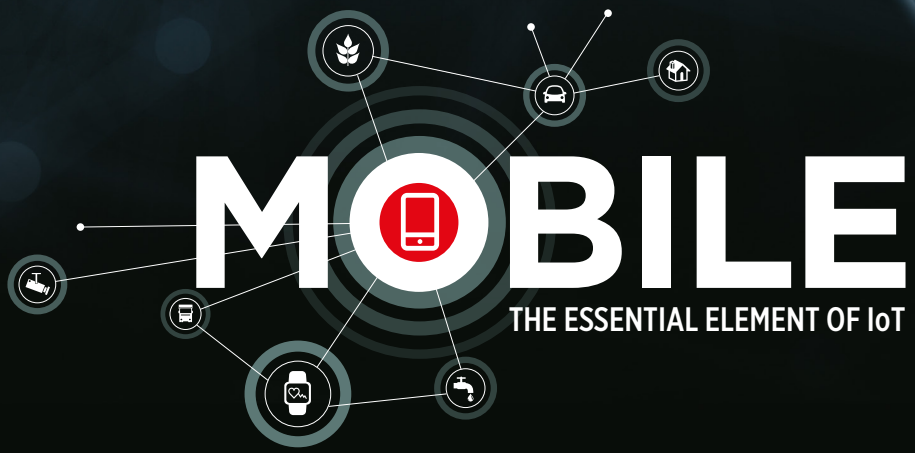
GSMA Connected Living

THE IoT GUIDE

MOBILE WORLD CONGRESS 2017



gsma.com/IoTMWC17

MOBILE. THE ESSENTIAL ELEMENT OF IoT

By 2025, 27 billion connected devices will operate around the globe forming the Internet of Things (IoT)[1]. Connected devices combined with big data will create invaluable business opportunities for mobile operators, governments, cities and companies spanning industries around the world.

The Internet of Things will create an astounding application service revenue opportunity of US$1.7 trillion by 2025[2]. Connectivity makes up less than 5% of this figure offering huge revenue potential for high value services.

5 billion devices will connect on Low Power Wide Area (LPWA) networks by 2022[3]. These technologies will make it viable to connect many more devices and machines to their owners, the Internet and each other.

Low Power Wide Area (LPWA) technologies have emerged to serve a diverse range of vertical industries and applications that use low data rates, require long battery lives, are low cost, and often operate in remote and hard to reach locations. Mobile operators already run dozens of trials of LPWA technologies in licensed spectrum (Mobile IoT), standardised by 3GPP. The first commercial mobile operator launches are planned for 2017.

Bringing to the table not only the infrastructure, but also decades of experience in providing trusted, secure and reliable connectivity, mobile operators are uniquely positioned as a key component of the IoT and are invaluable strategic partners for cities, governments and companies which are looking to make their contribution to a connected future.

[1] Machina Research, 2016
[2] All income from the sale of IoT devices and related services. Machina Research, 2017
[3] Strategy Analytics, 2014

MOBILE. THE ESSENTIAL ELEMENT OF IoT

GSMA GLOBAL MOBILE IoT SUMMIT

Mobile IoT = TRUSTED IoT

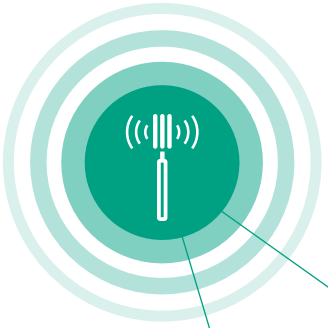
Sunday, 26 February 2017

13:00 – 17:30
Venue: Hesperia Tower Hotel

Mobile IoT refers to 3GPP standardised secure operator managed IoT networks. In particular, low power wide area (LPWA) networks in licensed spectrum designed for IoT applications that are low cost, use low data rates, require long battery lives and often operate in remote and hard to reach locations. Mobile IoT networks will play an important role in connecting up the billions of new devices making up the IoT. LPWA technologies will serve a diverse range of vertical industries and support a range of applications and deployment scenarios, which existing mobile technologies may not currently be best placed to connect.

The GSMA Global Mobile IoT Summit will cover perspectives from the entire ecosystem and explore recent implementations and use cases of Mobile IoT. Gain insight into these fast growing technologies, find out how the industry is working together to realise its full potential, and hear from leading mobile operators and ecosystem players about their plans to launch commercial Mobile IoT networks in 2017.

To register for the GSMA Global Mobile IoT Summit **visit: www.gsma.com/IoTMWC17**



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MOBILE.
THE ESSENTIAL ELEMENT OF IoT

GSMA GLOBAL MOBILE IoT SUMMIT

Mobile IoT = TRUSTED IoT

13:00 – 14:00	Registration, networking lunch and demonstration viewing
14:00 – 14:10	**Welcome and Introduction** **GSMA:** Graham Trickey, Head of Connected Living Programme
14:10 – 15:10	**Bringing Mobile IoT Technologies to the Market – Keynotes** **AT&T:** Cameron Coursey, VP Product Development; Chair of GSMA LTE-M Task Force **China Mobile Research Institute:** Xiao Shanpeng, Deputy Director, Department of Wireless and Terminal Technology **Orange:** Ronan Le Bras, Head of Technical Strategy, Wireless Networks; Chair of GSMA EC-GSM-IoT Group **Vodafone:** Luke Ibbetson, Chief Engineer, Group R&D; Chair of GSMA NB-IoT Forum
15:10 – 15:55	**The Voice of Mobile IoT Customers** **RM2 International S.A.:** David Simmons, Chief Technology Officer **South East Water, Australia:** Philip Johnson, Chief Financial Officer **University of St. Andrews:** Dr Bernie McConnell, Sea Mammal Research Unit, Scottish Oceans Institute
15:55 – 16:20	Refreshment break and demonstration viewing
16:20 - 17:25	**The Mobile IoT Ecosystem – Panel Discussion** **Intel:** Alexander Quach, Senior Director, Communication and Devices Group **Qualcomm:** Prakash Sangam, Director, Technical Marketing **Sierra Wireless:** Nicolas Damour, Senior Manager, Business and Innovation Development **u-blox:** Simon Glassman, Head of Strategic Partnerships, EMEA **Huawei:** Cao Ming, President of FDD Product Line, Wireless Network Product Line **Ericsson:** Lars Mårtensson, Vice President of Internet of Things **Nokia:** Mikhail Angelov, Head of IoT Connectivity Solutions, Advanced Mobile Network Solutions **Moderator:** Svetlana Grant, Project Director, Future IoT Networks, Connected Living, GSMA Mobile IoT technologies – time to market Mobile IoT roadmap Choosing the right technology: How to work with ecosystem partners Q&A
17:25 – 17:30	Closing remarks **GSMA:** Graham Trickey, Head of Connected Living Programme

GSMA CONNECTED LIVING SEMINAR

IoT ELEMENTS: BRINGING THE SMART CITY TO LIFE

GSMA seminars are free to all Mobile World Congress 2017 attendees

To register for the Connected Living Seminars, and to view the latest confirmed speaker details, **visit: www.gsma.com/IoTMWC17**

Tuesday, 28 February

12:00 – 14:00
GSMA Seminar Theatre 1, CC1.5

With 27 billion devices connected globally by 2025[4], the evolution of smart cities will change our everyday lives, from improving traffic flow to managing pollution and energy efficiency.

Mobile IoT connections, combined with IoT Big Data, will usher in a new era of IoT solutions which will help the market to scale and help develop valuable services for citizens such as safer road conditions and new crowd management solutions. This will help provide air pollution monitoring and reduction, water and waste management, and make it safer to attend large events.

Join this seminar to learn about:

- Innovative smart city solutions being deployed by mobile operators all over the world
- The benefits for governments when partnering with operators on smart city solutions
- How to ensure a safer city through secure mobile networks

12:00 – 12:05	**Welcome and Introduction** **GSMA:** Graham Trickey, Head of Connected Living Programme
12:05 – 13:00	**IoT Elements driving Smart Cities** **AT&T:** Mike Zeto, General Manager, Executive Director, Smart Cities **Telefonica** **Vodafone:** Adam Armer, Global Business Development Manager, IoT Vertical Market Development **Moderator:** Aruna Srinivasan, Executive Director, Connected Living, GSMA
13:00 – 14:00	**Collaboration: the Key to Smart Cities** **AT&T:** Mike Zeto, General Manager, Executive Director, Smart Cities **Digital Greenwich:** Paul Copping, Chief Innovation Officer **Far EasTone:** Mike Lee, Executive Vice President of Enterprise & Carrier BU **University of Cantabria:** Prof. Luis Muñoz, Department of Communications Engineering **Moderator:** Neill Young, Smart Cities Lead, Connected Living, GSMA
	Closing remarks **GSMA:** Graham Trickey, Head of Connected Living Programme

[4] Machina Research, 2016

GSMA CONNECTED LIVING SEMINAR

MOBILE IoT (LPWA) – OPEN FOR BUSINESS

GSMA seminars are free to all Mobile World Congress 2017 attendees

Wednesday, 1 March

13:30 – 15:30
GSMA Seminar Theatre 1, CC1.5

Low Power Wide Area (LPWA) is an emerging part of the IoT and represents a huge market opportunity as the IoT scales. Analyst firm Strategy Analytics anticipate there will be 5 billion LPWA connections by 2022[5].

Join industry-leading experts in the Mobile IoT (licensed spectrum, low power wide area) market to learn about the latest business opportunities including commercial rollouts, launches and pilots. And discover a variety of use cases including leisure, industrial and logistics tracking.

To register for the Connected Living Seminars visit: **www.gsma.com/IoTMWC17**

13:30 – 13:40	**Welcome and Introduction** **GSMA:** Graham Trickey, Head of Connected Living Programme
13:40 – 14:40	**Mobile IoT – The Market Opportunity** **Deutsche Telekom:** Alexander Lautz, Senior Vice President M2M **Korea Telecom:** June-Keun Kim, Senior Vice President, Head of GiGa IoT Business Unit **Telefonica:** Andres Padilla, Director of New IoT Solutions **Verizon:** Christopher Schmidt, Executive Director, Device Technology **Vodafone:** Luke Ibbetson, Chief Engineer, Group R&D; Chair of GSMA NB-IoT Forum
14:40 – 15:25	**Business Considerations: The Voice of the Ecosystem – Panel Discussion** **Ericsson:** Eric Parsons, Head of 4G & RAN Mobile Broadband, Business Unit Network Products **Gemalto:** Axel Hansmann, Vice President, Strategy and Marketing, M2M **Huawei:** Zhu Cheng, Director Cellular IoT Product Line **Nokia:** Martin Beltrop, Head of Portfolio and Strategy, Advanced Mobile Network Solutions **Moderator:** Alex Davies, Founding Editor of Rethink IoT, an IoT news service from Rethink Technology Research
15:25 – 15:30	Closing remarks **GSMA:** Graham Trickey, Head of Connected Living Programme

[5] Strategy Analytics, 2014

MOBILE. THE ESSENTIAL ELEMENT OF IoT

GSMA INNOVATION CITY

Experience the Future in a Connected World

Hall 4

Mon: 08:00 – 19:00

Tue: 08:00 – 16:30,
closed for private event **16:30 – 19:00**

Wed: 08:00 – 19:00

Thu: 08:00 – 16:00

Please note the GSMA Innovation City is now located in Hall 4, and is open to all attendees with all pass types.

Join the GSMA and partners that are at the very forefront of mobile innovation, including: Nokia, Orange, Telefonica, Sierra Wireless and Vodafone, showcasing products and solutions that are changing the way the world communicates.

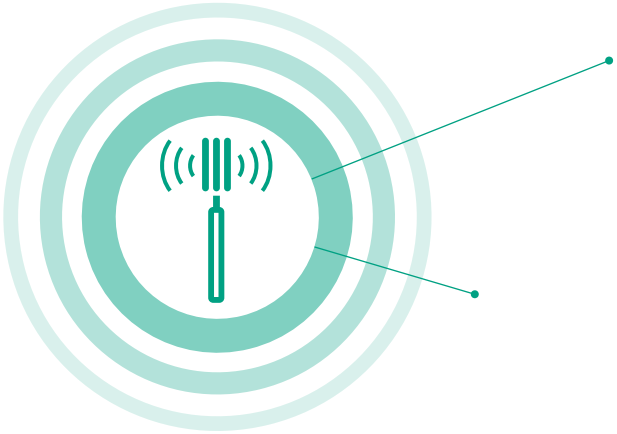
The Connected Living Programme Team will be available in the GSMA Innovation City throughout Mobile World Congress 2017 to answer your questions and meet face to face.

DEMONSTRATION	PARTNERS	DESCRIPTION
Mobile IoT	Winners to be announced	**GSMA Mobile IoT Innovators Showcase** The GSMA will be welcoming the winners and runners up of the Mobile IoT Innovators Showcase to display their solutions.
Mobile IoT	AT&T, Huawei, Intel, Quectel, Sierra Wireless, u-blox	**Mobile IoT Development Kits** On display are a selection of the developer kits which can be used in the development of LTE-M and NB-IoT devices.
Mobile IoT	CMCC, Ericsson, Intel	**NB-IoT Enabled Connected Factory** This connected screwdriver from China Mobile, Ericsson and Intel has a built-in sensor that detects turning and using an algorithm calculates the number of usages as well as number of turns per usage, transferring this information using NB-IoT networks.
Mobile IoT	HappyOrNot, Vodafone	**HappyOrNot – NB-IoT** HappyOrNot® is the global leader in instant customer and employee satisfaction reporting with its feedback collecting Smiley Terminals™ and intelligent data analytics reporting service. NB-IoT technology will enable HappyOrNot to produce more sleek, small, and efficient terminals, providing even greater usability, reliability, and flexibility to our clients.
Mobile IoT	Orange, Idea Cellular, GroundTruth, Nokia, Sierra Wireless	**Environmental measurements for Agriculture & Insurance – EC-GSM-IoT** Groundtruth is using EC-GSM-IoT to collect localised data from ground sensors in combination with datastreams from satellites and communities to provide more granular weather and environmental estimates. These data support the improved delivery of weather insurance, disaster response, and long-term management of key resources such as water.

DEMONSTRATION	PARTNERS	DESCRIPTION
Mobile IoT	Telefonica, Itron	**Industrial Sensors and Safety Monitoring – LTE-M** Itron and Telefonica will demonstrate how LTE-M enabled pressure and temperate sensors can ensure integrity for utility infrastructure and provide real-time monitoring for the safety of consumers, utility employees and their communities. Technologies to detect natural gas leaks and provide edge intelligence for remote shut-off, relying on the Telefonica LTE-M network to manage alerts and alarms with the utility's Operations Centre, will be featured and discussed.
Mobile IoT	Telefonica, Wellness Telecom	**Connected Waste Management – LTE-M** This LTE-M based connected waste bin enables cities to monitor waste levels in real time and optimise collection schedules, resulting in cleaner cities and cost savings through improved efficiency. The sensors in the containers also send alerts for temperature variation (fires) enabling a reduction in damage liability and response time.
Mobile IoT	Telefonica, Worldsensing	**Smart Parking – NB-IoT** This smart parking system, connected using NB-IoT, allows drivers to find parking quickly and efficiently while providing companies with the means to optimally manage their parking spaces. Based on small parking sensors installed in each parking spot, it guides drivers via electronic panels.
Mobile IoT	Vodafone, University of St. Andrews, Huawei	**Connected Seal Tracking – NB-IoT** These innovative NB-IoT Low Power Wide Area tags created by St Andrews University, supported by Vodafone and Huawei will help to track endangered seals in the wild and monitor their well-being to ensure their numbers remain stable.
Smart Cities	Far EasTone	**Smart City Tainan and Water Disaster Management** Far EasTone, through an augmented reality, will demonstrate how it developed smart city solutions in Tainan. To improve flood control and disaster recovery in Tainan, Far EasTone uses high availability LTE mobile communication services, coupled with advanced IoT monitoring devices and surveillance technologies to deliver water disaster management.
Smart Cities	Orange, Mobile World Capital, Ajuntament de Barcelona, Eurecat – Big Data COE	**IoT & Big Data in Action** This demo will showcase how multiple data sources from local information combined with data from a Mobile Network Operator in an IoT Big Data framework were used to understand visitor's mobility patterns around Barcelona. The information is used to improve all activities of management and decision making by the Tourism Area of Barcelona's City Council.
Smart Cities	Tele2	**Traffic Flow – Movement towards insights** Tele2 will demonstrate how they can analyse movements and identify patterns by using their mobile network
IoT Big Data	KT	**Smart Agriculture and Agri-Food Information Service** Korea Telecom shows how big data can be used to improve our environment, using information around cultivation history and genuine certification of farm products to change the way food gets from the farm to the plate.
IoT Big Data	Telefonica, Ayuntamiento de Málaga, EDP, Fiware, Malaga, Universidad de Cantabria, Urban Cloud	**EverImpact – Environmental Monitoring** This demonstration from Telefonica, EverImpact and associated data providers highlights how data collected from satellites and ground sensors can be used to monitor cities CO2 emissions together with air quality, producing real-time maps with highly accurate data to help cities to deal with their greenhouse gas emissions and pollution.
Health	Orange, Clinical Document Engineering, Mobile World Capital, Telefonica, Vodafone	**Easy, secure access to standardised health records** CDE is currently offering OpenCDE, a Vendor Neutral Archive (VNA) solution providing services to private health organizations for digital archive, custody, access, and structuring of clinical documents in a safe and confidential way. In order to avoid any Identity fraud, the integration of Mobile Connect into OpenCDE offer a new, simple and safe way to log-in. Now patients can manage their clinical information and share it with doctors from anywhere of the world.

MOBILE. THE ESSENTIAL ELEMENT OF IoT

MOBILE IOT TOUR



This self-discovery tour of key demonstrations of Mobile IoT (licensed spectrum low power wide area) solutions gives attendees the opportunity to see at a glance the broad range of use cases for Mobile IoT solutions, and how these new technologies will help support the further growth of the Internet of Things around the world.

Low Power Wide Area (LPWA) networks will play an important role in connecting up the billions of new devices making up the IoT. LPWA technologies are expected to serve a diverse range of vertical industries and support a range of applications and deployment scenarios, which existing mobile technologies may not currently be best placed to connect. Mobile operators already run dozens of trials of LPWA technologies in licensed spectrum, standardised by 3GPP. The first commercial launches are planned for 2017.

See below a list of demonstrations and where to find each participating company

COMPANY	TECHNOLOGY	DEMONSTRATION	LOCATION
AT&T	LTE-M	Smart shelving solution	Hall 4, 4A10
CMCC	LTE-M, NB-IoT	Dynamic demonstration of typical IoT applications scenarios including logistic tracking, industry IoT and smart wearables	Hall 1, 1G50
Ericsson	LTE-M	Fleet management; industrial power tool; smart agriculture	Hall 2, 2O60
Ericsson	NB-IoT	Connected conference hall; connected factory	Hall 2, 2O60
Giesecke & Devrient	NB-IoT	Smart city solutions like smart mining, smart environment and smart lighting	Hall 7, 7A41
Huawei	NB-IoT	Smart parking	Hall 1, 1J50
Nokia	NB-IoT	Gas meter with a Telit NB-IoT module running on Nokia's infrastructure	Hall 3, 3A10
Oberthur Technologies	LTE-M	Securing LPWA networks: demonstration of an LTE-M module using a GSMA Embedded SIM to support mobile operators in their evolution to 3GPP LPWA	Hall 6, 6H30
Sequans	LTE-M	Demonstration of IoT devices using Monarch LTE-M chip, devices from e.g. Encore Networks, Gemalto, LinkLabs, Nimbelink, Pycom	Hall 7, 7I81
Telefonica	LTE-M	Connected meter	Hall 3, 3K21
	NB-IoT	Lost & found tracker; smart bottle; digital shield	

To see a more comprehensive list of demonstrations, please visit www.gsma.com/MIoT-Tour

MOBILE. THE ESSENTIAL ELEMENT OF IoT

CONNECTED VEHICLE TOUR

Autonomous driving functions are already available in modern vehicles: an increasing number of cars are equipped with driver assistance systems, such as lane keeping assistant, highway driving assistant, and Adaptive Cruise Control (ACC), already relieving the driver of some tasks. These partially automated cars are connected with cellular networks which are already available today. Existing LTE technologies, for example, provide fast connectivity for telematics and infotainment, as well as support for connected services.

Advances in V2X technology, 5G networks, the GSMA Embedded SIM Specification, and improved security for connected solutions will further aid and accelerate the realisation of fully autonomous vehicles.

This self-discovery tour of key demonstrations of connected vehicle services allows attendees to see at a glance the technological advancements already available today, and where the automotive industry is headed in the future.

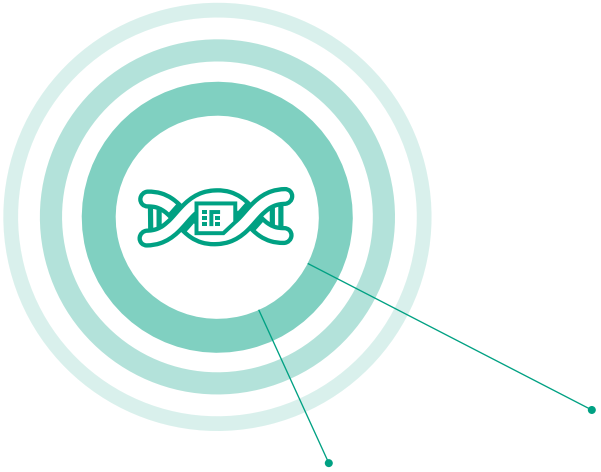
See below a list of demonstrations and where to find each participating company.

COMPANY	DEMONSTRATION	LOCATION
Argus Cyber Security	Argus connectivity protection integrated in Wind Helix Cockpit Platform. The integration of both solutions on top of Intel processor enables car manufacturers to seamlessly introduce vital cyber security protection without impacting their production cycles.	Hall 8, 4YFN, C3.1
Cisco Jasper	IoT connected traffic lights, smart parking, connected electric vehicle	GSMA Innovation City, Hall 4
Ford	From delivering favourite apps, to providing innovative solutions that connect your car to your home, to helping you order fuel on demand. Experience the latest in in-car technology demonstrated through SYNC 3 with AppLink.	Hall 1, 1A38
Harman International	Connected car systems, audio and visual products, enterprise automation solutions	Hall 2, 2K30
Huawei	Connected Car: Experience how 5G networks manage connected cars	GSMA Innovation City, Hall 4
Jaguar Land Rover, University of Surrey	5G on the Road	GSMA Innovation City, Hall 4
Oberthur Technologies	Keyless car entry: Offer greater flexibility and optimum security to share access rights to cars thanks to eSE-enabled devices	Hall 6, 6H30/6I30
Safran Identity & Security	Demonstration of flexible and interoperable Embedded SIM connectivity management for automotive infotainment and telematics systems	Hall 6, 6G30
SEAT	SEAT ID & Connected Driving concept with a futuristic simulator of the driving experience; SEAT Metropolis Lab, an international research center specialised in the development of data based software for urban solutions, and digital sharing fleet for employees	Hall 3, 3B14
Sierra Wireless	A chance to drive the world's fastest connected car and see what it's like to move at the speed of sound	GSMA Innovation City, Hall 4
UNLIMIT	Indian auto-rickshaws fitted with emergency IoT	GSMA Innovation City, Hall 4

To see a more comprehensive list of demonstrations, please visit www.gsma.com/Vehicle-Tour

MOBILE. THE ESSENTIAL ELEMENT OF IoT

GSMA EMBEDDED SIM FOR M2M INTEROPERABILITY TOUR



This self-discovery tour of key demonstrations of the GSMA Embedded SIM Specification for M2M gives attendees the opportunity to see at a glance how the GSMA Embedded SIM Specification is being applied in products from a broad range of industries, and it allows attendees to quickly navigate to their areas of interest.

The GSMA Embedded SIM Specification is a mature concept which now has been proven to be secure, scalable, robust and fully interoperable between operators. Companies looking to deploy the GSMA Specification can securely and remotely provision their M2M devices 'over the air' and easily switch operators after launch to market.

See below a list of demonstrations and where to find each participating company:

COMPANY	DEMONSTRATION	LOCATION
COMPRION	Comprehensive test architecture for Embedded SIM functionality and interoperability	**Hall 6, 6I20**
Fime	Comprehensive eUICC M2M interoperability testing solution	**Hall 5, 5B61**
GEMALTO	Subscription Management and Embedded SIM portability including smart city solution	**Hall 2, 2J29**
Hewlett Packard Enterprise	Embedded SIM interoperability through an innovative self-care portal for M2M Enterprise customers	**Hall 3, 3E11**
Oberthur Technologies	Revolutionary payment terminal connectivity	**Hall 6, 6H30/6I30**
Safran Identity & Security	Flexible and interoperable Embedded SIM connectivity management including automotive solutions	**Hall 6, 6G30**
VALID	Subscription Management and Embedded SIM portability including eGovernment and automotive solutions	**Hall 6, 6H41**

MOBILE. THE ESSENTIAL ELEMENT OF IoT

MINISTERIAL PROGRAMME

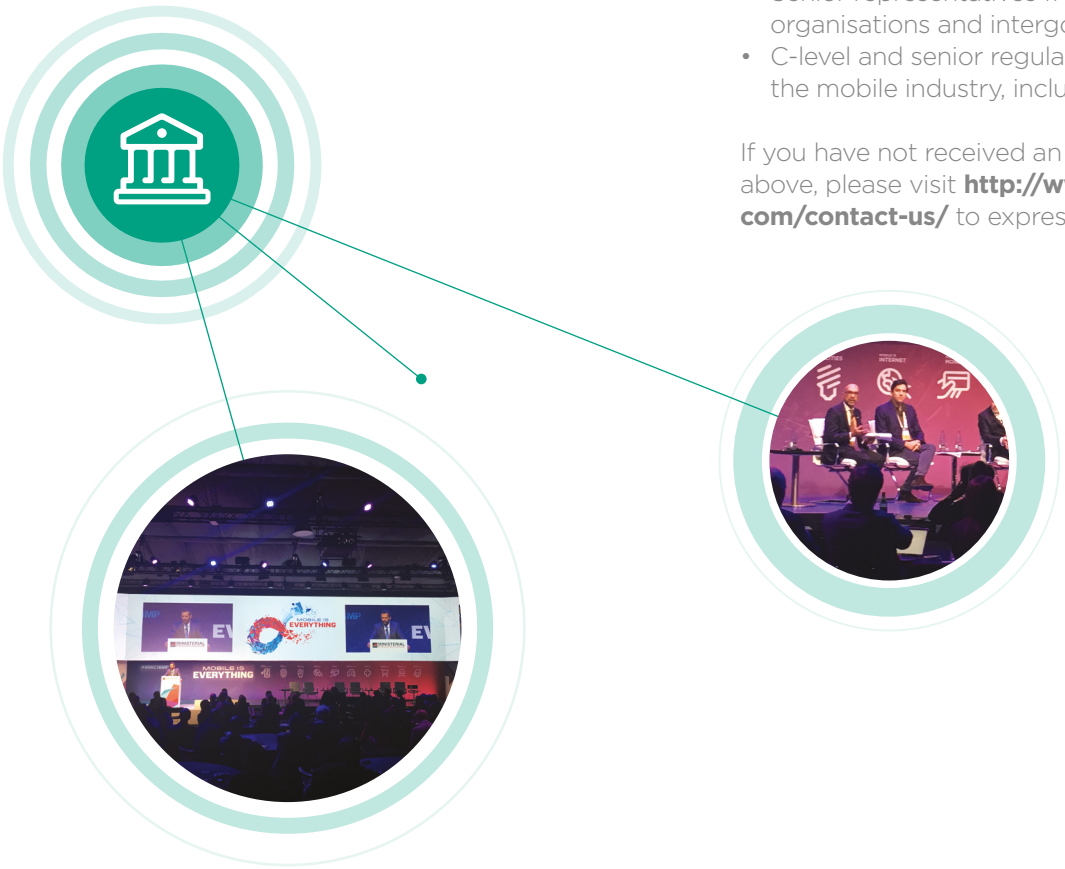
The GSMA's prestigious Ministerial Programme, held alongside Mobile World Congress, provides a unique platform for the world's most influential telecommunications leaders to unite and discuss the most pressing issues affecting the future of the mobile industry.

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

Attendance is open to:

- National telecommunications, finance and health ministries;
- Telecommunications regulatory authorities and central banks;
- Senior representatives from selected international organisations and intergovernmental bodies;
- C-level and senior regulatory representatives from the mobile industry, including 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.



MOBILE. THE ESSENTIAL ELEMENT OF IoT

MINISTERIAL PROGRAMME

Policy and Regulation to Unlock the Consumer and Business Benefits of the IoT

Advancing Healthcare through Mobile

Monday, 27 February

10:00 – 11:15
Auditorium A

Mobile technology continues to play a key role in addressing a wide range of socio-economic development challenges. Mobile enabled services such as e-government and e-health have delivered huge social impacts in remote communities where the roll out of mobile healthcare services have helped and supported those without access to essential healthcare and nutrition information.

Intragovernmental cooperation is urgently required for the full benefits of digital health to be realised. This session will showcase successful implementations of digital health services and the impact collaborative governance played in advancing healthcare through mobile.

The Ministerial Programme is an invitation only event. For more information visit **http://www.ministerialprogramme.com/contact-us.**

Paving the Way for Smart Cities

Monday, 27 February

10:00 – 11:15
Auditorium B

In the future, cities will be much smarter than they are today. But success depends on a common approach amongst government, city councils and the mobile industry. Early engagement with mobile operators in the planning process means cities can realise the benefits that arise from the operators' local presence and fully standardised networks, delivering real, long-term benefits to businesses and citizens.

How can the mobile industry help cities develop sustainable and innovative smart city services? And what makes mobile operators strategic partners for smart cities? This session will explore key prerequisites required from industry players to build a successful smart cities strategy.

For more details, and to view the latest confirmed speaker details, visit: **www.ministerialprogramme.com/2017-agenda**

MUST SEE IoT EVENTS

AT MOBILE WORLD CONGRESS 2017

Mobile World Congress 2017 – Main Conference

Monday, 27 February

11:00 – 12:10
Hall 4, Auditorium 2

The Industrial Internet

Industrial Internet and massive IoT have the opportunity to increase productivity and streamline industrial manufacturing technology by accumulating and making sense of data from production lines and equipment. Furthermore, it allows manufacturers to become predictive, understanding when and where faults are likely to occur, mitigate risk and reduce downtime. A recent paper by GE proposed that a 1% increase in productivity in industrial processes could translate to US$10-15 trillion increase in global GDP over 15 years. The opportunity to use data to increase productivity is not only beneficial to a firm, but the whole of society as well. Enabling IoT network technology, such as LPWA, together with cloud-based solutions, give manufacturing firms access to more information than ever before.

https://www.mobileworldcongress.com/start-here/agenda/the-industrial-internet/

16:00 – 17:30
Hall 4, Auditorium 2

Autonomous Vehicles

Managing the transition from manually driven cars to autonomous vehicles, and preparing the infrastructure to facilitate this technology will be a lengthy challenge from a technological and societal stand point. Additionally, laws and regulations will need to be adapted, a process which has already begun in many areas, including the United States, where regulation in California has been passed to allow for further testing on public roads. The mobile network is at the heart of the autonomous vehicle. Low latency, always-on and fail-proof are just some of the key requirements for cars. Will 5G be enough to handle this demand?

https://www.mobileworldcongress.com/start-here/agenda/autonomous-vehicles/

MUST SEE IoT EVENTS

AT MOBILE WORLD CONGRESS 2017

Mobile World Congress 2017 – Main Conference

Tuesday, 28 February

14:00 – 15:00
Hall 4, Auditorium 2

Car as a Service

Connected vehicles will not only be driverless, but ownerless, especially in crowded urban areas, where cars remain unused 95% of the time and rapidly depreciating. In order to deliver a regular tailored service, partnerships are forming between media companies, automotive manufacturers and other ecosystem players. Increasingly, traditionally functional objects such as vehicles or homes are becoming adaptable enough to mould themselves to the preferences and tastes of their users. End user knowledge creates loyalty and regular customers. A lack of ownership does not have to mean a less personal experience. Arguably, items like cars are becoming an extension of one's home and office, wherein they listen to the same music, experience the same connectivity and comfort. The surge in self driving technology and the connected user will allow cars to provide a service entirely customised to the person riding it, their mood, time of day or even their destination.

https://www.mobileworldcongress.com/start-here/agenda/cars-as-a-service/

15:30 – 16:40
Hall 4, Auditorium 2

Smart Cities, Connected Citizens

Smart cities are hardly a new concept, but the suite of services and applications that are now available to deployment is ever expanding. Cities are becoming smarter, more efficient and, to an extent, autonomous in its decision making. Whilst most smart city deployments exist in silos, common platforms are emerging to facilitate communication. As more cities become 'smart' they can learn more from each other, make more decisions and share more insights with experts to continue to improve its citizens' quality of life. What do citizens need from smart cities? How can common platforms help build synergies within and between cities, allowing them to share information and services? What is the social and environmental impact of a smart city? What will a truly "Smart City" look like?

https://www.mobileworldcongress.com/start-here/agenda/smart-cities-connected-citizens/

MUST SEE IoT EVENTS

AT MOBILE WORLD CONGRESS 2017

Mobile World Congress 2017 – Main Conference

Wednesday, 1 March

11:00 – 12:10
Hall 4, Auditorium 2

Enabling IoT Platforms

As the volume of services, data and opportunities continue to expand, enabling technologies and platforms will need to surface and be widely adopted to create an IoT ecosystem across industry sectors. Enabling IoT solutions should aim to facilitate synergies between use-cases to create economies of scale, providing security for the technology and users, and identifying the core network technology that will uphold and meet demand. Interoperability is the first step towards creating IoT ecosystems that cut across use-cases and industry sectors, but security has to be a primary focus.

https://www.mobileworldcongress.com/start-here/agenda/enabling-iot-platforms/

14:15 – 15:40
Hall 4, Auditorium 2

Enabling IoT Security

A significant amount of IoT projects do not make it past the prototype stage due to security concerns. Investment is increasing to meet this challenge and secure not only active IoT solutions, but future use-cases. The GSMA estimates that worldwide IoT security spending will increase by 73% by 2019 to US$195 million to address this gap. Security is at the heart of enabling IoT. The Enabling IoT Security session will explore best practice security strategies for IoT deployments, discuss the impact of security on the different layers and explore the opportunities for cross-industry consensus on security for devices, sensors and users alike.

https://www.mobileworldcongress.com/start-here/agenda/enabling-iot-security/

MUST SEE IoT EVENTS

AT MOBILE WORLD CONGRESS 2017

Discover the IoT with MWC Tours

MWC Tours provide the opportunity for a guided tour focused on key industry topics, enabling an in-depth exploration of your area of interest and maximising your experience at Mobile World Congress 2017. Get the chance to stop by some of the largest and well-known companies and talk to the exhibitors for their thoughts and opinions on the role of mobile. Tour guides are subject matter experts with years of experience guaranteeing a detailed and up-to-date insight into the industry.

The 'Connected World Tour' will dive into the connected future of the Internet of Things, exploring the latest products and innovative solutions the mobile industry has to offer.

The 'IoT Security Tour' will explore the security and privacy challenges of the Internet of Things, and which steps different companies are taking to overcome cybersecurity risks of the IoT.

To find out more, visit: **https://www.mobileworldcongress.com/exhibition/mwc-tours/**

GSMA CONNECTED LIVING

MOBILISING THE INTERNET OF THINGS

The GSMA's Connected Living programme is an industry initiative designed to help mobile operators add value and accelerate the delivery of new connected devices and services in the growing IoT market.

The programme aims to achieve this through industry collaboration, optimising networks and encouraging the development of appropriate regulation. It is also working to develop key enablers that will support the growth of M2M in the immediate future and the 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"

GSMA CONNECTED LIVING

MOBILISING THE INTERNET OF THINGS

Mobile IoT: Licensed Spectrum, Low Power Wide Area Solutions

The GSMA 'Mobile IoT Initiative' is designed to accelerate the commercial availability of Low Power Wide Area (LPWA) solutions in licensed spectrum. Backed by 60+ of the world's leading mobile operators, OEMs, chipset, module and infrastructure companies, this Initiative facilitates demonstrations, proofs of concept and trials of 3GPP backed LPWA licensed spectrum (Mobile IoT) technologies.

Secure IoT Networks

The GSMA has developed a set of IoT Security Guidelines and an IoT Security Self-Assessment scheme to promote best practice for the secure development, design and deployment of IoT services on any mobile network. A unified and robust approach to security will create a trusted, reliable environment that can scale as the market grows.

IoT Big Data

The GSMA is working with operators to make harmonised data sets and APIs available to establish an IoT Big Data ecosystem and to realise the full potential of the IoT. Cross-industry cooperation and collaboration will help in the development of new data-centric IoT solutions, ensuring the creation of common specifications and the full availability of diverse and harmonised data.

IoT Policy and Regulation

Governments and regulators can unlock the consumer and business benefits of the IoT by implementing policies that promote innovation and investment, and by creating regulatory frameworks that build trust and network capability. The GSMA is working to create a sustainable policy and regulatory environment to support the successful scaling of the IoT.

Industry Engagement

The GSMA works closely with its partners in the industry to drive adoption and impact the market through the key verticals Smart Cities, Connected Vehicles and Health. Regular engagement and communication with the industry will lead to better market understanding, resulting in improved customer service, a superior user experience and greater connectivity, enabling the market to develop.

MOBILE.
THE ESSENTIAL ELEMENT OF IoT

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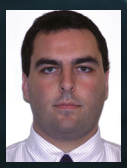

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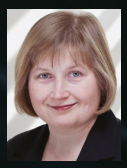

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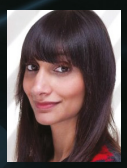

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