidity regulation, surface printability of paints and coating. It can be used to remove unwanted and harmful molecules from both air and water.
Environmental advantages: The Svenska Aerogel production method is energy efficient and uses common raw materials and produces very little waste.
Societal advantages: Reduced energy consumption by better insulation materials. Improved indoor air quality by humidity regulating coatings. Improved air quality also by tailor-made new filter materials.</td></tr>
<tr><td>Value Proposition</td><td>The simplified and efficient production method makes the price of Quartzene about 50-60 % lower compared to classically produced aerogels. This opens up new business opportunities in areas where the classical aerogels are not competitive.</td></tr>
<tr><td>Existing alternatives</td><td>Classically produced aerogels are due to high production cost mainly used in blankets or boards for improved high performance thermal insulation. The high cost only makes it possible to address niche markets which limits the market potential.</td></tr>
<tr><td>Collaboration(s)</td><td>The technology was developed with an industrial partner from the air filtration industry.</td></tr>
<tr><td>Asian connections</td><td>Svenska Aerogel have since August 2016 an agent and distributor agreement with a Japanese company. There is also i) since 2 years an ongoing collaboration with a large Korean company within a number of coating applications and ii) since six months with a Chinese company also regarding coatings.</td></tr>
<tr><td>Intellectual property status</td><td>Granted patent - patent number/s:
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>SE529160C2</td><td>Sweden</td><td>15 May 2007</td></tr>
<tr><td>US7,736,611 B2</td><td>USA</td><td>15 June 2010</td></tr>
<tr><td>ZL 200580048765.1</td><td>China</td><td>1 Feb 2012</td></tr>
<tr><td>CA 2592619</td><td>Canada</td><td>30 Sep 2014</td></tr>
</table>
Other forms of protection: Trademark Quartzene®</td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>No</td></tr>
<tr><td>Your commercialization objectives</td><td>Purchase & Sale Agreement (s)</td></tr>
<tr><td>Company (source) name</td><td>Svenska Aerogel AB</td></tr>
<tr><td>Address</td><td>Strömmavägen 2, SE-803 09 Gävle, SWEDEN</td></tr>
</table>

Main activity	**Production, R&D, and customer adaptation of the patented silica based aerogel-type material Quartzene®**
Contact details	**Contact person: Anders Lundström (AL), CEO** **Christer Sjöström (ChS), Head R&D** **Contact e-mail: AL: anders.lundstrom@aerogel.se** **ChS: christer.sjostrom@aerogel.se** **Website: www.aerogel.se**

3.28 UNITED KINGDOM

Country introduction

Capital	London	**Official EU language(s)**	English
Geographical size	248 528 km²	**Political system**	parliamentary constitutional monarchy
Population	64 875 165 *(2015)*	**EU member country since**	1 January 1973 (To 2018)
Population as % of total EU population	12.8 % *(2015)*	**Currency**	pound sterling GBP
Gross domestic product (GDP)	€ 2.569 trillion *(2015)*	**Schengen area member**	No, the UK is not a member of the Schengen Area.
Gross Domestic Expenditure on R&D (GERD) as % of GDP	1.7		

The most important sectors of the UK's economy in 2014 were public administration, defence, education, human health and social work activities (18.3 %), wholesale and retail trade, transport, accommodation and food services (18.4 %) and industry (13.5 %).
The UK's main export partners are Germany, the US and the Netherlands, while its main import partners are Germany, China and USA.

List of selected top three technologies:

1	The Expanded Bed Biofilm Reactor: a generic technology for intensification of bioprocesses, such as water or wastewater treatment, fermentation or biocatalysis.	Advanced Bioprocess Development Ltd.
2	Cytosystems Ltd: developing non-invasive technology to diagnose bladder cancer	Cytosystems Ltd
3	World's First Method For 3D Printing Room Temperature Curing Silicone Rubber	Fripp Design Limited

The Expanded Bed Biofilm (EBBR) Reactor: a generic technology for intensification of bioprocesses, such as water or wastewater treatment, fermentation or biocatalysis.	
Stage of the development	Ready for commercialization
Where has this technology offer been published/introduced/ described before?	Venturefest 2015, Manchester UK http://venturefestmanchester.com/news/september-2015/innovation-showcase-finalists-announced Carbon Trust Cleantech Investor Forum 2016 https://www.carbontrust.com/about-us/events/2016/09/clean-tech-investor-forum/ https://www.justinvesting.com/restricted/application/6a66826c-7682-47b6-9f35-0918bdfed53e
Technological sector According to the Field of science and technology classification	2.8 Environmental biotechnology 2.9 Industrial Biotechnology
Non-Proprietary Description	**Short description of the technology:** Immobilization of process microbes on 1 mm particles of ABDite®(porous carbon) as biofilm, to form bioparticles that are fluidized by upflow of process liquid (water, wastewater , growth medium or substrate solution), causing the bed to expand. A high concentration (up to 42 g/L) and large surface area (up to 2,400 m^2/m^3) of active biofilm is constantly bathed in the process liquid, allowing rapid and efficient transport of substrates to cells and products from cells. EBBR processes are mechanically simple and have a small footprint, resulting in low capex. **Innovative aspects:** • Counter-current aeration system with high efficiency and low running cost. • Inexpensive biomass support material ("media" in water industry parlance): ABDite®, 1 mm particles of porous carbon. • Automatic system to control biofilm thickness, which requires no actuators or moving parts. • Rational design of inlet distributor avoids excessive turbulence and loss of energy. **Economic advantages:** • Lowest capex and opex compared to competing tertiary wastewater treatment processes. • 10-fold increase in biomass concentration and thus rate of reaction. **Commercial advantages:** • Package plants can be manufactured under factory conditions, to ensure high quality and rapid installation. **Environmental advantages:** • Tertiary wastewater treatment process designed for nitrification can reduce ammonia-N concentration to < 1 mg/L,

	as well as reducing residual organic matter (BOD), suspended solids, bacteria (including *E. coli* & other coliforms), and oestrogens. • Tertiary wastewater treatment process also likely to consume greenhouse gases (methane and nitrous oxide), rather than generate them. **Societal advantages:** • Tertiary wastewater treatment process will improve protection of aquatic environment and atmosphere. • Compact, low totex process technology for lower consumer costs.
Value Proposition	Initial process (TRL7) for tertiary treatment of wastewater, to remove ammonia and other residual pollutants (short residence time, 1 h). Technology also suitable for nitrification of raw water, landfill leachate or anaerobic digestate; as well as anaerobic digestion of liquid wastestreams, denitrification (raw or wastewater). Phosphate removal might also be possible. Fermentation processes can also be intensified, by immobilizing up to 10-times more biomass than conventional suspension cultures can achieve. Cells with specific enzyme activity can be grown as biofilm, growth medium replaced with substrate solution and use immobilized cells to produce specific product. Cells can be re-generated by replacing product-rich solution with growth medium.
Existing alternatives	For ammonia removal from wastewater, extended aeration activated sludge (AS) or conversion to IFAS (e.g. Headworks Bio), MBBR (e.g. Veolia Water Technologies' Kaldnes) or MBR (e.g. GE Power Water and Process Technologies or Kubota Corporation) can be used. AS is an energy-intensive technology that has a low biomass concentration (0.6-3.0 g/L) and consequently occupies a large land area and has a long residence time (8 h). Extended aeration increases the energy consumption and land area required. IFAS and MBBR rely on expensive, manufactured biomass support media that have at least 10-fold less surface area then ABD's ABDite®. MBR relies on expensive membranes that must be cleaned regularly and replaced every 7 years or so. Alternative tertiary treatment technologies include Veolia Water Technologies' Biostyr process. ABD's EBBR was piloted using the same AS final effluent as the Biostyr at Davyhulme Wastewater Treatment Works (Manchester, UK), when it nitrified at 2.5 times the rate but using only 60% of the air.
Collaboration(s)	The technology was developed by Dempsey at Manchester Metropolitan University (MMU). ABD was established to commercialize the technology and is currently owned by Dempsey and MMU. ABD is the beneficial owner of patents granted on three improvements to EBBR technology that

<table>
<tr><td></td><td>Dempsey invented. Dempsey is employed by MMU for 4 days per week and is also Managing Director of ABD. Currently, he draws no income from ABD.</td></tr>
<tr><td>Asian connections</td><td>Dempsey had a study visit to Prof. Hideki Fukuda's lab at Kobe University but there has been no formal collaboration on the EBBR technology.</td></tr>
<tr><td>Intellectual property status</td><td>Granted patent - patent number/s:
<table>
<tr><th>Number</th><th>Country</th><th>Application date</th></tr>
<tr><td>EP1129037</td><td>UK, Ireland, France, Germany, Netherlands, Spain, Luxemburg, Switzerland</td><td>26/10/1999</td></tr>
<tr><td>EP1444167</td><td>UK, Ireland, France, Germany, Netherlands, Spain, Luxemburg, Switzerland</td><td>10/9/2002</td></tr>
<tr><td>2002334149</td><td>Australia</td><td>10/9/2002</td></tr>
<tr><td>2008200662</td><td>Australia</td><td>12/2/2008</td></tr>
<tr><td>CA 2348520</td><td>Canada</td><td>26/10/1999</td></tr>
<tr><td>CA 2500843</td><td>Canada</td><td>10/9/2002</td></tr>
</table>
Patent already applied for
<table>
<tr><th>Number</th><th>Country</th><th>Application date</th></tr>
<tr><td>532855</td><td>New Zealand</td><td>11/5/2004</td></tr>
<tr><td>6572773</td><td>USA</td><td>29/6/2001</td></tr>
<tr><td>7309433</td><td>USA</td><td>10/9/2002</td></tr>
<tr><td>7708886</td><td>USA</td><td>24/9/2004</td></tr>
</table>
Other forms of protection:
Owing to the high cost of patenting, certain design features of the EBBR have been maintained as Trade Secrets, which could be patented in the future given sufficient resources and a commercial need.</td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes (some current Trade Secrets could be patented)</td></tr>
<tr><td>Your commercialization objectives</td><td>Licensing

Investment</td></tr>
<tr><td>Prospects on international market?</td><td>The global market for wastewater treatment is large and growing.</td></tr>
</table>

Please explain why can this technology be interesting for a Japanese investor?	• Compact technology for minimal installation space. • High quality treated effluent for protection of rivers and coastal waters. • Potential for removal of pharmaceuticals, personal care products, and other priority pollutants of importance in highly developed countries. • potential for development of other compact bioprocesses for water or wastewater treatment, fermentation or biocatalysis.
Company (source) name	**Advanced Bioprocess Development Ltd.**
Address	**John Dalton Building, Chester Street, Manchester, M1 5GD**
Main activity	**Development of bioprocesses using expanded bed biofilm reactor technology**
Contact details	**Contact person: Dr Mike Dempsey** **Contact e-mail: mike.dempsey@bioprocesses.co.uk** **Website: www.bioprocesses.co.uk**

Cytosystems Ltd: developing non-invasive technology to diagnose bladder cancer	
Stage of the development	Prototype Available
Where has this technology offer been published/introduced/ described before?	Website: www.cytosystems.com Published: National Cancer Research Institute, British Association of Urological Surgeons, British Journal of Cancer, European Society for Medical Oncology, Clinical Cancer Research. All details can be found at http://cytosystems.com/index.php/news/publications Conferences: Medica Trade Fair, TechFest, BAUS, MediCity Social media: LinkedIn https://www.linkedin.com/company/cytosystems-ltd
Technological sector According to the Field of science and technology classification	3.4 Medical and health sciences: health biotechnology
Non-Proprietary Description	**Short description of the technology:** 429,000 people are diagnosed with bladder cancer globally per year. The current gold standard technology for diagnosing and monitoring bladder cancer is cystoscopy: an invasive, expensive procedure with risk of infection. Additional tools used to diagnose bladder cancer include urinary cytology and various molecular markers; these are non-invasive but lacks the sensitivity and specificity required for an accurate diagnosis. Cytosystems Ltd have developed a urine-test for bladder cancer which is both non-invasive and highly accurate: BladderLight™. BladderLight™ contains i) a device to collect and preserve bladder cells from urine, ii) a stain to identify malignancy, iii) automated software to analyse the cells and produce a report. Our technology will reduce the financial burden of bladder cancer, improve the patient experience, and simplify clinical practice for diagnosing cancer. Our technology has the potential to be used in other cancers, such as prostate cancer. Innovative aspects: Unlike our competitors' molecular tests, Cytosystems utilizes a whole-cell approach. This is made possible through our device, which captures bladder cells, preserves them, and maintains their morphometric details for analysis. The BladderLight software analyses the nature of each and every cell for a comprehensive analysis. Our whole-cell approach ultimately improves the accuracy of our test, and the automated analysis reduces subjectivity.

	Economic advantages: Bladder cancer is the most expensive cancer to manage. In part, this is due to the high recurrence rate of bladder cancer, and the expense of cystoscopy. Our urine-based test will be substantially cheaper, with possible savings to Europe alone of ~£800m. Commercial advantages: Non-invasive tests for cancer as part of national screening programmes are becoming more and more likely. Our test fits into current standard practice, is cost-effective and also highly accurate, making it a strong competitor to urine cytology, cystoscopy, and other urinary biomarker tests. Environmental advantages: There is the potential that our test could be used as point of care, reducing the transport needed by patients to hospitals. Societal advantages: Early diagnosis of cancer is essential for a better chance of survival. Our test is non-invasive and efficient. An additional downfall to cystoscopy is the risk of infection, which can lead to complications requiring time spent overnight in a hospital. Our test has no risk of infection, thus reducing the need for additional treatments. Being non-invasive, BladderLight, is not uncomfortable for the patient.
Value Proposition	Cytosystems' whole-cell approach together with the automated analysis reduces the subjectivity of diagnosis and increases accuracy. Our single use cell collection device, captures cells from urine and preserves them, thus retaining cell integrity and preventing damage to the cells –this helps to increase the sensitivity of the assay and is particularly useful in rural locations and in hot climates where degradation of cells is accelerated. Being partially automated, BladderLight reduces the burden on cytopathologists, ~85% of bladder cancer diagnostic tests are negative. Our technology can also be applied to other cancers, such as prostate cancer.
Existing alternatives	Cystoscope: the current 'gold-standard' of bladder cancer diagnosis. It is an invasive procedure with a risk of infection, but currently is the most accurate option available. Patients receive a cystoscopy to be diagnosed with bladder cancer, and they receive many cystoscopies after a diagnosis to monitor for recurrence of the disease; approximately 15% chance of recurrence per year post treatment. Cytology: a non-invasive urine test, suffers from poor sensitivity and thus cannot be used in isolation without cystoscopy.

<table>
<tr><td></td><td>Current main competition: UroVysion is a molecular urine-based test but lacks the sensitivity and specificity to supersede cystoscopy.

BladderLight: with the accuracy of cystoscopy, and the non-invasiveness of cytology, this test provides a strong alternative to UroVysion.</td></tr>
<tr><td>Collaboration(s)</td><td>The technology foundation of the MCM2 biomarker came from research conducted at the University of Cambridge.
Cytosystems collaborates with expert clinicians and researchers at the University of St Andrews.
In addition to academic collaboration, Cytosystems works alongside highly experienced urologists and pathologists, industrial designers, software specialists, and medical staff in local hospitals.</td></tr>
<tr><td>Asian connections</td><td>No.</td></tr>
<tr><td>Intellectual property status</td><td>__Granted patent - patent number/s:
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>2011-514120</td><td>Japan</td><td>18 June 2009</td></tr>
<tr><td>2009203592</td><td>Australia</td><td>09 January 2009</td></tr>
<tr><td>12701160.9</td><td>Europe (EP)</td><td>06 January 2012 (Granting in November 2016)</td></tr>
</table>
__Patent already applied for
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>15/046321</td><td>US</td><td>17 February 2016</td></tr>
<tr><td>14/489,207</td><td>US</td><td>15 December 2010</td></tr>
<tr><td>13/512,585</td><td>US</td><td>06 January 2012</td></tr>
<tr><td>15/101227</td><td>US</td><td>26 January 2016</td></tr>
<tr><td>13703634.9</td><td>Europe (EP)</td><td>04 January 2013</td></tr>
<tr><td>1511196.6</td><td>UK</td><td>25 June 2015</td></tr>
<tr><td>1518422.9</td><td>UK</td><td>19 October 2015</td></tr>
</table>
Other forms of protection: trademark - BladderLight™</td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes</td></tr>
<tr><td>Your commercialization objectives</td><td>Research & Development Agreement (s)

Licensing (nonexclusive)

Purchase & Sale Agreement (s)

Outright Sale of business/technology</td></tr>
</table>

	Investment
Prospects on international market?	Yes. Bladder cancer is prevalent globally.
Please explain why can this technology be interesting for a Japanese investor?	Because bladder cancer is a global problem, and many people in Japan will be diagnosed with bladder cancer each year (2.5 – 8 cases per 100,000) and require frequent monitoring – BladderLight will be used in diagnosis and monitoring of this population..
Company (source) name	**Cytosystems Ltd**
Address	**Cruickshank Building, Craibstone, Aberdeen, AB21 9TR**
Main activity	**Biotechnology: the development of non-invasive *in vitro* cancer diagnostics**
Contact details	**Contact person: Nigel McLean** **Contact e-mail: nigel.mclean@cytosystems.com** **Website: www.cytosystems.com**

World's First Method For 3D Printing Room Temperature Curing Silicone Rubber	
Stage of the development	Tested in the lab (proof of concept)
Where has this technology offer been published/introduced/ described before?	www.picsima.com https://www.youtube.com/watch?v=8uYTrm83Uvk
Technological sector **According to the Field of science and technology classification**	Could not find a code for Additive Manufacture/3D Printing
Non-Proprietary Description	**Short description of the technology:** A method for 3D Printing silicone rubber removing the need for moulding as well as being able to create new geometries that cannot be moulded **Innovative aspects:** Historically room Temperature curing silicone uses a base oil, a cross linker (to determine how hard/soft a part will be) and a catalyst all mixed together and left to cure at room temperature (Room Temperature Vulcanisation). The Picsima method does not mix in the catalyst. Instead the catalyst is extruded into a bath of silicone oil and catalysts. As the catalyst comes into contact with the material in the bath, the silicone rubber is cured. Therefore the catalyst can be controlled to create 3 dimensional geometry, a layer at a time i.e. it can now be 3D Printed **Economic advantages:** As 3D Printing is an 'additive process', no material is wasted. This is even more important with silicone where moulding, typically, produces 20% waste through over moulding and the removal of excess material ('flash') **Commercial advantages:** Another name for 3D Printing is 'Time Compression Technologies' and 3D Printing silicone is an example of a time saving method for creating 3 dimensional silicone rubber objects. In addition there is no longer a need to make a mould, saving more time. In both of the above, the ultimate advantage is faster turnaround in making rubber parts. The second advantage is you can now create parts which are not possible to be moulded (parts which require internal voids for example). The third advantage is we can cure ANY commercially available 2 part RTV platinum curing silicones, these include industrial, food and medical grade silicones.

	To date, the company has received over 200 qualified enquiries to 3D Print silicone. Enquiries range from global companies (such as Apple, Disney, J&J, JLR, Smith & Nephew, Philips), through to medium size medical device companies (such as ResMed) through to inventors. **Environmental advantages:** Principle environmental advantage is the reduction in the production of waste rubber through over moulding (see above) Secondary advantage is the general principle that 3D Printing reduces the amount of products required to be shipped from one point to another. 3D Printing allows for the digital transfer of data from one place to another where it can then be re created on a 3D Printer. **Societal advantages:** This will come in many forms based on the types of parts to be 3D Printed. For example, our technology is capable of 3D printing custom breast implants, implants that would never leak because they would be completely cured. As important, they could be made custom to the patient relieving much stress following a mastectomy. At the consumer level, the technology is capable of 3d Printing custom ear plugs removing all extraneous noise to improve the quality of the music listened to and removing the annoying 'tinny' should that everyone else around has to endure.
Value Proposition	To date silicone rubber can only be moulded, this restricts the application use because of costing and the limited geometry that can be created by moulding. With our technology these restrictions are lifted. Most importantly, the technology uses existing materials, materials that have already been developed and produced by material manufacturers such as Dow, Wacker, Nusil, BlueStar etc
Existing alternatives	Existing polymer based 3D Print technologies are restricted by the materials they require to make their 3D Print technology work. This restriction means tensile strength, tensile shear and temperature ranges are compromised. Our technology is the only one you can make ultra soft and stretchy capable of being used in sub zero temparatures as well as being capable of being steralised. There is one other company that is UV curing silicone rubber. But this technology is limited in the type of geometry and softness. Others have evaluated both UV curing and the RTV curing of silicone and have told us that ours is the only method that is fit for purpose (The UK's Ministry of Defence being one of them).
Collaboration(s)	No
Asian connections	No

<table>
<tr><td>Intellectual property status</td><td>Granted patent - patent number/s:
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>GB2524454</td><td>UK</td><td>24/10/24</td></tr>
</table>
Patent already applied for
<table>
<tr><td>Number</td><td>Country</td><td>Application date</td></tr>
<tr><td>P751510US-PCT</td><td>US</td><td>31/05/2016</td></tr>
<tr><td>P751510EP-PCT</td><td>Europe</td><td>31/05/2016</td></tr>
</table></td></tr>
<tr><td>Is it possible to file Japanese patent application?</td><td>Yes</td></tr>
<tr><td>Your commercialization objectives</td><td>Investment</td></tr>
<tr><td>Prospects on international market?</td><td>The global markets for silicone rubber are wide, from medical implants through to industrial prototypes and on to consumer devices such as ear plugs. As already stated, with a limited website (which cost $100) and a little PR we have already generated over $1M of enquiries. Currently we are turning customers away because of the lack of investment.</td></tr>
<tr><td>Please explain why can this technology be interesting for a Japanese investor?</td><td>Japan is one of the world’s most developed economies with the right demographic for needing silicone rubber. In addition Japan has a wealth of talent for developing engineering ideas into manufactured products.
Plus you contacted us.</td></tr>
<tr><td>Company (source) name</td><td>Fripp Design Limited</td></tr>
<tr><td>Address</td><td>The AMP Technology Centre, Brunel Way, Rotherham, S60 5WG</td></tr>
<tr><td>Main activity</td><td>Product Design, Industrial design, Polymer 3D Printing</td></tr>
<tr><td>Contact details</td><td>Contact person: Steve Roberts
Contact e-mail: steve@frippdesign.co.uk
Website: www.frippdesign.co.uk www.picsima.com</td></tr>
</table>

4. CONCLUSIONS / RECOMMENDATION

Throughout the project we found that most of the received technologies were provided by SMEs and project beneficiaries of the EU Research and Innovation programme. Although the list of these organisations can be found in an easy to access and large database, this method is not the most efficient for technology scouting because of the immense amount of requests to be sent and the fact that, for the most part, the listed entities hold only one or two technologies, making the collection process too slow.

For data collection, from our experience the most effective channels were the Technology Transfer Offices of major universities, and National Innovation Agencies. Despite their smaller number in each country, these organisations are in possession of subject matter expertise and offer a wide variety of technologies from different sectors. Still there are some drawbacks as technologies from the universities are commonly at a low TRL comparing with start-ups and SMEs. Since these technologies are at a low TRL and the product development phase is usually performed in a spin-off company, larger investment is needed and higher risk for commercialization can be expected.

Given the limited time and resources allocated for this study, the results should be regarded only as a snapshot sample of the newer and/or less known available technologies in Europe. The data collection from certain newer EU Member States from Central and Eastern Europe has been particularly difficult, which can be explained through their more limited access to technology transfer communities and networks. On the other hand, the amount of data received from some “innovation leaders” (France, Sweden, Luxemburg, the Netherlands) has been rather low, well below the actual potential, which might be due to the mentioned time constraints, limited budget, our limited contacts and, perhaps, the lack of interest in taking part in the survey.

Nevertheless, the present set of leads still provides an interesting sample of newer or less known technologies available in Europe, which reflects both capabilities and areas of expertise of the corresponding developers.

The data collected from the EU Member States from Central and Eastern Europe should be seen as particularly valuable due to the more limited exposure of these countries to the mainstream technology transfer networks. With a solid tradition of technological education, steadily increasing R&D investments, an active participation in EU R&D programmes, combined with much higher than (EU) average growth rates, these countries offer an enormous investment potential. In this context, the selected technologies from the region, some presented *en première*, could be highly relevant for Japan. Thus, the range of listed technologies is wide and intriguing, from nanotech, biotech and laser based solutions, to 3D printing, photonics and medical materials, from electric vehicles and nanosatellite components to innovative agriculture (rice crops) and fish processing.

For the future, we would suggest to expand and deepen this type of search and analysis, perhaps focusing on a single country or sector. We would also recommend repeating this exercise periodically to get a more comprehensive picture of the EU

member states' technological developments. In this context, the list of organizations presented in the annex could be useful. Other database which we recommend is the Enterprise Europe Network (EEN), since it is simple, quick and cooperative.

In practical terms, the Report provides a list of European technology providers that are ready and willing to be matched with Japanese partners, and we hope that it will result is some concrete business matchmaking and investment from Japan.

5. ANNEXES

5.1 Annex 1

Letter to request technologies:

Dear …,

I represent an international consortium of consultants, LC Innoconsult ~ Primary Care Innovation Consulting ~ Japan Technology Group.

We are assigned by EU-Japan Industrial Centre (acting on behalf of METI and the European Commission) to find and present for their consideration some of the best industrial innovation from European countries that could be commercialized in Japan. This is not a survey but an action oriented project in the framework of EU-Japan industrial dialogue aimed to assist Japanese partners and advise in prioritization of their investment targets.

As we are looking through databases and various proprietary sources, we believe that personal contacts and communications are still the best way to find the right technology. We are particularly interested to identify innovative civil technologies and B2B oriented projects that have not yet had broad international exposure.

We understand that you have a unique access and perspective on potential candidates in your country and will greatly appreciate your feedback and suggestions.

Please take a look at the attached form and let me know if you think you have a technology(ies) for us to consider. Maximally 3 to 5 technologies are more than welcome from one technology owner. The stage of the development is not limited to mature technologies, early stage technologies are also welcome. You can fill the form and e-mail it back to me to the next email address: eu-jap@lcinnoconsult.com. Please kindly let us know if you have any question.

We greatly appreciate your time and hope this project will result in some great opportunities for your technologies on Japanese market!

If you are not the one this letter was meant to be sent to, we would appreciate your contribution by forwarding it to the relevant person or department.

Sincerely,

P.S. Please see attached a support letter for your reference.

Support Letter:

EU-JAPAN CENTRE FOR INDUSTRIAL COOPERATION
日欧産業協力センター

Letter of Support

Tokyo, 1 August 2016

To whom it may concern,

In August 2016, the EU-Japan Centre for Industrial Cooperation entered into a contract with LC Inneconsult International for the execution of a comprehensive Report on "EU-Japan Cooperation on Industrial Technologies", with a business driven perspective, focusing on EU and Japan technology licensing, transfer and cooperation, technological and regulatory cooperation through the identification of industrial technologies developed in the European Union with lower international exposure, which have the potential to become strong candidates for future partnering, transfer or licensing with Japan.

The purpose of this letter is to kindly ask the relevant entities and institutions to cooperate with LC Inneconsult International and to support the provision of relevant information for the successful implementation of the above mentioned project.

Should you need more information, please consult our Head Office in Japan.

Signed by:

Silviu IORA
General co-Manager (EU side)
EU-Japan Centre for Industrial Cooperation

EU-Japan Centre for Industrial Cooperation Shirokane-Takanawa Station Bldg 4F, 1-27-6 Shirokane, Minato-ku, Tokyo 108-0072
日欧産業協力センター 〒108-0072 東京都港区白金1-27-6 白金高輪ステーションビル4階
(Tel) +81 03 6408 0201 (Fax) +81 03 6408 0283 (E-Mail) info@eu-japan.gr.jp (Homepage) http://www.eu-japan.gr.jp

5.2 Annex 2

List of contacted organisations

- Permanent Representations to the EU

Austria	Deputy Permanent Representative (Coreper I)
Belgium	Permanent representative of Coreper I
Bulgaria	First Secretary - Education and Research
Croatia	Deputy Permanent Representative (Coreper I)
Cyprus	Research attaché, Competitiveness, COREPER I
Czech Rebulic	Head of sectorial unit B
Denmark	Research, IT, Education and Culture
Estonia	Counsellor for Scientific Affairs
Finland	Senior Specialist of Research, innovation and space policy
France	Science and technology counsellor
Germany	Deputy Permanent Representative (Coreper I)
Greece	Ministry of development and competitiveness (internal market- industry-research & space)
Hungary	Science and technology counsellor
Ireland	Deputy Permanent Representative (Coreper I)
Italy	Competitiveness sector coordinator
Latvia	Counsellor (Research and Space)
Lithuania	Research attaché
Luxemburg	Preparation and coordination (COREPER I)
Malta	Competitiveness unit coordinator
The Netherlands	Head of Research and Atomic Questions section
Poland	Counsellor - Research and innovation, Technologial development
Portugal	Deputy Permanent Representative (Coreper I)
Romania	Head of INTERNAL MARKET, COMPETITIVENESS, RESEARCH Section
Slovakia	Head of Research, Science and Education Unit
Slovenia	Deputy Permanent Representative (Coreper I)
Spain	Information Technology Counsellor
Sweden	Research Council (research and innovation, space and nuclear research)
UK	Deputy Permanent Representative (Coreper I)

- Embassies in Tokyo (Japan)

Austria	Economic Affairs Department (Advantage Austria)
Belgium	Flanders Investment and Trade
	Walloon Trade and Investment Office
	Brussels Invest & Export
Bulgaria	Head of Trade and Economic Affairs Service Office
Croatia	Ambassador Extraordinary and Plenipotentiary
Czech Rebulic	Head of Economic and Commercial Section
Denmark	Commercial counselor
Estonia	Ambassador Extraordinary and Plenipotentiary
Finland	Counsellor of economic and trade policy
France	Advisor on science and technology
Germany	Head of the Science Unit
Greece	Counsellor of Economic & Commercial Affairs
Hungary	Science and Technology attaché
Ireland	Ambassador
Italy	Science attaché
Latvia	Commercial Counselor
Lithuania	Ambassador
Luxemburg	Ambassador
The Netherlands	Counsellor for Science and Technology
Poland	First Secretary (economy and S&T cooperation)
Portugal	Commercial Section (AICEP Delegate)
Romania	ECONOMIC SECTION
Slovakia	Counsellor, economic diplomat
Slovenia	Ambassador
Spain	Economic and Commercial Office
Sweden	Counsellor, Science & Innovation, Technical Development
UK	UK Trade & Investment Tokyo

- National Innovation agencies

Austria	The Austrian Research Promotion Agency (FFG)
Belgium	Flanders Innovation & Entrepreneurship (VLAIO)
Bulgaria	Applied Research and Communications Fund (ARC Fund)
Croatia	Croatian Agency for SMEs, Innovations and Investments (HAMAG-BICRO)
Cyprus	Cyprus Research and Innovation Center
Czech Rebulic	The Technology Agency of the Czech Republic (TA CR)
Denmark	The Danish Agency for Science, Technology and Innovation - Ministry of higher education
Estonia	Enterprise Estonia
Finland	The Finnish Funding Agency for Innovation (TEKES)
France	Public Investment Bank (Bpifrance)
Germany	Project Management Jülich implements
Greece	Enterprise Greece
Hungary	National Research, Development and Innovation Office
Ireland	Enterprise Ireland
Ireland	WestBIC
Ireland	South East Bic
Italy	Italian National Agency for New Technologies
Latvia	Latvian Technological Center (LTC)
Lithuania	Agency for Science, Innovation and Technology (MITA)
Luxemburg	National Agency for Innovation and Research
Malta	Malta Information Technology Agency
The Netherlands	The Netherlands Organisation for Scientific Research
Poland	Polish Agency for Enterprise Development
Portugal	Public Agency for Competitiveness and Innovation
Romania	Executive Agency for Higher Education, Research, Development and Innovation (UEFISCDI)
Slovakia	Slovak Innovation and Energy Agency (SIEA)
Slovenia	SPIRIT Slovenia
Spain	Centre for the Development of Industrial Technology (CDTI)
Sweden	Vinnova
UK	Innovate UK

- National Investment promotion agencies

Austria	Invest in Austria (ABA)
Belgium	Invest in Belgium
Belgium	Invest Europe
Bulgaria	InvestBulgaria Agency (IBA)
Croatia	Agency for Investment and competitiveness
Cyprus	The Cyprus Investment Promotion Agency (CIPA)
Czech Rebulic	The Business and Investment Development Agency (CzechInvest)
Denmark	Invest in Denmark - Ministry of Foreign Affairs of Denmark
Estonia	Estonian Investment Agency
Finland	Invest in Finland
France	Invest in France Agency (IFA)
Germany	Germany Trade & Invest
Greece	Enterprise Greece
Hungary	Hungarian National Trading House
Ireland	IDA Ireland
Italy	Italian Trade Promotion Agency (ICE)
Latvia	Investment and Development Agency of Latvia (LIAA)
Lithuania	Invest Lithuania
Luxemburg	Luxembourg for Business and Innovation
Malta	Malta Enterprise
The Netherlands	Invest in Holland
Poland	The Polish Information and Foreign Investment Agency (PAIiIZ)
Portugal	aicep Portugal Global
Romania	Invest in Romania
Slovakia	Slovak Investment and Trade Development Agency (SARIO)
Slovenia	SPIRIT Slovenia
Spain	Invest in Spain
Sweden	Business Sweden
UK	Department for Business Innovation & Skills
UK	CBI

- National government level innovation ministries, departments

Austria	Austrian Ministry for Transport, Innovation and Technology
Belgium	Department of Economy, Science & Innovation
Bulgaria	Ministry of Economy
Croatia	Croatian Agency for SMEs, Innovations and Investments (HAMAG-BICRO)
Cyprus	Directorate General for European Programmes, Coordination and Development (DG EPCD)
Czech Rebulic	Section for Science, Research and Innovation
Denmark	The Danish Agency for Science, Technology and Innovation - Ministry of higher education
Estonia	Economic Development Department
Finland	Research and Innovation Council - Ministry of Education and Culture
France	Ministry of Higher education and research
Germany	Federal Ministry of Education and Research
Greece	Athena Research and Innovation Center in Information, Communication and Knowledge Technologies
Hungary	National Research, Development and Innovation Office
Ireland	Department of Jobs, Enterprise and Innovation
Italy	The National Research Council (CNR)
Latvia	Ministry of Economy
Lithuania	Ministry of Science and Education - Technology and Innovation Division
Luxemburg	Ministry of Economy - Research and Innovation Directorate
Malta	The Malta Council for Science & Technology
The Netherlands	Ministry of Economic Affairs
Poland	Ministry of Higher Education - Department of Innovation and Development
Portugal	The Ministry of Science, Technology and Higher Education
Romania	National Authority for Scientific Research and Innovation (NASR)
Slovakia	Ministry of Economy - Section Business Environment and Innovation
Slovenia	Ministry of Economic Development and Technology
Spain	Ministry of Research, Development and Innovation
Sweden	The Swedish Research Council
UK	Innovate UK

- Research and Technology transfer departments of high level national universities

Austria	Medical University of Graz
Austria	CeMM Research Center for
Austria	Molecular Medicine of the
Austria	Austrian Academy of Sciences
Belgium	Institute of Tropical Medicine
Belgium	KU Leuven
Belgium	Universiteit Gent
Belgium	Universiteit Hasselt
Belgium	Vrije Universiteit Brussel
Belgium	UCL
Belgium	University of Liege
Belgium	Verhaert
Bulgaria	Agricultural University Plovdiv
Bulgaria	Burgas Free University
Bulgaria	University of Structural Engineering& Architecture "Lyuben Karavelov"
Bulgaria	Medical University Pleven
Bulgaria	Medical University of Plovdiv
Bulgaria	Medical University- Varna
Bulgaria	New Bulgarian University
Bulgaria	Plovdiv University
Bulgaria	University of Ruse
Bulgaria	Sofia University
Bulgaria	Technical University of Gabrovo
Bulgaria	Technical University of Sofia
Bulgaria	Technical University of Varna
Bulgaria	University of Architecture Civil Engineering and Geodesy
Bulgaria	University of Chemical Technology and Metallurgy
Bulgaria	University of Shumen
Bulgaria	University "Prof. Dr. Asen Zlatarov" - Burgas
Bulgaria	Varna Free University
Denmark	Aarhus University
Denmark	Technical University of Denmark
Denmark	Aalborg University
Denmark	University of Southern Denmark
Finland	University of Eastern Finland- Faculty of Health Science
Finland	University of Oulu
Finland	Åbo Akademi University
Germany	Georg-August-University Goettingen
Greece	School of medicine - University of Crete
Greece	Institute of Pharmaceutical Research and Technology
Greece	Athens Institute for Education and Research (ATINER)
Ireland	National University of Ireland, Galway

Ireland	University College Dublin - School of Medicine
Ireland	Trinity College Dublin
Ireland	Pharmaceutical and Molecular Biotechnology Research Centre
Ireland	NUI Galway
Italy	European Academy of Bozen/Bolzano (EURAC)
The Netherlands	Radboud Universiteit
The Netherlands	University Medical Center Groningen
The Netherlands	University Medical Center Utrecht
The Netherlands	Ultrecht University
The Netherlands	Erasmus MC
The Netherlands	Arcarios
The Netherlands	Universiteit Utrecht Holding
Poland	Instytut Farmaceutyczny (Pharmaceutical Research Institute)
Romania	Universitatea "1 Decembrie 1918" din Alba Iulia
Romania	"Aurel Vlaicu" University of Arad
Romania	University "Vasile Alecsandri" din Bacau
Romania	Transilvania University of Brasov
Romania	Polytechnic University of Bucharest
Romania	Technical University of Civil Engineering Bucharest
Romania	University of Agronomic Sciences and Veterinary Medicine- Bucharest
Romania	University of Bucharest
Romania	Carol Davila University of Medicine and Pharmacy
Romania	Technical Military Academy of Bucharest
Romania	Carol I National Defence University
Romania	National Academy of Intelligence
Romania	Technical University of Cluj-Napoca
Romania	University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca
Romania	Babes-Bolyai University
Romania	Iuliu Hatieganu University of Medicine and Pharmacy
Romania	Ovidius University
Romania	Mircea cel Batran Naval Academy
Romania	University of Craiova
Romania	University of Medicine and Pharmacy of Craiova
Romania	University of Galati
Romania	Gheorge Asachi Technical University of Iasi
Romania	Ion Ionescu de la Brad University of Agricultural Sciences and Veterinary Medicine of Iasi
Romania	Alexandru Ioan Cuza University
Romania	Grigore T.Popa University of Medicine and Pharmacy
Romania	University of Oradea
Romania	University of Petrosani
Romania	University of Pitesti
Romania	Petroleum-Gas University of Ploiesti
Romania	Lucian Blaga University of Sibiu
Romania	Nicolae Balcescu Land Forces Academy

Romania	Stefan cel Mare University of Suceava
Romania	Valahia University of Targu Mures
Romania	Politehnica University of Timisoara
Romania	Banat University of Agricultural Sciences and Veterinary Medicine
Romania	West University of Timisoara
Slovakia	Technical University of Košice
Slovakia	Comenius University in Bratislava
Slovakia	Slovak University of Technology in Bratislava
Slovakia	The Technical University of Kosice
Slovakia	Slovak University of Agriculture in Nitra
Slovakia	Technical University in Zvolen
Slovakia	University of Zilina
Spain	Institute for Bioengineering of Catalonia
Sweden	Karolinska Institutet
Sweden	Luleå University of Technology
Sweden	Lund University
Sweden	Umeå University
Sweden	Linköping University - Liu Innovation
Sweden	Swedis University of Agricultural Sciences
Switzerland	Université de Fribourg
Switzerland	Ecole polytechnique fédérale de Lausanne (EPFL)
Switzerland	Institute of Pharmaceutical Sciences (IPW) - ETH Zurich
Switzerland	Institute of Pharmaceutical Medicine
Switzerland	University of Basel
United Kingdom	University of Oxford
United Kingdom	University of Cambridge
United Kingdom	Imperial College London
United Kingdom	University College London
United Kingdom	University of Edinburgh
United Kingdom	King’s College London
United Kingdom	University of Manchester
United Kingdom	University of Bristol
United Kingdom	University of Warwick
United Kingdom	University of Glasgow
United Kingdom	Durham University
United Kingdom	University of Sheffield
United Kingdom	University of St Andrews
United Kingdom	Queen Mary University of London
United Kingdom	University of Southampton
United Kingdom	University of Exeter
United Kingdom	University of York
United Kingdom	University of Birmingham
United Kingdom	University of Leeds
United Kingdom	Lancaster University
United Kingdom	University of Nottingham

United Kingdom	University of Sussex
United Kingdom	University of Liverpool
United Kingdom	University of East Anglia
United Kingdom	University of Leicester
United Kingdom	Royal Holloway, University of London
United Kingdom	University of Dundee
United Kingdom	Cardiff University
United Kingdom	University of Aberdeen
United Kingdom	Newcastle University
United Kingdom	University of Reading

- Public Research Organisations (PROs)

Belgium	Katholieke Universiteit Leuven
Belgium	Universite Chatolique de Louvain
Belgium	IMEC
Belgium	EBN Innovation Network
Czech Republic	Charles University in Prague
Czech Republic	Technology park, Olomouc
Czech Republic	Palacky University in Olomouc, Science and Technology Park
Denmark	Aalborg University
Dánia	SDU
Dánia	Danish Technological Institute
Dánia	Agro Business Park
Dánia	Agro Food Park
Estonia	Tallin University
Estonia	Estonian Intellectual Property and Technology Transfer Centre
Finnland	University of Vaasa
France	Interface Enterproses Universite de Liege
Germany	PRA Int, Pharmaceutical R Associates GMBH
Germany	Technische Universitat Chemnitz
Germany	Technische Universitat Dortmund, TT Office
Germany	Wuppertal Institut
Germany	LFT
Greece	Aristotle University of Thessaloniki
Hungary	Bay Zoltán Intézet
Hungary	BME
Hungary	University of Debrecen
Hungary	EKTF Eger
Hungary	ELTE
Hungary	ELTE IKKK
Hungary	MTA
Hungary	Nano Szövetség
Hungary	Pannon E, Informatika

Hungary	University of Pécs
Hungary	University of Szeged
Hungary	UNI-FLEXYS University Innovation (Miskolci Egyetem)
Ireland	Portershed
Latvia	Riga Technical University
The Netherlands	Yellow Research
The Netherlands	VSL
The Netherlands	S&T
Poland	Cracow Uni of Economics
Poland	Institute of non-ferrous metal
Poland	Polska Akademia Natur
Poland	Warsaw University of Technology
Poland	Jagiellonian University
Portugal	Universidade de Aveiro
Romania	ICPE Romanian Research Institute for Electrical engineering
Romania	AROTT
Romania	Alexandru Ioan Cuza University
Romania	National Institute of Materials Physics
Slovakia	Slovenská Akadémia Vied
Spain	Barcelona Science Park
Spain	Universidade de Vigo
Spain	IAT
Sweden	KTH, Royal Institute of technology
Sweden	SLU Holding
Sweden	YKI, Ytkemiska Institut, Institute for Surface Chemistry
UK	Uni of Nottingham, TTO

- Project participants of the H2020 R&D programme

Austria	Centre for Social Innovation
Ausztria	WKO
Belgium	Com&Sens
Belgium	BEWARRANT
Belgium	ORGANIC WASTE SYSTEMS NV
Belgium	Universiteit Gent
Belgium	OWS
Czech Republic	Institute of Nuclear Physics PAN
Finland	VTT
Germany	HPX POLYMERS GMBH
Germany	FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG EV
Germany	BELECTRIC OPV GMBH
Germany	fraunhofer IVV
Germany	Institute of Interdisciplinary Research
Germany	Fulda University of Applied Sciences
Hungary	Pemu Műanyagipari Zrt.
Hungary	Mozaik Education Ltd.
Hungary	Fővárosi Vízművek
Ireland	University College Dublin
Italy	BECAR SRL
Italy	BEGHELLI S.P.A.
Italy	FRENER & REIFER GmbH/Srl
Italy	ENEA
Italy	Istituto Nazionale Scienza e Tecnologia Materiali
Italy	CALEF , Consorzio R&D
Italy	MBN NANOMATERIALIA SPA
Italy	INSTM
Italy	UNIBO
Italy	SSICA
Italy	ARCHA
Italy	Femto Engineering
Italy	MOGU
Italy	BARILLA
Italy	Ardagh Group
Italy	Unioncamere Lombardia
Italy	European Museum Academy
Italy	Luigi Micheletti Foundation
Italy	Istituto Superiore Mario Boella
The Netherlands	BPF
Poland	MOSTOSTAL WARSZAWA SA
Poland	PROMOST CONSULTING

Poland	POLITECHNIKA KRAKOWSKA
Slovakia	Department of Internal Affairs and Monument Care
Slovenia	LAJOVIC TUBA EMBALAZA DOO
Slovenia	SIBO G. d.o.o.
Slovenia	ILIRIJA, RAZVOJ, PROIZVODNJA IN TRZENJE KOZMETICNIH IZDELKOV DD
Slovenia	GIZ GROZD PLASTTEHNIKA
Slovenia	Technology Park Ljubljana
Slovenia	Jozef Stefan Institute (JSI)
Spain	UNIVERSIDAD POLITECNICA DE MADRID
Spain	FUNDACION TECNALIA RESEARCH & INNOVATION
Spain	Energy Panel S.L.
Spain	INNOVACIO I RECERCA INDUSTRIAL I SOSTENIBLE SL
Spain	INSTITUTO TECNOLOGICO DEL EMBALAJE, TRANSPORTE Y LOGISTICA
Spain	FUNDACIO PRIVADA ASCAMM
Spain	Bioinicia S.L.
Spain	IRIS
Spain	AIMPLAS
Spain	IRTA
Spain	ITENE
Spain	Universidad de Almería
Spain	Cooperatives Agraries
Spain	Fertinagro
Spain	Indulleida
Spain	Campus Iberus
Sweden	CHALMERS TEKNISKA HOEGSKOLA AB
Sweden	SWEREA SICOMP AB
Sweden	KTH Royal Institute of Technology
UK	Cranfield University
UK	INSTITUTE OF OCCUPATIONAL MEDICINE
UK	BIOVALE
UK	Exergy

- Project participants of the V4 R&D programme

Czecz Republic	The Science and Technology Park of Palacký University in Olomouc
Poland	INNpuls Ltd.
Poland	University of Dabrowa Gornicza
Slovakia	Institute of Technology Slovak Academy of Sciences
Slovenia	Slovak Centre of Scientific and Technical Information

- Project participants of the Danube R&D programme

Austria	Business Upper Austria Environmental Cluster department (Clusterland)
Austria	Brimatech Services GmbH
Ausztria	Graz University of Technology Insitute of Inorganic Chemistry.
Ausztria	IAFES - International Association for eScience
Bulgaria	Cluster for Education Training and Qualification
Bulgaria	DZZD Consortium Innovative Capital
Bulgaria	Sofia University
Bulgaria	IBPhotonics
Croatia	Regional Development Agency of Dubrovnik Neretva County, DUNEA llc
Croatia	Technology Park Varazdin ltd.
Croatia	Business Incubator BIOS
Czecz Republic	DEX Innovation Centre
Czecz Republic	National Cluster Association
Czecz Republic	ILA s.r.o.
Czecz Republic	Institute of Physics, Academy of Sciences of the Czech Republic
Germany	Application Center Oberpfaffenhofen (ESA BIC Bavaria)
Hungary	Iparfejlesztési Közhasznú Nonprofit Kft. (IFKA)
Hungary	Cluster of Applied Earth Sciences
Romania	Transylvania Textile & Fashion Professional Association
Romania	SC IPA SA, R&D, Engineering and Manufacturing for Automation Equipments and Systems
Romania	Horia Hulubei National Institite for R&D in Physics and Nuclear Engineering
Romania	National Institute for Laser, Plasma and Radiation Physics
Romania	Politehnica University Timisoara
Slovakia	The UNION of SLOVAK CLUSTERS
Slovakia	B I C Bratislava, Ltd.
Slovenia	Business Support Centre Ltd
Slovenia	Technology Park Ljubljana d.o.o.
Slovenia	University of Nova Gorica
Slovenia	CAEN ELS D.O.O.

- Project participants of the Central Europe R&D programme

Austria	Centre for Social Innovation
Croatia	UNIVERSITY OF SPLIT
Czecz Republic	Palacký University Olomouc
Germany	Steinbeis Innovation gGmbH
Italy	Regional Union of the Chamber of Commerce of Veneto
Poland	Jagiellonian University
Slovakia	Slovak Scientific and Technical Information Centre
Slovakia	BIC Bratislava, Ltd.
Slovenia	Jožef Stefan Institute

- H2020 SME instrument beneficiaries

  - **Estonia:**

Estonia	***Aasa Global AS***
Estonia	***Advanced Sports Installations Europe AS***
Estonia	***Alekon Holding AS***
Estonia	***ANF Development***
Estonia	***Big Data Scoring***
Estonia	***Bioatlas***
Estonia	***Cleveron***
Estonia	***Cybernetica***
Estonia	***Dermtest***
Estonia	***Digital Sputnik***
Estonia	***Dr. Niine Nahakliinik***
Estonia	***Icosagen***
Estonia	***Insignia Group OÜ***
Estonia	***Interspectrum***
Estonia	***Jeko Disain***
Estonia	***Kinasera OÜ***
Estonia	***Lingvist***
Estonia	***Medical Technology Group***
Estonia	***Meratel OÜ***
Estonia	***MikroMasch OÜ***
Estonia	***My Capital OÜ***
Estonia	***Optofluid Technologies OÜ***
Estonia	***Polydome OÜ***
Estonia	***Positium OÜ***
Estonia	***Regio OÜ***
Estonia	***Sardina Systems Os***

Estonia	***Scult***
Estonia	***Sentab Estonia OÜ***
Estonia	***Skeleton Technologies***
Estonia	***Spray Printer***
Estonia	***THE Systems OÜ***

- **Latvia:**

Latvia	***Latitude Yachts***
Latvia	***Baltic Scientific Instruments***
Latvia	***EMI Electronics***
Latvia	***High End Engineering Photonic Labs Ltd.***
Latvia	***Latima SIA***
Latvia	***AgriCon Gmbh***
Latvia	***Rubber Products***
Latvia	***Kepp EU***

- **Lithuania:**

Lithuania	***Elinta Imoniu Grupe***
Lithuania	***Gumos Technologijos***
Lithuania	***NanoAvionika***
Lithuania	***Nova Fabrica Ltd.***
Lithuania	***Baltic Orthoservice, UAB***
Lithuania	***UAB Ruptela***
Lithuania	***UAB Solet Technics***
Lithuania	***Energenas, UAB***
Lithuania	***UAB Medium Group***
Lithuania	***FOODSniffer***
Lithuania	***Blue Ocean Robotics***
Lithuania	***UAB Ferentis***
Lithuania	***UAB Saulés véjo aruodai***

- **Poland:**

Poland	***Biotrem SP z.o.o.***
Poland	***Atsora***
Poland	***BAG Precision Farming Sp. Z.o.o.***
Poland	***BBH Biotech sp. Z.o.o.***
Poland	***BCAST Sp.z.o.o.***
Poland	***BG TECHNO***
Poland	***Binartech Sp. Z.o.o.***
Poland	***Bioseco Sp. Z.o.o.***

Poland	***Bonda***
Poland	***Bonevitae S.A.***
Poland	***ConnectPoint Sp. Z.o.o.***
Poland	***Eton Group Sp. Z.o.o.***
Poland	***Excalibur (exc Sp. Z.o.o.)***
Poland	***FINEUS Przewrocki Sp.J.***
Poland	***Hydroline Poland Sp. z.o.o.***
Poland	***IDAP Technology***
Poland	***InPhoTech***
Poland	***IOT Sp. Z.o.o.***
Poland	***IPANTERM Sp. Z.o.o***
Poland	***JAKUSZ Sp. Z.o.o.***
Poland	***IT.expert Sp. Z.o.o.***
Poland	***Metrosoft Polska***
Poland	***ML SYSTEM SpółŁka Akcyjna***
Poland	***Monitor CR sp. Zoo.***
Poland	***Napiferyn Biotech Sp. Z.o.o.***
Poland	***NatVet sp.z.o.o.***
Poland	***NEEL Sp z.o.o.***
Poland	***OptiNav***
Poland	***Innovation Enterprise IMPULS***
Poland	***Pixel Legend Sp.z.o.o.***
Poland	***Plasma System SA***
Poland	***PolTREG S.A.***
Poland	***QuantumLab***
Poland	***Red Sky Sp. Z.o.o.***
Poland	***RemoteMyApp sp. Z.o.o.***
Poland	***SAV STUDIO***
Poland	***SESCOM S.A***
Poland	***SIRC Sp. Z.o.o.***
Poland	***SKA Polska Sp. Z.o.o.***
Poland	***Skyvory Projects***
Poland	***Sup4Nav LLC***
Poland	***Synektik S.A***
Poland	***TEBAMIX Sp. Z.o.o.***
Poland	***Torqway***
Poland	***IMMUNOLAB Sp. Z.o.o.***
Poland	***ZakŁady Urzadzen KotŁowych "Staporków" S.A.***

- **<u>Czech Republic:</u>**

Czecz Republic	***Enantis s.r.o.***
Czecz Republic	***GPI Energy***
Czecz Republic	***Kinalisoft s.r.o.***

Czecz Republic	***BlindShell***
Czecz Republic	***Incomaker s.r.o.***
Czecz Republic	***Olife Corporation a.s.***
Czecz Republic	***PVF***

- **Slovakia:**

Slovakia	***Axxence***
Slovakia	***Edico a.s.***
Slovakia	***EKOSERVIS SLOVENSKO s.r.o.***
Slovakia	***HighChem Ltd.***
Slovakia	***R-DAS SRO***
Slovakia	***SAFTRA photonics s.r.o***
Slovakia	***SKLADKY a ODPADY s.r.o***

- **Hungary:**

Hungary	***Admatis Kft.***
Hungary	***AgriCon Hungary Kft.***
Hungary	***Aranyponty Zrt.***
Hungary	***ASK-M Kft.***
Hungary	***Atractor Kft.***
Hungary	***BaseWalk Kft.***
Hungary	***Be-novative Hungary Kft.***
Hungary	***Bifarma***
Hungary	***BIOMORV Ltd.***
Hungary	***BIOPOLUS Technológiák Zrt.***
Hungary	***BioSystems International Kft.***
Hungary	***Central European research Center***
Hungary	***Dicomlab***
Hungary	***DO3D INNOVATIONS Kft.***
Hungary	***Dolhay Kft.***
Hungary	***Dunagona Kft.***
Hungary	***EU Edge Ltd.***
Hungary	***Falcon-Vision Zrt.***
Hungary	***Hungaro Lux Light Kft.***
Hungary	***Innowaste Kft.***
Hungary	***Intersoft-Hungary Kft.***
Hungary	***Kation Europa Lp.***
Hungary	***LIGHWARE KFT.***
Hungary	***Mcule Kft.***
Hungary	***Medio Trade Kft.***
Hungary	***MultiSense Labor Kft.***
Hungary	***NUAGE Kft.***
Hungary	***OPTIN Kft.***

Hungary	***Pharmahungary Group***
Hungary	***QuantisLabs Kft.***
Hungary	***R-Fire***
Hungary	***SILEX Kft.***
Hungary	***SLOT***
Hungary	***Smart-Heart Kft.***
Hungary	***TFEX***
Hungary	***UTB ENVIRO***
Hungary	***Walkable Future Kft.***
Hungary	***Zöldségcentrum Kft.***

- **Austria:**

Austria	***Arsanis Biosciences GmbH***
Austria	***Attoquant Diagnostics GmbH***
Austria	***Biomedica Medizinprodukte GmbH&Co KG***
Austria	***CNSystems Medizintechnik AG***
Austria	***Cryoshelter GmbH***
Austria	***CSD Labs GmbH***
Austria	***Delacon Biotechnik GmbH***
Austria	***ekey biometric systems GmbH***
Austria	***Frauscher Sensortechnik GmbH***
Austria	***Fresnex GmbH***
Austria	***g.tec medical engineering GmbH***
Austria	***Green4Cities Ltd.***
Austria	***Greenetica GmbH***
Austria	***Heliovis AG***
Austria	***Innofreight Speditions GmbH***
Austria	***Personal Indoor Assistant***
Austria	***NEXTSENSE GmbH***
Austria	***PAYBON GmbH***
Austria	***Pessl Instruments GmbH***
Austria	***Pidso GmbH***
Austria	***RHP***
Austria	***RIKA Innovative Ofentechnik GmbH***
Austria	***Schiebel Elektronische Geraete GmbH***
Austria	***SignTime GmbH***
Austria	***TAmiRNA GmbH***
Austria	***UberGrape GmbH***
Austria	***VASCOPS GmbH***
Austria	***VCE Vienna Consulting Engineers ZT GmbH***
Austria	***Xylem Technologies***

- **Croatia:**

Croatia	***Amphinicy Technologies***

Croatia	***as2con-alveus ltd.***
Croatia	***Rimac Automobili***
Croatia	***Tema***

- **Slovenia:**

Slovenia	***Acies Bio d.o.o.***
Slovenia	***Anigmotech d.o.o.***
Slovenia	***ARGAS d.o.o.***
Slovenia	***ASC***
Slovenia	***BlackBox***
Slovenia	***CGS Plus d.o.o.***
Slovenia	***DomencaLabs d.o.o.***
Slovenia	***Efos d.o.o.***
Slovenia	***Elaphe Propulsion Technologies d.o.o.***
Slovenia	***Elgoline d.o.o.***
Slovenia	***Ema d.o.o.***
Slovenia	***Etra d.o.o.***
Slovenia	***Etrel d.o.o.***
Slovenia	***Exor-Evs d.o.o.***
Slovenia	***GEM motors d.o.o.***
Slovenia	***Genialis d.o.o.***
Slovenia	***GoOpti Podpora d.o.o.***
Slovenia	***Inea d.o.o.***
Slovenia	***Ino Vine d.o.o.***
Slovenia	***KODA PROM d.o.o.***
Slovenia	***M SORA d.d.***
Slovenia	***Marand d.o.o.***
Slovenia	***MELU***
Slovenia	***Metron Institute***
Slovenia	***Pipistrel d.o.o.***
Slovenia	***Plenum IT d.o.o.***
Slovenia	***Podkriznik d.o.o.***
Slovenia	***Polycom d.o.o.***
Slovenia	***Primum d.o.o.***
Slovenia	***PROFORM d.o.o.***
Slovenia	***Robotina d.o.o.***
Slovenia	***Silvaprodukt d.o.o.***
Slovenia	***Strip's d.o.o.***
Slovenia	***TOM Pit d.o.o.***
Slovenia	***VB Center d.o.o.***
Slovenia	***Vending Marketing d.o.o.***
Slovenia	***Veplas Group***

- **Romania:**

Romania	***Cargo List***

- **Bulgaria:**

Bulgaria	Bultech 2000
Bulgaria	Comac Medical
Bulgaria	HI-TECH Business Incubator Asparuhovo
Bulgaria	SCAD

- **Greece:**

Greece	***Aephoria.net***
Greece	***Apogee Information System***
Greece	***Atlantis Engineering***
Greece	***BCND***
Greece	***Christoforos Keridis S.A.***
Greece	***Draxis Technology***
Greece	***E.T.ME. LTD.***
Greece	***Euditi LTD.***
Greece	***Dakofaka***
Greece	***Helbio***
Greece	***Intale***
Greece	***Monolithos***
Greece	***Planetek Hellas***
Greece	***PL surveyors***
Greece	***pro-Actina***
Greece	***Psyctotherm***
Greece	***Streamlined Naval Architects***
Greece	***Terracom IT***
Greece	***Think Silicon***

- **Cyprus:**

Cyprus	***Aqualligence LTD.***
Cyprus	***Elysee Irrigation Ltd.***
Cyprus	***IrisPhone Ltd.***
Cyprus	***Offshore Monitoring Ltd.***

- **Malta:**

Malta	***LOQUS Business Intelligence***
Malta	***Reaqta***

Malta	***Wellness Spa Italy***

- **Italy:**

Italy	***01 Wiring***
Italy	***8B- Espresso***
Italy	***A. Water Systems s.r.l.***
Italy	***Abich S.r.l.***
Italy	***Abo Data S.r.l.***
Italy	***Aconet***
Italy	***Advanced Computer Systems***
Italy	***Advanced MicroTurbines S.r.l.***
Italy	***AECI S.r.l.***
Italy	***Aero Sekur***
Italy	***Aethra Telecommunications***
Italy	***Air Bonaita S.p.A.***
Italy	***Air Clean s.r.l.***
Italy	***Aitek S.p.A***
Italy	***Aleph***
Italy	***Alltox***
Italy	***Alma Sistemi SAS***
Italy	***Alosys***
Italy	***Alpha Progetti s.r.l.***
Italy	***Anderlini Meccanica***
Italy	***Antares Vision***
Italy	***bSmart***
Italy	***AppsBuilder***
Italy	***Arc-Projects***
Italy	***Archa***
Italy	***Archi Group***
Italy	***Archon***
Italy	***Argitek S.r.l.***
Italy	***Arken SpA***
Italy	***Artys S.r.l.***
Italy	***Ascoel***
Italy	***AsterAvia***
Italy	***ATP s.r.l.***
Italy	***AvMap***
Italy	***B&P SpA***
Italy	***BCN Concerie SpA***
Italy	***Bercella S.r.l.***
Italy	***Bilimetrix***
Italy	***Bio-on S.p.A.***
Italy	***Bio-Pro S.r.l.***
Italy	***Bios S.r.l.***

Italy	***Biosensor S.r.l.***
Italy	***Biosphere S.r.l.***
Italy	***Birrificio Baladin***
Italy	***Blu Electronic S.r.l.***
Italy	***BiMind S.a.s.***
Italy	***BMR***
Italy	***BrainSigns S.r.l.***
Italy	***C.A.T. S.r.l.***
Italy	***CA-MI S.r.l.***
Italy	***CalBatt S.r.l.***
Italy	***Caleidos***
Italy	***Camiceria Giovanni Taccaliti S.r.l.***
Italy	***Cartacci Bruno& C. SNC Di Alessandro e Leonardo Cartacci***
Italy	***Castellanza Engineering S.r.l.***
Italy	***C.A.T. Progetti S.r.l.***
Italy	***Cautha S.r.l.***
Italy	***CECOM S.r.l.***
Italy	***CiaoTech S.r.l.***
Italy	***Cibas S.a.s.***
Italy	***Cibitex***
Italy	***Cima1915 S.r.l.***
Italy	***Cimberio S.p.A.***
Italy	***Citybility S.r.l.***
Italy	***Civitanavi Systems S.r.l.***
Italy	***Clevertech***
Italy	***Co.Ra***
Italy	***Co.Stamp S.r.l.***
Italy	***Coelux S.r.l.***
Italy	***Cogisen S.r.l.***
Italy	***Cogne Macchine Tessili S.P.A.***
Italy	***Cogo Bilance***
Italy	***Colour - System S.p.A.***
Italy	***Comesvil S.p.A.***
Italy	***Cometa S.p.A.***
Italy	***ComfTech S.r.l.***
Italy	***Cormatex S.r.l.***
Italy	***Corn Valley S.r.l.***
Italy	***Crea Solution S.r.l.***
Italy	***Cromostamp Italia S.r.l.***
Italy	***Cso Strumenti Oftalmici***
Italy	***Cyanagen S.r.l.***
Italy	***Cynny S.p.A.***
Italy	***D-Orbit***
Italy	***D.R. Wine Tech S.r.l.***
Italy	***Datawizard S.r.l.***

Italy	***Daxel S.r.l.***
Italy	***DEF di R. Doni S.p.A.***
Italy	***Delco S.r.l.***
Italy	***Deltafin 21 S.r.l.***
Italy	***DEMA S.r.l.***
Italy	***Dermochimica S.p.A.***
Italy	***Detoxizymes S.r.l.***
Italy	***Dianax S.r.l.***
Italy	***Diesel Center S.p.A.***
Italy	***Dofren S.r.l.***
Italy	***Dolphin Fluidics S.r.l.***
Italy	***Dino Paladin***
Italy	***Diatech Pharmacogenetics S.r.l.***
Italy	***DS4 Laser Technology S.r.l.***
Italy	***Dune***
Italy	***e way Enterprise Business Solutions***
Italy	***Eco4Cloud***
Italy	***Eco4Cloud***
Italy	***Ecobuilding S.r.l.***
Italy	***Ecofor S.r.l.***
Italy	***Econboard S.r.l.***
Italy	***Edillio S.r.l.***
Italy	***EggPlant S.r.l.***
Italy	***Egimotors***
Italy	***EICAS Automazione S.p.A.***
Italy	***EID S.r.l.***
Italy	***Ekymed S.p.A.***
Italy	***Electronic Systems S.p.A.***
Italy	***Elettronica GF***
Italy	***Elettrosystem SAS***
Italy	***Emmecom S.r.l.***
Italy	***Emmeti***
Italy	***Energia Mediterranea S.r.l.***
Italy	***Energyntegration S.r.l.***
Italy	***Enologica Vason***
Italy	***Enter S.r.l.***
Italy	***eProInn***
Italy	***ERPlan***
Italy	***ETA S.r.l.***
Italy	***ETS Sistemi Industrial***
Italy	***Eurek S.r.l.***
Italy	***eViso***
Italy	***F-LAB S.r.l.***
Italy	***Farina Presse S.r.l.***
Italy	***FAST S.p.A.***

Italy	***Fastenica S.r.l.***
Italy	***FDS Italy S.r.l.***
Italy	***Ferdiam S.r.l.***
Italy	***Fractalgarden S.r.l.***
Italy	***Fibertech Group S.r.l.***
Italy	***Fieni Giovanni S.r.l.***
Italy	***Fiordelisi S.r.l.***
Italy	***Flexbimec International S.r.l.***
Italy	***Fluid-o-Tech S.r.l.***
Italy	***Fonderia Maspero S.r.l.***
Italy	***Fonderie Cervati S.r.l.***
Italy	***Talentlab***
Italy	***Geetit S.r.l.***
Italy	***Genomnia***
Italy	***Gi Erre Plastica S.r.l.***
Italy	***Gimeco Impianti S.r.l.***
Italy	***GiPStech S.r.l.***
Italy	***Geneticlab S.r.l.***
Italy	***GLOBI Hi-Tech***
Italy	***Glomeria Therapeutics S.r.l.***
Italy	***GMSPAZIO S.r.l.***
Italy	***GReD S.r.l.***
Italy	***GreenApes***
Italy	***Greenrail s.r.l.***
Italy	***Greenrail s.r.l.***
Italy	***Green Tech S.r.l.***
Italy	***GRINP Technology***
Italy	***Gualini S.p.A.***
Italy	***Gymnotus***
Italy	***Herniamesh S.r.l.***
Italy	***Huberg SAS***
Italy	***Hydro Italia S.r.l.***
Italy	***Hydroingea S.r.l.***
Italy	***Hydronit S.r.l.***
Italy	***ILSA S.p.A.***
Italy	***IGW S.r.l.***
Italy	***IMA***
Italy	***Imaging Technology Abruzzo S.r.l.***
Italy	***Imperial Europe S.r.l.***
Italy	***I.M.S. Industrie Meccaniche Scardellato S.p.A.***
Italy	***Informatica System S.r.l.***
Italy	***IngeniArs S.r.l.***
Italy	***InSensus Project S.r.l.***
Italy	***Inventia S.r.l.***
Italy	***IODA S.r.l.***

Italy	***iptSAT***
Italy	***Iris S.r.l.***
Italy	***IRLE S.r.l.***
Italy	***Irtal Nicola Cerulli S.r.l.***
Italy	***Isico***
Italy	***IsTech***
Italy	***Italtek S.r.l.***
Italy	***IVM s.r.l.***
Italy	***IVTech S.r.l.***
Italy	***JOS Technology***
Italy	***Kayser Italia S.r.l.***
Italy	***Kite Solutions***
Italy	***l'acn***
Italy	***la CORO Implanti S.r.l.***
Italy	***La Sanfermese SPA***
Italy	***Lab Service***
Italy	***La.Me.P S.r.l.***
Italy	***Landlab***
Italy	***LARIUS S.r.l.***
Italy	***Laserlam***
Italy	***LaserPoint S.r.l.***
Italy	***LeafSpace***
Italy	***Lock&Charge S.r.l.***
Italy	***Labophy***
Italy	***LTG Elettronica***
Italy	***Lualdi SPA***
Italy	***Macchine Speciali S.r.l.***
Italy	***Magenta S.r.l.***
Italy	***Manfredini&Schianchi***
Italy	***Marbo Group***
Italy	***MarCold***
Italy	***MDLab S.r.l.***
Italy	***Mmi S.r.l.***
Italy	***Memex S.r.l.***
Italy	***MET S.r.l.***
Italy	***Micro4yoU***
Italy	***ML Engraving***
Italy	***ML Engraving***
Italy	***Mobiltech***
Italy	***modeFinance***
Italy	***Favero Antonio S.r.l.***
Italy	***Monozukuri S.p.A.***
Italy	***Mosaicoon S.p.A.***
Italy	***Moving***
Italy	***MPG Manifattura Plastica S.p.A.***

Italy	***Moltosenso S.r.l.***
Italy	***N.A.M. S.r.l.***
Italy	***NanoSiliCal Devices S.r.l.***
Italy	***NASTRI-TEX S.r.l.***
Italy	***NatiMab***
Italy	***Nearchimica SPA***
Italy	***NEAT S.rl.***
Italy	***Nevexn***
Italy	***New Gluten World S.r.l.***
Italy	***Novagenit S.r.l.***
Italy	***NplusT***
Italy	***NTP Nano Tech Projects S.r.l.***
Italy	***ODL S.r.l.***
Italy	***Omca S.r.l.***
Italy	***Omini Pharma S.r.l.***
Italy	***Onairics S.r.l.***
Italy	***Oncoxx Biotech S.r.l.***
Italy	***Otomec S.r.l.***
Italy	***PALU S.r.l.***
Italy	***Panotec S.r.l.***
Italy	***Petra Polimeri S.r.l.***
Italy	***Phidrive***
Italy	***Pieri S.r.l.***
Italy	***Point Plastic S.r.l.***
Italy	***Plastical S.r.l.***
Italy	***Plastiroma S.r.l.***
Italy	***PLC System S.r.l.***
Italy	***Pnat S.r.l.***
Italy	***Poggipolini***
Italy	***Pro Gamma S.p.A.***
Italy	***Produtech S..r.l.***
Italy	***ProPhos Chemicals S.r.l.***
Italy	***Proxentia S.r.l.***
Italy	***Proxentia S.r.l.***
Italy	***PSI***
Italy	***Pulverit SPA***
Italy	***Qascom***
Italy	***Quintetto S.r.l.***
Italy	***Rebernig Supervisioni S.r.l.***
Italy	***Refa Med S.r.l.***
Italy	***Renience S.r.l.***
Italy	***RF microtech S.r.l.***
Italy	***Saceccav S.p.A.***
Italy	***HQ Sadel S.r.l.***
Italy	***SAM SAS***

Italy	***Saquella 1856 S.r.l.***
Italy	***Smart Building Skin S.r.l.***
Italy	***Schiaffini Travel S.p.A.***
Italy	***Seagate S..rl.***
Italy	***Selva S.p.A.***
Italy	***Sensichips S.r.l.***
Italy	***Sereco Biotest***
Italy	***Silk Biomaterials***
Italy	***Sinnotech S.r.l.***
Italy	***Signo Motus S.r.l.***
Italy	***Smart Patch***
Italy	***Societá Agricola Serenissima***
Italy	***Sofasi S.r.l.***
Italy	***Solarinvent S.r.l.***
Italy	***Solergy Italia S.r.l.***
Italy	***Soltigua***
Italy	***Stam S.r.l.***
Italy	***Stem Sel S.r.l.***
Italy	***Studioemme s.as.***
Italy	***SUM srls***
Italy	***Sunchem Holding S.r.l.***
Italy	***SUN GEN S.r.l.***
Italy	***SurveyLab S.r.l.***
Italy	***T4i S.r.l.***
Italy	***Taitus Software Italia S.r.l.***
Italy	***TEA Sistemi SPA***
Italy	***TeamDev S.r.l.***
Italy	***Technoform S.P.A.***
Italy	***Tek Frigo S..rl.***
Italy	***Tensive S.r.l.***
Italy	***Tep Energy Solution S.r.l.***
Italy	***Tera S..rl.***
Italy	***Termomacchine S.r.l.***
Italy	***Tesi Elettronica E Sistemi Informativi S.P.A.***
Italy	***The Hub Roma S.r.l.***
Italy	***Thurckon S..rl.***
Italy	***Tiessepi S.r.l.***
Italy	***Tirsi S..rl.***
Italy	***Topjet S.r.l.***
Italy	***Tretec S..rl.***
Italy	***Tyvak International***
Italy	***Upgrading Services S.p.A.***
Italy	***Value Biotech***
Italy	***Varvel S.p.A.***
Italy	***Vetroresina S.p.A.***

Italy	***Vibe S.r.l.***
Italy	***Voice Systems***
Italy	***Vito Rimoldi S.p.A.***
Italy	***Wardroba S.r.l.***
Italy	***Water View***
Italy	***WDE Maspell S.r.l.***
Italy	***WiTEch S.p.A.***
Italy	***X23 Ltd***
Italy	***Xeos***
Italy	***Zinco Service S..rl.***
Italy	***Zuna S.rl.***

- **France:**

France	***3D Krea Form***
France	***Adways***
France	***Aenitis Technologies***
France	***Active Innovation Management***
France	***Alam Medical***
France	***Alcea Offices and Factories***
France	***ALG***
France	***Algama***
France	***Algonesia Gandi***
France	***Alphageomega***
France	***Amoneta Diagnostics***
France	***Axenis S.A.S.***
France	***Blockbase SAS***
France	***Château Haut Peyrous***
France	***Citrage***
France	***Damae Medical***
France	***Detect Reseaux***
France	***DiamLite***
France	***Dymant***
France	***easyLI***
France	***Echy***
France	***Eco-Tech Ceram***
France	***Ecoxia SAS***
France	***Edxact SA***
France	***Elistair***
France	***Emulsar***
France	***Endonov SAS***
France	***Energiestro***
France	***Enertime***
France	***EP Tender***
France	***Equimer***

France	***ERSO***
France	***Exoes***
France	***FIBandCO***
France	***Fidzup***
France	***First Light Imaging***
France	***FPC Ingernierie***
France	***Genes'Ink***
France	***Gmi-Aero SAS***
France	***GreenWaves Technologies***
France	***GridPocket***
France	***Horus Pharma***
France	***Icelltis***
France	***Imagine Eyes***
France	***In&Motion***
France	***Inovfruit***
France	***InSolem SARL***
France	***iPRI Services***
France	***Kelenn Technology***
France	***Magillem Design Services***
France	***Matchic Labs***
France	***MC2-Technologies***
France	***Mensia***
France	***Metemis Development***
France	***Magpie Polymers***
France	***Microphyt***
France	***Multiposting***
France	***Muses***
France	***Nanolike***
France	***Natural Grass***
France	***Natureplast SAS***
France	***Navocap***
France	***NetCeler SAS***
France	***New Generation SR***
France	***Newtec Scientific***
France	***Octoly***
France	***Openways***
France	***Optana Technologies***
France	***Optis***
France	***Oxent***
France	***Pay Plug***
France	***Phenix***
France	***Photeomix***
France	***PicoSeq***
France	***Platform.sh***
France	***Powertech***

France	***Prana***
France	***Qarnot Computing***
France	***Qivivo***
France	***Regulaxis***
France	***Reuniwatt SAS***
France	***Revinax SAS***
France	***Robosoft***
France	***Save Innovations***
France	***Shopedia***
France	***SoftCorner***
France	***Soltiles***
France	***SP3H***
France	***Stilz Chimie***
France	***Stream Vision***
France	***Streamdata and Motwin***
France	***Sunaero***
France	***Surgivisio***
France	***TCLand Expression SA***
France	***Tetrane***
France	***UB***
France	***Ubeeqo***
France	***Ubithings***
France	***VFO***
France	***Whylot SAS***
France	***YouTransactor***
France	***Zephy-Science SARL***

- **Spain:**

Spain	***1D3A Technology***
Spain	***ABN Pipe Systems***
Spain	***Abro Biotec***
Spain	***Acellera Labs SL***
Spain	***Acorde Technologies***
Spain	***Actisa***
Spain	***Ad Telecom SL***
Spain	***AD Biocomposites***
Spain	***Adex***
Spain	***ADN Mobile Solutions***
Spain	***AEInnova***
Spain	***Aeorum***
Spain	***Aequs***
Spain	***Aerdron SL***
Spain	***Aerlyper***
Spain	***Agefred SL***

Spain	***Agrofield***
Spain	***AMINSA***
Spain	***Airtren***
Spain	***Alava Reyes Consultores SLU***
Spain	***Albyn Medical***
Spain	***Algaenergy SA***
Spain	***AlphaSIP***
Spain	***Alu Group SL***
Spain	***AMC Chemical***
Spain	***Apria Systems SL***
Spain	***Aquasonics***
Spain	***ARI***
Spain	***Arima Software Design SL***
Spain	***Arquimea***
Spain	***Artelnics***
Spain	***Artinvet***
Spain	***Aticser***
Spain	***Axeb Biotech SL***
Spain	***Ayanet TIC***
Spain	***BaiWind SL***
Spain	***BCB***
Spain	***BCInnova***
Spain	***BEL***
Spain	***Berbetores Industrial SL***
Spain	***BETA Renowable Group SA***
Spain	***Bicosome***
Spain	***Biko2 2006 SL***
Spain	***Bio-inRen***
Spain	***Biocurve***
Spain	***Naturae***
Spain	***Bioftalmik SL***
Spain	***Biohope***
Spain	***Biolan***
Spain	***Bionanoplus SL***
Spain	***Biotica***
Spain	***Biotmicrogen***
Spain	***BitBrain***
Spain	***Bluelife***
Spain	***Bosques Naturales***
Spain	***Boot&Work Corp, SL***
Spain	***BluePlasmaPower***
Spain	***Bridge Mediatech SL***
Spain	***BSQ Solar***
Spain	***Bultaco***
Spain	***Cadel Deinking SL***

Spain	***Calvo***
Spain	***Camelina Company Espana SL***
Spain	***Canvax Biotech***
Spain	***Catuav***
Spain	***Cegasa Portable Energy SLU***
Spain	***CellMat Technologies SL***
Spain	***Centro de Investigaciones Submarinas SL***
Spain	***Chimigraf***
Spain	***Chimigraf***
Spain	***CEAE***
Spain	***Cifga***
Spain	***Cleandrone***
Spain	***Openjoy***
Spain	***Cohitech***
Spain	***Conservas Fredo***
Spain	***Copcar***
Spain	***Counterest***
Spain	***CTRL4 Enviro SL***
Spain	***Cubenube SL***
Spain	***Cubi Playa***
Spain	***Cysenergy***
Spain	***D&M International***
Spain	***D&R Ingenieros***
Spain	***DAS***
Spain	***das-Nano***
Spain	***Datacentric PDM SA***
Spain	***Defensya***
Spain	***Degima***
Spain	***Deusto Sistemas***
Spain	***Dexmasensors SL***
Spain	***Diagnostiqa SL***
Spain	***DyCare***
Spain	***Easy-Code***
Spain	***Ebers Medical Technology***
Spain	***Ecoalf***
Spain	***Ecrowd Invest***
Spain	***Efinétika Soluciones Energéticas SL***
Spain	***Electricidad Jaca***
Spain	***Enair Energy***
Spain	***EncoreLab***
Spain	***Enerocean***
Spain	***Enosan***
Spain	***Entecnia Consulting SL***
Spain	***Eodiss Systems SL***
Spain	***Epic Power Converters SL***

Spain	***Esalto***
Spain	***Esteyco SAP***
Spain	***Eurogan SL***
Spain	***Exploded View SL***
Spain	***FacePhi Beyond Biometrics***
Spain	***FacePhi Beyond Biometrics***
Spain	***Factorverde***
Spain	***Farsens***
Spain	***Fede Pulverizadores***
Spain	***Fina Biotech***
Spain	***Fitoplancton Marino SL***
Spain	***Flubetech***
Spain	***Fluzo Studios SL***
Spain	***Fractus***
Spain	***Fresmak SA***
Spain	***Friendkhana***
Spain	***Visualfy***
Spain	***Gala Gar SL***
Spain	***Garagescanner***
Spain	***Geezar Soluciones SL***
Spain	***Geko Navsat SL***
Spain	***OncoVision***
Spain	***Genaker***
Spain	***GeoActio***
Spain	***Gescaser SA***
Spain	***GEA forestal***
Spain	***GFM***
Spain	***Gigigo***
Spain	***Global Olive***
Spain	***Gnanomat SL***
Spain	***GNCLáser***
Spain	***Gnoto Marketing& Sales, SL***
Spain	***Graphenea***
Spain	***Green Wave Technologies SL***
Spain	***Greene Waste to Energy SL***
Spain	***Greenpower***
Spain	***Grupo Tecnico Rivi SL***
Spain	***GTZ***
Spain	***Hal SL***
Spain	***Helopav SA***
Spain	***Bastan Technologias***
Spain	***Hidronav***
Spain	***Hiperbaric SA***
Spain	***HTP-Systems***
Spain	***Hormesa***

Spain	***Hydrokemos***
Spain	***Iberital***
Spain	***IcarVision Systems, SL***
Spain	***IDAERO***
Spain	***Iden Biotechnology***
Spain	***Ideya***
Spain	***Igen Biotech***
Spain	***GMI Group***
Spain	***Iline Microsystems SL***
Spain	***Imicroq***
Spain	***Inbiolev SL***
Spain	***Inbiomotion SL***
Spain	***Indemesa SL***
Spain	***InesFly***
Spain	***Infaimon SL***
Spain	***IngecID***
Spain	***Ingelia SL***
Spain	***Ingeniatrics***
Spain	***Ingenia Motion Control***
Spain	***Innovatec***
Spain	***Next Automotive Safety***
Spain	***Inseef***
Spain	***INSTAGREEN***
Spain	***Instant Sport SL***
Spain	***Instituto Holografico Terrasun***
Spain	***Insulclock***
Spain	***Interval SA***
Spain	***Invar***
Spain	***Irideon SL***
Spain	***Iris***
Spain	***Isend SA***
Spain	***Itestit SL***
Spain	***Itestit SL***
Spain	***Ixion***
Spain	***JOT Internet Media***
Spain	***KDPOF***
Spain	***Kelme***
Spain	***Kerionics SL***
Spain	***Kimitec***
Spain	***King of App***
Spain	***Ekuore***
Spain	***Laimund***
Spain	***Lancor***
Spain	***Largoiko SL***
Spain	***Larrasa***

Spain	***LC Paper SA***
Spain	***Leading***
Spain	***Lenz Instruments***
Spain	***Leunamme Engineering***
Spain	***Life Length***
Spain	***Lightbee SL***
Spain	***Living Surf SL***
Spain	***Lointek***
Spain	***LPI***
Spain	***Lumiker***
Spain	***Luntarium***
Spain	***Mahei***
Spain	***MedicalDev***
Spain	***Medtep Online SL***
Spain	***Merak SL***
Spain	***Mesurex Aeronautics Division SL***
Spain	***Microgaia***
Spain	***Microptic SL***
Spain	***Leverade***
Spain	***Monteloeder***
Spain	***Mind the Byte***
Spain	***myABCKit***
Spain	***Nabrawind***
Spain	***Naevatec***
Spain	***Naian Software SL***
Spain	***Nanogap***
Spain	***Natural Machines***
Spain	***Nautilus Floating Solutions SL***
Spain	***Nektria***
Spain	***NEOS Surgery SL***
Spain	***Nesplora***
Spain	***Nesplora***
Spain	***New Pack Technologies SL***
Spain	***New Music Now***
Spain	***Nexiona***
Spain	***NIT***
Spain	***Nommon***
Spain	***wesmartPark***
Spain	***Ocean Cleaner Technology***
Spain	***Ocupharm***
Spain	***Ontech Security***
Spain	***Onyx Solar***
Spain	***Grupo OX***
Spain	***Probisan***
Spain	***Peptomyc***

Spain	***Picvisa***
Spain	***Pensumo***
Spain	***PlayFilm***
Spain	***Playforapply***
Spain	***Lufort***
Spain	***Protein Alternatives***
Spain	***Productos Agrovin SA***
Spain	***Promaut***
Spain	***Prot-On***
Spain	***Prototal***
Spain	***Pyro***
Spain	***QualityFry***
Spain	***Qhaceshoy***
Spain	***Quantitas Energy***
Spain	***Quaternium***
Spain	***Quercus Technologies SL***
Spain	***Quibim***
Spain	***Quintin***
Spain	***Quotanda***
Spain	***Remote Eye***
Spain	***RDC***
Spain	***Robotnik***
Spain	***Rokobun***
Spain	***Rovalma***
Spain	***Rufepa***
Spain	***Sensing&Control Systems***
Spain	***S2 Grupo***
Spain	***Sanidad Agricola Econex SL***
Spain	***Sanz Clima***
Spain	***Satlantis***
Spain	***Scanfisk***
Spain	***SciencePack***
Spain	***Sciling***
Spain	***SEADM***
Spain	***Seaplace***
Spain	***SEDET***
Spain	***Sendekia SL***
Spain	***SENSIA***
Spain	***SensoWave***
Spain	***Seppelec***
Spain	***Seven Solutions SL***
Spain	***SHS Consultores***
Spain	***Sigma Technologies SL***
Spain	***Signaturit Solutions SL***
Spain	***Sistemas OEE***

Spain	***Smart Sensor Technology***
Spain	***Smartick***
Spain	***Smile and Learn***
Spain	***Solar MEMS Technologies SL***
Spain	***Solarbox***
Spain	***Solutex***
Spain	***Sonicat***
Spain	***Starlab***
Spain	***Structural Research SL***
Spain	***Talaia Networks***
Spain	***Talemnology***
Spain	***Talleres Azuara SL***
Spain	***Taniwa Health***
Spain	***Technidrone***
Spain	***Tecnimusa SL***
Spain	***Tecnologia y Aplicaciones Laser SLU***
Spain	***Tecnologias Avanzadas Inspiralia SL***
Spain	***Technoturbines***
Spain	***Tecselor***
Spain	***Telice***
Spain	***Termosalud***
Spain	***Terrasolum***
Spain	***Tewer***
Spain	***The Social Coin***
Spain	***The Zebrafish Lab***
Spain	***TNSL***
Spain	***Toro Development SL***
Spain	***Torrescamara***
Spain	***Torus***
Spain	***ULMA Embedded Solutions***
Spain	***Urbana IDR***
Spain	***Vadecity***
Spain	***Veigalan***
Spain	***Venter Pharma SL***
Spain	***Viavansi***
Spain	***Visual Tagging Services***
Spain	***Vivainnova***
Spain	***VLPbio***
Spain	***Voctro Labs***
Spain	***Vortex Bladeless SL***
Spain	***Watly***
Spain	***Weco Windows***
Spain	***Wetech***
Spain	***WIP***
Spain	***Worldcoo***

Spain	***WoS***
Spain	***Xerolutions***
Spain	***Yflow SD***
Spain	***ZEU***
Spain	***Zoitechlab SL***
Spain	***Zoovel***
Spain	***ZUMA***

- **Portugal:**

Portugal	***AcessoMatic***
Portugal	***Ar Diagnostic***
Portugal	***Aveleda***
Portugal	***Bluecover Technologies***
Portugal	***Boereboom Invitro Portugal***
Portugal	***Bright Curiosity LDA***
Portugal	***CoolFarm***
Portugal	***Cross Border Talents***
Portugal	***Eixo Digital***
Portugal	***EnergyPulse Systems***
Portugal	***Enermeter***
Portugal	***EQS Global Group***
Portugal	***Gepack***
Portugal	***Livedrive***
Portugal	***Logistema***
Portugal	***Magnomics SA***
Portugal	***Media Corp LDA***
Portugal	***Mobiag***
Portugal	***Nicepellets LDA***
Portugal	***Omniflow SA***
Portugal	***Optisigma***
Portugal	***Percieve 3D***
Portugal	***PET sys Electronics SA***
Portugal	***Sensefinity LDA***
Portugal	***STAB VIDA***
Portugal	***StemCell2Max***
Portugal	***SWORD Health***
Portugal	***Take The Wind***
Portugal	***UBQ- UNIDADE BIOQUÍMICA***
Portugal	***Unbabel, Lda***
Portugal	***VisionSpace Technologies***
Portugal	***Xhockware***
Portugal	***Ynvisible***

- **Belgium:**

Belgium	***2ZK***
Belgium	***Aratana Therapeutics NV***
Belgium	***Bekina Boots***
Belgium	***DNAlytics***
Belgium	***Feops BVBA***
Belgium	***Formac Pharmaceiticals NV***
Belgium	***Knowliah NV***
Belgium	***Mazaro***
Belgium	***Multiplicom***
Belgium	***Novosanis***
Belgium	***Nyxoah SA***
Belgium	***Otoconsult NV***
Belgium	***OWS NV***
Belgium	***Preferalis***
Belgium	***Space Applications Services***
Belgium	***Teal IT***
Belgium	***Vetex NV***
Belgium	***Voxdale BVBA***
Belgium	***Zebra Academy CVBA***

- **Luxembourg:**

Luxembourg	***Digicash Payments***
Luxembourg	***MyScienceWork***
Luxembourg	***TheMarketsTrust***

- **The Netherlands:**

The Netherlands	***Abundnz B.V.***
The Netherlands	***Agendia NV***
The Netherlands	***Aitek BV***
The Netherlands	***Ampyx Power BV***
The Netherlands	***Angio Target BV***
The Netherlands	***Anteryon***
The Netherlands	***AOES***
The Netherlands	***aQysta***
The Netherlands	***ASK Community Systems***
The Netherlands	***Bepart BV***
The Netherlands	***Bi-Energy BV***
The Netherlands	***Blue 4 Green B.V.***
The Netherlands	***CargoBox***
The Netherlands	***Bright Computing***
The Netherlands	***CarbonOrO***
The Netherlands	***Colsen***

The Netherlands	***Da Vinci Laboratory Solutions B.V.***
The Netherlands	***Donkervoort Automobielen BV***
The Netherlands	***e-Traction Europe B.V.***
The Netherlands	***Elitac***
The Netherlands	***Entech Scientific B.V.***
The Netherlands	***eVision Industry Software***
The Netherlands	***Except***
The Netherlands	***FABPulous***
The Netherlands	***free-D Geometries B.V.***
The Netherlands	***Greenflux***
The Netherlands	***Heliox***
The Netherlands	***Heliox***
The Netherlands	***Hemics***
The Netherlands	***Holland Conditioning Parkeersystemen B.V.***
The Netherlands	***Holland Container Innovations***
The Netherlands	***Hy2Care***
The Netherlands	***Hydrowashr***
The Netherlands	***IBIS Power***
The Netherlands	***IBS Precision Engineering***
The Netherlands	***INE***
The Netherlands	***iPM Partners***
The Netherlands	***Leap Development B.V.***
The Netherlands	***MAGNETO***
The Netherlands	***Medis medical imaging systems***
The Netherlands	***Metasensing B.V.***
The Netherlands	***MiLabs B.V.***
The Netherlands	***MilkWays Holding B.V.***
The Netherlands	***Mount Medical***
The Netherlands	***Nemo Healthcare***
The Netherlands	***Nico-lab***
The Netherlands	***NTRC***
The Netherlands	***Optisense Technologies***
The Netherlands	***Orbital Eye***
The Netherlands	***Patho Finder***
The Netherlands	***Pluriomics B.V.***
The Netherlands	***Pontis Engineering B.V.***
The Netherlands	***Provalor***
The Netherlands	***Psicon B.V.***
The Netherlands	***Px HealthCare***
The Netherlands	***Reciclata B.V.***
The Netherlands	***S&T B.V.***
The Netherlands	***Saint Trofee***
The Netherlands	***Self-Screen***
The Netherlands	***Sepasoft B.V.***
The Netherlands	***Solynta***

The Netherlands	***SonicSampDrill B.V.***
The Netherlands	***SpinControl Gearing B.V.***
The Netherlands	***Sqetch***
The Netherlands	***SBE***
The Netherlands	***Tide Microfluidics***
The Netherlands	***Treeway***
The Netherlands	***Trilobes***
The Netherlands	***Tvilight***
The Netherlands	***Vadac B.V.***
The Netherlands	***Viaderna***
The Netherlands	***ViriCiti B.V.***
The Netherlands	***Vitality Vector B.V.***
The Netherlands	***Volgroen***
The Netherlands	***Vryhof Anchors B.V.***
The Netherlands	***Waterwatch***
The Netherlands	***Withlocals***
The Netherlands	***Xpand Biotechnology B.V.***

- **Germany**

Germany	***3B Pharmaceuticals***
Germany	***3S Antriebe GmbH***
Germany	***Addact***
Germany	***AgriCon GmbH***
Germany	***Airrays***
Germany	***Amorh Systems***
Germany	***Anvo-Systems Dresden GmbH***
Germany	***Apsec***
Germany	***Armatix GmbH***
Germany	***Aross 3D GmbH***
Germany	***Arxes-tolina***
Germany	***Astrofactum***
Germany	***Autoaid GmbH***
Germany	***Systemparken***
Germany	***AVA-CO2- Forchung GmbH***
Germany	***Averbis GmbH***
Germany	***Bernhard Jöckel***
Germany	***Bettervest***
Germany	***Bogen***
Germany	***BTD***
Germany	***BVB Innovate GmbH***
Germany	***c-Lecta***
Germany	***CellTool GmbH***
Germany	***C.H.Müller GmbH***
Germany	***CNS Therapy***

Germany	***Coin Consulting UG***
Germany	***ColVisTec AG***
Germany	***Comnovo GmbH***
Germany	***Consultech***
Germany	***Deutsche Energieversorgung GmbH***
Germany	***E-nema***
Germany	***Eagleyard Photonics GmbH***
Germany	***EINS GmbH***
Germany	***En3 GmbH***
Germany	***EnerKite***
Germany	***ENS***
Germany	***EoMap***
Germany	***Epi-interactive***
Germany	***Epigenomics***
Germany	***Epyxs GmbH***
Germany	***ESDA Technologie GmbH***
Germany	***Evopark GmbH***
Germany	***Fastner GmbH***
Germany	***Fit Analytics***
Germany	***FoodLoop GmbH***
Germany	***Fricke und Mallah Microwave Technology GmbH***
Germany	***Friz Biochem***
Germany	***GameYourself***
Germany	***Gensoric GmbH***
Germany	***GGWK Medical Tech***
Germany	***Greenspider***
Germany	***GroupEstate***
Germany	***Florafuel AG***
Germany	***The Matrix***
Germany	***Hapticom***
Germany	***Heich Consult GmbH***
Germany	***Hightex Verstärkungsstrukturen GmbH***
Germany	***HKL Energieanlagen AG***
Germany	***HLW TEC***
Germany	***Hydro-Air***
Germany	***IBG Automation GmbH***
Germany	***IBIDI GmbH***
Germany	***Immundiagnostic AG***
Germany	***IEG Technologie GmbH***
Germany	***IGV GmbH***
Germany	***Industrialpartners GmbH***
Germany	***InFarm***
Germany	***InnoRoute***
Germany	***Innsystec***
Germany	***InProcess Instruments***

Germany	***Intelligent Imaging Solutions GmbH***
Germany	***Invent***
Germany	***Ionera***
Germany	***Ionovation GmbH***
Germany	***Jena-Geos-Ingenieurburo GmbH***
Germany	***JenLab GmbH***
Germany	***Kasseler Stottertherapie***
Germany	***KCN***
Germany	***KKS***
Germany	***Lipp GmbH***
Germany	***LKZ***
Germany	***Lophius***
Germany	***Ludy***
Germany	***MDS Meyer GmbH***
Germany	***mb+Partner***
Germany	***Mediagnost***
Germany	***Metaheps GmbH***
Germany	***Mi medical Innovation***
Germany	***Mosaiques***
Germany	***MST Maschinenbrau GmbH***
Germany	***Nenader Shark GmbH***
Germany	***Novihum Technology GmbH***
Germany	***PADO Elementebau GmbH***
Germany	***ParkTAG***
Germany	***petaFuel***
Germany	***piur imaging***
Germany	***Plasmachem***
Germany	***promeos GmbH***
Germany	***Pusch AG***
Germany	***Q3 Energie***
Germany	***ResuSciTec GmbH***
Germany	***S4M***
Germany	***Saperatec***
Germany	***Scarabeus AG***
Germany	***SelfD Technologie GmbH***
Germany	***Silicon Planet GmbH***
Germany	***Silicon Radar GmbH***
Germany	***SIMFO GmbH***
Germany	***Siqens GmbH***
Germany	***Sividon Diagnostics***
Germany	***SKM GmbH***
Germany	***Solardynamik***
Germany	***Solutronic Energy GmbH***
Germany	***Soma Analytics***
Germany	***Soma Analytics***

Germany	***Sonotec***
Germany	***Sonovum AG***
Germany	***SunOyster Systems GmbH***
Germany	***Space Structures GmbH***
Germany	***Spectrum ARC***
Germany	***Spherotec GmbH***
Germany	***SphingoTec***
Germany	***Spring Techno GmbH***
Germany	***Telocate GmbH***
Germany	***Teraki GmbH***
Germany	***Terranea UG***
Germany	***Thermoelectric Industrial Solutions GmbH***
Germany	***Trivisio***
Germany	***toughTrough GmbH***
Germany	***UnserParkplatz GmbH***
Germany	***Verkehrswacht Parkplatz GmbH***
Germany	***wusoa GmbH***
Germany	***Zaak Technologies GmbH***

- **Denmark:**

Denmark	***Advanced Substrate Technologies A/S***
Denmark	***Absolute Zero IVS***
Denmark	***Agrifarm***
Denmark	***Amminex Emissions Technology A/S***
Denmark	***AntibioTx ApS***
Denmark	***Apiosoft ApS***
Denmark	***Aviatec***
Denmark	***Biorem ApS***
Denmark	***Blusense Diagnostics***
Denmark	***bosoLog ApS***
Denmark	***CardLab innovation***
Denmark	***Ceko Sensors ApS***
Denmark	***ClearView Trade ApS***
Denmark	***COOL4SEA ApS***
Denmark	***CSA***
Denmark	***CytoTrack ApS***
Denmark	***Danelec Marine***
Denmark	***Danish Power System ApS***
Denmark	***Danish Wood Technology A/S***
Denmark	***DGE***
Denmark	***DMC***
Denmark	***Dupont Lightstone***
Denmark	***ecoXpac***
Denmark	***Explicit ApS***

Denmark	***Fire Eater AS***
Denmark	***Floating Power Plant A/S***
Denmark	***Genomic Expression***
Denmark	***GLPS***
Denmark	***Egernsund Tegl***
Denmark	***H2 Logic***
Denmark	***HALDRUP GmbH***
Denmark	***Hello World Mobile ApS***
Denmark	***HPNow***
Denmark	***iLocator ApS***
Denmark	***Inmold***
Denmark	***Integra Consult AS***
Denmark	***Kamis Wrang ApS***
Denmark	***KM Rustfri A/S***
Denmark	***Liftra ApS***
Denmark	***LS Control A/S***
Denmark	***My Defence Communication ApS***
Denmark	***NIL Technology ApS***
Denmark	***Norlase***
Denmark	***NTU International***
Denmark	***Penneo***
Denmark	***PlastiSens***
Denmark	***PowerCon A/S***
Denmark	***Qimova***
Denmark	***ReMoni***
Denmark	***RSP Systems A/S***
Denmark	***RushFiles***
Denmark	***Sepior***
Denmark	***Safe Green Logistics***
Denmark	***Steeper Energy ApS***
Denmark	***Stender Diagnostics***
Denmark	***Thürmer Tools***
Denmark	***TPU A/S***
Denmark	***Tuco Marine ApS***
Denmark	***Ucomposites A/S***
Denmark	***Wavepiston***
Denmark	***Zymonostics ApS***

- **United Kingdom:**

United Kingdom	***2M Engineering***
United Kingdom	***A&M EDM***
United Kingdom	***Abcodia***
United Kingdom	***Accelerated Medical Diagnostics Ltd.***

United Kingdom	***Accentus Medical***
United Kingdom	***Acedag Ltd.***
United Kingdom	***Adaptix***
United Kingdom	***Advanced Bioprocess Development Ltd.***
United Kingdom	***Advanced Therapeutic Materials Ltd.***
United Kingdom	***Aglaris***
United Kingdom	***Alchemie Technology Ltd.***
United Kingdom	***Altek Europe Ltd.***
United Kingdom	***Alterix Ltd.***
United Kingdom	***AM Technology***
United Kingdom	***Advanced Mechanical Systems***
United Kingdom	***Anvil Semiconductors Ltd.***
United Kingdom	***Applied Inspection***
United Kingdom	***Aqanat***
United Kingdom	***Aquablast Ltd.***
United Kingdom	***Artaic Ltd.***
United Kingdom	***ATC Group Ltd.***
United Kingdom	***Attomaker***
United Kingdom	***Audax Global***
United Kingdom	***Auriplex Ltd.***
United Kingdom	***Auto Trip Ltd.***
United Kingdom	***Avanti Communications Ltd.***
United Kingdom	***AvantiCell Science Ltd.***
United Kingdom	***Avtura***
United Kingdom	***Bactest Ltd.***
United Kingdom	***Beckett Rankine Ltd.***
United Kingdom	***Bedfont Scientific Ltd.***
United Kingdom	***BioCarbon Engineering***
United Kingdom	***Biomeme Inc.***
United Kingdom	***Blendology Ltd.***
United Kingdom	***BlueMorph Technologies Ltd.***
United Kingdom	***Brainomix Ltd.***
United Kingdom	***BuffaloGrid Ltd.***
United Kingdom	***C-Tech innovation Ltd.***
United Kingdom	***C4 Carbides Ltd.***
United Kingdom	***Cagix EU Ltd.***
United Kingdom	***Calcivis Ltd.***
United Kingdom	***Carbon Analytics***
United Kingdom	***Cardiocity Ltd.***
United Kingdom	***Cascoda Ltd.***
United Kingdom	***CEMCO Ltd.***
United Kingdom	***Twine***
United Kingdom	***Carroll&Meynell Transformers Ltd.***
United Kingdom	***CNG Fuels Ltd.***
United Kingdom	***Cobalt Light Systems Ltd.***

United Kingdom	***Cool Energy***
United Kingdom	***Crapper&Sons***
United Kingdom	***Critical Pharmaceuticals Ltd.***
United Kingdom	***Crowd Analytics***
United Kingdom	***Cutting and Wear***
United Kingdom	***Cydar Ltd.***
United Kingdom	***Cyto***
United Kingdom	***DDG International Ltd.***
United Kingdom	***DelAgua Ltd.***
United Kingdom	***Delfland Nurseries Ltd.***
United Kingdom	***Desolenator***
United Kingdom	***Digital Life Sciences Ltd.***
United Kingdom	***Dressformer Ltd.***
United Kingdom	***DUeDil Ltd.***
United Kingdom	***Eco Green Drive***
United Kingdom	***Econic Technologies***
United Kingdom	***Edurio***
United Kingdom	***EDS Group Professional Engineering Services***
United Kingdom	***Powerstar***
United Kingdom	***Engine Developments Ltd.***
United Kingdom	***Ensygnia Ltd.***
United Kingdom	***Enviko***
United Kingdom	***Be-Wind***
United Kingdom	***Equipmake Ltd.***
United Kingdom	***Ecosheet***
United Kingdom	***Expert Tooling& Automation Ltd.***
United Kingdom	***EyeDPro***
United Kingdom	***Face Recording&Measurement Systems***
United Kingdom	***Fianium***
United Kingdom	***Fibre Technology Ltd.***
United Kingdom	***Filton Systems Engineering Ltd.***
United Kingdom	***Find Invest Grow***
United Kingdom	***Fleet Innovations Ltd.***
United Kingdom	***Flexion Mobile***
United Kingdom	***Fluorogenics***
United Kingdom	***Forward Composites Ltd.***
United Kingdom	***FreeWire Technologies Ltd.***
United Kingdom	***Fripp Design and Research***
United Kingdom	***Fuel 3D Technologies Ltd.***
United Kingdom	***FUZ Designs Ltd***
United Kingdom	***Gaia-Wind Ltd.***
United Kingdom	***Gasfill Ltd.***
United Kingdom	***GeoLang Ltd.***
United Kingdom	***Glenside Group***
United Kingdom	***GMS***

United Kingdom	***GR8 Engineering***
United Kingdom	***Green Fuels Research Ltd.***
United Kingdom	***Guidance Navigation Holdings Ltd.***
United Kingdom	***HMR Ltd.***
United Kingdom	***Hardstaff Barriers***
United Kingdom	***Health Intelligence Ltd.***
United Kingdom	***HiLight Semiconductor Ltd.***
United Kingdom	***HRS Ltd.***
United Kingdom	***Hugslock Systems Ltd.***
United Kingdom	***Hybrid Air Vehicles Ltd.***
United Kingdom	***i-movo***
United Kingdom	***Ibex Innovations Ltd.***
United Kingdom	***Omnitek***
United Kingdom	***Impact Laboratories Ltd.***
United Kingdom	***IN2***
United Kingdom	***Industrial Phycology***
United Kingdom	***Industrial Tomography Systems PLC***
United Kingdom	***Ingenza***
United Kingdom	***Innovo***
United Kingdom	***Insignia Technologies Ltd.***
United Kingdom	***Integrated Design and Analysis Consultants***
United Kingdom	***Ipurtech Ltd.***
United Kingdom	***IS Instruments Ltd.***
United Kingdom	***Inspection Technologies Ltd.***
United Kingdom	***Ixaris Systems Ltd.***
United Kingdom	***JK Fabrications Ltd.***
United Kingdom	***JR Fibres***
United Kingdom	***JRI Orthopedics***
United Kingdom	***KW Special Projects Ltd.***
United Kingdom	***Kanichi Research Services Ltd.***
United Kingdom	***Keronite International Ltd.***
United Kingdom	***Kiwi Power Ltd.***
United Kingdom	***Koolmill Systems Ltd.***
United Kingdom	***KR Trauma Support Ltd.***
United Kingdom	***Kromek Ltd.***
United Kingdom	***Krysium Technologies Ltd.***
United Kingdom	***Leapin Digital Keys Ltd.***
United Kingdom	***Libralato***
United Kingdom	***Lindhurst Engineering***
United Kingdom	***Linkko Partners Ltd.***
United Kingdom	***Liopa***
United Kingdom	***Loc8tor Ltd.***
United Kingdom	***Lontra Ltd.***
United Kingdom	***Loowatt Ltd.***
United Kingdom	***Loritus***

United Kingdom	***Lumen Research***
United Kingdom	***Magnetic Systems Technology Ltd.***
United Kingdom	***Michell Instruments Group***
United Kingdom	***Micromix Plant Health Ltd.***
United Kingdom	***Microwave Technology Ltd.***
United Kingdom	***Monese***
United Kingdom	***MWS Ltd.***
United Kingdom	***Nafici Environmental Research Ltd.***
United Kingdom	***NALIA Systems***
United Kingdom	***Nedra Ltd.***
United Kingdom	***Neuroprex Europe Inc Ltd.***
United Kingdom	***Nexen Lift Trucks Ltd.***
United Kingdom	***Nova Innovation Ltd.***
United Kingdom	***Nur Energie***
United Kingdom	***Omsbar Ltd.***
United Kingdom	***Oncolinx UK Ltd.***
United Kingdom	***OTAQ***
United Kingdom	***Overview Ltd.***
United Kingdom	***P1Vital***
United Kingdom	***Perpetuum Ltd.***
United Kingdom	***Perspectum Diagnostics***
United Kingdom	***Phasor Solutions Ltd.***
United Kingdom	***Phoenix Photonics***
United Kingdom	***PipeHawk PLC***
United Kingdom	***Planned Dearture***
United Kingdom	***Plasbrun Plastics Engineering Ltd.***
United Kingdom	***Point Topic***
United Kingdom	***Pragmatic Printing Ltd.***
United Kingdom	***ProAxsis Ltd.***
United Kingdom	***Protein Logic Ltd.***
United Kingdom	***PsyOmics***
United Kingdom	***Puridify Ltd.***
United Kingdom	***Q-Tec***
United Kingdom	***RayGen Resources Ltd.***
United Kingdom	***Recycling Technologies***
United Kingdom	***Reedsy***
United Kingdom	***Refgas Ltd.***
United Kingdom	***Reminova Ltd.***
United Kingdom	***Renovagen Ltd.***
United Kingdom	***Rinicare***
United Kingdom	***RTC Electronics Ltd.***
United Kingdom	***Saccade Diagnostics***
United Kingdom	***Scubacraft***
United Kingdom	***Secon***
United Kingdom	***Secr Secure Ltd.***

United Kingdom	***SeeQuestor Ltd.***
United Kingdom	***Silent Sensors Ltd.***
United Kingdom	***Skymark Packaging International Ltd.***
United Kingdom	***SMAR Azure Ltd.***
United Kingdom	***Smarter Grid Solutions***
United Kingdom	***Smartkem Ltd.***
United Kingdom	***Sofant Technologies***
United Kingdom	***Solar Polar***
United Kingdom	***Speakerbus Technology Ltd.***
United Kingdom	***Smart Separations***
United Kingdom	***Stablepharma Ltd.***
United Kingdom	***Succorfish***
United Kingdom	***Synapse Information Ltd.***
United Kingdom	***Teknisolar Ltd.***
United Kingdom	***Terraseed***
United Kingdom	***TES Ltd.***
United Kingdom	***The Environment Bank Ltd.***
United Kingdom	***Mudlark***
United Kingdom	***The Severn Partnership Ltd.***
United Kingdom	***Smart Actuator Company***
United Kingdom	***Thomson Power Europe Ltd.***
United Kingdom	***Tinizine Ltd.***
United Kingdom	***Tisics***
United Kingdom	***Tissuemed Ltd.***
United Kingdom	***Touriocity Ltd.***
United Kingdom	***Transense***
United Kingdom	***TRC***
United Kingdom	***Tumour Trace***
United Kingdom	***Tutorfair***
United Kingdom	***Ultrahaptics Ltd.***
United Kingdom	***Ultromex***
United Kingdom	***Valuechain Ltd.***
United Kingdom	***VFT Ltd.***
United Kingdom	***Blockwalls***
United Kingdom	***Winsor Medical Ltd.***
United Kingdom	***XCellR8 Ltd.***
United Kingdom	***Zeroshift Transmissions Ltd.***
United Kingdom	***ZoneArt Networks Ltd.***

- **<u>Ireland:</u>**

Ireland	***Adapptise Ltd.***
Ireland	***Allogen Biotech***
Ireland	***AltraTech Ltd.***
Ireland	***Aperilink***

Ireland	***Arralis***
Ireland	***Artomatix Ltd.***
Ireland	***Biosensia Ltd.***
Ireland	***BlueBridge Technologies***
Ireland	***Brandon Bioscience***
Ireland	***Climote Ltd.***
Ireland	***Composite Recycling Ltd.***
Ireland	***Convex***
Ireland	***DesignPro Ltd.***
Ireland	***ÉireComposites***
Ireland	***Endeco Technologies Ltd.***
Ireland	***Episcan Ltd.***
Ireland	***Esave Corporation Ltd.***
Ireland	***Eveara Ltd.***
Ireland	***Evolution Environmental Services Ltd.***
Ireland	***Exergyn***
Ireland	***Finesse***
Ireland	***G&M Steel Fabricators Ltd.***
Ireland	***G&M Steel Fabricators Ltd.***
Ireland	***Hibergene Diagnostics Ltd.***
Ireland	***Ikon Semiconductor Ltd.***
Ireland	***Inform Biosciences***
Ireland	***Innopharma***
Ireland	***Luxcel Biosciences***
Ireland	***Mac***
Ireland	***Nuritas Ltd.***
Ireland	***NVP Energy***
Ireland	***OncoMark***
Ireland	***Pilot Photonics***
Ireland	***PMD Solutions Ltd.***
Ireland	***Reflective Measurement Systems***
Ireland	***RR Projects***
Ireland	***Schwungrad Energie***
Ireland	***Sedicii Innovations Ltd.***
Ireland	***SiriusXT Ltd.***
Ireland	***Skytek Ltd.***
Ireland	***Slainte Beoga Teoranta***
Ireland	***SonarSim***
Ireland	***TIC Ltd.***
Ireland	***TruePivot***
Ireland	***UniTuition***
Ireland	***Vitalograph Ltd.***

- **Sweden:**

Sweden	***1928 Diagnostics***
Sweden	***Agrisera AB***
Sweden	***Airec AB***
Sweden	***Arne Jensen AB***
Sweden	***Applied Nano Surfaces***
Sweden	***Arcam AB***
Sweden	***AroCell AB***
Sweden	***Avantherm AB***
Sweden	***BioArctic Neuroscience AB***
Sweden	***BioInvent International AB***
Sweden	***Biovica***
Sweden	***Biovica***
Sweden	***Boule Medical***
Sweden	***Cimco Marine AB***
Sweden	***Cinnober***
Sweden	***Cleanergy AB***
Sweden	***Climatewell***
Sweden	***CLS AB***
Sweden	***Dafo Brand***
Sweden	***Degoo Backup***
Sweden	***Denator AB***
Sweden	***ScoreCloud***
Sweden	***Echandia Marine***
Sweden	***Ekomarine Paint AB***
Sweden	***Emotra AB***
Sweden	***Enza Biotech***
Sweden	***Ferroamp Elektronik AB***
Sweden	***Finepart Sweden AB***
Sweden	***Foreseeti AB***
Sweden	***Hoa's Tool Shop***
Sweden	***Hövding Sverige AB***
Sweden	***IBC Robotics***
Sweden	***ifoodbag AB***
Sweden	***Ignitia***
Sweden	***Immunovia AB***
Sweden	***Luxbright***
Sweden	***Luxbright***
Sweden	***Mandalon Technologies AB***
Sweden	***Mantex AB***
Sweden	***MD Biomedical AB***
Sweden	***Nelson Garden AB***
Sweden	***Neozeo AB***
Sweden	***Nordic Aircraft***
Sweden	***Nordic Ground Support Equipment AB***
Sweden	***Nordic Solar***

Sweden	***Opsis Monitoring Systems***
Sweden	***Optixmarine***
Sweden	***Parans Solar Lighting***
Sweden	***Paxymer AB***
Sweden	***Plasmatrix AB***
Sweden	***PPPolymer***
Sweden	***Prismatic Sensors***
Sweden	***ReVibe Energy***
Sweden	***Scandecon AB***
Sweden	***Symcel***
Sweden	***SalixEnergi Europa AB***
Sweden	***Senzime AB***
Sweden	***Sioo Wood Protection AB***
Sweden	***Sol Voltaics***
Sweden	***Solvatten***
Sweden	***Starcounter***
Sweden	***Svenska Aerogel AB***
Sweden	***TCN***
Sweden	***ThunderMaps AB***
Sweden	***Vibrosense Dynamic AB***
Sweden	***Volumental AB***
Sweden	***Triblade***
Sweden	***XVIVO Perfusion***

- **Finland:**

Finland	***Alleco Products***
Finland	***AlphaSense Oy***
Finland	***Aurelia Turbines***
Finland	***Bionova Ltd.***
Finland	***Black Donuts Inc.***
Finland	***Brighterwave Inc.***
Finland	***Conexbird Oy***
Finland	***Convion***
Finland	***Diktamen***
Finland	***Ductor Oy***
Finland	***Elastopoli Oy***
Finland	***Elcogen Oy***
Finland	***Enevo Oy***
Finland	***Finbiosoft***
Finland	***FP-Pigments***
Finland	***GASEK***
Finland	***Gasera Ltd.***
Finland	***HitSeed Oy***

Finland	***Hydroline***
Finland	***Iceye Oy***
Finland	***IndoorAtlas Ltd.***
Finland	***Inray Oy***
Finland	***Kiosked Oy***
Finland	***Linkker Oy***
Finland	***Lukoton***
Finland	***MetGen Oy***
Finland	***Navigil Ltd.***
Finland	***Netcycler Oy***
Finland	***Nordic 24/7 Services Oy***
Finland	***Norsepower***
Finland	***Nukute***
Finland	***Nurmi Cylinders Oy***
Finland	***Reagena Oy***
Finland	***Paptic***
Finland	***Paumax Oy***
Finland	***Coreorient Oy***
Finland	***Polarsol***
Finland	***Polarsol***
Finland	***RELEX***
Finland	***Sampo Software Oy***
Finland	***Scaffdex Ltd.***
Finland	***Signmark Productions Oy***
Finland	***Silvergreen Ltd.***
Finland	***Sofi Filtration Ltd.***
Finland	***Solar Water Solutions***
Finland	***Supponor Oy***
Finland	***TactoTek Oy***
Finland	***Tamturbo***
Finland	***Uniq Bioresearch Oy***
Finland	***Vaadin Oy***
Finland	***Varaani Cloud Hub***
Finland	***Verkotan Oy***
Finland	***Zenrobotics Oy***

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Sviluppo chimica
University of Ferrara
Intelligentsia Consultants
Intrasoft
LUXINNOVATION
Saxion University
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IAPMEI
IPN
Tecminho
University of Coimbra
TehImpuls
RRA LUR
IMPIVA
Gothia Science Park
Malmö
KITE
Optimat

YTKO

- Internal databases:
    - ESIC (Exploitation Strategy and Innovation Consultants)

BIAS - Bremer Institut für Angewandte Strahltechnik
ACCIONA Technological Centre Madrid
Aercrete
AEROGEL
Austrian Society for Systems Engineering and Automation
BIMAQ - Bremen Institute for Metrology, Automation and Quality Science
Cogvis
Computer Vision Lab
Coolrec
DPI - The Polymers Research Platform
FAE - Francisco Albero S.A.U.
Friedrich-Alexander-University / Institute of Manufacturing Technology
Indumetal Recycling
Instytut Techniki Budowlanej
Mostostal
Noesis Solutions
Ondeo Industrial Solutions
Optisort / Refind
Optoelectronica
Philips
Philips Consumer Lifestyle
Precitec
Projekt Engagemang
Relight
Rihs
RWTH Aachen University
Siemens
SP Technical Research Institute of Sweden
Swiss Federal Institute of Technology
Técnicas Reunidas
TNO - Toegepast Natuurwetenschappelijk Onderzoek
TUHH - The Hamburg University of Technology
Université de Picardie Jules Verne
University of Twente
VEW-Vereinigte Elektronikwerkstätten
VSL - The Dutch National Metrology Institute

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ESA
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KIC InnoEnergy
EIT Health
EIT Raw Materials
Strategic Allies
Innoget
Anvo-Systems Dresden
Anwendungszentrum
Heliatek
Novaled
Innowise
TWIST - Technologies from Wallonia for Image, Sound and Text
Clusterul Medical Sanatate Romania
Prounion
The Flemish Aerospace Group (FLAG)
Flanders Biobased Valley
DSP Valley (Designing Smart Products)
ecobuild.brussels – impulse.brussels

5.3 Annex 3

Fair candidates that are not in the top three:
(Need more info)

Country	Title	Value proposition	TRL	Comments	Assessment_JP
Austria	In-silico identification of novel enzymes	Computational enzyme search platform (catalphoretm) to identify high-value enzymes for biocatalytic processes, medical applications or cross-reactivities of therapeutically relevant inhibitors	5, 6	Relevance to Japanese industry is to be reassessed. Might have been too narrow.	Interesting technology and limited application. Market could be too narrow.
Austria	New Hydroxynitrile Lyases	Novel hydroxynitrile lyase enzymes for the preparation of enantiopure cyanohydrins	4, 5	Uncertain value (narrow application)	Target is too narrow and it could be difficult to market and identify appropriate licensee or partner.

Austria	osteomiR(TM) - a blood-based diagnostic test for fracture-risk in postmenopausal women and type-2 diabetics	Tamirna is specialized in biomarker development using blood-circulating micrornas – evolutionary conserved regulators of gene expression and cell/tissue function. Our biomarker technology is blood-based and minimal-invasive, fast and robust. The osteomir™ test is a diagnostic algorithm ("signatures") that uses the logic combination of serum microrna levels and clinical parameters for early diagnosis of osteoporosis. This test provides decision support to doctors, clinical researchers and pharmaceutical companies that manage osteoporotic patients or develop anti-osteoporotic drugs.	8, 9	The relevance of osteo diagnostcs in Japan would be a critical info to assess this technology relevance. In generala - good potential because of the aging population healthcare focus.	This application could be interesting. However it seems tha market has already been established and need to show clear advantage against existing methods or technologies.
Austria	SiMAX – Automatic translation system for barrier-free communication in sign language	First functional system for semiautomatic translation from text into sign languages. It includes emotions and other elements essential to sign languages.	8	Need to determine language specificity and adaptability. What is the actual technology that could be transferred?	It is unclear if this is applicable for manually coded Japanese. It has to have a transferable technology or IP.

Bulgaria	Jet engine for civil purposes in industry and construction	A new type of engine - Industrial Rocket Engine (IRE). IRE works on the basis of the rocket engine and is applicable as a propeller in two outstanding industries – metal formation and civil construction.	4, 5	Potentially a strong candidate - need a better understanding of the need/application that the new engine is advantageous for. Also IP strategy is a question.	Difficult to market in Japan. What is the advantage against existing engine?
Czech Republic	Multifunctional porous self-standing diamond membrane for cell cultivation	Preparation of self-standing porous polycrystalline diamond membrane from randomly oriented 2D siox nanofibers. The fabrication process includes synthesis of siox nanofibers using electrospinning method. Then the nucleated fibre membrane is covered by a thin diamond film. (reduced number of process steps and shorter time of deposition)	5, 6	Need more analysis on a specific industrial application relevance. Trade secret might not be enough protection to consider at this development stage.	Trade secret is usually not applicable for technology transfer for Japanese company.
Germany	Quantitative detection of circulating tumor cells (CTCs) to monitor cancer treatment and new cancer activity (Maintrac Method)	Laser scanning microscopy to quantify in the blood ctcs	8, 9	Probably a 'no' as this is not a 'technology' but the whole method of diagnostic… need more info about underlying innovation to assess possible applications	Same comment as Eugene's.

Denmark	Microelectronic development for the powered card industry and manufacturing of a variety of powered cards for financial, ID, access control or ID purpose	Full “system on Card” with fingerprint scanner on standard ISO 7810 credit card. - Full user control of RFID communication with a contactless card. - Capable of collecting multiple cards in one card and change card data dynamically. - Platform to connect merchants and consumers interactively.	8, 9	Probably a 'no' - not particularly a B2B … but need to look into an underlying invention/innovation. Might have a narrow valuable application to consider.	Probably no market in Japan for credit card industry.
Denmark	Radically new method in artificial insemination in animals (possibly also in humans)	No technology description provided (refer to an Appendix, not available)	4, 5	The authors are quite confused about IP (listed test results as type of IP protection), no actual technology description provided - likely a 'no'	Unable to evaluate.
Estonia	Esters of (2-hydroxy-3-oxo-cyclopent-1-enyl) acetic acid and their use for preparing (-)-R-homocitric acid gamma-lactone, (+)-S-homocitric acid gamma-lactone and the corresponding (-)-R-homocitric acid and (+)-S-homocitric acid salts.	New simple and efficient method for the synthesis of both enantiomers of homocitric acid γ-lactones and the corresponding homocitric acid salts.	4, 5	JP patent is issued in 2013 - is it known and interesting? Slightly conflicting preference on the deal structure. Need to narrow down the application and assess its Japanese relevance.	Specific application need to be determine.

Estonia	FishOS (also branded FishDirector) — virtualized data center management and automation software for superefficient cloud data center operations.	Fishos enables highly efficient openstack data center operations. It uniquely actively maximizes server utilization, lowering energy consumption as well as reducing server acquisition costs and the size of data center facilities (as fewer servers are required). This results in lower data center operating and capital expenditures (opex and capex) and mitigates data centers' impact on the environment (including particularly by reducing their operators' carbon footprint).	8, 9	Need more data on the specific value proposition and commercialization strategy (deal structure). Not sure the need addressed is of high value in japan.	Might be no market potential in Japan. Data center solution is not attractive for Japanese company.
Estonia	High Energy Density Solid Fluoride Ion Battery (sFIB)	Fluorine ion batteries optional solution	4, 5	There is no clear value proposition. More r&d is needed. Need to define applications.	Same comment as Eugene's.
Estonia	Impedance based sensing and spectroscopy	Enables to build reliable, low footprint, embeddable sensing solutions for varous biomedical and food applications.	4	Probably a "no" - too large and diverse portfolio without specific application. Low trl for such complicated set of assets. Ask about narrow innovation/technology?	Specific application need to be determine to evaluate marketability in Japan.

Estonia	Method for preparation of (2-Hydroxy-3-oxo-cyclopent-1-enyl)-acetic acid esters [related to another project!]	Starting compounds for the technology, described in US patent 8,148568 B2; JP 5301432. A shortest and most effective approach for preparation of starting compounds for homocitric acid	3, 4	Not an independent project - continuation of another one from Margus Lopp. Need to be considered as one.	Unable to evaluate.
Greece	FXply™ technology: Industrial Technology for Multi-scale Reinforcement of Polymer Composite Materials towards Performance Tailoring and new Functionalities	This technology gives the opportunity to address performance drawbacks by tailoring the formulation of composites. Composites can have new targeted functionalities such as toughness, electrical conductivity etc, apart from the established performance of the prepreg material (eg. Strength). The technology has been designed in such a way to ensure seamless integration in exisitng production lines as the output of the process is in a typical ply/roll form.	6	Probably a 'no' because of the uncertainties of IP protection and commercialization (a process). Could be interesting if there is a particular narrow application of high value.	Know-how and trade secrets are difficult to transfer especially in this type of technology in Japan.

Greece	Rechargeable electrochemical lithium ion cell for low temperature (<-40oC) applications	A silicon based lithium-ion cell has been developed, which delivers more than 200 Wh/kg with very good stability and performance even at lower temperatures (down to -40 oc)	4	It looks like the only viable application outside the space one would be in electric vehicles - need to assess the interest/need of the car makers in Japan	Clear competitive advantages need to be addressed. Generally Japanese auto makers are very strict to evaluate new technologies especially from outside.
Greece	Robotic Concentrated Solar Thermal Collectors for Heating and Cooling in Buildings and Factories	Robotic Concentrated Solar Thermal Collector with Fresnel lenses, solar tracking and point focus (high temperature thermal energy for heating/cooling/desalination at the local distributed level).	6, 7	Need more data on the innovation and possible IP protection strategy… is the application of high interest is another question to assess	Difficult to enter the market from outside. Solar power industry in Japan is relatively closed and government controlled market.
Spain	1.- SIESTA: Spanish Initiative for Electronic Simulations with Thousands of Atoms 2.- SIESTA PRO: Professional services and industrial and commercially driven sw developments	SIESTA is both a method and its computer program implementation, to perform efficient electronic structure calculations and ab initio molecular dynamics simulations of molecules and solids. Material design and simulation.	4, 5, 9	Most likely a 'no' - uncertain IP situation. Need more data on industrial application and value beyond research and development.	JP patent is necessary to work with Japanese company in this industrial sector.

Spain	Affordable, wireless system for temperature monitoring during transit and storage of perishable products that permits sharing information between different members of a cold chain	Wireless monitoring and cloud storage of information that can be shared and processed by any member of the cold chain.	7, 8	Probably a 'no' because of limited business model (sale). Seems to be a product. Need to look into a core underlying technology to consider.	Too competitive market. And it seems a product.
Spain	Battery management system (BMS) technology	Advanced management of batteries based on Lithium technologies, integrating hybridized balancing, advanced soc&soh estimations and Power Line Communication (PLC) between battery module controllers using the high voltage bus.	8, 9	Not clear if it has a stand alone value or need to be used with other technologies… probably a 'no', unless relevant to the another project	Battery management technology could be not attractive for Japanese companies in this industry sector.
Spain	Company involved in the development of new nanomaterials optimized to its implementation in the new energy storage devices generation (better storage performance, clean manufacturing procedures, etc.)	New class of nanomaterials with high add value to be used in Energy Storage devices. These nanomaterials are scalable in a cost-effective manner with proved quality.	3, 4	Potentially a strong candidate - need more data on various application(s) and material characteristics.	Concrete value proposition is necessary to present for Japanese company.

Spain	DeMILI Software.	Demili is a diagnostic software that can distinguish between benign manifestation (steatosis) and malignant (steatohepatitis) of NAFLD through the optical image analysis of liver MRI for evaluation of two imaging biomarkers related to the existence of steatohepatitis and fibrosis.	6, 7	Probably a "no" - the clinical validation of a software is highly regulated by country specific agencies, uncertain IP situation and limited deal preference make this a low priority even if proven effective	Difficult market to enter from outside especially in this development stage and IP situation.
Spain	EEG and neurostimulation (Transcranial Current Stimulation - tCS) devices for monitoring and stimulating the brain	Wireless, wearable, very easy and fast to set-up, dry electrodes available, solid gel electrodes available too, cloud service for EEG storage and data analysis, cloud service for home use of our stimulator devices, MRI compatible, MEG compatible, neurofeedback SW, optimization service to target specific areas of the brain. Multichannel tcs system (up to 32 channels). Also our system can do both EEG and Stimulation (hybrid system).	8, 9	Need more info on the patents and type of innovation behind this technology, might be of interest	Specific application is unknown. Information about IP is necessary.

Spain	Enhancing the quality attributes of processed honey and avoiding its crystallisation by the application of a non-thermal treatment process	High Power Ultrasounds (HPU) applied to honey induce acoustic cavitation that lead in the fragmentation and destruction of honey crystals delaying crystallization around 12 months post processing.	6, 7	Probably a 'no' unless could have a broader application, might be too consumer oriented	Industry needs are uncertain. Who is going to use this technology?
Spain	Fast DC Charging System.	The Fast DC Charging System allows 1 electric vehicle to be charged with DC in a few minutes. Each DC Charging System is composed of 2 main blocks, the CHARGER MAIN CONTROL SYSTEM and the POWER CONTROL SYSTEM.	3, 4	Probably a 'no' because of a very narrow application and uncertain IP	IP information is necessary and development stage is too early for Japanese company in this industry sector.
Spain	Heat Recovery Unit (HRU) for conversion into mechanical or electrical energy, from low temperatures (85 degC) and from 25 up to 2 MWt.	ENERBASQUE's technology based in Organic Rankine Cycle, is focused in the recovery and conversion into other energy forms as electricity, air compressed, cold or mechanical energy	8, 9	Probably a 'no' - issued with IP and business model, also a bit too generic in the description. Need more specific, high value application to consider.	IP information and competitive advantage based on actual data would be necessary to talk to Japanese company in this industry sector.

Spain	Integrated gasification plants for the elimination of organic waste (municipal solid waste, non-hazardous industrial waste, hospital waste, wood, coal, used tires, plastics and rubbers, sludge from water treatment plants, slurry ...) and biomass.	A gasification technology capable of recovery energy profitably of any organic waste, regardless of moisture, composition, heat value or morphology. As a result of this new technological advance our gasifiers gain in versatility and energy efficiency, having a gasification technology more flexible regarding the entry requirements of the waste to recovery.	8, 9	I doubt this technology is addressing a valuable need on the current markets… need more info on that and a feedback on relevance in Japan	Biomass market in Japan continues growing as expected. However the need for this type of technology is uncertain.
Spain	Intracranial Stroker Motor Rehabilitation	The long-term vision of IS-MORE is to allow stroke patients to regain the daily life they used to have. A totally unique link between the user's brain signals and the movements of the impaired limb and the modulation and reorganisation of neural processes using brain-body linked actuators.	4, 5	Probably a 'no' because of the customer orientation - but need to be considered as addresses high value problem	Not sure any market needs are there for this particular technology.

Spain	SIMOVE: Onboard speed monitoring system and data travel collection.	The device is able to track the position and the speed of any tram or train. When the speed limit is exceeded, the system alerts the driver with a visual (speedometer) and acoustical (alarm) warning to reestablish the right speed. If the driver does not respond, automatically the SIMOVE is programmed to activate the emergency brake to stop the tram or train. Besides, this system does not interfere with other safety systems like the 'dead man' device.	9	Most likely a 'no' unless the application has high value/relevance in Japan. Uncertain IP situation and deal preferences.	No market in Japan. Train system is highly developed and advanced as well as very restricted by regulation and standard.
Spain	SoHo3X	Soho3x device (our industrial technology) gathers the right technic in holography and optics to trap the sunlight into the device and then guide it efficiently towards the solar cells. As a result, we have achieved a product capable to interfere in each area of improvement in the solar photovoltaic industry, increasing the Power Density (kwh/m2) of a flat conventional photovoltaic (PV) module.	8, 9	Need more data on the value of the application and competitive analysis	Competitive advantage needs to be addressed.

Spain	Thermal protection systems for space launchers and entry probes.	The thermostructural materials have been proven their performances for mechanical resistance at high temperature (over 1500ºc) with low density. These thermostructural materials are limited due to high price and lower space heritage. The combination developed by TECNALIA profits from thermostructural in weight and toughness and from ablative in thermal and cost performances.	6, 7	Probably a 'no' - space application is hardly of high value. Might consider if other applications could be suggested, explored.	Difficult application to market. Unknown how to evaluate technology.
Spain	THERMOLAN ® Software	The Thermal analysis Thermolan® helps foundry technicians to evaluate the metallurgical condition of the melted iron, to foresee its behavior during the solidification process and to act on the productive process in real time. The target is to propose efficient solutions based on simplicity.	8, 9	Interesting and valuable application. Need more data on the sensitivity and efficiency of the analysis. Also - quite a limited business model (sale). Probably a 'no' unless some direct interest exist in japan industry.	Narrow market and difficult industrial sector to tap into.

Spain	Water Briefcase. MOBILE SYSTEM nonintrusive ANALYSIS AND DETERMINATION OF PERFORMANCE IN INDUCTION MOTORS	Determines induction motor efficiency without intrusive tests and without specialized equipment	4, 5	Most like a 'no' - a service model without clear IP… could reconsider if the underlying technology has another application of interest	No market in Japan with no JP patent in this industry sector.
Spain	WINCRETE – Concrete floating platform for wind turbines	Windcrete is a spar type floating substructure designed to carry wind turbines of up to 10 MW in deep offshore marine environments. It uses reinforced concrete in a monolithic structure with a smooth geometry that provides durable and reliable stability with a long lifespan and significantly reduced maintenance costs.	4, 5	The technology might be at a too early developmental stage to be interesting, need more data on tests and an assessment of the market value in Japan	Technology needs to be demonstrated through F/S with actual environment.
Finland	Arctic berry based natural antimicrobials	VTT has developed a technology to make highly active antimicrobial fractions from the berry processing side stream material. The idea is to utilize nature's own strong antimicrobial power for industrial innovations. (cosmetic and food sector)	8, 9	Specific info about active compound and its properties as well as raw material availability is needed to assess. Not sure about actual trl.	Technology based on natural source or material tend to get avoid unless there is significant advantages.

Finland	Peptide antibiotic coated catheters	Peptide antibiotic coated catheters	5, 6	The technology and its value proposition does not seem well defined… need more data on coating performance and particular application	Medical device coating is interesting market. However several similar technologies are available in the market in Japan. Competitive advantage with data is necessary to present.
Hungary	Antimicrobial coating for sanitary products	Self-disinfecting, highly durable surface that perfectly meets hygienic needs of today's customers. As a result of these improved hygiene conditions, the chance of infection is greatly reduced. Additionally, the use of antiseptic products can be minimized, making the coating environmentally friendly and also skin-friendly.	8, 9	Most likely a 'no' - mixture of high maturity and uncertain IP protection… Also not sure the application is really a B2B.	
Hungary	Novel Fire Fighting Technology for Storage Tanks called FoamFatale	It is New Foam Supply system and Foam Introduction Method. It was developed to achieve extraordinarily high foam application rate. The technology based on new scientific discoveries prevents air pollution, protects the stored material, and saves the	8, 9	Likely a 'no' - the IP situation and protectability in Japan is questionable. Need more data on the specific application.	

		storage tank against heat damages.			
Hungary	Novel Flat Solar Collector Technology	A closed flat solar collector with selectively coated absorber. It has a specific geometrical shaped and surface treated absorber which provides the most efficient heat absorbance and transfer, including all the benefits of low quantities of heat transfer fluid. (offers an 80% efficiency compared to the 40-60% efficiency gained by other solar collectors available on the market.)	8, 9	Concerns are about IP situation and possible competitive advantage. Need more test data and validation of value.	
Italy	ARGO- Optical multi-camera measuring system for the contact-less measurement of moving rigid bodies	EICAS innovative optical multi-camera measuring system for contact-less measurement of the pose (position and attitude, corresponding to 6 degrees of freedom) of a set of movable bodies within a predefined camera field of view.	6, 7	Potentially strong candidate - need info on IP situation and strategy	IP protection is necessary especially in this sector in Japan. Difficult to enter the market. The Japanese industrial automation industry is one of the most advanced and very competitive in R&D.

		Many applications: identification/localisation of objects and obstacles in the working area, walk-through programming and training by demonstration, safety systems implemented through virtual safety fences, robot TCP (Tool Central Point) accurate measurement in order to increase the robot accuracy, 3D surface acquisition for generating the finishing path industrial robots, intelligent robotic cells.			
Italy	Engineering test systems and data analysis software tools for non-volatile memory validation, characterization and qualification	A toolset that helps memory device developers, manufacturers and users to understand the behavior of the devices in a fast and efficient way. RIFLE test and measurement systems highly optimized for non-volatile memory development and the barniemat memory test data analysis software toolset.	8, 9	Probably a 'no' because of the uncertain IP situation. Seems to be a bit narrow application with a focus on user. Need more info about developers and manufacturers value proposition.	No market in Japan. Very limited players are in the memory chip and semiconductor manufacturing industry in Japan.

Italy	ERSEC - Precise on-board vehicle localisation system - through intelligent data-fusion of GPS-EGNOS, GIS, environmental and vehicle dynamic sensors - to be used for collision avoidance and automatic guidance of vehicles	ERSEC is a precise on-board vehicle localization system developed within the FP7 247955 ERSEC Project "Enhanced Road Safety by integrating Egnos-Galileo data with on-board Control system" (www.ersecproject.eu). The ERSEC main innovation consists in achieving a significant improvement in the vehicle positioning accuracy, going from metres offered by the EGNOS/GNSS to decimetres with an updating frequency that is going from the typical 5 Hz up to 100 Hz, through low cost equipments.	6, 7	Probably a 'no' because of lack of IP protection and uncertainty of the application. Need more data on the underlying innovation for possible alternative applications.	No market in Japan. IP protection is necessary. Vehicle control system is too competitive to enter.
Italy	single chip sensor with integration of gas, radiation and infrared sensors	Proprietary microelectronics chip with unique sensor readout and proprietary heterogeneous materials deposition. Miniaturization and cost saving.	4, 5	Probably a 'no' - limited business opportunity because of lack of patent protection. Need to focus on a specific application and demonstrate value.	No market in Japan without IP protection especially in automobile industry.

Italy	Smart Building skin	A new way of conceiving both the photovoltaics and glass block industry, through multifunctional translucent components for roofs and façades that optimize buildings energy performance, while enhancing their aesthetics	4, 5	Probably a 'no' - this seems to be an early stage concept for a very narrow application. Need more data on a specific need and competitive landscape	No market in Japan. Glass block product is very common and well established in Japan. Value proposition is uncertain.
Lithuania	Production of BOG (fossil) OAK raw materials by its own developed and patented technology. Product development and production of BOG (fossil) oak.	In the world is a very small amount of real bog (fossil) oak raw materials. The technology enables us to satisfy any size of demand with high quality raw materials.	8, 9	Need more info on the details of the actual process and the innovation angle - provided info is too generic	Unable to evaluate. Lack of technical information. Uncertain market value.
Portugal	Emulsified suspensions for cold accumulation	A group of researchers from a Portuguese University developed a phase change composite material with high thermal conductivity, dispersed in an aqueous matrix with self-organisation, processable in situ and with high potential for use in cold storage systems. The new material allows to accumulate a large amount of energy in the form of latent heat, the thermal conductivity is improved and, mainly, it	3	Not sure on the value of the application and the specific competitive advantage. Might be too early stage to assess.	Development stage is too early to tap into Japanese company. It seems very narrow and limited market.

		eliminates the stability problems of the devices incorporating the material due to the small volume variations in the phase shift.			
Slovenia	Charging of electric vehicles – smart charging stations and back & front end solutions for the management of charging stations, roaming platform	Interactive charging, power management, clustering, demand side management, integrated front & back end, dynamic tariffing, load management of internal network, most advanced EU charging equipment	8, 9	Probably a 'no' - seems to be a complicated control system for a narrow application (electrovehicle) with no IP	No market in Japan without proper IP protection.
UK	Libralato Rotary Hybrid Engine	The Libralato rotary hybrid engine represents an historic breakthrough in automotive internal combustion engine design. Its revolutionary 9 phase thermodynamic cycle completes in each rotation, with higher efficiency (higher compression and expansion ratios) and lower emissions (cool exhaust gas recirculation - EGR). With 50% mass and 30% cost savings, it enables plug-in hybrid	5, 6	Probably a 'no' - the claims and old patents (1989) are highly presumptions. Very strong data from working prototype would be needed to consider this technology. Also need to find a specific industrial application to capture the value if proven.	No market in Japan. Too competitive against major auto manufacturers in hybrid electric vehicles.

		systems to fit into any car engine bay; to drive EV in 'town' and ICE in the 'country'; reducing fuel consumption by 65% and CO2 by 55%, without government subsidy or range anxiety.			
UK	Novel design of laser for telecoms	A new design of semiconductor laser for telecoms. A vertical-cavity surface-emitting laser (VCSEL) with all associated advantages. A bright efficient VCSEL with no need for cooling and with emission at telecom wavelengths in the range from 1260 to 1675 nm.	4, 5	Potentially a strong candidate - need to assess the value of the application for the Japan telecom market	Probably no market in Japan for laser technology in telecom industry. Big Japanese telecom companies have similar technologies and products.
UK	Novel semiconductor memory offering the speed of RAM and persistence of FLASH	A new design of semiconductor memory	4, 5	There is actually very little info in the submission to assess the value and competitive advantage of this technology. Might be too early. Could be reassessed after test data available to compare with industry standards.	Not enough information about technology to evaluate. However Japanese manufactures have been getting weaker in this sector.

Weak candidates that are not in the top three:
“Definite no”

Country	Title	Value Proposition	TRL	Comments
AT	GREENpass – a planning, simulation and certification tool of Urban Green Infrastructure	Detailed planning and simulation services of the effects of urban green infrastructure (UGI) on city quarters and single buildings with the GREENpass ®. The GREENpass® technology also introduces the first certification for climate change compatible urban development by UGI worldwide.	8, 9	not really a B2B, no opportunity to protect in japan
BG	Autonomous (unmanned) solar powered boat for hydrographic survey and ambient water monitoring	Ambient water monitoring in restricted access area, or endangered places (e.g. measuring / monitoring the dredge plume while dredging contaminated sediments in ports, or surveying other maritime construction works)	6, 7	not a B2B technology - a product
BG	Ekomilk Horizon + AMPI, Fully automated mini-lab for milk parameters + somatic cells measurement	Fully automated mini-lab for milk parameters + somatic cells measurement with cloud-based solution for data collection and analysis. The innovation allows on-farm measurement for more selective antibiotic use with selective dry cow therapy and accurate and early detection with less discarded milk.	5, 6	the actual need and value proposition are not so clear… in addition authors indicated that the technology could not be protected in Japan

BG	Open Standard for Parametric Geometry & Semantics (based on Semantic Web) + supporting component + example WebGL/HTML5 client/server solution.	Software Library/Component to support Open Standard 'CMO with Extensions', a standard based on Semantic Web (W3C) technology for integrating parametric knowledge with geometry and semantics.	8, 9	Uncertain industrial application as well as vague protection and deal preference… no clear business model
CZ	A circadian LED source of tunable white light based on novel phosphor material conception (Eu2+-doped ternary sulfides)	A light bulb (white light LED source) which is able to produce white light with tunable colour temperature during the daytime.	5, 6	Lack of potential protection in Japan
CZ	BlindShell	BlindShell is an innovative smartphone that seeks to solve a major social problem by assisting visually impaired people to utilize modern touchscreen smart phones. Functionality available includes: call; SMS; contacts; alarm clock; notes; calendar; book reader; integration of the biggest online digital library Bookshare; colour recognition tool (via camera), banknote recognition tool (via camera); and magnifying glass with OCR (via camera).	8, 9	Not a B2B technology, rather a product to be sold. Might look into the core innovation behind the product for possible interest.
CZ	Development of Laser-Based Radiation sources	The invention is a new generation radiotherapy device and method of treatment and imaging. The device and method disclosed synchronize monitoring and treatment of a patient in the same time. It also discloses a method of calibration tests which are helpful to personalized treatment. According to the invention, the system can deposit a huge amount of dose to the patient within few pulses. Moreover, this technology is suitable for both, classical electron accelerator and new laser driven electron sources.	3, 4	the project seem to be too generic and involves many various components to develop and investigate. The deal preference too limited and uncertain.

DE	Sensor Fusion Software Development Kit (mobile) to predict mobility patterns	predict.io turns smartphones into context sensors. So that mobile active businesses can target moments rather than statistics and learn more about their customers' behavior. The SDK (software development kit) for iOS, Android and Cordova can be installed in minutes.	8, 9	the technology is widely used already, the application, type of protection and the deal preference are not a fit for this program
DE	Smart system (limits the use of a weapon only to the legitimate owner – prevents misuse of weapons)	Autentification system. The enhanced chip technology implemented in the product contains all the relevant information (marking), stores all relevant usage (shot counter) and can also be transferred to military type of products.	8, 9	weapon applications - hardly of interest to Japanese market
EE	Fuel Cell technology	(not enough data provided to formulate competitive advantage - seems like just another type of fuel cells…)	8, 9	Not enough info on competitive advantage and differential features. Only interested in selling the product.
EE	Sentab Social TV box to enhance connectivity and reach of online services	Innovative entertainment and communication system that runs on TV	8, 9	Consumer oriented product
EL	Standard accuracy pressure transducer for harsh environments	This sensor is made entirely out of Titanium, offering a unique solution for applications in extremely harsh environments and/or heavily corrosive media. It can withstand not only corrosive media but also extreme mechanical fatigue environments in terms of vibrations and shocks in an all welded titanium housing. It can be used by personnel without special training as the design is bullet proof making it extremely difficult to destroy.	4, 5	vary narrow application and uncertain IP protection

ES	accurate sub-nanosecond time transfer and frequency distribution for reliable industrial and scientific applications	Timing and synchronization telecom equipment (switches and nodes) for different industrial segments such as Telecommunications (5G requires synchronized antennas), Finances (for distributing legal time stamping from national metrology institutes and time stamping of stock transactions, especially for High Frequency Trading), Smart Grid (for a global time reference, it facilitates data analysis across the grid also forensic analysis in case of black-out), Defense (multiple antennas synchronization and distributed radar). As a GPS back-up for time critical infrastructure.	9	commercially available, not possible to protect in Japan
ES	Development of civil engineering software with Artificial Intelligence algorithms	TADIL Road and TADIL Railway: Software that uses Artificial Intelligence techniques applied to the automatic development of tracings of linear infrastructures in a very short period of time, saving time and means to the Administration. DITEL: Complementary software applied to the three-dimensional design of tunnels and linear structures, (viaducts), and bridges. VVOS: Software of artificial vision in situ that enables to see the infrastructures in its future position in a scale 1:1 before its building.	9	not a B2B technology, might still have a market but as a service offering
ES	EIDOCALC Software	Eidocalc® is a software oriented to evaluate on real time the forecasted internal soundness of cast iron part. It is able to integrate the quality parameters of liquid iron in the real production conditions and perform numerical simulation forecasting during the production. The result is the internal soundness of the produced parts and the reduction of the scrap level.	8, 9	hardly relevant - without IP protection and only sales as a model… Might worth checking if the specific problem exists in the fabrication industry to recommend.

ES	eValanz, Balance Evaluation and Rehabilitation	eValanz is a system specifically designed for the assessment and rehabilitation of patients suffering balance disorders. eValanz combines static posturography tests with limits-of stability tests and it monitors the pressure centre of moving targets; it also provides a sensory analysis of the proprioceptive, visual and vestibular systems.	8, 9	An interesting product but not a B2B technology - limited IP and business model. Might still consider for sales agreement with particular organisations in Japan as the need is real and important
ES	Foodini, the first kitchen appliance based on 3D printing technology	Foodini is a 3D food printer + IoT (Internet of Things) new generation kitchen appliance promoting cooking with fresh, real ingredients.	9	consumer oriented product, not a B2B
ES	Hierarchical three dimensional (3d) nanostructured networks	Enables a precise control over the morphology of material. The technology consists in the fabrication of a homogeneous periodic 3D nanotubular network in anodic aluminium oxide (AAO).	4, 5	by the words of the provider themselves: "There are no technologies in the market that provide similar characteristics to a 3D network material"
ES	Measurement of pedestrian and non-motorized flows and queues outdoor and privacy-respectful through computer vision systems	Computer vision applied to the recognition of patterns of human flows. For instance, by means of queue measurement, the speed of a ski lift can be modulated. Innovative aspects: System working outdoor and optionally with thermal images, respecting privacy.	9	not particularly a B2B technology, more like a service offering
ES	Medical Dispenser	solution (software, machine and blister packs) for dispensing weekly personal medication to chronic patients, helping them with their compliance to treatment	8, 9	not a B2B technology, consumer oriented

ES	NESPLORA has developed a new ICT system for the evaluation of mental disorders called “VRMIND”, based on the use of Virtual Reality (VR) environments. This technology is characterised by the ability to develop, clinically validate and perform innovative diagnosis procedures that simply couldn’t be done up to now.	new ICT system for the evaluation of mental disorders, called “VRMIND”, based on the use of virtual reality (VR) environments	9	potentially a valuable product but can't be pursued without solid IP and clinical data
ES	SAFTInspect - Ultrasonic synthetic aperture focusing technique for the inspection of railway crossings	SAFTInspect aims to develop an affordable and reliable ultrasonic inspection solution for sections of high manganese steel rail crossing points.	3, 4	the application is hardly a high value/relevant in Japan; uncertain IP situation
ES	SALOMON Software	Machine learning… Salomon is a unification of technologies that creates the new generation of predictive models of control, eliminating known problems.	8, 9	a product for sale - no IP protection and possibility to protect in Japan.
ES	SEESWIND. Safe, quiet and efficient wind generator from small winds (2.5 m / s) to violent (> 7 m / s).	12 small wind vertical axis, modular, silent and safe wind turbines, capable of providing energy efficiently with winds from small to violent.	9	a product for sale and installation. Need to review a core technology for other applications to reconsider.

ES	Technology platform to exploit private parkings empty spaces. Through our app our users can reserve, access and pay for private parkings on an hourly base like if it were a public parkings.	RFID access technology combined with App and users, Private parking owners can rent their empty spot/s on hourly based; Users park at a fraction on public parkings	9	not a B2B technology, no opportunity to protect in Japan.
ES	The smart container for trees	Container for the care of trees and plants. Automated irrigation control device.	3, 4	a product concept, without IP… probably to early stage to consider
ES	ZG3D - Advanced 3D Industrial Inspection System	ZeroGravity3D is an inspection system that applies Machine Vision to quality control. It is an industrial solution easy to integrate in production processes, capturing images of an object from a number of cameras while the part is in free fall.	5	the application says - "can't be protected in Japan"
FI	MyoGel - 3D human tumor bioassays	novel and easy to use solution to test various properties of tumor cells as well as efficacy (and toxicity) of potential drug compounds	4,5	This is a very narrow niche product (for ADME/Tox market). No clear competitive advantage.
FR	More Accurate and Faster Wind Power Engineering Simulations	This platform lets global wind industry stakeholders generate bankable assessment reports for any given wind project within a fraction of the time it used to take and for a fraction of the cost industry stakeholders used to pay.	9	Interesting but narrow application, more like a service than an industrial technology
HR	Electronic product design, Embedded Software Development, Electronic product manufacturing.	smart central telemetry system collects all data from connected devices or sensors	8	The submission describes a product, not a technology. No data on current and possible IP protection.

HR	over-the-top content (OTT)	delivery of audio, video, and other media over the internet without the involvement of a multiple-system operator in the control or distribution of the content.	7, 8	not a B2B technology, no opportunity to protect in Japan.
HR	Segmentation and digital colouring of tissue structures in microscopic image of unstained specimen	method for automatic (unsupervised) segmentation of microscopic image of unstained specimen in histopatology and digital colouring of segmented tissue structures	3, 4	narrow application - a software for histological analysis device
HR	Wireless Sensor Network for Analog Signal Acquisition	A system for short range wireless communication that can be used for energy efficient continuous analog signal acquisition in Internet of Things applications or in wearable medical monitoring devices.	5, 6	the application says that this cannnot be protected in Japan
HU	Stringbike offers an innovative chainless drive technology for all those bicycle riders, who want to enjoy a different, dynamic and unbelievable smooth ride. The drive system is oil-less, clean and smooth	An alternative drive technology for bicycles, what offers 10-12 advantages compared to the chain driven bicycles. The three main advantages are the improved dynamics, smooth driving sensation, clean, lubricant-free drive train	8, 9	not a B2B technology, already had discussions with Japanese partners
HU	Ultra-lightweight, Foldable, Electric Scooter	An ultra-lightweight, foldable, electric scooter which can revolutionize urban traffic. It meets the increased needs for mobility and extends it even in crowded urban traffic.	6-9?	consumer oriented product, not a B2B. Also - no possible protection in JP
HU	Sustainable agriculture eco-system	VegaAlga - a remote-controlled, automated algae pond in a greenhouse or plastic tunnel, which provides farmers with fresh algae fertilizer suitable for farming activities every second week	4-6?	hardly a B2B, uncertain business model and IP protection

IT	ADR1EN – System for active removal of space debris using nets	ADR1EN is a system for active removal of space debris (dead satellites / upper stage spent rockets) with nets.	6, 7	space applications are hardly of interest for Japanese industry, no IP and no ideas on the reasonable deal structure
IT	Clay objects produced by 3D printing. Innovation on porcelain with creation of coloured porcelain bodies	3D printing production capabilities	8, 9	no specific technology presented - more a capability/service or company description. No specific business model.
IT	Easy line products CE IVD	Easy® line kits for KRAS, BRAF, NRAS, EGFR, ALK, DPYD, UGT1A1, THYROID analysis working on the most common real time platforms. Our technology is allowing to the oncologists to prescribe the drug only after genetic tests of the patient in order to provide the right treatment to any individual patient.	8, 9	the application sais that this can not be protected in Japan, also seems like a product to be sold, not a technology
IT	EICASLAB - The professional software suite for automatic control design and forecasting	Automatic Algorithm & Code Generation, multi-processor architectures management and multi-level hierarchical controls, Rapid Control Prototyping and Hardware In the Loop are part of the overall capabilities offered by this software suite, in which all tools are at disposal of the designer in a fully integrated way.	8, 9	limited commercialization opportunities - basically a service offering for existing industrial robotics
IT	FIBERSPIN	Industrialization and commercialization of a new technology for textile spinning machine designed for producing spools of wool fibres (increasing the speed of spindles rotation, permits a growth of the production, less occupied spaces, places of work more healthy)	3, 4	narrow application, no personal point of contact or info on IP, limited deal structure options and early stage of development

IT	FPE Focal Plane Explorer	The Focal Plane Explorer is an instrument devoted to the characterization of focal plane matrix array detectors, such as CCD and CMOS devices. The FPE is suited for assessing the detector response at optical wavelengths as a function of the illumination pattern and position, e.g. the detector MTF and its spatial pattern of sensitivity.	8, 9	without IP protection there could be no serious business model to explore.
IT	HyLIPS Hyperspectral Lightweight Imagers for micro-PlatformS	Autonomous and light spectral imaging sensors suited to be operated on-board of CubeSats and micro-drones. Let us note that the HyLIPS technology includes a specific type of sensors (hyperspectral imagers) because of their excellent diagnostic ability and the huge information content conveyed by their datasets.	4, 5	without IP protection there could be no serious business model to explore. Another concern is a very narrow application for the sensor.
IT	New real time PCR CE IVD device	a new real time PCR CE IVD device composed by: 1. Real time PCR platform 2. Analysis software 3. Lyophilized reagents 4. Instrument accessories 5. Reagents accessories	4, 5	the application sais that this can not be protected in Japan, also seems like a product to be sold, not a technology
IT	Traffic Flow – Analytics for smarter cities	TrafficFlow is an innovative, flexible and low-cost platform for road-traffic data collection and analysis. Based on sensors equipped with advanced video analysis software, TrafficFlow is the answer to our smart cities' need for minimally invasive systems to improve transport management.	5, 6	might be an interesting and valuable product, but a B2B one. Also uncertain IP situation.
LT	Compact lights for bicycles	Lighting for vehicles - optimization of beams, double beam (DLR/low), narrowing lenses for fancy design, wireless charging, etc.	8, 9	a consumer product

LV	Fixed wing UAVs	Small fixed wing unmanned aircraft system provides possibility to gather data for prolonged period of time at large distances from control station. Defense, law enforcement, border and coastline monitoring, disaster response and other data gathering.	9	not a particular technology but a description of capabilities of a manufacturing company. They need clients and partners.
PL	BOWWE.com is site builder which offers for small and medium size businesses websites that sells their services or products.	customer is small or medium size service provider like hairdresser, personal coach, english tutor, construction company, cleaning company, and BOWWE.com provides for all these companies websites which are optimized for selling their services and have tools to close the selling process online.	8, 9	not a B2B technology
PL	Connected Energy (CE) - intelligent system of receivers recognition that works in network as well as measurement of electricity usage	CE is a hardware, software and cloud computing solution for energy management used in households and small companies. CE has unique features that give value both to utilities and users.	3, 4	not really a B2B - service offering for households and organisations… uncertain IP status
PL	Explosive mine neutralizer Thermal mine neutraliser	Explosive mine neutraliser is used to neutralise hazardous objects, such as mines, improvised explosive devices (IED), mortar bombs shells etc. The set consists of three main elements: an explosive charge, a pointer and a tripod. When fired, a metal “saucer” is formed out of a liner and destroys or separates the mine fuse from the mine body.	9	lack of civilian application. Ready to purchase product.
PL	Honaro – marketplace of the future selling services typically offered by small and medium size businesses.	Web site management tool - complete set of special widgets and tools to manage online presence.	6, 7	not a B2B technology

PL	Perfect Dashboard. The One Place You Will Ever Need to Manage All Websites Efficiently	With Perfect Dashboard, every web developer can become a professional website maintenance provider and offer management services at compelling prices.	8, 9	consumer oriented product/service
PL	Process of manufacturing textile barrier materials	The subject of the invention is the method of obtaining innovative textile barrier materials against UV radiation and microbes, which are moreover characterised by very high photocatalytic activity. After special textiles pre-treatment micronized and modified titanium dioxide (TiO2) particles are incorporated into the textiles' structure by means of conventional methods: dip-coating with water dispersion or coating with the paste with proper rheological properties.	8, 9	cannnot be protected in Japan
PL	SafeSky	Drone detection and neutralization system	8, 9	product to sell, not a technology
PL	Smart passive soft body armour based on shear thickening fluid (REA).	Smart soft body armour based on shear thickening fluid (REA) was developed. Ballistic tests for the REA inserts were conducted by the Institute of Security Technologies MORATEX, and certified by the Military Institute of Armament Technology (under Ministry of National Defence) according to PN-V-87000: 2011 standard (K1 A class).	8, 9	military oriented technology without opportunity to protect in Japan
PT	Blocks and modular construction system	A researcher from a Portuguese university has developed a new modular building system uses blocks that have a specific geometry to allow easy connection and assembly of the elements forming a larger panel. This modular construction system can be used in several areas since the civil construction, furniture or other areas of engineering.	4, 5	not particularly a B2B technology with limited commercialization opportunities

PT	Graphical method for assessment and comparison of radiotherapy treatment plans	This invention concerns to a graphical method to compare and evaluate different radiation therapy plans, which is always a complex process because of its inherent multicriterial nature. This method intends to be a reliable clinical decision-making support tool for the treatment plan selection. It has the advantage of giving full information on all the parameters that have driven the plan optimization in just one image and the corresponding score index.	8, 9	not particularly a B2B technology. This is a service offering to medical professionals or hospitals.
SI	Genialis Platform – web software for Next-Generation Sequencing (NGS) data management, analysis, visualization and collaboration	We developed Real Time Interactive Visualizations to enhance the user experience, to improve the efficacy of data exploration and insight generation by an order of magnitude.	3, 4	developers are looking for clients, hardly an attractive model
SI	Just UAV it: Smarter electrical grid inspection for 21st century	Enhances power grid inspections, consisting of Unmanned Aerial Vehicle (UAV), equipped with different loads, for gathering inspection data, and a proprietary software for inspection data analysis and semi-automatic error detection.	2, 3	not a commercializable technology, rather a concept for service business
SI	MagYeast	Innovative technology for magnetic separation of yeast from sparkling wine in just 30 minutes. It enables radical improvements of production flexibility, production volume and significant cost, storage and energy savings to the producers of high quality sparkling wines.	4, 5	very limited application of uncertain value in Japan
UK	Nanogel treatment for dry eye	A novel treatment for dry eye and dry skin conditions.	4, 5	very interesting product with good market potentials - but not a B2B technology