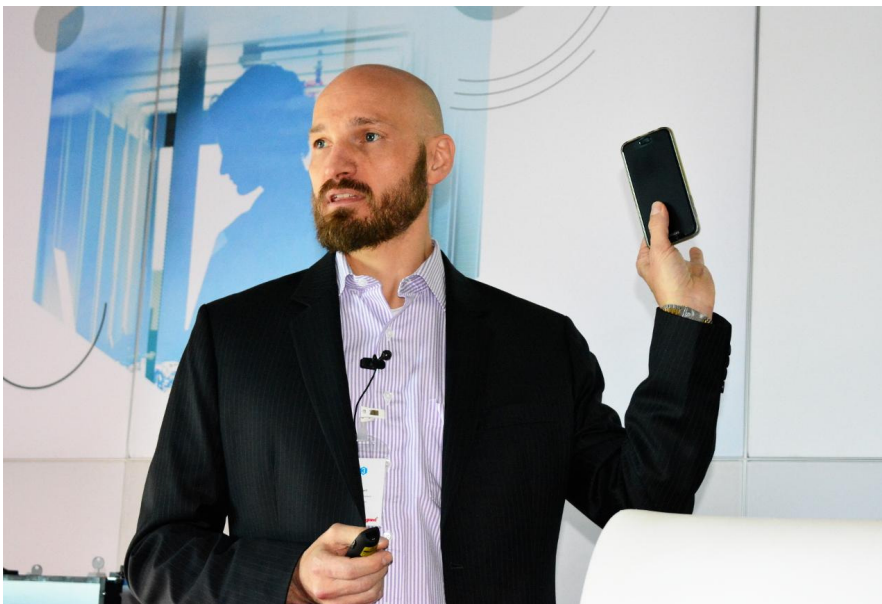


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Energy and data networks merge into "smart" buildings

author: [Maria Maltseva](#) date: 23/11/2017 15:29 comments: 0

The challenge for PoE from the next generation is the enormous load, says Legation



It's time to start thinking about IT management as a building management, said Gauthier Umber, Business Development Manager for Central and Eastern Europe at Legrand

There is one technology that radically changes the networks in our buildings, and this is Power over Ethernet - the transmission of electricity on the cables that mainly transmit data. The development of this technology - along with the introduction of the concept of so-called intelligent buildings - will soon lead to a merger of energy and data networks into one.

The penetration of building sustainability codes and clean energy requirements are a catalyst for this merger process. That's why it's time to start thinking about IT management as a building management, "said Gauthier Umber, Business Development Manager for Central and Eastern Europe at Legrand, one of the world's largest manufacturers of structural cable components.

Up to 100W on LAN

"So far, everyone has been expecting more and more productivity from the cabling. In category 6E, we are no longer so excited about the issue of productivity because it is high, but what we need now is more energy, "says Umber. "Our wireless devices need electricity and we do not want to spend separate cables just for their power supply."

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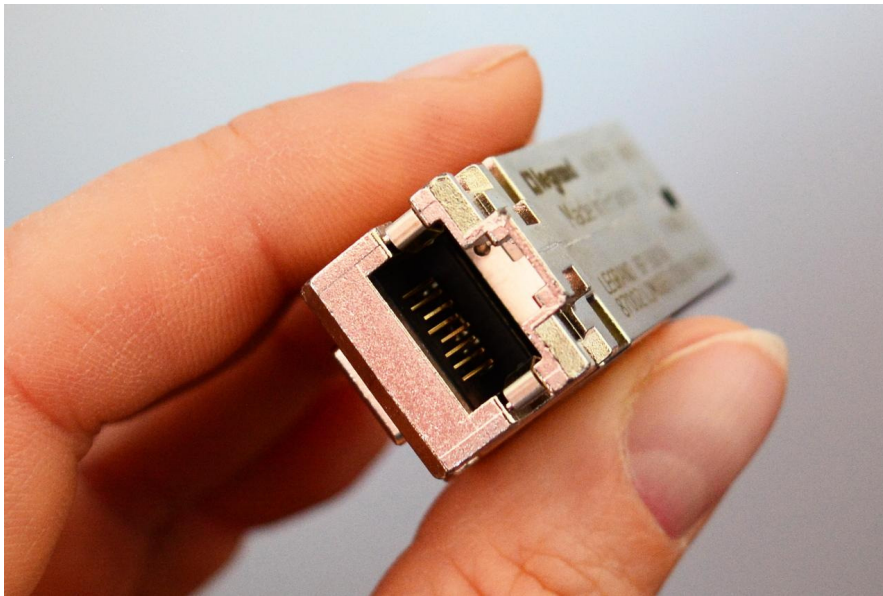
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The new RJ-45 connector designed by Legrand to "carry" 100W without burning

On the other hand, in recent years, the Internet of Things has been developing at an extraordinary pace, reminds the specialist. Here, the two trends are already happening. Building management, power supply, data transfer merge into one. Hence the need for a change in the design of cable systems.

The focus is on focusing on centralized and easily serviced blocks most often installed in the ceiling to provide connection and power to wireless access points, building automation stations, sensor modules, and more. Also, cable ties to the wall sockets and sockets drop off.

The challenge for these new generation PoE networks is the enormous load, as was made clear by Umber's presentation to Bulgarian consumers. The latest PoE standard is expected to guarantee 100 watts of power through the data cable. It's great if we want to charge our little electronics through the data network; this however means a great load for the installation.



When the data and power networks are united and the main network specialist turns into a building manager, the components he works with must provide him with speed and ease of work. Legrand makes small design changes to ensure this: the patch panels are easy to hang, integrated holders "sort out" the bundles of cables - all must be "plug-and-play" ...

The first problem is the very high degree of warming - especially where large numbers of cable connections are concentrated in a small space. This is particularly relevant for data centers. The other problem is that the RJ-45 network connectors themselves are not designed for such a heavy load. They tend to create a spark and burn. That is why new types of cables are being developed and a new type of connectors designed to allow for the transfer of increased energy volumes, the Legrand manager said.

All in one

But unification and unified governance bring a number of benefits. "There are already test buildings where everything is through the grid: the overall lighting in the building, LED components, color control, displays, even air conditioning is on the net," said Umber.

This, in turn, also significantly changes the way in which buildings work. Their operation is changing: there are no separate lighting, current, data, sensors ... The IT manager is no longer

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elements in the building, blood system ". **Resistance as a catalyst**

Contributing to the trend is the ubiquitous development of standards and codes for building sustainability and energy efficiency. The requirement for building energy to be clean and as much as possible to locally produce is one of the factors.

"It's great - the solar systems on the roofs of the buildings provide DC current, which is good because there is no need for conversion - PoE uses a constant current," said Umber. "We have seen the network as something that serves phones and computers so far, but now it is ready to power our devices as well."

On the other hand, building sustainability certification schemes such as LEED and BREEAM impose energy efficiency requirements. "The role of structural cabling here is the result of the intention to reduce the overall carbon footprint, in particular to reduce energy consumption," Legrand said.



"We have seen the network as something that serves phones and computers so far, but now it's ready to power our devices," says Gutierrez Umber

"This is primarily a matter of design. The fact is PoE technology can spend a lot of power on the cable. But this may not be unwarranted: if you lose 15% of the power on the cable but you save a lot more because of the intelligent control of air conditioning, for example, or the lighting, you will achieve energy efficiency improvements and the benefit will be much more than those lost 15%," said Umber.

It can be said that this is a matter of proper design. So, by the way, the French manufacturer avoids talking about products and energy efficiency - the vision is that efficiency is a function of good design.

Transfer of knowledge

The process of change requires a thorough rethink of the way buildings are designed. For the design and the role of the network, we must also think about the idea of the building, with its basic architectural elements. For this purpose, Legrand works hard with the communities of engineers, designers, architects, IT managers. The company organizes trainings and seminars.

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"With IT managers, it's hard to figure out what's really innovative and what's just a fun gadget. Professionals, however, are trying to create new designs, and our responsibility is to help find out where it really makes sense to make the changes," said Umber.

Testing new technologies, approaches and designs with consumer organizations is another aspect of how to build know-

how. "We test together with users. We share what we learn from one place in other countries. We promise that the success of a project can be automatically transferred elsewhere because building codes and traditions are different, but it is important to spread knowledge," concluded Gottier Umber.

Furthermore, Legrand also participates in the commissions for the preparation of industrial standards for structural cabling, the French company, which is also present on our market via Legrand Bulgaria.

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He has been writing on IT topics since the end of 1999 with a focus on business software and information society issues. From 2009 also wrote about green technologies [All the publications by Maria Maltseva »](#)

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