



Mobile IoT

Global NB-IoT Summit

BARCELONA - 21ST FEBRUARY 2016



Mobile IoT = Trusted IoT



Mobile IoT

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Welcome - Graham Trickey, Head of Connected Living Programme, GSMA

- Mobile IoT is a priority GSMA initiative for the acceleration of operator managed, licensed LPWA solutions
- Mobile IoT pilots are being deployed in 2016 enabling the rapid realisation of the potential of licensed LPWA
- NB-IoT a key player within the family of 3GPP supported LPWA technologies
- GSMA NB-IoT Forum is an integral part of the GSMA Connected Living Programme



Mobile IoT

Global NB-IoT Summit Agenda

- 12.45 Welcome - Graham Trickey, Head of Connected Living Programme, GSMA
Introduction - Luke Ibbetson, Chair of NB-IoT Forum, Vodafone
- 12.55 **Session One: Operator Perspective**
Luke Ibbetson, Chair of NB-IoT Forum, Vodafone (moderator)
Luigi Licciardi, Head of Standards and Technology Disclosure, Telecom Italia
Angel David Barrio, Vice President IoT & M2M, Etisalat
Madam Huang Yuhong, Deputy General Manager, China Mobile Research Institute
- 13.10 **Session Two: Mobile Industry Perspective**
Svetlana Grant, Project Director, Future IoT Networks, GSMA (moderator)
Eric Parsons, Head of Mobile Broadband, Ericsson
Quan Yu, Chief Strategy Officer of Wireless Product Line, Huawei
Sabine Rossel, Principal Engineer, Intel
Ulrich Dropmann, Head of Standardization, Nokia
Durga Malladi, VP Engineering, Qualcomm
Simon Glassman, Head of Strategic Partnerships, EMEA, u-blox



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Global NB-IoT Summit – Agenda continued

13.55 **Session Three: Customer Perspective**

Alain Staron, VP Digital Offers, Veolia

Gianfranco DeFeo, Executive Manager for Innovation & Strategic Developments, Pietro Fiorentini

Jack Yu, CEO, Oviphone

Xie Yao, International Market Director, Fangle

Charles Dasher, Design Lead, Ericsson representing Chattahoochee Riverkeeper

14.40 **Closing Remarks**

Luke Ibbetson - Chair of NB-IoT Forum, Vodafone

14.45 Networking Reception



Mobile IoT

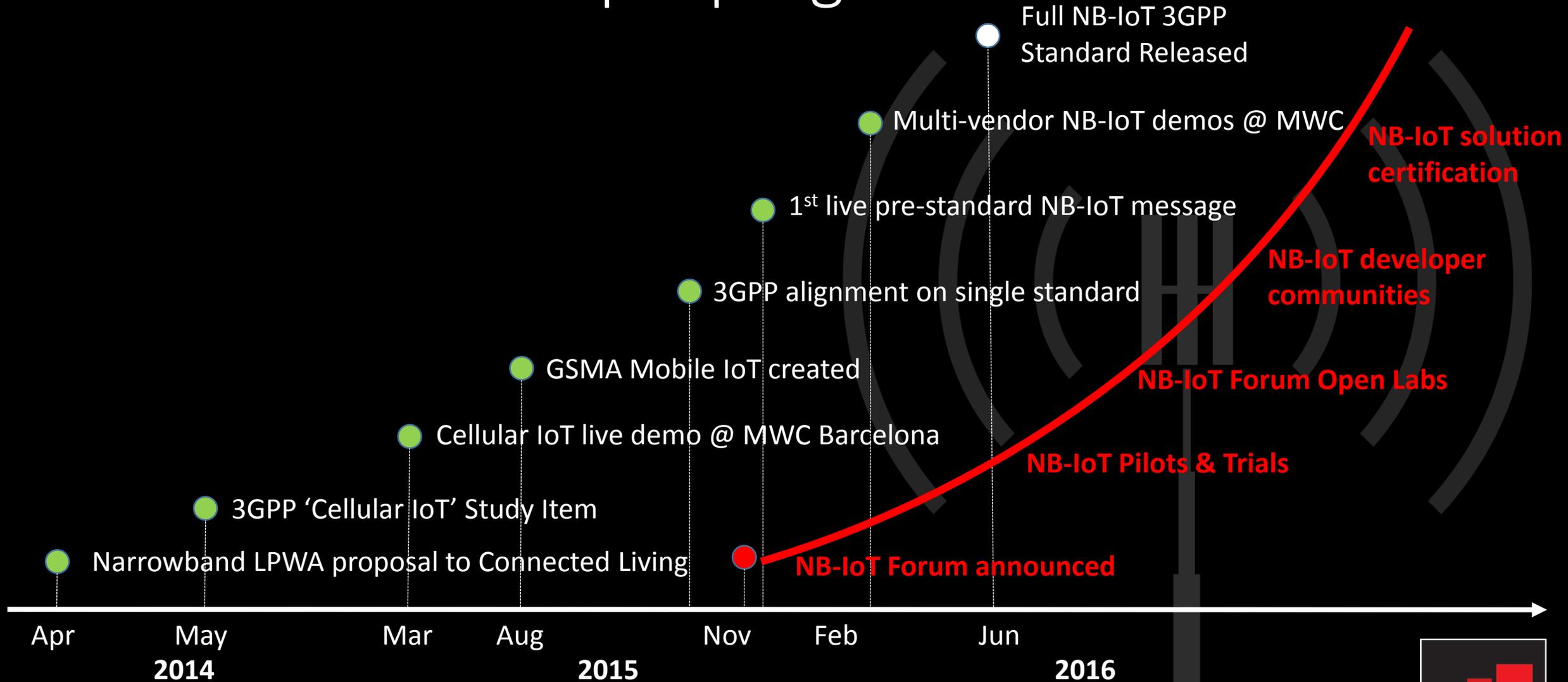
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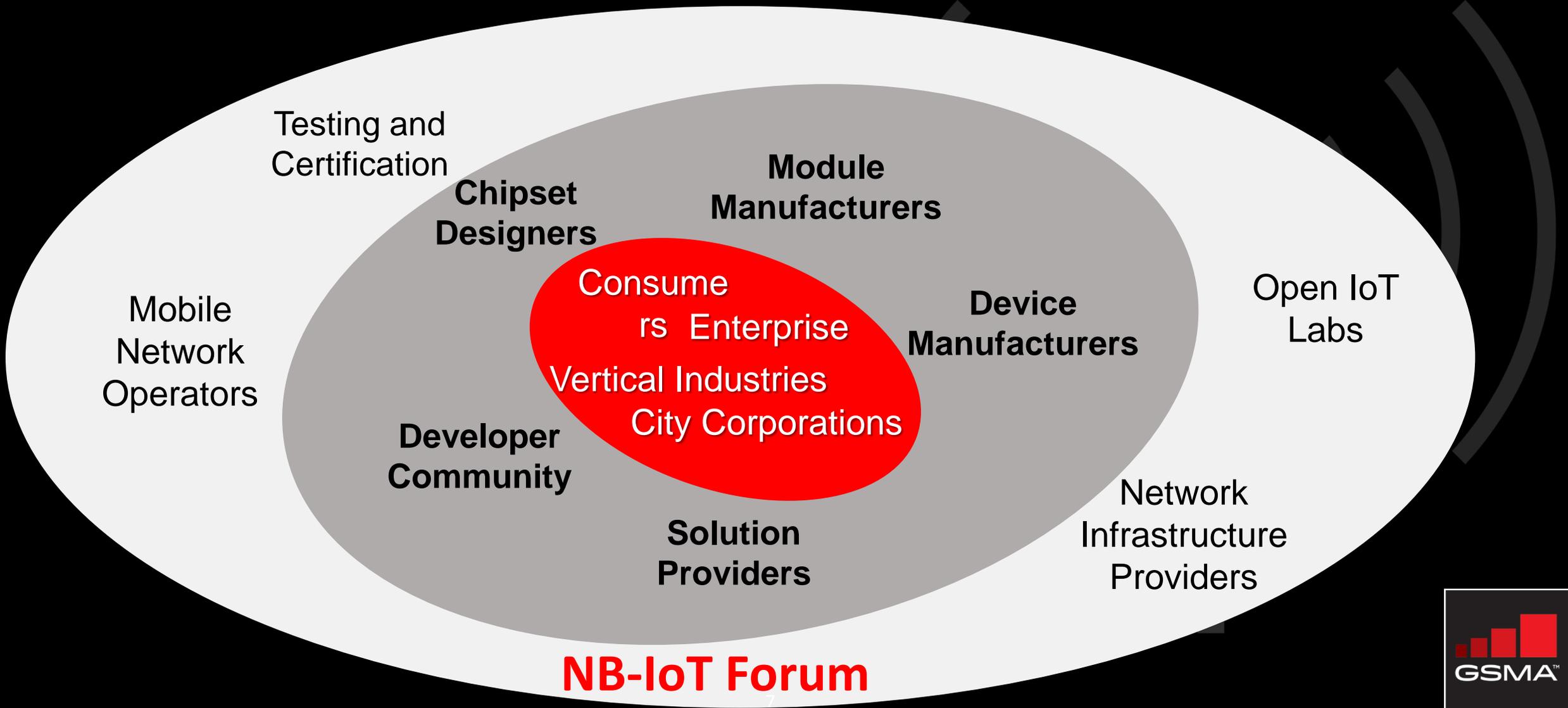
Welcome – Luke Ibbetson, Chair of NB-IoT Forum, R&D Director, Vodafone



NB-IoT has made rapid progress



Building the ecosystem for NB-IoT





Mobile IoT

Session One: Operator Perspectives

Moderator: Luke Ibbetson, R&D Director, Vodafone Group

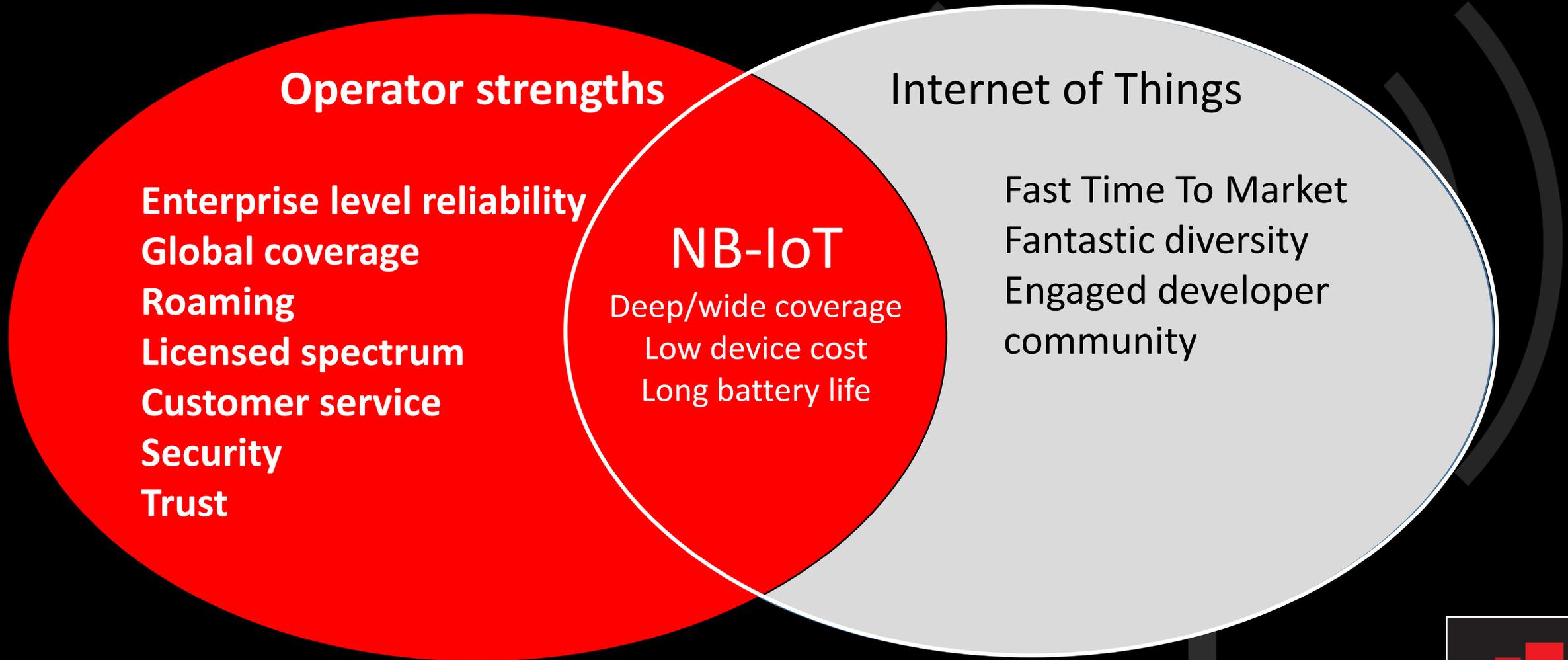
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Mobile Network Operators and NB-IoT



A rapidly evolving ecosystem in Europe



6 Billion connections + more than 1 trillion € in 2020

Source: IDC

IoT addressable markets

more mature verticals

next big opportunities

Smart Home Fire & Safety Remote diagnostics Security	Connected Car Driver Insurance/behaviour	Smart Retail Just-In-Time promotions & coupons Smart shelves	Wearables & eHealth Health remote monitoring	Smart Agriculture & Food Security Livestock Tracking Smart Irrigation Water leakage mngt	Smart living environment for ageing well Assisted living Sleep Monitoring Room occupancy	Smart Energy Intelligent house heating Energy Saving mngt	Smart City & eTourism Smart light bulb Public Transport Waste management
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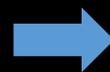
IoT market will exceed 1Bn€ in 2018!

Smart Meters legal obligations

- > 50% gas smart meters by 2018
- new electricity meters from 2018 will offer opportunity to exploit infrastructure synergies for Smart City

Higher CAGR expected for E-health, Smart Tourism and Smart Agriculture

Sensors/Actuators exchange Data over common standardised NB-IoT networks



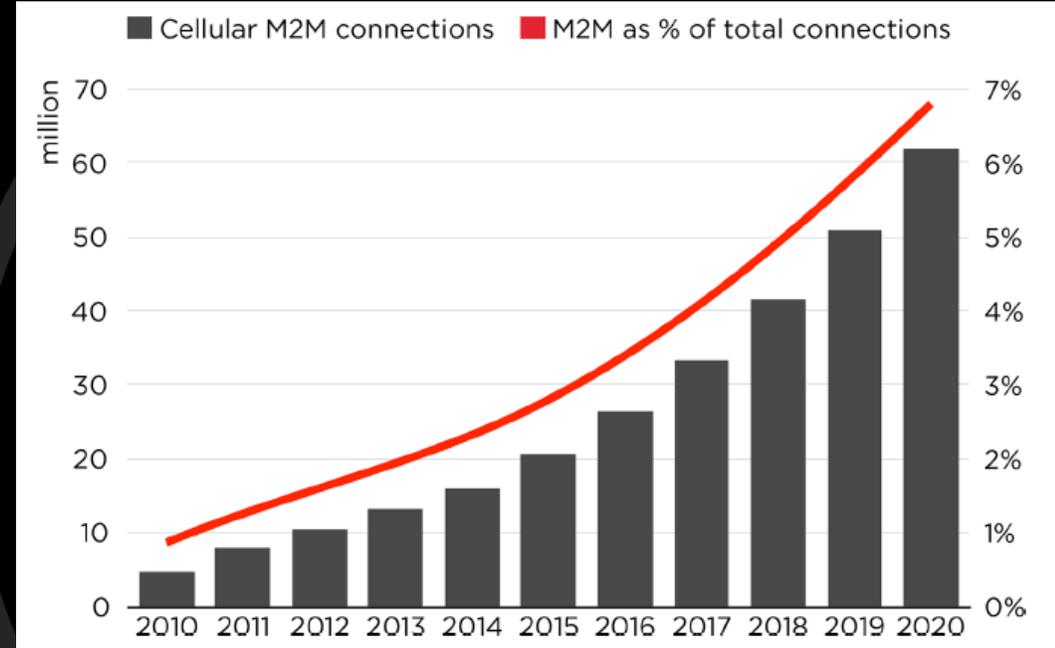
Need to boost applications ecosystem
 Set policy framework to allow benefit from Big Data



The view from Latin America



- M2M connections growth is expected to be strong over the next few years, at a compound annual growth rate (CAGR) of 25% over the period to 2020, by which date the total number of connections will have reached 62 million
- Brazil is the largest market in Latin America in terms of number of M2M connections



Environmental monitoring



Utilities: smart water management



Utilities: energy management at home and in buildings



Smart assisted living and wellbeing

Some countries in Latin America have historically benefited from leapfrogging to the latest technological breakthroughs. Embracing IoT could be the catalyst to once again leapfrog the competition



The view from MEA – Industrialized Countries



The view from MEA – Developing Countries



- *Sustainability & Utilities*



- *Agriculture & Cattle*



- *Smart Cities*



IoT is an Emerging Market with Huge Potential in China

10 billion connections & **1 trillion** RMB in China market in 2020

Source: Machina research, McKinsey, IDC, Cisco



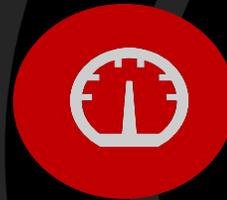
Logistics

- Tracking packet: 10 B
- Container: 4 M



Environment monitoring

- Smog & pollution monitoring: 100 M
- Auto agriculture: 100 M



Smart Metering

- Water metering : 380 M
- Gas metering: 300 M

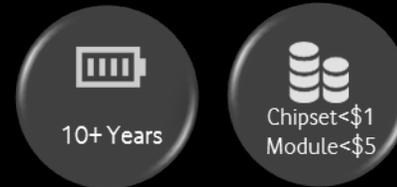


Smart Home

- Domestic appliance: 250 M
- Kids smart watch: 220 M



Enhanced Coverage & massive connection



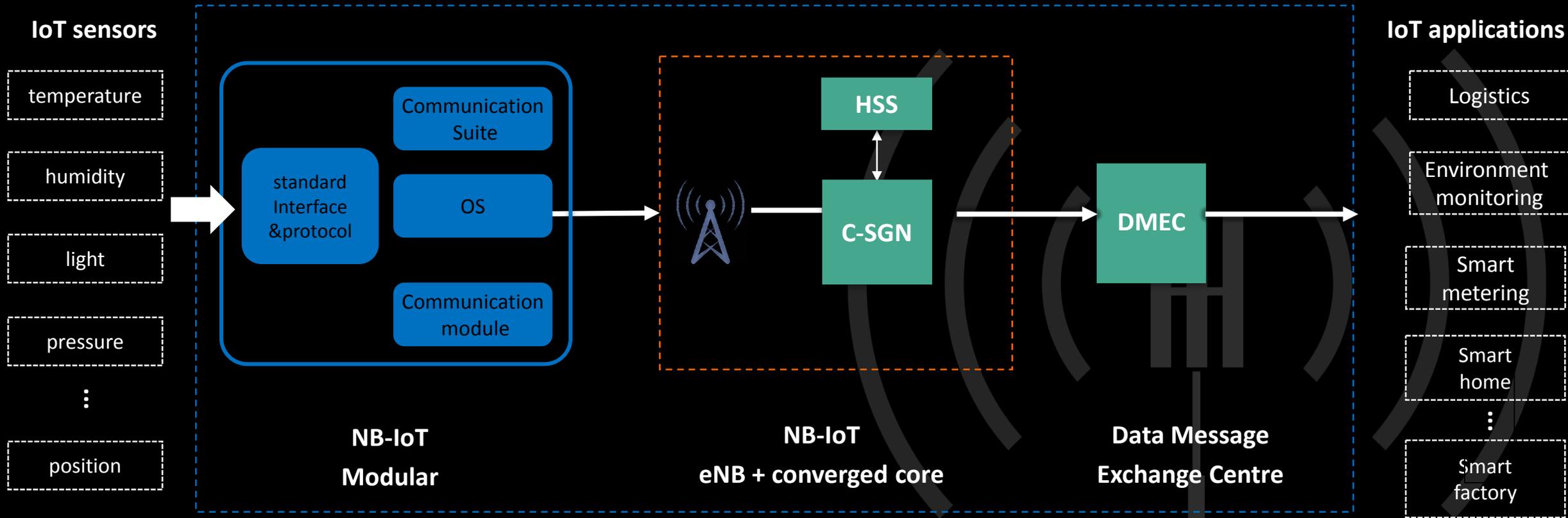
Low cost & power consumption



Plug & Play



View of China Mobile for booming the service



Highly integrated modular

- 6 in1 to 8 in1
- Extremely low power & cost

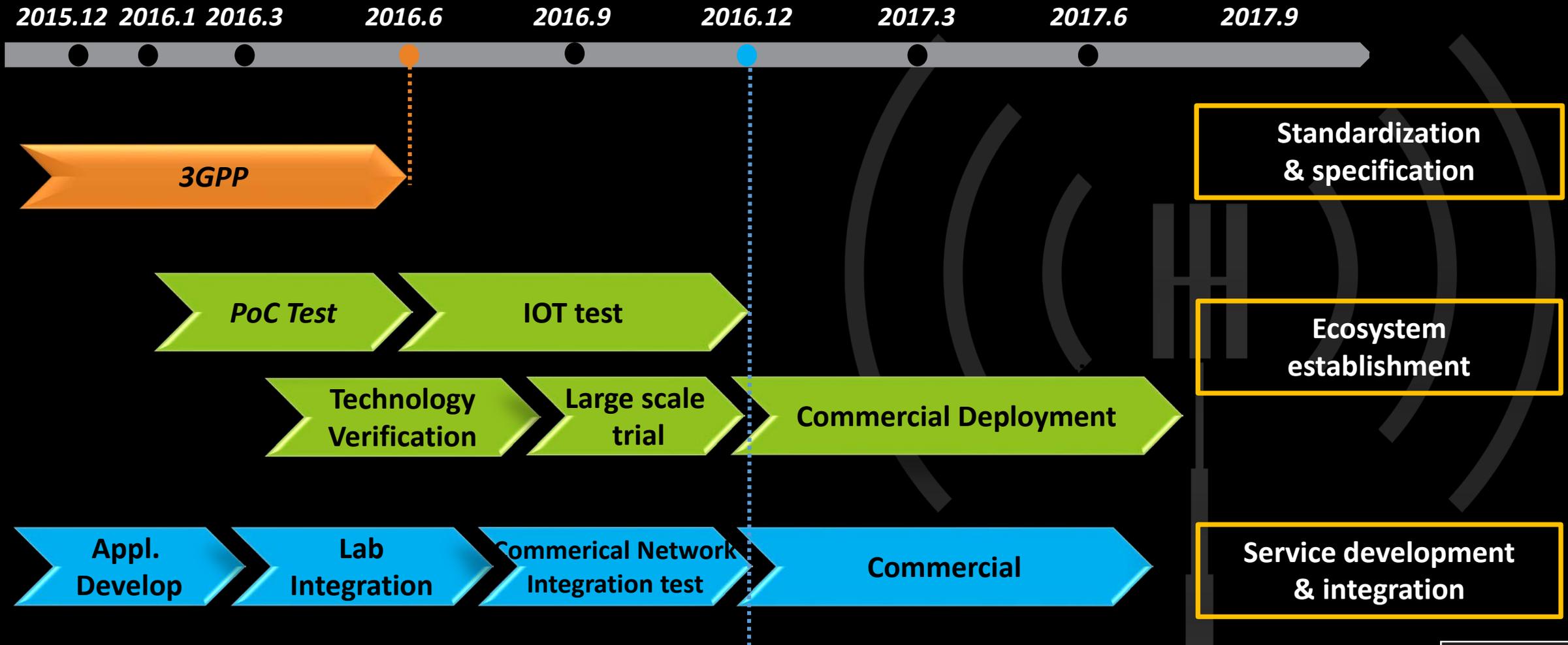
Low cost authentication

- eSIM/ sSIM, NFV-based HSS etc.
- Remote service enable

Open API

- Unified and opened interfaces to sensor
- Unified and opened interface to application

View of China Mobile for booming the service



NB-IoT Forum MNO Snapshot





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Session Two: Mobile Industry perspective

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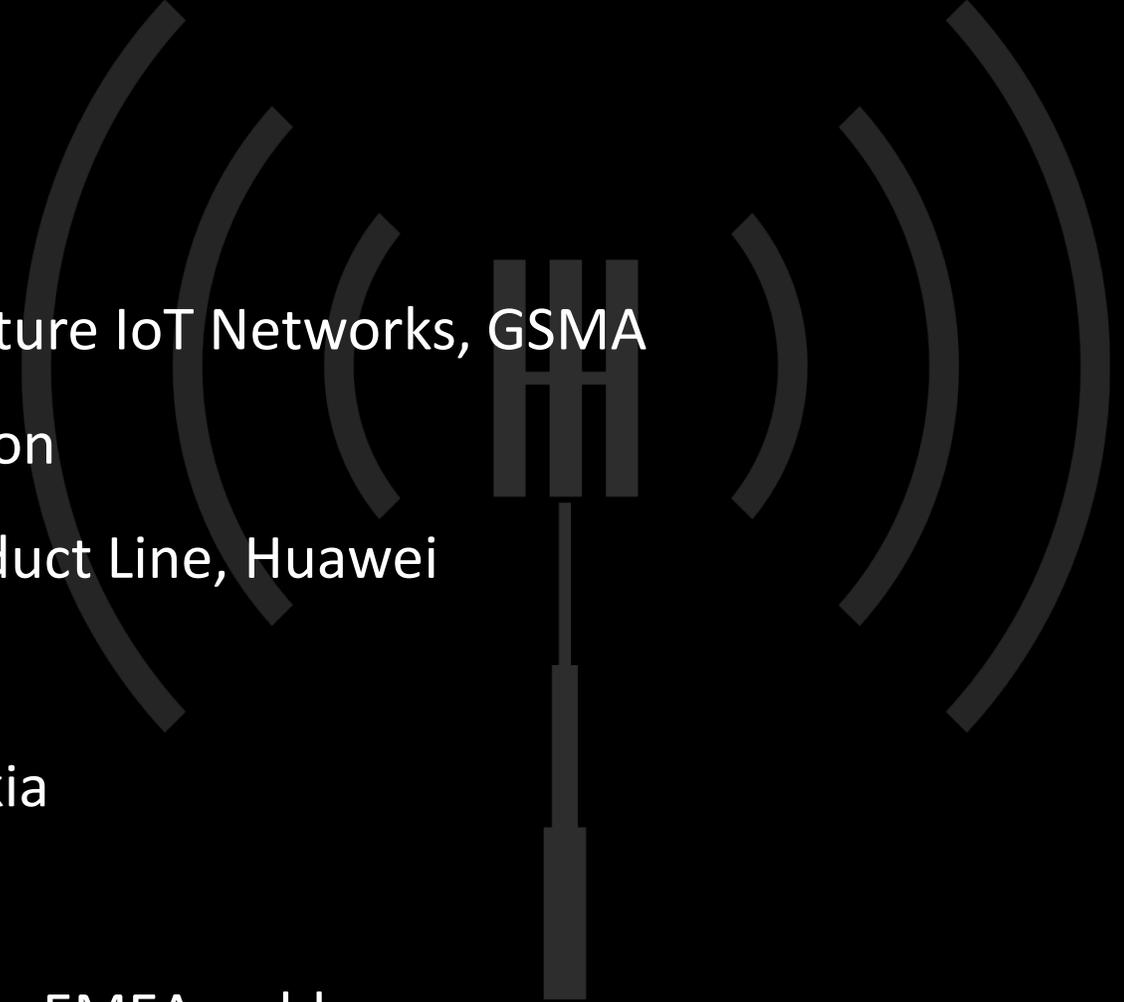
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**Pietro
Fiorentini**

Smart Gas Metering & Connectivity

Barcelona, February 21, 2016



Our context:

- Energy
- Oil & Gas
- Systems and components for the gas treatment, control and metering

FROM THE WELLHEAD TO YOUR DOORSTEP

Upstream and Production

Transmission

Power generation

Industrial users

Distribution

Residential and Commercial





Pietro Fiorentini connected products

Total delivered Smart industrial meters: > 100,000 (GPRS)

Residential Smart Meters delivered in 2015: 950,000

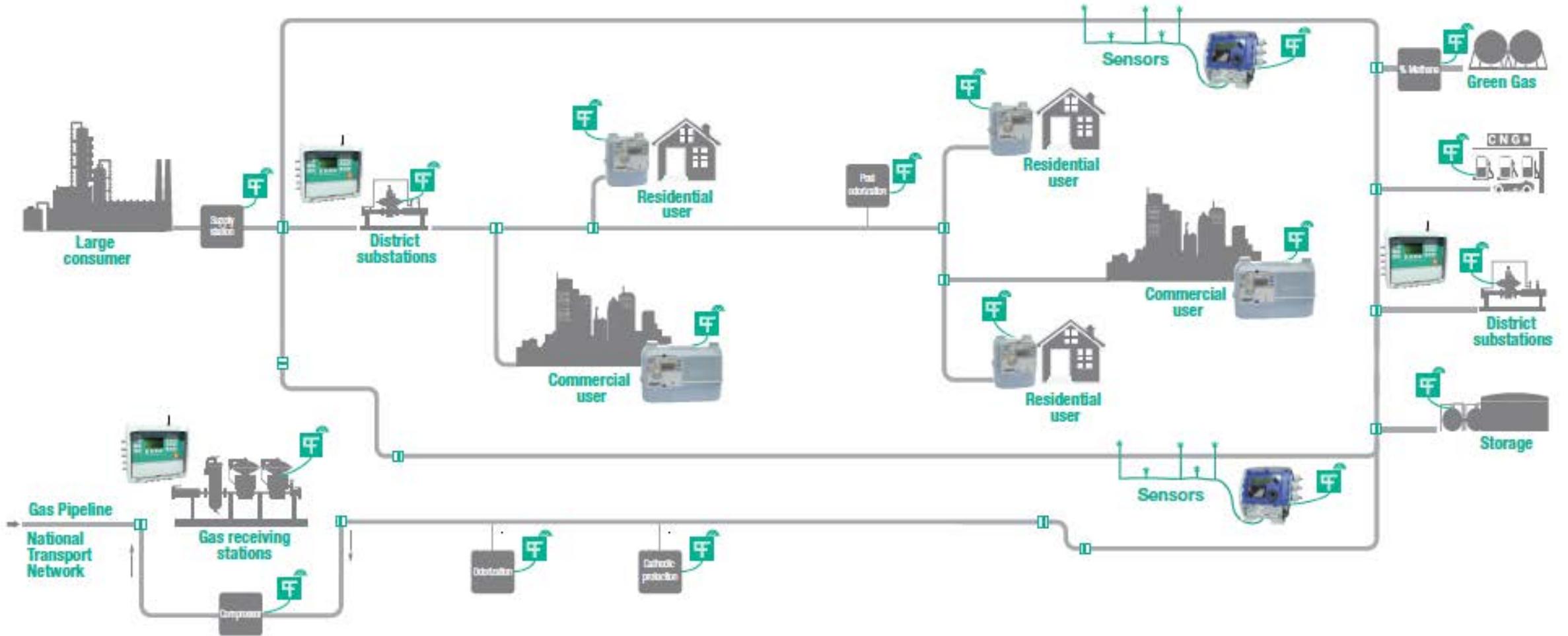
(40% GPRS – 60% W MBUS)

Meter Data Management, Network mgt SW by





Going to a connected Gas Network





Italy: the numbers

Operations

Always connected
(PSTN – GPRS - LTE)

- > 20,000 Plants
- > 8,000 gas quality analyzers

Smart operations

(GPRS - LTE-M - NB IoT)

- > 50,000 Data loggers
- > 50,000 Cathodic protection points
- > 1,000,000 Industrial meters
- > 50,000 district stations

Smart metering

REGULATED ROLL OUT
(NB IoT – W Mbus)

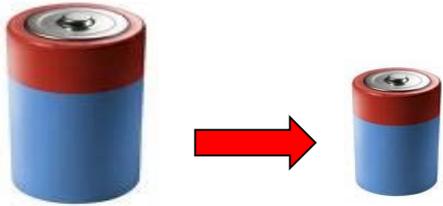
- > 15,000,000 Residential meters

Water network has similar market size & requirements



NB-IoT expected benefits

Smaller battery



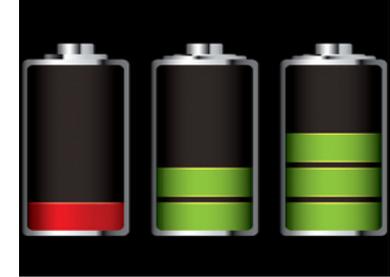
No SIM card



Communication
Reduced Cost



Battery Longer Life



Better radio Coverage



Efficient Sftw Download



Multicast Command





Challenges

- Regulator orientation: today W M-Bus 169 MHz –
Recent opening toward NB IoT
- Expected battery life: > 15 years
(already available for W M-Bus connection)
- Time to market: roll out already in progress





Open issues

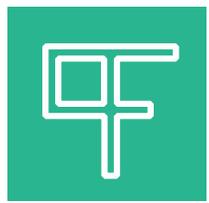
- Energy Regulators position
- Customers orientation
- Influence of other services for multi-utilities
- Service availability by multiple operators
- Service availability aligned with meter life (15 years in Italy – longer in other countries)
- Area coverage
- Embedded SIM – SIM operator portability / roaming
- Support download for firmware upgrade
- Availability of pilot projects in short term



Expectations from the Ecosystem

- Prompt availability of modules prototypes for ATEX and Metrological approvals
- Start of pilot projects in Q 2 / 2016 (Italy, Spain, China)
- Support by local operators
- Search of multi utility opportunities
- Open Labs open to Gas & Water Operators
- Data security & cryptography at least equivalent to GPRS

Thank you



Pietro Fiorentini

www.fiorentini.com



全球首款遥控·心率
智能手表 R11



RWATCH 艾戴 一切从孩子出发

儿童定位手表



Oviphone Technology Limited

Focus on the Smart Watch and NB-IoT



俞文杰 (Jack Yu): +8613611753876 jackyu@oviphone.cn

Work with Huawei NB-IoT application in Wearable devices
NB-IoT Device Life Demo in Huawei MBB 2015 Hongkong
2015 Smart Watch shipment more than 1.5KK

MTK Wearable platform 250X Alpha customer
Work for Disney brand in the GPS Kid's watch
2014 ship with 600K smart watch



2008

Oviphoen was founded in Zhangjiang, Shanghai, P.R.C
Focus on the Mobile Phone design

2012

Set up the Innovation department team
Focus on the Smart Watch and GSM Module Application

2013

GSM Module lead market in tablet and 3KK shipment
Smart Watch products start to Shipment
RWATCH brand set up

2014



2015

GSMA and MWC2016
China LPWAN Alliance member
NB-IoT devices will be mass production

2016

Why Wearable Devices need NB-IoT Technology?

Current wearable device such as smart watch and location based(LBS) devices for human and Pet (things) use 2G (GSM) , 3G (WCDMA) or 4G (LTE) technology.

The traditional communication technology have power consumption too high problem. Which effect to the wearable device convenience of usage.

When HUAWEI colleagues introduced the NB-IoT technology, we believe NB-IoT is the next generation of smart wearable core technology. NB-IoT technology can be good solution for the Power Management issue in the Wearable device.

Low cost and wide coverage, will make NB-IoT wide and rapid popularity.

远程监听
宝贝声音 随时倾听

家长发送监听指令，可以随时了解孩子的周边情况，手机无任何提示，不会发出任何声音避免打扰孩子，可以随时知道孩子的小秘密。



智能防盗

- 自动设置、解除防盗报警**
车辆静止10秒后，将自动进入报警状态；走到车旁边，无需操作，智心识别你的身份，立即安全解除报警状态。
- 智能报警**
在设防状态下自行车被拆卸或者被破坏，云端将第一时间发送报警信息到您手机。
- 智能追踪**
若爱车不幸被盗，点击APP上的“车辆追踪”图标，即可实时追踪车辆位置。

*此功能目前完美支持iOS8.0以上的苹果手机、支持蓝牙4.0的Android4.0以上手机。




NB-IoT Application --- NB-IoT Watch

*Ublox SARA Module with Huawei
2nd generation NB-IoT chipset
NB-IoT+ iBeacon +G-Sensor location.
Compatible technology:
--GPS compatible design
--Wifi: compatible design
--RFID*

*Wearable design:
Size: 42*44*14.5mm
Battery: 60mAh
IP67 Waterproof*





Smart Parking System (NB-IoT Network)

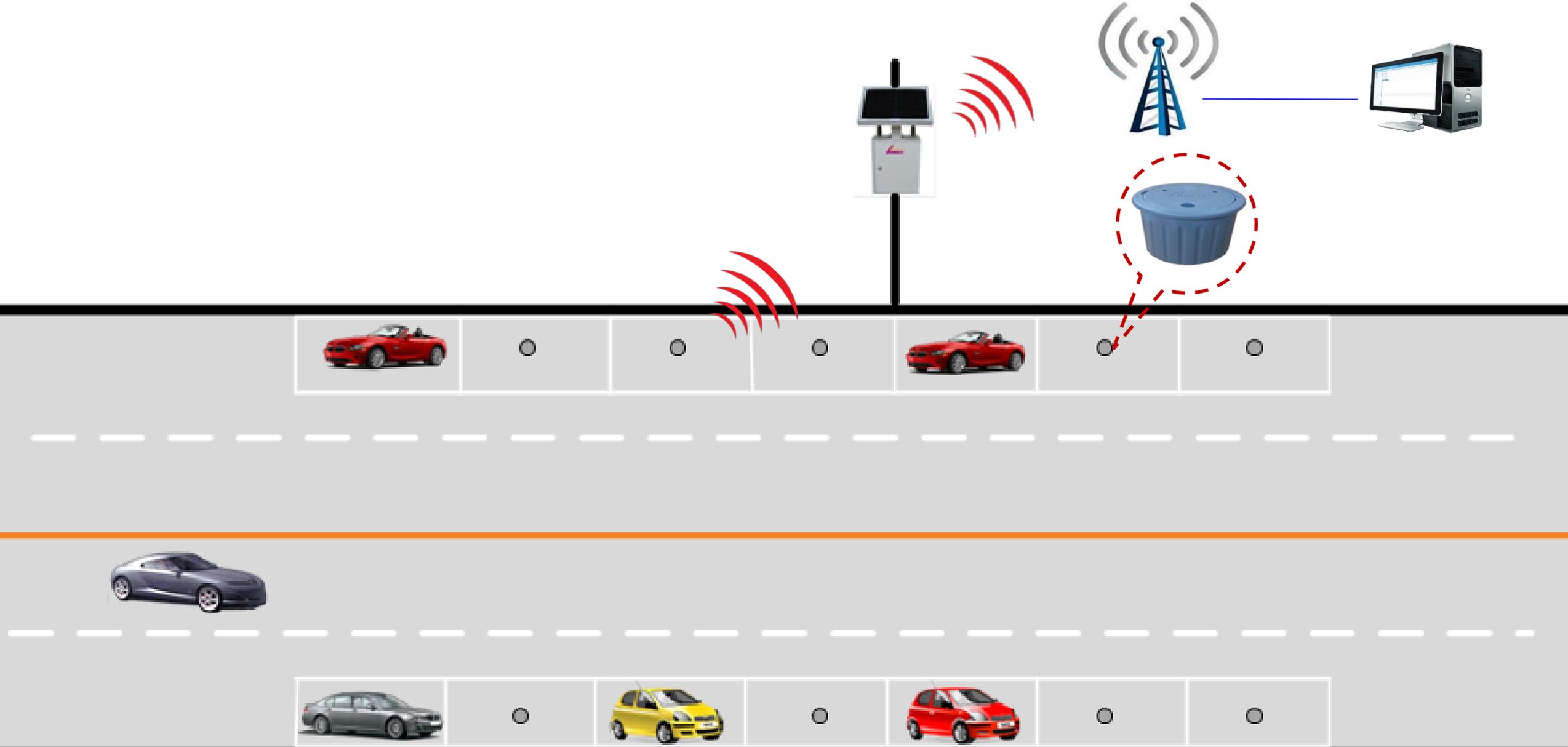
Fangle Technology CO., LTD (China)

Company Introduction



Fangle Technology CO., LTD specialized in researching and developing the equipments and the management and application software businesses in intelligent traaffic field.

2.4G Networking Solution



NB-IoT Networking Solution





2



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GSMA NB-IoT Forum

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