Lpwan16
conference

CAP'TRONIC
Systèmes électroniques
et logiciel embarqué

Event Partner

EMBARQUÉ
Logiciels & systèmes

Low power wide area network: Which technology for M2M and IoT infrastructures?

Lpwan16
conference16

Which technology for M2M and IoT infrastructures?

LPWA networks constitute an ideal solution for machine-to-machine (M2M) and the Internet of Things (IoT) applications that necessitate wide coverage and a sparing use of energy at a limited cost. Smart City (with its sensors embedded in an urban setting), water, gas & electricity metering, e-health, connected buildings, agriculture… these are amongst the many applications that can be potentially covered by LPWA networks and that have a very bright future ahead of them.

The experts are wagering on an explosion of the number of LPWA connections in the next 8 years. According to the analyst firm Machina Research, more than 3 billion LPWA-enabled M2M connections will be deployed between now and 2023, exceeding the number of M2M cellular (2G, 3G, 4G…) connections.

What technical solutions are best positioned in the market?

There are several LPWAN technologies (LoRa, SigFox, Qowisio, etc.), each having a proprietary, locked-in, non-standard solution for addressing, localization, security, provisioning, AAA, etc. This is the case because the stringent LPWA constraints do not allow for classical management techniques to be used. Mobile operators have not had their last word too and under the auspices of the GSMA, several of them recently launched the Mobile IoT Initiative, aimed at accelerating the commercial availability of LPWA wireless technologies adapted for deployment in the frequency bands that they own (and are thus accessible under license). LTE-M, a variant of LTE and designed to cater to the needs of M2M, is one of them. Finally, the WiFi world is also pushing its solution.

Is there room for all these technologies in the running?
What are LPWAN players' challenges going forward?
How can they fight off the counter-attack of LTE and WiFi?
How will the incumbent telecom industry players react?
How can they fight their own fragmentation?
Could the capacity and data rate race that otherwise dominates the wireless industry not take place in LPWAN?
Answers will be given during the LPWAN Conference to be held in Paris CDG from 18 to 20 May 2016.

The agenda: technology comparisons, deployments, startups new ecosystem

After a first tutorial day dedicated to LoRa and LTE-M initiatives, the conference will start with an introduction session led by technology agnostic analysts comparing LPWAN solutions (Sigfox, LoRa, Qowisio, etc). Other sessions will cover standardization works (Weightless, 3GPP NB-IoT, WiFi HaLow), service providers strategies, building blocks and security issues.

A panel gathering innovative startups will showcase the emerging ecosystem of the smart things/smart objects market.

The scientific committee

Regis Lauret, Marketing Director, Eolane
Cyrille Le Floch, CEO, Qowisio
Philippe Cola, Senior E2E Network Architect and Services, Bouygues Telecom
Professor William Webb, President, Weightless SIG
Jérôme de Murcia, LoRa IoT Network Infrastructure Skill Center Leader, Orange Labs
Aapo Markkanen, Principal Analyst, Machina Research
Philippe Guillemette, Technical Director, Sierra Wireless
Nicolas Jordan, Actility
Teppo Hemiä, CEO, Wirepas

Régis Lauret   Cyrille Le Floch   Philippe Cola   William Webb   Jérôme de Murcia

Aapo Markkanen   Philippe Guillemette   Nicolas Jordan   Teppo Hemiä

08.30   WELCOME, REGISTRATION AND COFFEE

→ Introduction to LoRa

LoRa™ Alliance

10.00   Presenting the LoRa Alliance
Key requirements of internet of things
Key characteristics
Describing the LoRaWAN 1.0 specification
LoRaWAN network architecture

10.45   COFFEE BREAK

11.15   Communication technology
Localization
Security
Classes of end-point devices
Building blocks

Presented by
François Sforza
SEMTECH

12.00   LUNCH

→ Introduction to LTE-M

14.00   Background on cellular technologies in general
LPWA for the Internet of Things
LPWA IoT requirements and technology landscape
LTE-M evolution for cellular IoT
Deep dive on LTE-M

14.45   COFFEE BREAK

15.15   LTE-M features (long battery life, low device cost, low deployment cost, full coverage)
LTE-M in 3GPP Release 13
First deployments
LTE-M vs. LTE Category 1/0
LTE-M vs. 3GPP NB-IoT
Project methodology

Presented by
Nicolas Damour, Sr Manager for Business and Innovation
SIERRA WIRELESS

16.00   END OF THE TUTORIALS

08.00 WELCOME, REGISTRATION AND COFFEE

CHAIRMAN
François Gauthier,
Director,
L'EMBARQUÉ

08.30 OPENING TALK

By **Aapo Markkanen**
Principal Analyst
MACHINA RESEARCH

Delivering an analyst's view of the latest developments in IoT connectivity, with a special focus on how the Low Power Wide Area networks are driving the market.
Presenting findings from Machina Research's latest reports and providing an update on the related market forecasts.

→ INTRODUCTION SESSION

09.00 Comparing LPWAN Technologies

Should we choose a LPWAN technology or stay on more classical wireless system? Among the existing technologies LPWAN : LoRa, Sigfox, Qowisio ... which is the most suitable for my application? Must I make a choice or integrate several technologies in my sensor?

Pascal Saguin, CEO, ADEUNIS RF

09.30 Protocols and Wireless Technologies in the IoT Context

Providing an overview of SigFox, LoRa, 868Mhz, 169MHz, GSM/LTE/5G, Modbus, Wireless M-Bus, 6LowPan, etc… What are the usefull questions for making a choice ? Coexistence and complementarity of these technologies. What is the response of the GSM world ? What future for proprietary technologies ? Will we seee new solutions arising ? Licensed or unlicensed?

Vincent Bulot, Business Development Manager, ATIM

10.00 How to Play the Capacity/Data Rate Game

LPWAN is in the process to prove the market appetite for a completely different trade-off between capacity, data rate, range, cost, scalability and autonomy. This being acted, what can happen next? How will the incumbent telecom industry players react? What are LPWAN players' challenges going forward? How can they fight off the counter-attack of LTE and WiFi? How can they fight their own fragmentation? Could the capacity and data rate race that otherwise dominates the wireless industry not take place in LPWAN?

Loic Lietar, CEO, GREENWAVES TECHNOLOGIES

10.30 COFFEE BREAK

→ STANDARDIZATION SESSION

11.00 LTE-M

Focusing on the most important benefits that LTE-M is bringing to the market:
• Being a standardized and licensed solution
• Being a low power solution, a low-cost solution
• Using strong, field-proven security mechanisms
• Being quickly deployed in global markets thanks to the re-use of 4G/LTE

Nicolas Damour, Sr Manager for Business and Innovation, SIERRA WIRELESS

11.25 3GPP: NB IoT

Discussing NB-IOT, a new narrowband radio technology to address the requirements of the Internet of Things (IoT). The new technology will provide improved indoor coverage, support of massive number of low throughput devices, low delay sensitivity, ultra-low device cost, low device power consumption and optimized network architecture.

Philippe Reininger, Chairman, 3GPP RAN WG3

11.50 Weightless: Open Standards for LPWAN Landscape

The only successful wireless technologies are open standards, and the world of LPWAN connectivity for the IoT will be no different. Weightless provides the only fully open standards for unlicensed and licensed operation. Its set of standards includes Weightless-N providing one-way communications for the most low-power and lightweight devices, Weightless-P providing robust and feature-rich two-way connectivity and Weightless-W for operation in white space spectrum where available.

William Webb, President, WEIGHTLESS SIG

→ WiFi IoT SESSION

12.15 WiFi IoT Solutions

Describing different low power solutions that will enable Wi-Fi to maintain its critical role in the IoT. Discussing additional IoT-related activities that are helping to further proliferate Wi-Fi in the Smart Home and other segments.

Aapo Markkanen, Principal Analyst, MACHINA RESEARCH

12.30 WiFi Role in IIoT

Describing the role of WiFi in IIOT to enable critical application, such as distributed advanced analytics on the edge, by ensuring network high performance. Discovering why WiFi is so useful to build a scalable, flexible and secure industrial grade network solution able to make visible and measurable the invisible industrial machines and sensors.

Nicola De Carne, Founder and VP of Marketing, WI-NEXT

12.45 LUNCH

→ TECHNOLOGY PROVIDERS SESSION

14.00 LoRa WAN: Balancing the Technology Push and Market Pull

Discussing the needs for standardization, interoperable networks (open, closed, and propriety), and robust technology with several key attributes. Pulling from a variety of proven use cases in the agriculture, supply chain, and building automation industries

Jaap Groot, Senior Business Development Director, SEMTECH

14.30 Fully Decentralised LPWA Networks

Discussing a disruptive IoT connectivity solution which enables anyone to become an operator for his own network anywhere in the world. A solution which is HW independent, based on open market off the shelf radios and standard IPv6 adaptation and IoT protocols.

Jussi Numminen, Director, Head of Radio Strategy and IPR, WIREPAS

15.00 Reliable, Ultra-low Energy, High-capacity Scalable Networking

Presenting the key characteristics of Weightless-P and what it brings to LPWAN-U (unlicensed spectrum). Describing the design principles which uniquely allow Weightless-P to bring the capabilities of field-proven cellular technologies to the low-complexity and ultra-low power LPWAN space.

Fabien Petitgrand, CTO, M2COMM

15.30 COFFEE BREAK

→ SERVICE PROVIDERS SESSION

16.00 Orange

Discussing the view of Orange regarding the radio technology alternatives (pros and cons of the technologies evaluated in our labs) to address low power wide area services based on extensive analyses and tests performed these 5 last years:
• the reasons why Orange has selected LoRa technology
• the technical challenges to operate an IoT LPWA network based on unlicensed spectrum
• the LoRa network architecture deployed

Jérôme de Murcia,
Orange Labs, Project Leader on IoT Network Infrastructures, ORANGE

16.30 Qowisio

Describing a company active along every part of the value chain for connected devices (range of innovative devices, connectivity, applications, cloud, etc.). Last June Qowisio raised €10 million in setting up its first public network on mainland France.

Cyrille Le FLoch, CEO, QOWISIO

17.00 Bouygues

Discussing technical challenges, architecture choices. Presenting case studies. Overviewing market evolution.

Thomas Landspurg, CTO, OBJENIOUS

17.30 DEBATE

17.30 What will Future IoT Networks Look Like?

Licensed or unlicensed?
Ultra narrow band vs space spectrum?
Open or proprietary protocols?
Throughput vs very low power?
LPWAN vs 5G

Moderator:
François Gauthier,
Director,
L'EMBARQUÉ

Participants:
Cyrille Le FLoch, CEO, QOWISIO
Jérôme de Murcia, Orange Labs, Project Leader on IoT Network Infrastructures, ORANGE
Philippe Cola, Senior E2E Network Architect and Services, BOUYGUES TELECOM
Fabien Petitgrand, CTO, M2COMM
Nicolas Damour, Senior Manager for Business and Innovation, SIERRA WIRELESS
Loic Lietar, CEO, GREENWAVES TECHNOLOGIES
Pascal Saguin, ADEUNIS RF

18.30 END OF CONFERENCE DAY ONE

19.00 WELCOME COCKTAIL

FRIDAY 20 MAY 2016 / CONFERENCE DAY 2

08.30 WELCOME AND COFFEE

CHAIRMAN
Aapo Markkanen
Principal Analyst
MACHINA RESEARCH

→ INTERNET ROLE SESSION

09.00 IETF Activity

Describing IETF working group activities in IoT.

Alexander Pelov, Associate Professor,
TELECOM BRETAGNE

09.15 Internet: the Future of LPWA?

There are several LPWA radio technologies each having a proprietary, locked-in, non-standard solution for addressing, localization, security, provisioning, AAA, etc. A deep understanding of Internet protocols helped us to address these constrains without breaking the interoperability with the Internet. Describing an innovative approach based on Internet technologies offering network neutrality, rapid service development and deployment and independence from the underlying radio technology. A real-world implementation is already in operation covering the city of Rennes, France.

Laurent Toutain, TELECOM BRETAGNE

09.45 6TISCH

Pascal Thubert
CISCO

10.15 COFFEE BREAK

→ BUILDING BLOCKS SESSION

10.45 From Concept to Product, using IoT Building Blocks from an Electronic Solution Provider

Eolane, electronic solution provider and key player in the M2M and IoT ecosystem provides IP building blocks and platforms to enable and accelerate application solution providers with:
• IoT platform for wearable and B2C applications
• Solution and product reference design for smart & connected fabrics eHealth and wellness applications
• LPWAN reference design connectivities for Smart cities, Smart building and smart energy

Regis Lauret, Marketing Director, ÉOLANE

11.15 Performance Evaluation of LoRa Radio Solution for PREDNET Wildlife Animal Tracking Project

The PREDNET project focuses on two specific use cases:
• Jackal behavior understanding and cattle surveillance;
• Fight against rhinoceros poaching.
The proposed WSN contains wearable devices carried by animals and infrastructure devices (base stations). The key requirements of the system are long range transmissions and low power consumption.

Viktor Toldov, UNIVERSITY OF LILLE, IRCICA, INRIA

11.45 Deployment of Country-wide LoRa Networks in Belgium and in the Netherlands

In Belgium, Proximus has deployed LoRa in ten major urban and logistic areas as well as in the city of Luxembourg. This deployment included the installation of LoRa base stations and the setup of the central network controllers and management platforms. In the Netherlands, KPN is deploying LoRa base stations on their 3/4G tower locations. KPN and Proximus KPN will be using Actility's ThingPark Wireless™ solution.

Gabor Pop, Solutions Marketing Manager, ACTILITY

12.15 Critical KPI (Key Performance Indicators) for LPWA Networks

Discussing network design, radio environment analysis and scalability (depending on use case), to installation, operation and performance management. A real experience feedback of current installations is shared to point critical KPI (radio budget, cell loading, QoS, latency, power consumption, net topology…) to manage a low-cost but not low-quality LPWA network.

Yannick Delibie, CTO, KERLINK

12.45 LUNCH
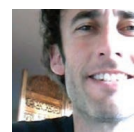
14.00 ROUND TABLE

14.00 Smart Objects/Smart Things Companies

Demonstrating the LPWA ecosystem with presentations from innovative startups.

Participants:
SMOCKEO
SENSING LABS
WI6LABS
IEM
IDOSENS

→ SECURITY SESSION

15.00 Achieving a Legacy Cellular Security Level

SIGFOX and LoRa networks are demonstrating an unrivalled ability to seamlessly enable battery-operated sensors to upload their data onto cloud applications for years without maintenance. Nevertheless, while the simplicity of the communication protocol of such networks is an obvious asset when it comes to saving sensor power compared with 2G/3G/4G, it could become a weakness for those applications requiring a level of security equivalent to legacy cellular. Demonstrating what are the tools and remedies that will solve this question and raise LPWAN on-par with SIM-card enabled networks.

Guillaume Crinon,, Technical Marketing Manager EMEA, AVNET MEMEC SILICA

15.30 How the Digital Security Technologies can be Developed to Enable Security and Privacy?

Mapping the IoT security threat, and illustrating the risk through uses cases assessing the different solutions to secure the devices, including a Secure Element based on digital security technologies. Explaining how this Secure Element can be efficiently deployed in the IoT chain in a competitive manner.

Jean Pierre Delesse, COO, TRUSTED OBJECTS

16.00 LoRa Security, Confidentiality & Keys Management Principles - a Comprehensive Insight

Starting by an overview of the components and actors you can find in a LoRa Network, we'll go through the security keys management principles to end with an introduction to the secure element, an optional embedded higher level of security that protects the sensitive data inside the device.

Arsene Betolaud, Product Manager, GEMALTO

16.30 COFFEE AND END OF THE CONFERENCE

NOVOTEL CONVENTION & WELLNESS PARIS ROISSY CDG

The Novotel Convention & Wellness Roissy CDG is a 4-star hotel with 289 rooms close to Roissy CDG airport and 15.5 miles from Paris.

Ideal for a business trip or family stay. The hotel boasts 12,917 sq. ft. of meeting space in 18 modular rooms.

The Wellness Center - a 6458-sq. ft. spa with pool, sauna, hammam, fitness center and beauty treatments - is there to help you unwind. The contemporary and welcoming Novotel Café offers original and varied dishes.

The guestrooms feature contemporary decor and furnishings and come equipped with satellite TV, high-speed Internet connections and a minibar. Further amenities include hairdryer, direct dial telephone, radio, tea and coffee making facilities, iron and ironing board, individually adjustable climate control system and a personal safe box.

The Hotel Novotel Convention & Wellness is connected to Roissy CDG Airport Terminals by the **free shuttle «Circuit Gold»** bus service.

Terminal 2 and TGV station: Level 5
Terminal 3: in front of Roissy Pôle

More information about the Novotel Convention and Wellness

Cancellation/Modification Policy

You may cancel or modify your hotel reservation free of charge before 48 hours of arrival date. Beyond that date, cancellation charges will be applied corresponding to 1 night's charge.

We require that any room cancellations have to be received in writing and acknowledged by contact us: contact@uppersideconferences.com

Room Rates

Single Occupancy: € 160/night. One breakfast included. Local taxes included.
Double Occupancy: € 175/night. Two breakfasts included. Local taxes included.

Up to 2 children (15 years and under) stay free when sharing with parents.

To get more information and to book your room at the Novotel Convention & Wellness Paris Roissy CDG, please go to www.uppersideconferences.com
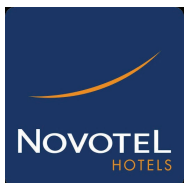
Hotel Novotel Convention & Wellness Paris CDG
10 allée du Verger
95700 Roissy en France

Novotel Website

LPwan16 conference16

DATES AND VENUE

18/20 May 2016

Hotel Novotel
Convention & Wellness Paris CDG
10 allée du Verger
95700 Roissy en France
France

The Hotel Novotel is connected to Roissy CDG Airport Terminals by the free shuttle «Circuit Gold» bus service.

Terminal 2 and TGV station: Level 5

Terminal 3: in front of Roissy Pôle

More information about the Novotel Convention and Wellness

ORGANIZED BY

TERMS OF PARTICIPATION

Full payment or Purchase Order is required for admission to the conference.

PAYMENT

Cards (Visa, Amex, Mastercard, Diner)
Bank transfer, Cheque and Travelers cheque.

REGISTRATION FEES

- 3-Day Event Including Tutorials 18/20 May 2016:

€ 2,000 + VAT € 400 = € 2,400

- 2-Day Conference 19/20 May 2016

€ 1,500 + VAT € 300 = € 1,800

- Tutorials only 18 May 2016

€ 850 + VAT € 170 = € 1,020

The conference passes include: access to the conference room(s), access to the exhibition; coffee breaks, luncheons, welcome reception and slides-set of the speaker presentations.

More info and registration online:

https://www.uppersideconferences.com/lpwan/

CANCELLATION CONDITIONS

Substitution of delegates is permitted at any time.
For all cancellations received before April 15, 2016, the entire registration amount will be refunded.

All registrations cancelled after April 15, 2016 and before April 30, 2016 are subject to a € 250 administration charge.

For all cancellations received after April 30, 2016, regrettably, no refunds can be made.

Payments will be refunded if the conference is cancelled by the organizer.

CONFERENCE PROGRAM MODIFICATIONS

Upperside Conferences reserves the right to make any necessary changes to the program. Every effort will be made to keep presentations and speakers as represented. However, unforeseen circumstances may result in the substitution of a presentation topic or a speaker.

Conference language: English

CANCELLATION OF THE CONFERENCE

Payments will be refunded if the conference is cancelled by the organizer.

☐ I would like to register, I have read and accept registration fees, payment and cancellation policies.

Please tick and report the letter in the block below.

A **3-day Event** including Tutorials. 18/20 May 2016. **€ 2,000.00** + VAT € 400.00 = **€ 2,400.00 €.**

B **2-day Conference.** 19/20 May 2016. **€ 1,500.00** + VAT € 300.00 = **€ 1,800.00.**

C **Tutorials only.** 18 May 2016. **€ 850.00** + VAT € 170.00 = **€ 1,020.00.**

	MR/MRS	FIRST NAME	FAMILY NAME	EMAIL
☐ 1				
☐ 2				
☐ 3				

COMPANY

ADDRESS   CONTACT

ZIP CODE   CITY   COUNTRY

TEL.   FAX   EMAIL

☐ AMERICAN EXPRESS   ☐ VISA   ☐ MasterCard   ☐ Diners Club International

☐ I enclose a cheque in favour of Upperside Conferences

☐ Please invoice my Company. Payment upon receipt of invoice

HOLDER

EXPIRY DATE   CVC