



ITU WORKSHOP ON SPECTRUM MANAGEMENT FOR INTERNET OF THINGS DEPLOYMENT

**GENEVA, SWITZERLAND
22 NOVEMBER 2016**

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Organised by:



ITU Workshop on Spectrum Management for Internet of Things Deployment (Geneva, 22 November 2016)

A New Generation of e-Health Systems

Mr. Alexandre De Masi
University of Geneva, Switzerland

representing WWRF EMW VIP

- Sick-care rather than health-care
- Acute rather than preventive
- Expenditure on Healthcare as share of GDP in %, 2015
 - China, 5.5 %
 - Europe, 10 %
 - USA, 17.1 %[Source: Worldbank]
- All figures expected to grow until 2020 relatively and absolutely
- Absolute healthcare expenditure by 2020
 - Germany, 550 Billion USD
 - China, 1000 Billion USD
 - USA, 5500 Billion USD



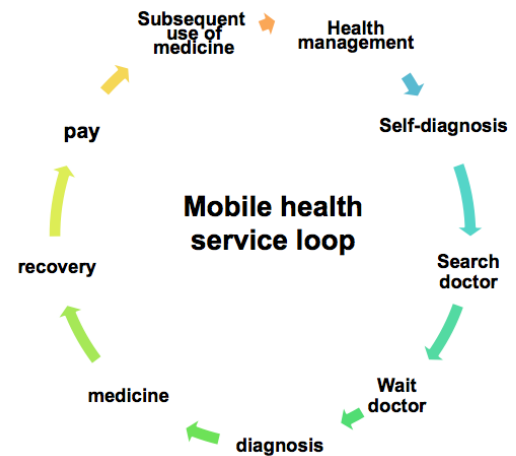
Vision & Scope



- Develop an e/m-Health and wearables vertical industry paradigm to expose the requirements of such systems (HaaS) to be 5G enabled. Get the experts from this vertical industry involved in the WWRF VIP and beyond.
- Scope: the requirements of providing effective healthcare on 5G technology, and the identification of use cases for 5G in the healthcare ecosystem.

- Algorithms
- Software upgrades
- e-delivery (Documents, Digital Images)
- Automated ordering
- Smart medical devices
- Value assets
- Entertainment
- Hospital to home
- Digital assistant
- Security

m-Health service closed loop



Braun Smart Infusion Pumps



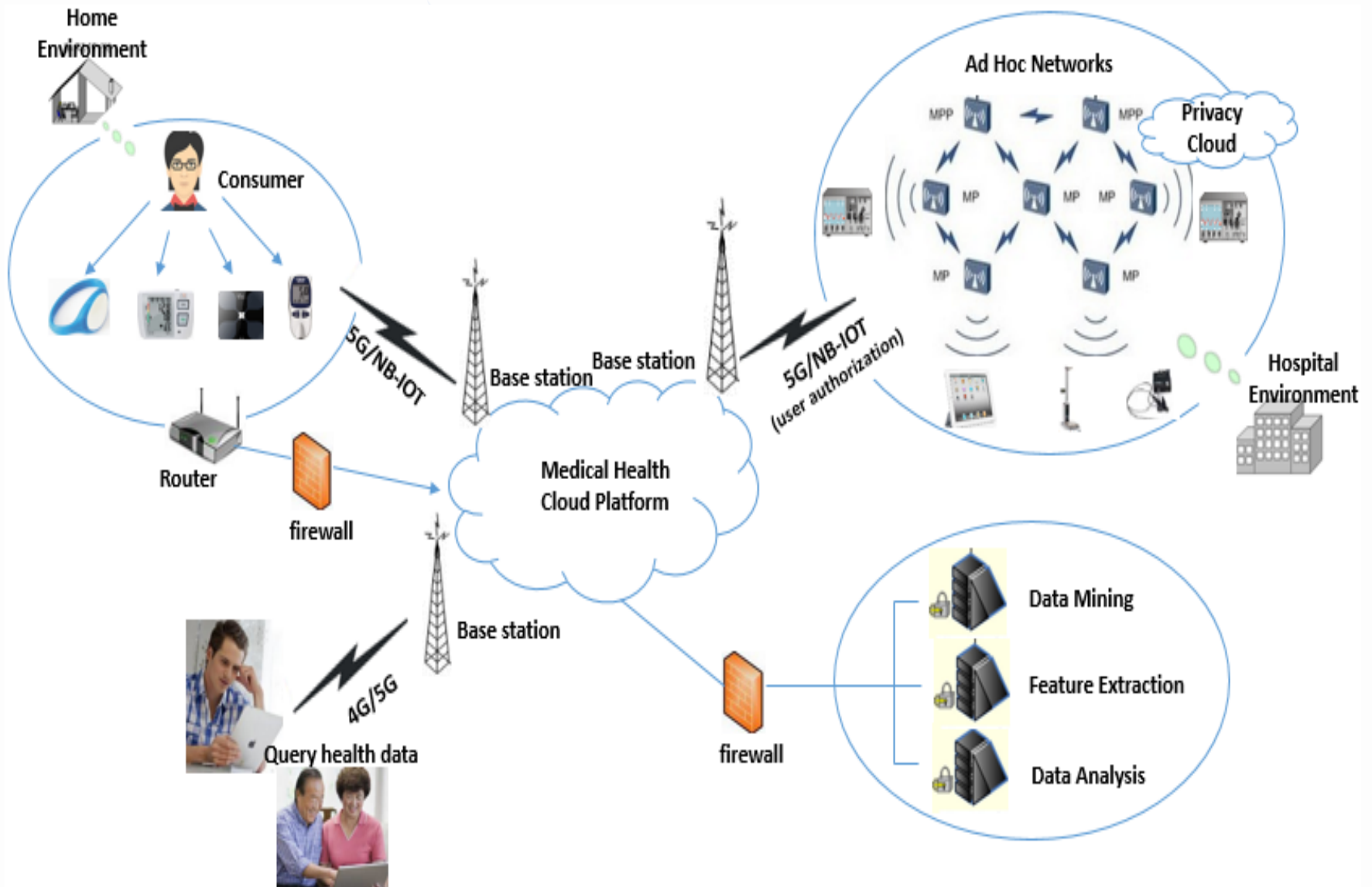
ESYSTA Bluetooth Insulin Pen



Teva / Gecko Smart Asthma Inhaler



Infrastructure



- To meet the diverse requirements of different applications and use case scenarios, the following requirements need to be achieved in the Network:
 - Flexibility: the system can flexibly support the various requirements. For example, reliability, latency, spectrum efficiency, energy efficiency, device form factor and cost.
 - Scalability: the system can be scaled to support new deployment scenarios and use cases.
 - Security: the system need to ensure secured operation.

Requirements

Usage case	Coverage	Download data rate	Upload data rate	Mobility	Reliability	Latency	Battery lifetime
Home	Short/ Wide	<25Mbps	<25Mbps	~1m/s	99.99%	10-100ms	Weeks
Hospital	Short/ Wide	25-200Mbps	25-200Mbps	~1m/s	99.99%	10-100ms	Days
Disaster	Wide	>200Mbps	25-200Mbps	<10m/s	99.99%	<10ms	Days
Pre-hospital emergency	Wide	>200Mbps	25-200Mbps	<500km/h	99.99%	<10ms	Days

Thank you!

Contact us and get involved!

WWRF EMW VIP

wwrf-vip-emw@wireless-world-research.org

<http://tinyurl.com/wwfrehealthwhitepaper>