



Mobile IoT Security

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Who is the GSMA?



THE GSMA
WAS FOUNDED
IN
1987

12 OFFICES WORLDWIDE:



LONDON



DUBAI



ATLANTA



BRUSSELS



BARCELONA



HONG KONG



BRASILIA



BUENOS AIRES



SAO PAULO



NAIROBI



NEW DELHI



SHANGHAI



The GSMA
represents
the interests
of mobile
operators
worldwide



UNITING
NEARLY
800
MOBILE
OPERATORS



WITH
300+
COMPANIES
in the broader mobile ecosystem



GSMA events, attract over
200,000+
delegates from across
the globe annually.

The GSMA works to deliver a regulatory environment
that creates value for consumers by engaging
regularly with:



MINISTRIES
OF TELECOMS



TELECOMS
REGULATORY
AUTHORITIES



INTERNATIONAL &
NON-GOVERNMENTAL
ORGANISATIONS



CONNECTING
24,000+
Industry Experts

Exclusively for GSMA Members,
InfoCentre[®] is your place to
connect with a global
community of industry experts

GSMA Working Groups
provide frameworks and
standards in commercial,
operational and
technical matters that help
maintain and advance
mobile industry ecosystems



**EIGHT
BILLION+**
MOBILE CONNECTIONS
WORLDWIDE

The GSMA Board

Our Board comprises 25 members who represent the largest operator groups as well as smaller independent operators with global reach.



Programmes



Identity

Enabling trust and
creating value
through digital
identity



Future Networks

Creating the Network for
secure, smart and
seamless services



Internet of Things

Mobilising the
Internet of Things



GSMA Connected Living Programme

MOBILISING THE INTERNET OF THINGS – ENABLING GROWTH & OPPORTUNITY

CURRENT SITUATION

- IoT is developing rapidly but with significant market fragmentation.
- Operators will add value beyond connectivity.

MARKET GROWTH

IoT M2M
Connections

Forecast Growth

2015	2020
6bn	15bn

Source: Machina Research, 2016

MARKET OPPORTUNITY

Enable Operators to deliver the breadth of IoT solutions required and move up the value chain to achieve full market potential.

\$1.3

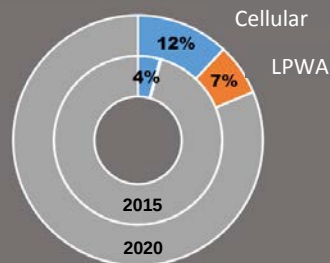
TRILLION

Total IoT Services Revenue
market in 2020

Source: Machina Research, 2016

IoT M2M Connections

as percentage of mobile connections



By 2020 nearly 20% of mobile
connections will be cellular or LPWA =
1.8 billion

FOCUSED DELIVERY ON KEY MARKET ENABLERS

Mobile IoT to develop
licensed
LPWA opportunity and pilots



Customer focused remote
SIM provisioning



IoT Big Data harmonised data
and APIs



Securing the IoT



Sustainable IoT regulatory
& policy environment



Active industry engagement –
Smart Cities, Automotive and
Health



More info on IoT - www.gsma.com/connectedliving

Diversity of IoT Applications

IoT services can be linked by common infrastructure, data sets and technologies.

Mobile operators are able to provide connectivity and managed services for a variety of applications with very diverse requirements.

TRANSPORT	 PUBLIC TRANSPORT	 TRAFFIC MANAGEMENT	 PARKING
ENVIRONMENT	 AIR QUALITY	 WEATHER SENSING	 FLOOD CONTROL
SAFETY	 STREET LIGHTING	 CROWD CONTROL	 CCTV
UTILITIES	 SMART METERING	 WASTE MANAGEMENT	 SEWERAGE
HEALTHCARE	 DISEASE CONTROL	 EMERGENCY RESPONSE	 PATIENT AUTHENTICATION
GOVERNMENT	 CITIZEN ENGAGEMENT	 MUNICIPAL SERVICES	 INFRASTRUCTURE MONITORING
ENTERTAINMENT AND TOURISM	 EVENT MANAGEMENT	 RECREATION FACILITIES	 SHOPPING MALLS
COMMERCE	 DELIVERY LOGISTICS	 RETAIL	 ADVERTISING



Mobile IoT: 3GPP standard technology for LPWA



Mobile IoT refers to 3GPP standardized secure operator managed IoT Networks, in particular low power wide area network

Choice of Technologies

LTE M

NB-IoT

EC-GSM-IoT

Key Features

Low Cost Module

Better Coverage

Long Battery Life

Low data needs

2-ways communication

Key Benefits

3GPP Standards

Global Coverage

Secure

Scalable



Major Development: Growing Mobile IoT Ecosystem

Supported by all major vendors in the mobile ecosystem
Clear roadmap: LTE-M and NB-IoT will become part of 5G standard

Chipsets and modules



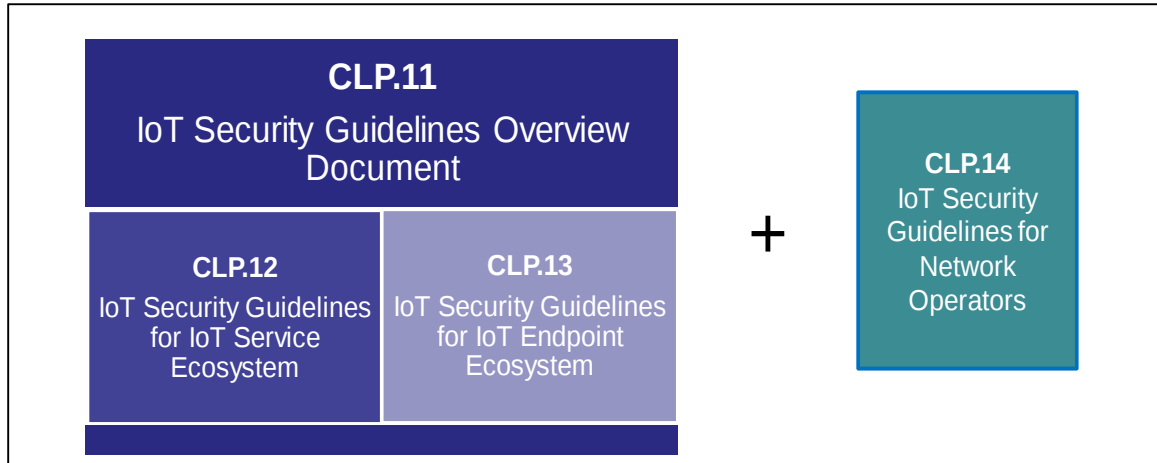
Infrastructure



Sample IoT Model



GSMA IoT Security Guidelines Structure



- IoT Service Providers
- IoT Device Manufacturer
- IoT Developers
- Network Operators

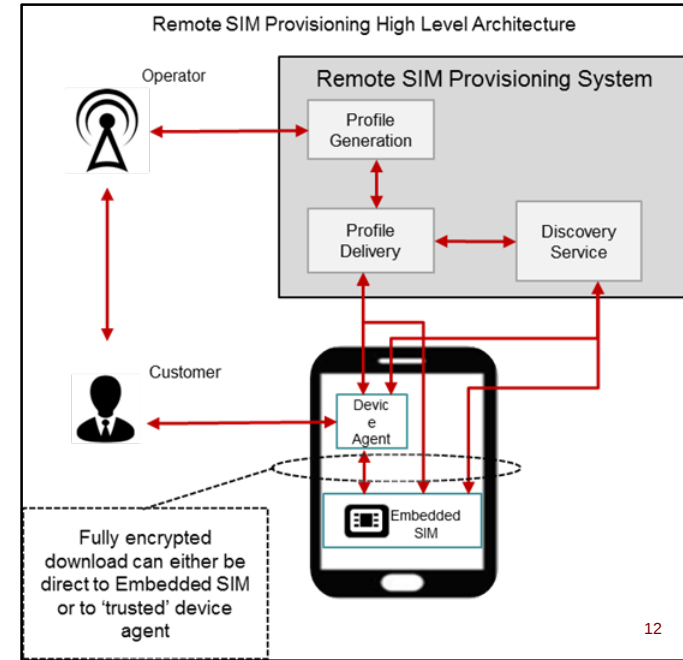
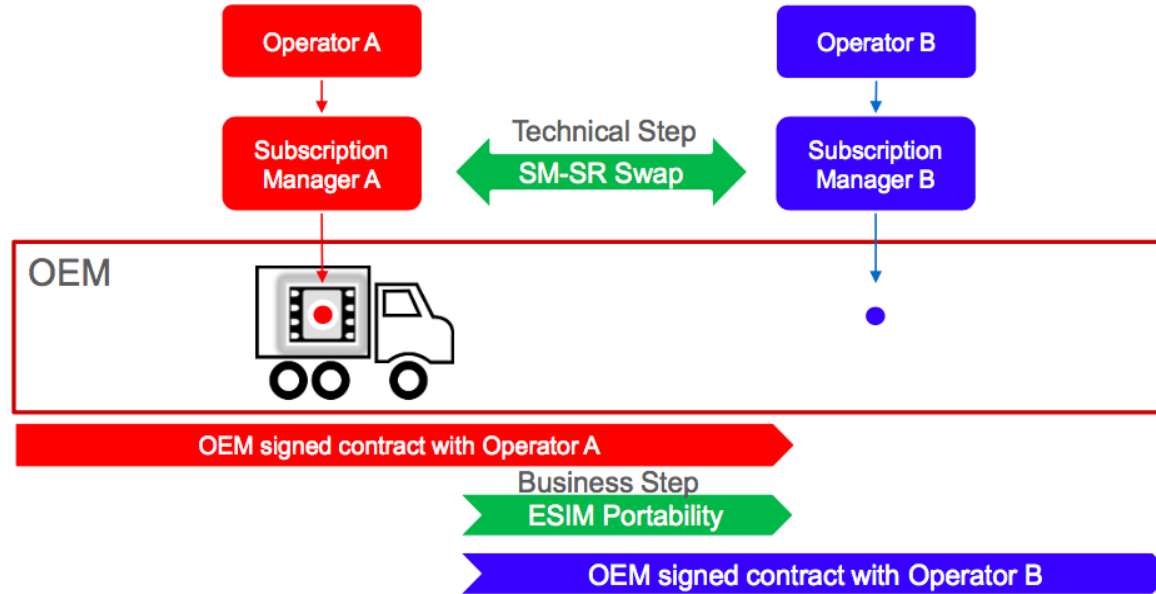


Security Challenges Inherent In The Growth of IoT

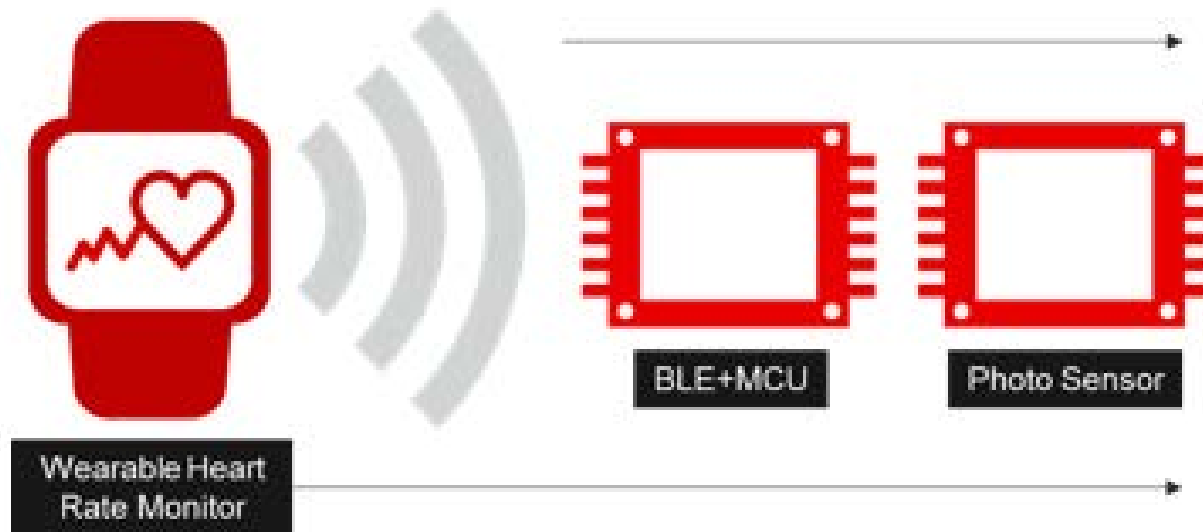
- Availability: Ensuring constant connectivity between Endpoints and their respective services
- Identity: Authenticating Endpoints, services, and the customer or end-user operating the Endpoint
- Privacy: Reducing the potential for harm to individual end-users
- Security: Ensuring that system integrity can be verified, tracked, and monitored



eSIM and Remote SIM Provisioning

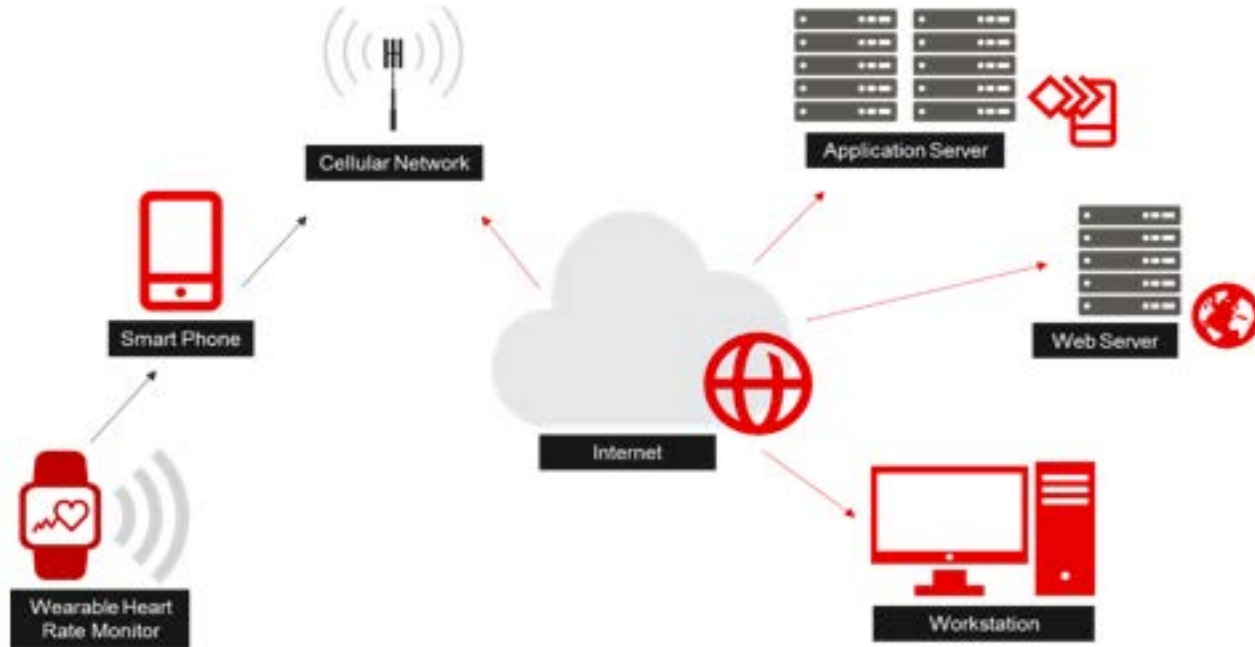


Example – Endpoint Overview

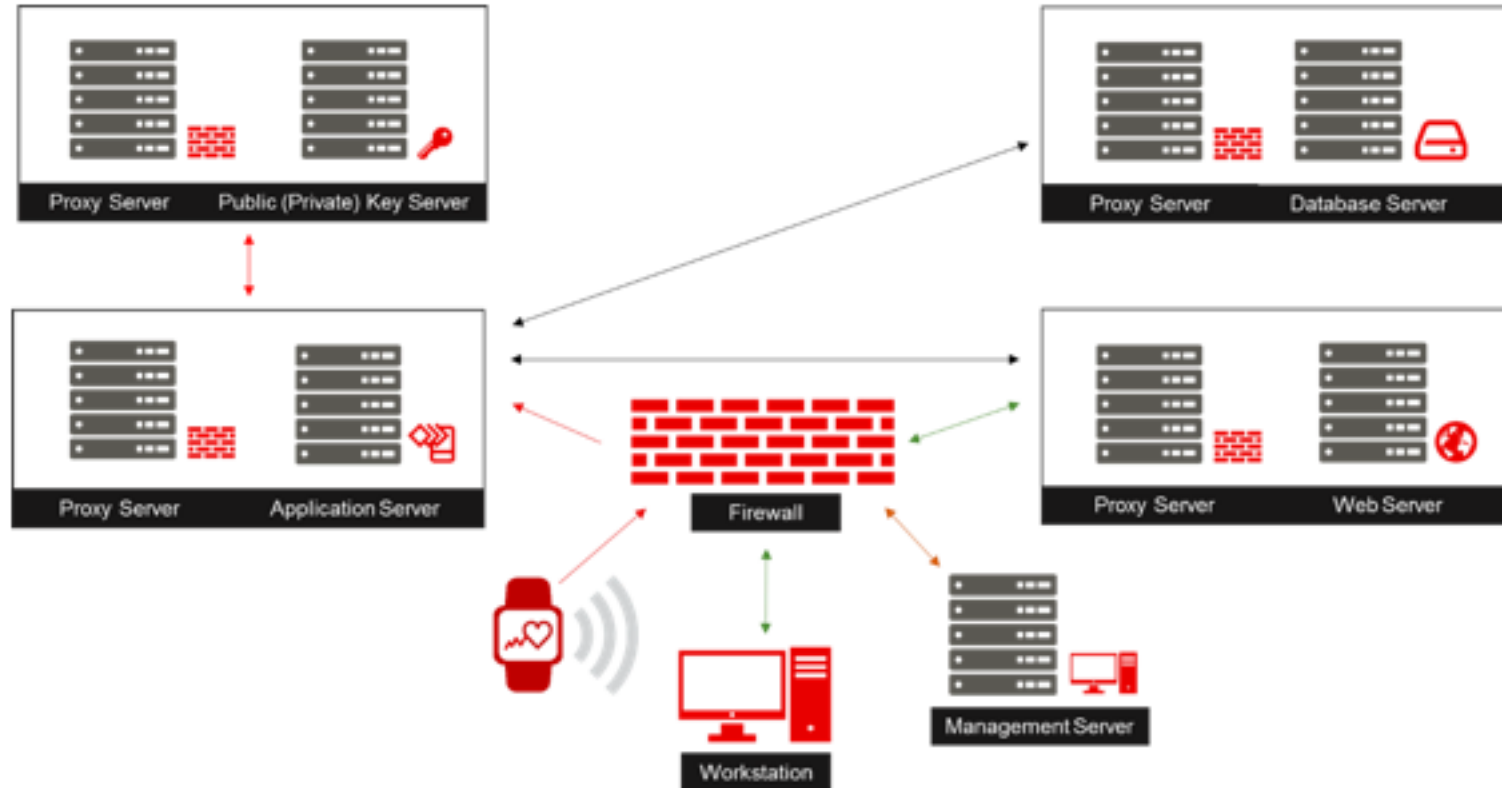




Flow of Data to Simple Back End Service



Resultant Service Ecosystem





Connected Living

Thank you



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