

# Dynamic outdoor lighting solutions for cities and municipalities to reduce energy costs and light pollution

## Summary

Profile type	Company's country	POD reference
<b>Technology offer</b>	<b>Austria</b>	<b>TOAT20230802006</b>
Profile status	Type of partnership	Targeted countries
<b>PUBLISHED</b>	<b>Commercial agreement with technical assistance</b>	<b>• World</b>
Contact Person	Term of validity	Last update
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## General Information

### Short summary

An Austrian company active in the field of smart street lighting has developed a motion detector based on radar technology with a huge detection area. Radar technology is used due to its advantages in comparison to passive infrared (PIR) sensors, e.g. independency of outdoor temperatures. The SME seeks sales partners that are well connected to cities and municipalities to inform and advise mayors and decision-makers with a view to developing the trend of smart lighting/switching off lighting.

### Full description

The motivation for founding the company was a flight over Europe showing total light pollution. Similarly, tens of thousands of kilometres (streets, parks, cycle paths and footpaths) are lit continuously at night, even if there is no traffic. Convenience and safety do not require permanent lighting, rather a dynamic and precise solution which does not unnecessarily brighten the environment, disturb the animal world or waste an unnecessarily large amount of energy.

The emerging trend of dimming or even switching off streetlights along with expertise in radar technology paved the way for using radar for motion detection. Thanks to technical developments, the product is easy to install (plug-and-play), can easily control lights, can be integrated into other light management systems and can be employed by every interested city management provider.

The company developed a range of products and services in smart lighting providing standard-compliant lighting when it is needed thanks to dynamic lighting control. If a street is empty, lights are dimmed down. As soon as moving people or vehicles are detected, the lights are turned up. The solutions offer maximum energy (and energy cost) savings without loss of comfort, provide a significant reduction in light pollution and CO<sub>2</sub> emissions and so contribute to achieving climate targets.

Radar (while more expensive) is favoured over passive infrared (PIR) sensors as it functions independent of the outdoor temperature and the temperature of the object. This leads to benefits in very warm regions because the mandatory temperature delta cannot be detected by PIR, e.g. when the ambient temperature is around 38°C because the difference to average body temperature is less than 4°C. In cold temperatures when people are dressed in thick clothing, insulation from body heat can prevent PIR from detecting people. Electric vehicles do not generate heat and so cannot be detected. Additionally these are the only products on the market using two radar modules that look to the left and right straight along the street – this radar position enables wide motion detection range (25 metres for pedestrians and bikers and more than 70 metres for cars). With PIR, fast moving objects could potentially leave the area before it has even been lit up. Since the radar is an active sensor, it can gain much more and more detailed data compared to PIR. The company is working on a solution for counting traffic and differentiation of objects. PIR sensors are not suitable here as they only react to heat and cannot deliver precise data about the object.

The software is made by a Swiss partner. Both, hardware and software are easy to install and work online or offline meaning that a Cloud is not needed. The solutions can transform any modern LED street light into a dynamic street light. A standalone radar motion sensor, which can be used in conjunction with any D4i-compatible (Digital Addressable Lighting Interface for IoT) light management system, is also available.

There is a mother enterprise responsible for R&D, facilitating fast reaction to changing customer needs. Nonetheless, considering future plans to adapt the product range, the SME is open to discussions with external development partners on the basis of commercial agreement with technical assistance.

The solution is to date most intensively used in the city of Salzburg, Austria, but there are also reference projects in Slovenia, Germany, Switzerland and other parts of Austria.

The SME's strategy is to work together with reliable partners who are experts in their domestic markets with good connections to municipalities. Ideally, the SME is looking for lighting manufacturers that also sell light management systems as well as light architects and planners. Partners should promote the idea of "light on demand only when and where it is needed", should support the SME in public tenders or direct contracts and should be in a position to offer after sales support.

#### Advantages and innovations

Reliable, radar-based motion detection  
Compatible with all modern LED street lights  
Easy installation and retrofitting  
Freely configurable lighting profiles: streetlights can be configured as individual luminaires or in freely combinable groups  
Plug-and-play solution  
Optional cloud connection - system works offline as well as online, so there is no need for a permanent Internet or GMS connection  
Highly energy efficient,  
Controllable, smart, environmentally responsible

#### Technical specification or expertise sought

#### Stage of development

**Already on the market**

#### IPR Status

**IPR granted**

#### Sustainable Development goals

- **Goal 9: Industry, Innovation and Infrastructure**
- **Goal 11: Sustainable Cities and Communities**
- **Goal 12: Responsible Consumption and Production**

## Partner Sought

#### Expected role of the partner

The ideal partners need to share the same enthusiasm for reducing light pollution and helping to save energy and money for cities and municipalities. Typical partners are lighting manufacturers in the area of street lighting that wish either to use the sensor in combination with their own light management system or to employ the whole system offered by the SME. The technology can be integrated into an existing light management system if it is D4i-compatible. If the partner does not use light management, system integration can be carried out based on relevant consultation. Technical support is always offered, regardless of the type of system integration.

The company sells its products mainly in their domestic market: Austria. There are also strong sales partners in Switzerland and in Germany, the latter market having huge potential with significant expected growth. There is continuous development on the features of the products and further innovations are planned for the coming months, with a view to using the product range in more applications.

## Type of partnership

**Commercial agreement with technical assistance**

## Type and size of the partner

- **Big company**
- **SME 50 - 249**
- **SME 11-49**

## Dissemination

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## Technology keywords

- **10002007 - Environmental Engineering / Technology**
- **004006002 - Lighting, illumination**
- **10002002 - Outdoor Air Pollution/Treatment**

## Targeted countries

- **World**

## Market keywords

- **03001006 - Controllers**
- **03004003 - Other electronics related equipment**

## Sector groups involved

- **Renewable Energy**