

## **The LonMark Smart City Council**

April 19, 2017

### **How and Why We Formed?**

In 2014, at Light + Building Frankfurt, eleven LonMark International member companies demonstrated for the first time a unique open Streetlight Control Solution highlighting to attendees competing but compatible products working together on the same streetlight network to provide energy savings to cities.

Building on the momentum generated at the LonMark International street lighting booth, LonMark formed the Outdoor Lighting Committee (OLLC) with the mission to increase industry awareness of networked street lighting solutions worldwide and educate cities on the benefit of open systems.

The focus of the OLLC was on smart streetlighting as a strategic asset of a city: providing safer roads, inviting public areas and enhanced security in homes, businesses and city centers. Cities that create controlled streetlight networks can save up to 50% on energy and drastically enhance the maintenance service and safety as well as leverage the streetlight grid as the backbone of other smart city applications.

And that is where we are right now.

### **The Smart City:**

In a smart city the quality of life and provision of information will be improved by digital applications using the backbone of the streetlights. Everything is connected to the internet thus solving the problems associated with urbanization, which can result in significant cost savings as well as help solve environmental issues.

LonMark based solutions make it possible to collect environmental data such as pollution ratio, humidity, temperature, car traffic, energy, gas and water meters, street noise levels, etc. Cities can use this information to increase their knowledge for strategic planning. The investment to install the infrastructure (segment controllers, telecommunication network, and Central Management Software) can be reused for many other applications.

### **Our Contribution:**

who mbH (Germany) in cooperation with Wirepas (Finland) and Vossloh Schwabe (Germany) are currently developing an RF based solution that fulfills the needs of a smart streetlighting system and also provides the opportunity for applications in a smart city. If a manufacturer offers this option, the RF modules can be directly integrated with the lighting controller, so there is no need to replace the whole streetlighting module. The mode of operation is based on an open wireless LON RF transport network that is connected via a router with the city management system where the streetlights can be monitored, controlled, serviced and updated. With the help of special protocols and algorithms an interface offers a smart and open connection to applications for the Internet-of-Things (IoT) like parking management, trash cans fill levels, emergency services, environmental monitoring sensors, and other solutions.

### **HD-PLC Channel**

who mbH and Panasonic (Japan) are working on a new LON High-Definition Power Line Communication (HD-PLC) transceiver IEEE 1901-2010 HD-PLC with a Data Transfer Rate up to > 1Mbps.

In July who mbH will run a pilot in Lübeck, Germany with the prototypes simulating LonWorks devices testing the communication.

### **RF Channel**

who mbH along with Wirepas and Vossloh Schwabe are developing a RF transceiver for ISO 14908 (EN 14908).

A pilot also with 1000 light points is planned in Q3 2017 in Frankfurt, Germany.

By following the LonMark Guidelines, solutions using both HD-PLC and RF will interoperate in the same network by using a standard LON router, which will enable more scalable and flexible system designs. We anticipate this approach will resolve many of the current technical challenges often seen during field system installations of pure RF or PLC networks.

### **International Standards**

Once approved, LonMark anticipates updating the LonMark Layer 1– 6 Interoperability Guidelines to reflect the new channels as well as updates to the certification tool to handle these new channels. In addition, LonMark International, on behalf of the membership, will engage with CEN, ISO, ANSI, CTA, and others to enable both the RF and HD-PLC channels as new international standard media types and include them as part of the 14908.x/709.x suite of LonMark standards.

### **How Do We Want to Move Forward - A Call to Action**

The new channel types will enable the transfer to a real smart city solution but there is more to it.

We are looking for new and existing LonMark members who see value in supporting the LonMark Smart City Council with applications such as traffic monitoring and urban congestions reduction, environmental data collection and monitoring, civic informational and advertising signage displays, residents security and safety services, EV charging stations, WiFi hotspots, waste management, smart parking, etc.

To reflect the enhanced scope of this effort we have changed the name of the committee to LonMark Smart City Council (SCC). [The Charter including objectives for the SCC is available here.](#)

We plan to organize a webinar to present the concept in further detail and to answer your questions (date to be confirmed shortly).

For more information and/or registration for the webinar please contact [henny@lonmark.org](mailto:henny@lonmark.org)