

Lighting and Connectivity

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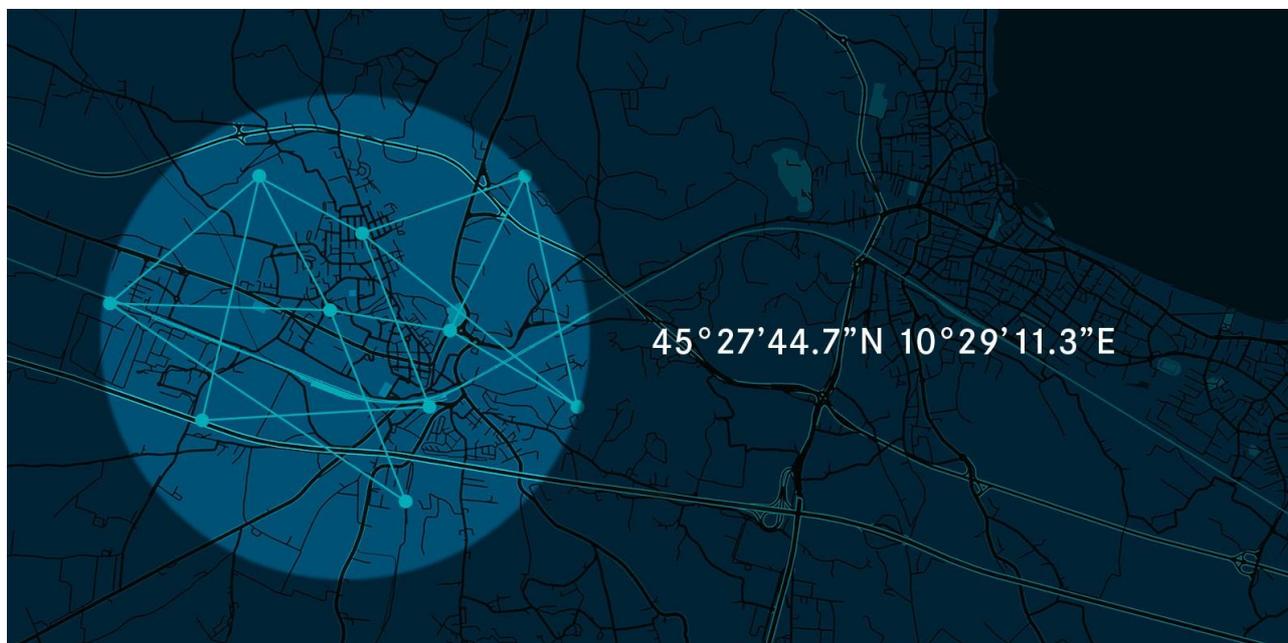
Abstract

A new revolution of Lighting seems to be around the corner, which is there for all to see. Most people will think I am crazy, considering that LEDs are now more than common. But it is not like that and I am not talking about LEDs.

The LED revolution has already ended (it is taken for granted), modifying the lighting world, but the change that is about to take place is far greater and deeper.

I am talking about IoT (Internet of Things), an acronym, which we now find in many newspapers and many speeches, along with the all-Italian version Industry 4.0, often lacking in content.

I will not go into exhaustive detail, what it is and what it can be done, because unfortunately a technical treatment would be very reductive. Basically you can do almost anything, but the problem is to think about what.



Simply, when we talk about IoT, we are talking about objects, interconnected systems through a technology (usually wireless), some protocol, able to exchange data acquired from sensors.

It is clear that we are speaking of a world in strong technological evolution, of a very wide range of technologies and protocols that can be used.

It follows that we are faced with an infinite number of possible and imaginable combinations of uses (functionality).

It would be impossible to think this aspect into exhaustive detail, I will speak instead of the change that will involve the world of urban and street lighting (and not only).

IoT will change the way we do many things. It will transform the products and its concept, because basically an "IoT product" is something that has inherent the smart idea, that is an object whose functionalities are not the main purpose of the object.

The ingredients for the fittings revolution are all there: connectivity, where in recent years we have seen specific technologies appear for IoT applications such as Bluetooth Mesh, LoRA, Sigfox, NBIoT, etc.; multiple sensors; and the possible applications born of the new needs of those who administer the cities and especially of the people who live there. Indeed, with relatively low costs, adding some components to the power supply part, luminaires from light sources have become nodes of a communication network.

Lighting fixtures are today the vector of this innovation, thanks to their pervasive presence and distributed in the urban and extra-urban context. They therefore become the focus of a transformation, of IoT innovation. In such a multifaceted context, different industrial sectors converge, complementary and with very different characteristics.

The telecommunications industry, as well as automation and security management, with ease and speed, seems today to be able to adapt and incorporate the lighting industry realizing what many lighting companies are trying to build, understand and try. Electronics and the IT world come into this sector with vehemence, becoming leaders.

These industrial companies easily manage the needs of an industry that requires specific skills that go well beyond electronics.

The lighting industry that painstakingly made the transition from the old technology to LED over the past decade, today finds itself having to propose a content of innovation, an advantage that makes it still attractive.

Indeed, the rapid escalation in energy saving has already been done to a good extent and today LED street lighting is becoming a commodity.

Therefore, almost out of necessity, it found itself meeting a different market; proposing a new value content.

The lighting devices, in addition to connectivity systems, will receive, increasingly, multiple sensors, able to gather information of various kinds, from temperature to humidity, air quality up to image recognition. The light, paradoxically, will be the less valuable content of the lighting fixture, which will instead be the network, source of service provision.

It is the first step that moves lighting from mere light to a networking service.

This changes the paradigm of the lighting product, which becomes a land of convergence of different expertise, which will hopefully have to work together to create a new and different technological content, a new value of the object.

In this sense, it is desirable or foreseeable that the future converges towards organizations in which the characteristics are defined for a standardized mechanical interface between the attachment of the LED outdoor fixture and the module for the detection and communication sensors. Due to the lack of typification and the increasing diversification of the offer of communication technologies, the industry proposes a standardization of interfaces between objects.

Standardization can be seen as a useful tool in an industrial perspective for the reduction of maintenance costs and the constant updating of the equipment in line with the technological evolution of the sector.