



Connected  
Living

# MOBILISING THE INTERNET OF THINGS

GSMA Connected Living at Mobile World Congress 22 – 25 February 2016



[www.gsma.com/ConnectedLiving](http://www.gsma.com/ConnectedLiving)

# GSMA CONNECTED LIVING MOBILISING THE INTERNET OF THINGS

The GSMA Connected Living programme is an initiative to help operators add value and accelerate the delivery of new connected devices and services in the M2M market.

This is achieved by industry collaboration, appropriate regulation, optimising networks as well as developing key enablers to support the growth of M2M in the immediate future and the Internet of Things (IoT) in the longer term.

The Internet of Things continues to grow and is a major theme of this year's Mobile World Congress with many more IoT conference sessions, live technology demonstrations and leading industry experts. The Connected Living Programme is convening the mobile industry and focusing on securely scaling the IoT.

*"Our vision is to enable the IoT, a world in which consumers and businesses enjoy rich new services, connected by intelligent and secure mobile networks."*



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# GSMA CONNECTED LIVING

## MOBILISING THE INTERNET OF THINGS

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### SECURE IOT NETWORKS

The GSMA has developed **IoT security guidelines** to promote best practice for the secure design, development and deployment of IoT services. A proven and robust approach to address typical cybersecurity and data privacy issues associated with IoT services will create trusted, reliable services that can scale as the market grows.



### MOBILE IOT: LOW POWER WIDE AREA SOLUTIONS

The **'Mobile IoT Initiative'** is designed to accelerate the commercial availability of **Low Power Wide Area (LPWA)** solutions in licensed spectrum. Backed by 26 of the world's leading mobile operators, OEMs, chipset, module and infrastructure companies, this Initiative will facilitate demonstrations, proofs of concept and pilots of a selection of complementary LPWA licensed spectrum technologies. It will also provide analysis and feedback to assist 3GPP in standardising the technologies.



### EMBEDDED SIM FOR MACHINE TO MACHINE (M2M)

The **GSMA's Embedded SIM Specification** provides a standard mechanism for the **remote provisioning** and management of machine to machine (M2M) connections, allowing "over the air" provisioning of an initial operator subscription, and the subsequent change of subscription from one operator to another. This enables simplified distribution and management of M2M devices on a global scale and enables capabilities for all stakeholders.



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### IOT BUSINESS ENABLERS

IoT solutions deliver benefits to governments, citizens, end-users and society. The GSMA is working to create a **sustainable M2M policy and regulatory environment** that enables operators to unlock the consumer and business benefits of the IoT.



### ECOSYSTEM ENGAGEMENT

The GSMA works closely with its partners in the ecosystem to drive adoption and impact the market through the key verticals **automotive, transportation, utilities & health**, as well as supporting the scaling of key market applications such as **wearables, smart home, smart cities and big data**.



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# GSMA CONNECTED LIVING SEMINAR

## SECURELY SCALING THE INTERNET OF THINGS

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GSMA SEMINARS ARE FREE TO ALL MOBILE WORLD CONGRESS 2016 ATTENDEES

To register for the Connected Living Seminars, and to view the all the latest confirmed speaker details, visit: [www.gsma.com/ConnectedLiving/Events](http://www.gsma.com/ConnectedLiving/Events)

**Wednesday 24 February 2016**

**9:00 - 11:30**

**GSMA Seminar Theatre 1 & 2 in CC1,  
South entrance**

In this Connected Living seminar, hear from leading ecosystem players about their vision and plans for Mobile IoT (Low Power Wide Area) solutions, and find out how IoT Security experts intend to ensure long term sustainability and market growth.

**9:00 - 9:15**

**Welcome and Introduction**

**9:15 - 10:30**

**Mobile IoT = Trusted IoT**

By 2022, as many as 5 billion devices are forecast to be connected via low power wide area networks. In 2016, several Mobile IoT technologies will be making their way to the market. These are trusted mobile standards-based low power wide area networks that will cover a wide variety of IoT applications.

This session will cover the following topics, followed by audience Q&A:

- ➔ Introduction to Mobile IoT
- ➔ LPWA promise: How big is the world of IoT?
- ➔ Choosing the right technology for IoT: Key decision factors
- ➔ Standardisation or diversity: What serves the IoT industry best?

**10:30 - 11:30**

**Securing the IoT**

IoT services can only scale if they are secure, and the security of any service is only as good as its weakest link. The GSMA has developed IoT security guidelines to promote best practice for the secure design, development and deployment of IoT services. A proven and robust approach to address typical cybersecurity and data privacy issues associated with IoT services will create trusted, reliable services that can scale as the market grows

This session will cover the following topics, followed by audience Q&A:

- ➔ The IoT Security Challenge
- ➔ The GSMA IoT Security Guidelines
- ➔ Extending the reach of mobile network security to the IoT



**Register your interest to gain priority entry into this seminar**



\*Registering does not guarantee your seat; places are limited and allocated on a first-come, first-served basis. Priority lane access closes 10 minutes before the start of the seminar.

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# GSMA CONNECTED LIVING SEMINAR

## THE INTERNET OF THINGS: TODAY AND TOMORROW

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**Wednesday 24 February 2016**  
**12:00 - 14:00**  
**GSMA Seminar Theatre 1 & 2 in CC1,**  
**South entrance**

**12:00 - 13:00**  
**Embedded SIM: Enabling the Internet of Things**

The GSMA's Embedded SIM Specification provides a standard mechanism for the remote provisioning and management of machine to machine (M2M) connections, allowing "over the air" provisioning of an initial operator subscription, and the subsequent change of subscription from one operator to another. This enables simplifies distribution and management of M2M devices on a global scale and enables capabilities for all stakeholders.

In this session you will hear from both mobile operators and customers on the benefits which have been realised since the launch of the GSMA Embedded SIM Specification, as well as best practices and lessons learned from real world experiences.

This session will cover the following topics, followed by audience Q&A:

- GSMA Embedded SIM latest growth
- Operator Perspective
- Customer Perspective



**13:00 - 14:00**  
**Big Data: Realising the Full Potential of the IoT**

From its inception, to the present day, and into the future, the IoT continues to produce an almost unquantifiable amount of data. The economic benefit of a harmonised IoT big data ecosystem is conservatively estimated at \$44 billion for all ecosystem players, and this session will be focusing on unlocking that value.

While some early adopters have started developing new services enhanced by the power of IoT big data, barriers still remain in place to wide scale access and usage. Our expert speakers will be sharing their experiences and knowledge on how harmonised ecosystems can be achieved, the value they can generate, and how a new generation of IoT services leveraging data from multiple sources can be developed, to realise the full potential of the IoT

This session will cover the following topics, followed by audience Q&A:

- Introduction to IoT big data ecosystem concept
- The importance of sharing harmonised data to build the next generation of services
- Opportunities, barriers and the need for collaboration to build the ecosystem

**Register your interest to gain priority entry into this seminar**



\*Registering does not guarantee your seat; places are limited and allocated on a first-come, first-served basis. Priority lane access closes 10 minutes before the start of the seminar.

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# GSMA CONNECTED LIVING AT THE GSMA INNOVATION CITY

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## CHECK-IN TO THE CONNECTED FUTURE

Hall 3, Stand 3A11 and 3A31  
22 - 24 February 09:00 - 19:00  
25 February 09:00 - 16:00

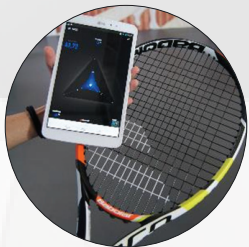


*Please note that the City will close at 16:00 on Tuesday 23 February for a private reception.*

**CHECK-IN to the GSMA Innovation City at Mobile World Congress and experience first-hand how mobile-connected products and services are improving the lives of people at home and work.**

Join the GSMA and partners that are at the very forefront of mobile innovation, including: **AT&T, GMA, Jasper, KT Corporation** and **Sierra Wireless**, showcasing products and solutions that are changing the way the world communicates.

- ➔ Take your seat on board the City's first airliner and strap yourself in for a unique interactive virtual reality experience.
- ➔ Move into the logistical zone and see how you can never lose your luggage again, or how to track goods around the world.
- ➔ Pass through the agriculture zone and see how connectivity is helping farmers track their herd movements, or see how their crops are maturing
- ➔ In the transport zone you can see not only the latest benefits of a connected car, but also see how you can track a bicycle - even underground.



**THE CONNECTED LIVING PROGRAMME TEAM WILL BE AVAILABLE IN THE GSMA INNOVATION CITY THROUGHOUT MOBILE WORLD CONGRESS 2016 TO ANSWER YOUR QUESTIONS AND MEET FACE TO FACE.**

# GSMA CONNECTED LIVING AT THE GSMA INNOVATION CITY

## MEMBER SERVICES PAVILION

### MOBILE CONNECT IN HEALTH - **Etisalat**

With Mobile Connect, **Etisalat** enables sportspeople, coaches and family members to have access to an athlete's performance data in real time. This highly secure user-friendly format is designed to improve professional performance or individual lifestyle.

### GSMA IOT SECURITY GUIDELINES - **Mouse Labs**

**Mouse Labs** will be presenting an interactive IoT Platform which fully adheres to the new GSMA IoT Security Guidelines. With security at its foundation, trust in the IoT will be made simple and seamless.

### CONNECTED LIVING HUB

For all things **Connected Living** come to our "hub" and meet our experts.



## AGRICULTURE

### SMART CATTLE - **Telefonica, FIWARE & Senso Wave**

This demonstration from **Telefonica, FIWARE & Senso Wave** shows how sensors on the cattle's collar tracks and monitors their movement and health. When mashed up with external harmonised data (weather, air quality etc) it provides the farmer with information on how local conditions may impact livestock.

### SMART SILO - **Telefonica, FIWARE & Ubikwa**

INSYLO is a solar panel device which allows farmers to track silo stocks with a mobile app and web services. Working with Telefonica, FIWARE & Ubikwa, it provides a collaborative framework between farmers and feed compounders to optimise logistic costs.

### SMART FARMING - **Telefonica, FIWARE & Team Dev**

Agricolus uses multiple different sensors including soil (nutrient level, humidity, water content, temperature) and weather conditions to optimise growing conditions working with Telefonica, FIWARE & Team Dev.

### IOT SECURITY - AGRICULTURE - **Ericsson & Telenor**

This **Ericsson & Telenor Connexion** demonstration shows end-to-end authentication and data confidentiality in a capillary network in line with the new GSMA IoT Security Guidelines.

### MOBILE IOT - EC- GPRS - **Orange, Intel & Ericsson**

This showcase from Orange, Intel & Ericsson demonstrates how 3GPP-based LPWA technology with EC-EGPRS addresses the challenge of extending coverage deep indoors and to remote locations. EC-EGPRS is a software upgrade on existing GSM networks. The feature is able to deliver coverage improvement for up to 20 dB leading to a 7x extension in the coverage of low-rate applications.

## TRANSPORT

### GSMA Embedded SIM Specification - **Jaguar Land Rover**

Jaguar's most connected car, the Jaguar F-Pace, will be showcasing in-car services that in the future will be enabled by the GSMA Embedded SIM Specification.

### IoT Big Data Analytics Service - **KT**

This in-car IoT data service uses data extracted from KT On-Board Devices (OBD) (such as location, vehicle warning and fault data) and external local data like weather or traffic information to develop local market insights at an enterprise level. The end user will also receive an analytics service allowing them to monitor their vehicles' health.

### Smart City Navigation Service - **Telefonica & Here Maps**

This app from **Telefonica & Here Maps** demonstrates how car navigation can be enriched by real time contextual data from smart cities. Based in the city of Porto (Portugal) it will show real time environmental information about the city and its facilities and guides drivers to suitable parking spot (indoors or outdoors), depending on different parameters such as vehicle type, traffic incidences, occupancy levels of nearby parking.

### Road Weather - **KT & Inrix**

This commercial product has been augmented by taking real time information from a KT OBD that allows a car to act as a real-time sensor to provide more up-to-date and accurate local information. By adding this harmonised vehicle data, this application can now provide near real time in-car information on driving conditions and how they may impact the users' journey.

### Smart Bikes - **NB-IoT - Ericsson, Nokia, Intel**

This **Ericsson, Intel & Nokia**, demonstration shows how 3GPP-based NB-IoT technology can be used to track a fleet of hire bikes when they move into low signal areas either at street level or below ground.

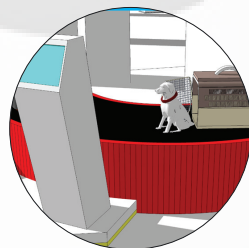
### Mobile IoT Water Meter - **NB-IoT - Vodafone, u-blox, Neul & Huawei**

**Vodafone, Huawei, Neul and u-blox** will be showcasing an NB-IoT Smart Water Meter live trial in Valencia, Spain.

## LOGISTICS TRACKING

### Pet Tracking - **NB-IoT - Vodafone, Huawei & Oviphone.**

**Vodafone, Huawei & Oviphone** will demonstrate a GPS-based tracker for pets which allows pet owners to check the location of their pet from their smartphone, tablet or computer.





# GSMA CONNECTED LIVING AT THE MINISTERIAL PROGRAMME



The GSMA's prestigious Ministerial Programme, held alongside Mobile World Congress, provides a unique platform for the world's most influential telecommunications leaders to unite and discuss the most pressing issues affecting the future of the mobile industry.

The Ministerial Programme is an **invitation only** event targeted at senior government and industry representatives.

Attendance is open to:

- National telecommunications ministries and regulatory authorities
- Senior representatives from selected international organisations and intergovernmental bodies
- C-level and senior policy/regulatory representatives from the mobile industry, including network operators and vendors

If you have not received an invitation but fit the criteria above, please visit <http://www.ministerialprogramme.com/contact-us/> to express your interest in attending.

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# GSMA CONNECTED LIVING AT THE MINISTERIAL PROGRAMME

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## POLICIES AND REGULATION FOR GROWTH OF THE INTERNET OF THINGS

### Leadership Workshop - Internet of Things

Tuesday 23 February

16:00-17:30

Auditorium A

As mobile broadband networks spread, the cost of hardware falls, new business models emerge and smartphones become commonplace, consumers are using wireless connectivity to enhance security systems, energy meters, household appliances, wearable devices, healthcare monitors and the in-car experience.

These connected devices are the building blocks of the Internet of Things (IoT). The IoT has the potential to bring substantial social and economic benefit to governments, citizens, end-users and businesses through the creation of new jobs, increase in productivity and competitiveness, improvements in service delivery and personalisation, and more efficient use of scarce resources. Although forecasts indicate a significant opportunity, this is still a nascent industry. The IoT ecosystem is composed of a large number of diverse players, deploying innovative services across different networks, technologies and devices. Providing clarity and consistency of regulation for equivalent services, as well as policies that enable growth, are therefore key in fully capturing its opportunity to stimulate this market.

This session will explore the ways in which mobile is transforming everyday life for consumers, businesses and industries and assess the implications of the IoT revolution for governments and regulators. In particular, this session will provide examples from different regions in the world of concrete steps that governments and regulators are taking to stimulate innovation and growth of this sector, and ensuring a supportive regulatory framework that provides trust for both users and industry players .

**For more details and to view the latest confirmed speaker details visit:**

**<http://www.ministerialprogramme.com/leadership-workshops-internet-of-things/>**

# MUST SEE IoT EVENTS

## AT MOBILE WORLD CONGRESS 2016

### Sunday 21 February 2016

#### **GSMA Mobile IoT Initiative - Global NB-IoT Summit**

**12:00 - 14:45**

**The Consul's Room, Casa Llotja del Mar, Barcelona**

The GSMA Global NB-IoT summit will explore the value of Narrow Band IoT technologies and the benefits it can bring to individuals, organisations and the economy as a whole. It will cover perspectives from the entire ecosystem and demonstrate how the industry is working together within the NB-IoT Forum to realise the full potential of the technology.

Taking place the on the Sunday before Mobile World Congress, this is a unique opportunity to gain insight into this fast growing technology. This event is free to attend but pre-registration is required.

For more details visit:

<http://www.gsma.com/connectedliving/events>

### Monday 22 February

#### **The Future of the SIM - Remote SIM Provisioning for Consumer Devices**

**14:30 - 16:30**

**GSMA Seminar Theatres 1 & 2, CC1 Upper Walkway, South Entrance**

Mobile connected devices are forecast to grow to 11 billion by 2020 (Source Machina Research). This growth is being driven by an increase in the range of new types of mobile connected devices including wearable and companion mobile devices. These new devices need to be small, light-weight and connected independently to the mobile network. The SIM is a key capability enabling secure and convenient connection to global mobile networks.

Join this seminar to find out how the SIM is evolving enabling new consumer devices to be smaller, lighter

and easier to use. The first session will focus on the new single, global remote SIM provisioning specification and how this will impact the development of new consumer devices. This session will explain how the world's device vendors and SIM providers are responding to this challenge.

#### **Smart Cities Sustainability**

**15:15 - 16:15**

**Conference Hall 4, Auditorium 5**

This session will focus on the continued demand on smart systems in order to achieve long term attainment for smart cities. Operators, governments and platform providers need to harmonise efforts to improve sustainability, economic performance and quality of life whilst also reducing environmental impact.

What are the main challenges involved in achieving and maintaining a sustainable environment? Industry experts will be brought together to showcase examples of successful smart systems and will discuss how the ecosystem is coming together to address the challenges of making smart cities a reality.

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# MUST SEE IoT EVENTS

## AT MOBILE WORLD CONGRESS 2016

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### Tuesday, 23 February

#### The industrial Internet of Things

11:00 - 12:00

Conference Hall 4, Auditorium 5

This session will focus on the industrial internet of things (IIoT) and the opportunities for enterprises across industries around the world. Much discussion on the benefits of IoT to date has centred on creating efficiencies, however, crucial to companies now is how IIoT can drive revenue growth.

The concept of industrial M2M isn't new, but the opportunity has exploded as enterprises across a range of industries increasingly recognise the value of pairing big data analytics with IIoT. Through discussion and analysis of case studies in success, this session will explore the big applications for IIoT, the different approaches to capturing revenue growth with IIoT and the potential challenges ahead.

### Wednesday 24 February

#### The Internet of Things: Connectivity

16:45 - 17:45

Hall 4, Auditorium 5

Connectivity and communication technologies provide the fundamental plumbing to IoT solution enablement. All vertical markets are dependent on innovation in device and communication technologies to reduce costs, enhance services, and to enable a roadmap of new services.

This portion of the value chain is complex for suppliers and end-users. Besides continuous hardware pricing pressure, device and module vendors need to rationalize portfolios for connectivity options, vertical market segments served, and services. For instance, cellular hardware is being challenged by new low-power wireless WAN technologies operating on unlicensed spectrum.

This in turn is driving development of new LTE standards designed for M2M/IoT communications. This session will assess the most salient device, module, connectivity technology, standards and vertical market trends shaping the IoT market.

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# MUST SEE IoT EVENTS

## AT MOBILE WORLD CONGRESS 2016

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**Thursday 25 February**

### **Securing the Internet of Things**

**11:00 - 12:00**

**Hall 4, Auditorium 5**

The Internet of Things will enable unprecedented numbers of connected things from wearables and connected cars to smart homes and critical infrastructure.

The possibilities are seemingly endless as new use cases emerge. However, with more connected devices comes a greater risk of potential security threats; hackers will always look for ways to expose new vulnerabilities. Industry approaches to tackling security weaknesses range from reactive measures to seeking to implement security at the design stage.

What security threats does the Internet of Things pose? What is the industry, from device manufacturers and app developers to mobile operators and industry alliances doing to secure the Internet of Things? How can security and encryption be embedded into IoT platforms, apps and big data stores to protect against potential security hacks? Find out in this session.

### **Connecting the Home**

**14:15 - 15:15**

**Hall 4, Auditorium 5**

The rise of the Internet of Things has seen the concept of the connected home become a reality.

With connected devices continuing to grow, evolve and benefit consumers, we are now seeing the connected home become one of the largest growth opportunities for the IoT ecosystem.

As we become increasingly aware of the benefits of a connected home, the demand for solutions is gathering momentum. Barriers to adoption remain however; there is a strong need to establish interoperability among connected products and services in order to enable collaboration and allow network and service optimisation for example.

Join some of the industry's leading players as they discuss innovative solutions and the challenges and opportunities faced in achieving interoperability.



# Mobilising the Internet of Things

GSMA Connected Living at Mobile World Congress 22 -25 Feb 2016

## CONNECTED LIVING PROGRAMME KEY CONTACTS:



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Mobile IoT



**IAN SMITH**  
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Engagement



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