Patented AI sound-sensing technology for adaptive public lighting and Smart City services

Summary

Profile type
Business Offer

Company's country
Italy

POD reference
BOIT20251029009

Profile status
PUBLISHED

Type of partnership
Commercial agreement

Targeted countries
• **Japan**

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Term of validity
7 Nov 2025
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General Information

Short summary

An Italian company offers a patented AI-based solution that transforms every street lamp into a smart-sensing device by anonymously classifying the surrounding soundscape. This enables compliant and highly efficient adaptive lighting and opens up new Smart City services. The technology is already on the market. Partnership sought is a commercial agreement for international expansion, with a specific focus on Japan.

Full description

A company based in northern Italy has developed and patented a solution for Smart Cities: an AI-based light control system which transforms every street lamp into a Smart infrastructure listening to traffic with edge computational intelligence to classify sound events. It integrates light control and dimming to each light with an on-device system that listens and anonymously classifies surrounding sounds (like traffic or alarms).

The patented solution is the best answer to spread light control adaptive lighting techniques with point-to-point regulation of street lamps, enabling efficient adaptive lighting and Smart Cities services.

The on-edge sound classification technology (each lamp listens to the surrounding environment) allows each lamp to gather valuable and anonymous city-wide data, including:
- Vehicle classification and count (light vs. heavy duty)

- Sound meter data (peak and equivalent noise levels)
- Emergency event recognition (e.g. sirens and alarms)
- Weather events detection (e.g., rain and wind duration and intensity).

The Italian company sells in the market :
- a point-to-point street lamp control system
- a field concentrator allowing the transmission of commands to the nodes. The same hardware can be offered in the indoor lighting market, integrated with an adapter
- a cloud-based web platform providing all lights maintenance and vehicle counting data that can be used for adaptive lighting.

The company is actively seeking transnational commercial agreements, looking to partner with experienced distributors or agents to establish the solution as a leading remote lighting control solution.

The company is also open to licensing agreements with licensees for the internationally patented solution.

The Italian company offers know-how transfer and technical assistance, within the desired commercial agreement, in the solution adaptation to international markets.

The geographical scope of partnerships sought is on international markets, with a primary focus on Japan.

Advantages and innovations

The technology offers several key competitive advantages in the Smart Lighting sector compared, for instance, to cameras or radars:

- Non-invasive and integrable: it uses small Micro-Electro-Mechanical Systems (MEMS) microphones that are integrated directly into the lamp body, requiring no additional invasive and ad-hoc sensing devices. This means that a single electronic control board enable widespread implementation of adaptive technology

- Cost-effective: small MEMS microphones provide a highly cost-effective sensor solution compared to alternative adaptive lighting technologies (e.g. currently used cameras or radar)

- Privacy-by-design: data classification occurs entirely on the edge device (in the sensor unit inside the streetlamp), ensuring that audio is never recorded or streamed, thus respecting personal privacy

- Widespread data source: it exploits the pervasiveness of the street lighting networks to provide anonymous and broad soundscape data for enhanced city planning and safety. This type of data is not currently collected on a wide scale in Smart Cities

- Market readiness and potential: the technology is fully developed, patented, and already on the market (sales expansion stage). The international lighting market offers interesting prospects, also considering the increasing adoption of lighting standards at the international level, both in terms of growth in lighting stock and of Smart Lighting.

Technical specification or expertise sought

Stage of development

Already on the market

Sustainable Development goals

- **Goal 13: Climate Action**
- **Goal 7: Affordable and Clean Energy**
- **Goal 9: Industry, Innovation and Infrastructure**

IPR Status

IPR granted

IPR Notes

Partner Sought

Expected role of the partner

The Italian company is seeking established partners to expand the market for its patented AI sound-sensing technology in key international areas, specifically Japan and also other non-EU countries. The desired partners are:
- distributors of the patented solution
- manufacturers in the lighting sector, e.g. of lamps and telecontrols.

These partners are sought for a commercial agreement and also possibly a licensing agreement, to enable the incorporation of the technology in existing products. The Italian company also offers know-how transfer and technical assistance in the adaptation of the solution.

Type of partnership

Commercial agreement

Type and size of the partner

- **SME 11-49**
- **Big company**
- **SME 50 - 249**
- **SME <=10**

Dissemination

Technology keywords

- **01003022 - Smart Appliances**
- **02006004 - Installations related to construction (energy, lighting, …)**
- **01003023 - Environmental and Biometrics Sensors, Actuators**
- **04007002 - Lighting, illumination**
- **10002010 - Remote sensing technology**

Market keywords

- **08002002 - Industrial measurement and sensing equipment**
- **08002006 - Numeric and computerised control of machine tools**
- **08003007 - Other industrial equipment and machinery**
- **03008004 - Other electronics related (including alarm systems)**

Targeted countries

- **Japan**

Sector groups involved

- **Energy-Intensive Industries**
- **Electronics**
- **Mobility - Transport - Automotive**
- **Digital**