

Internet of Things in the 5G Era Used in Health monitoring applications

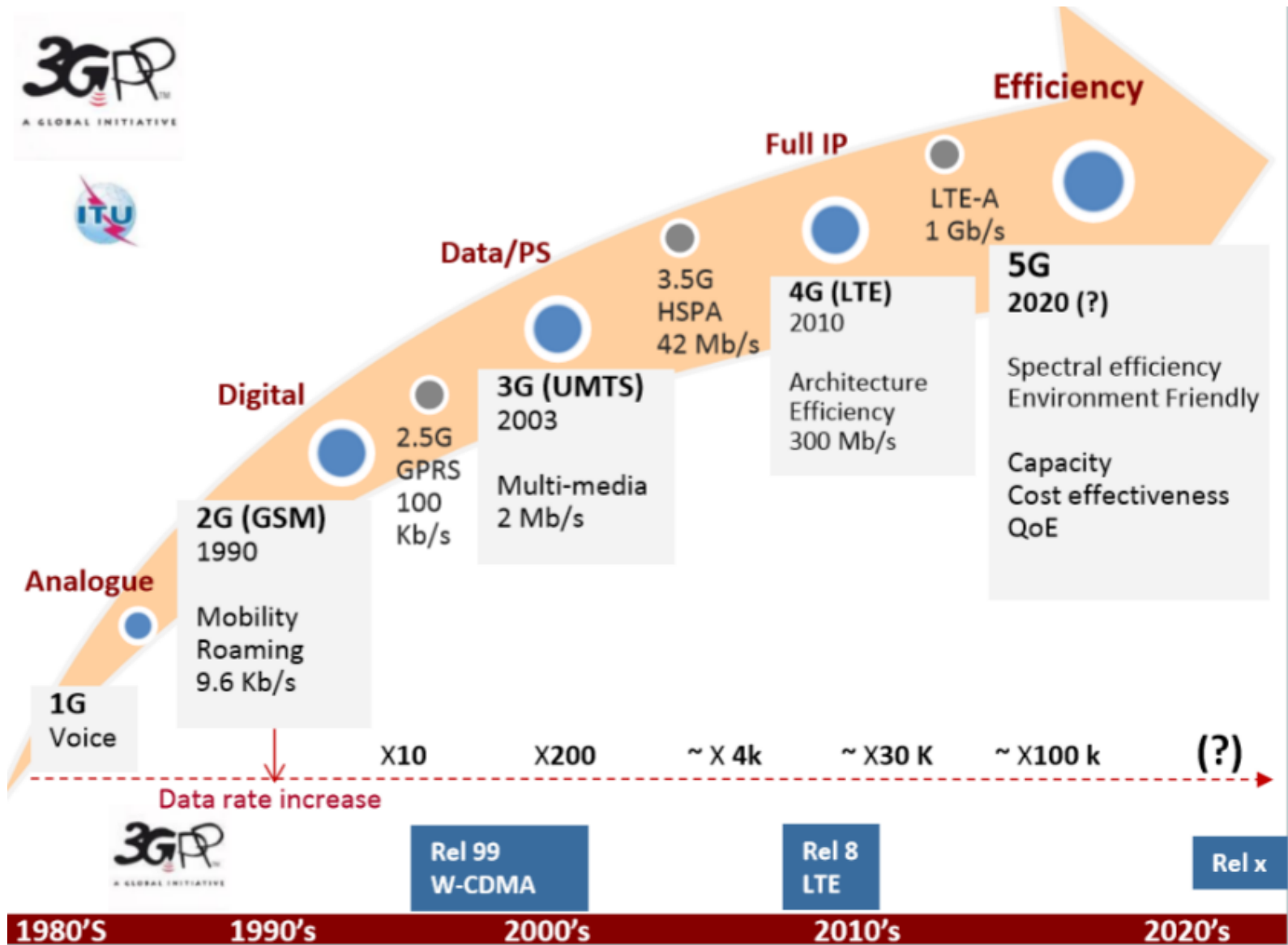
Edited by:
Alireza Piran Kashani

Winter 2018

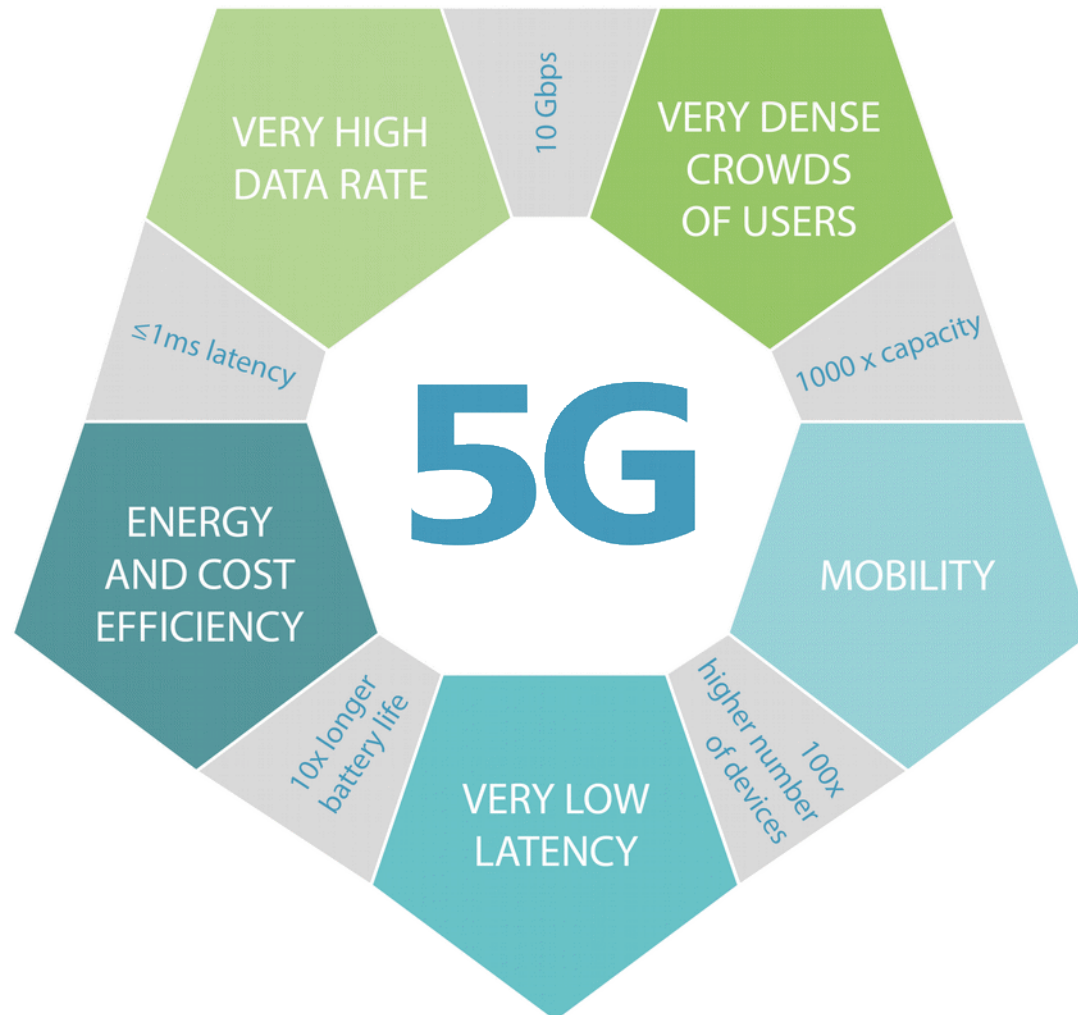
Rough structure

- History
- Technology introduction and specification for 5G
- Cloud servers as reliable storage for IoT big data
- 5G potential capabilities for IoT
- Health monitoring as a used case to combine 5G and IoT
 - IoT functions for Health monitoring
 - Data storage demands for medical data bases

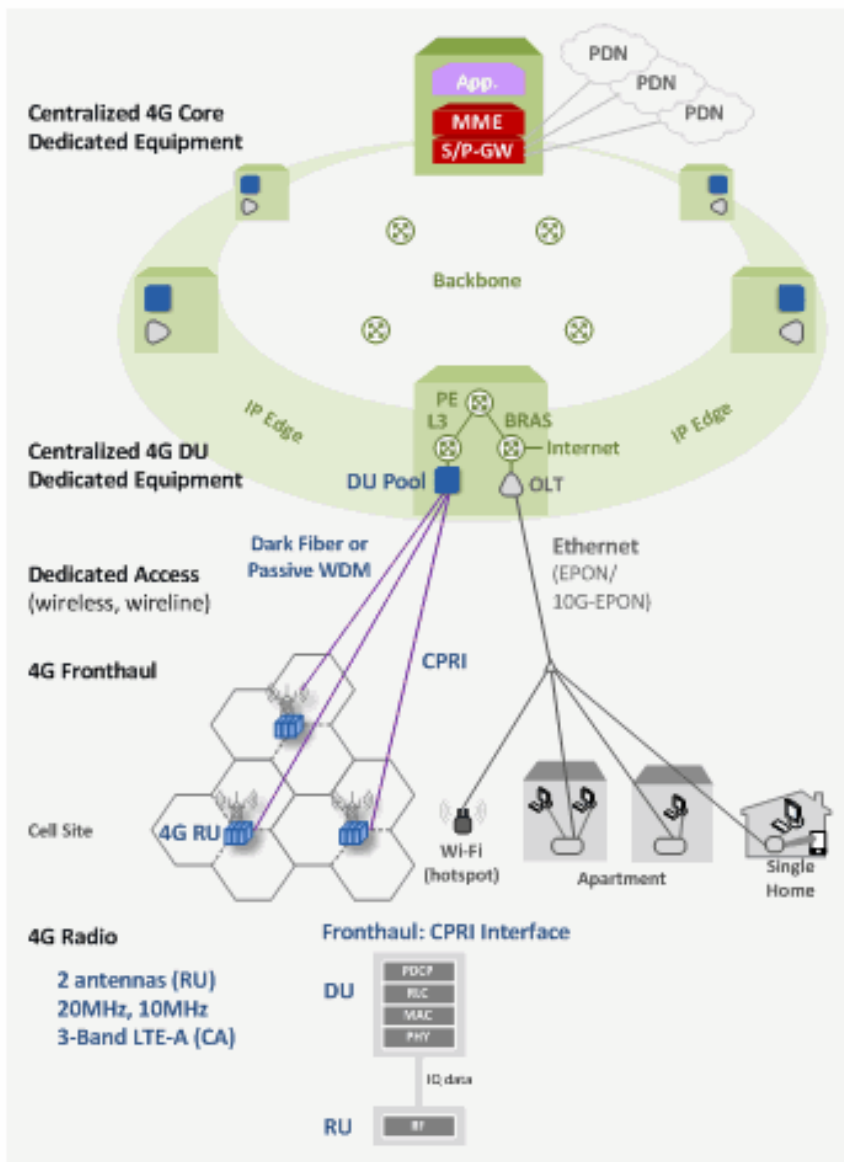
History and Bandwidth



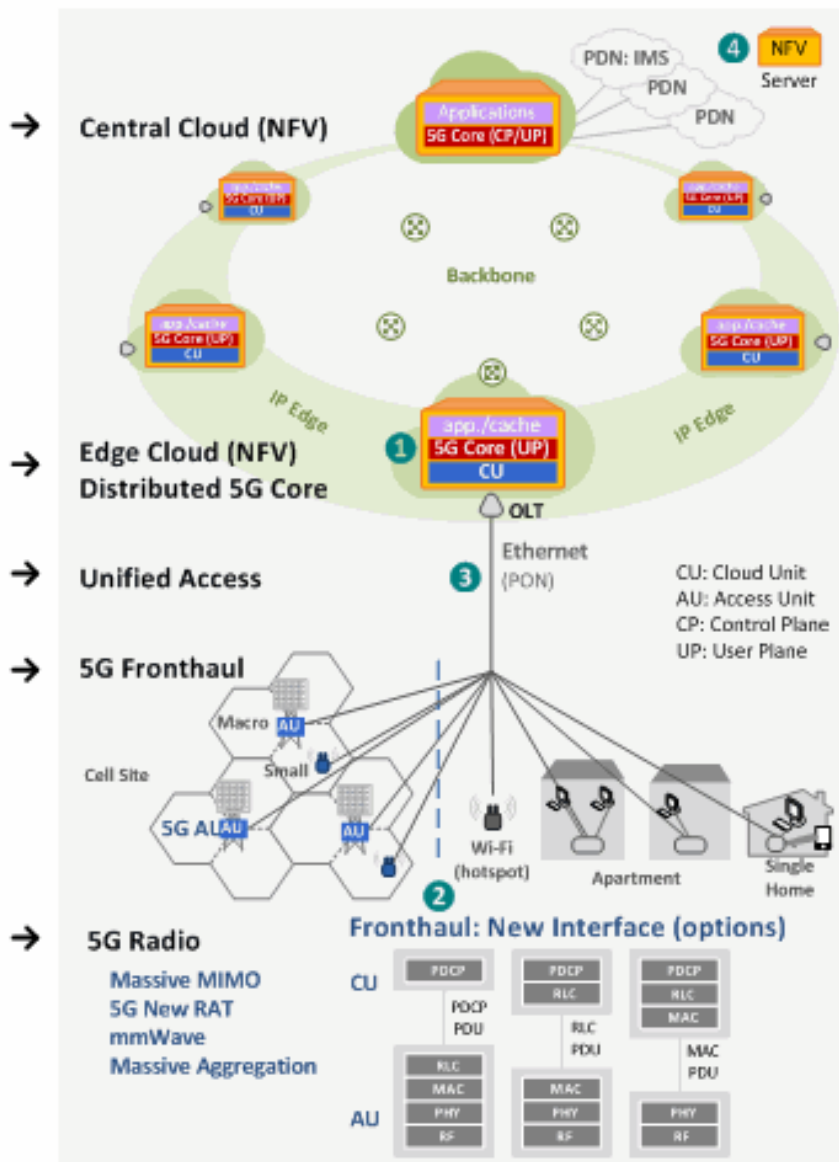
5G introduction



4G Network

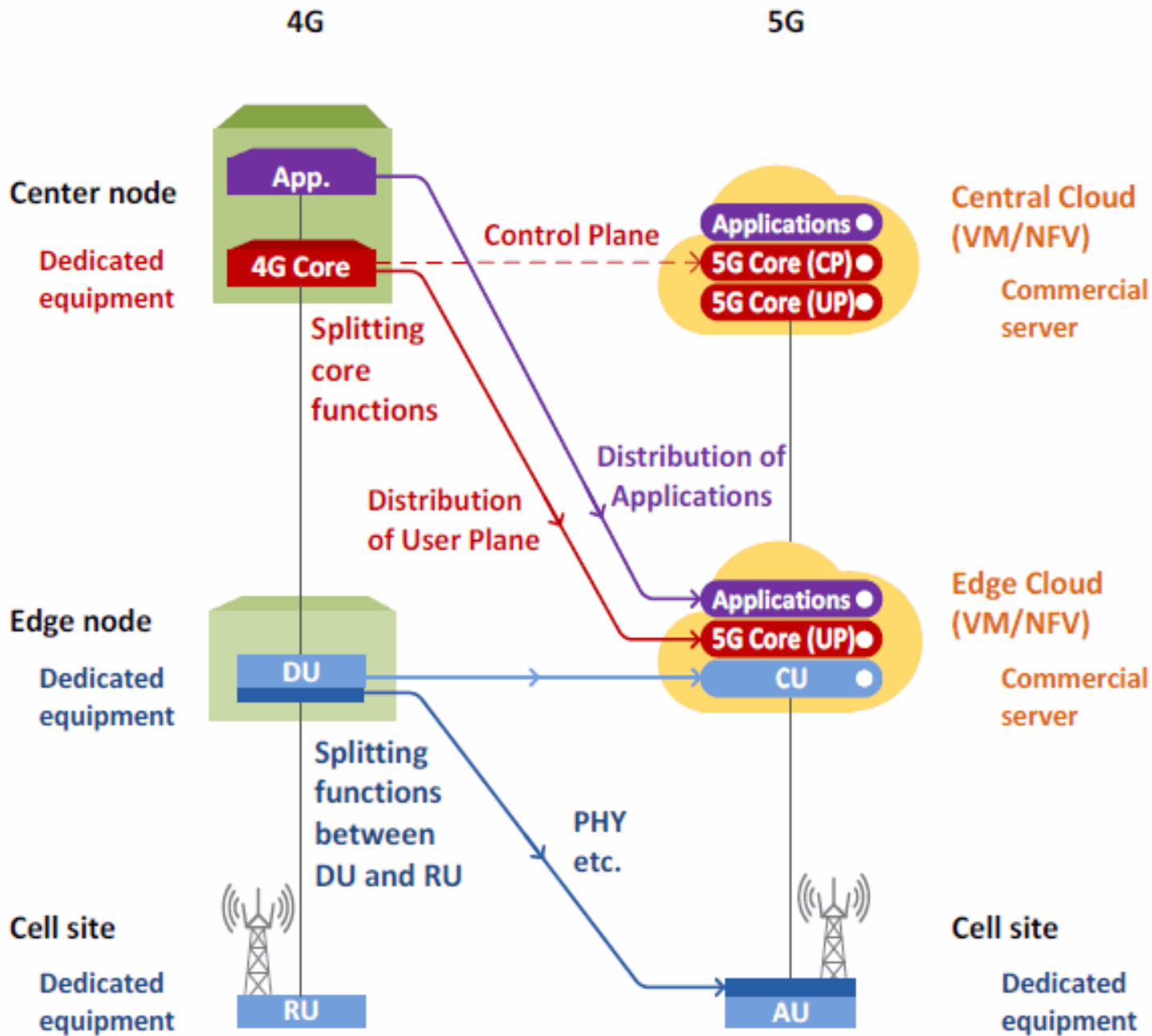


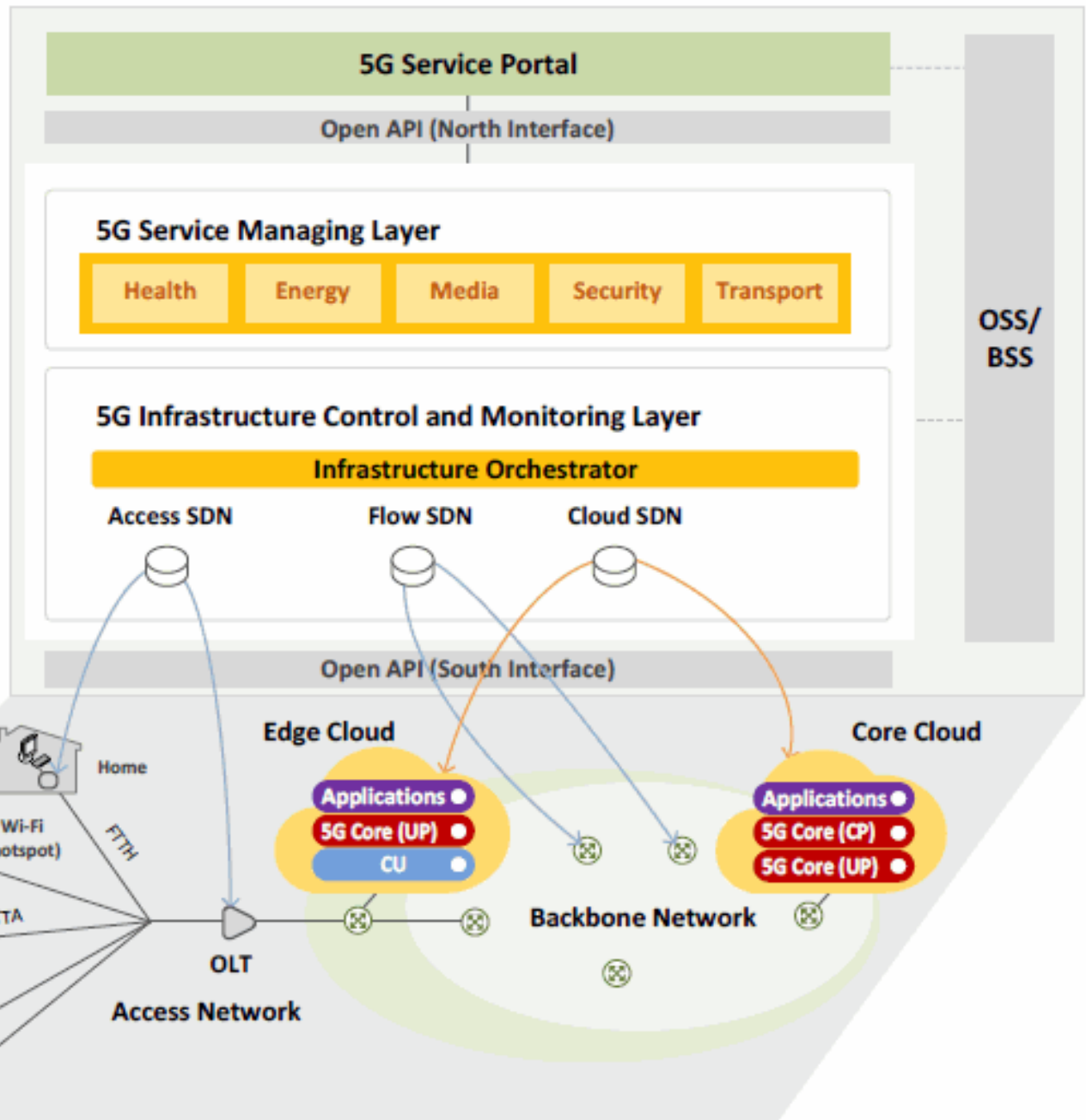
5G Network



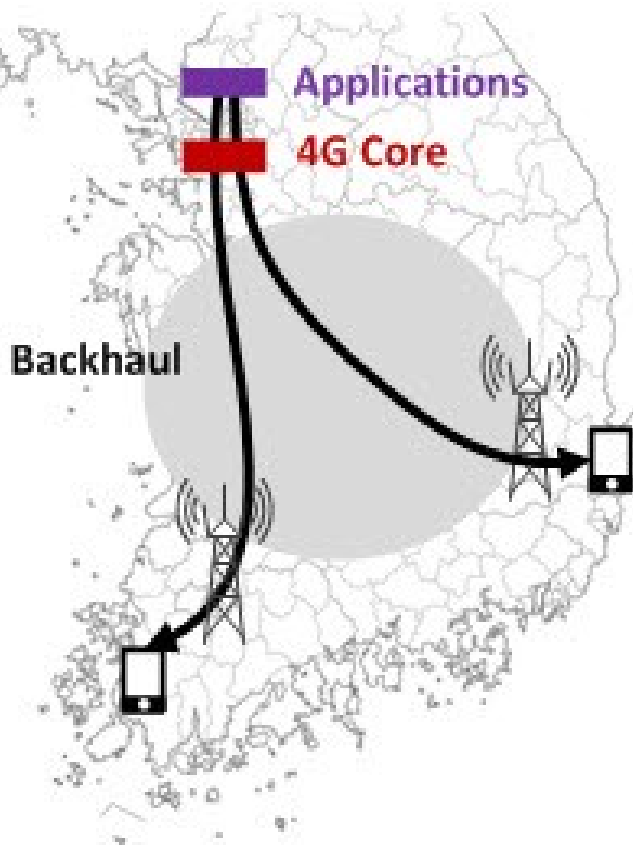
2015

2020

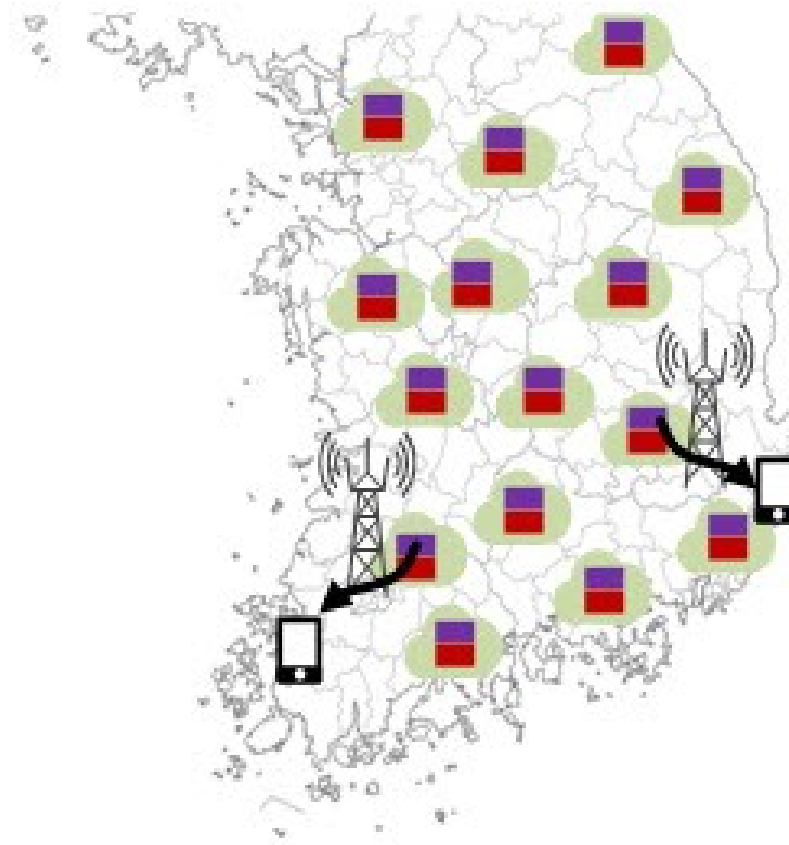




4G

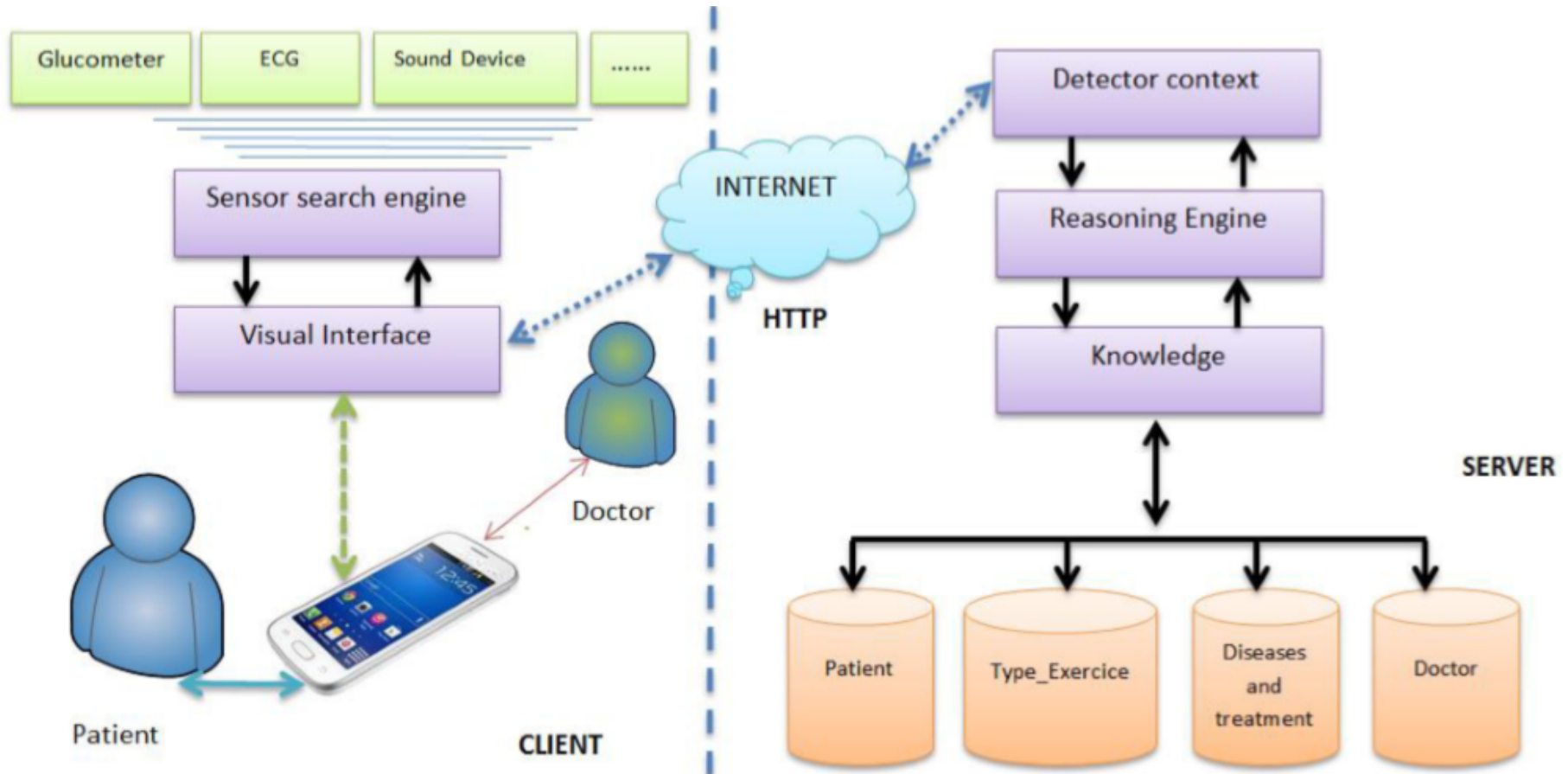


5G



Applications
5G Core (User Plane)
Edge Cloud

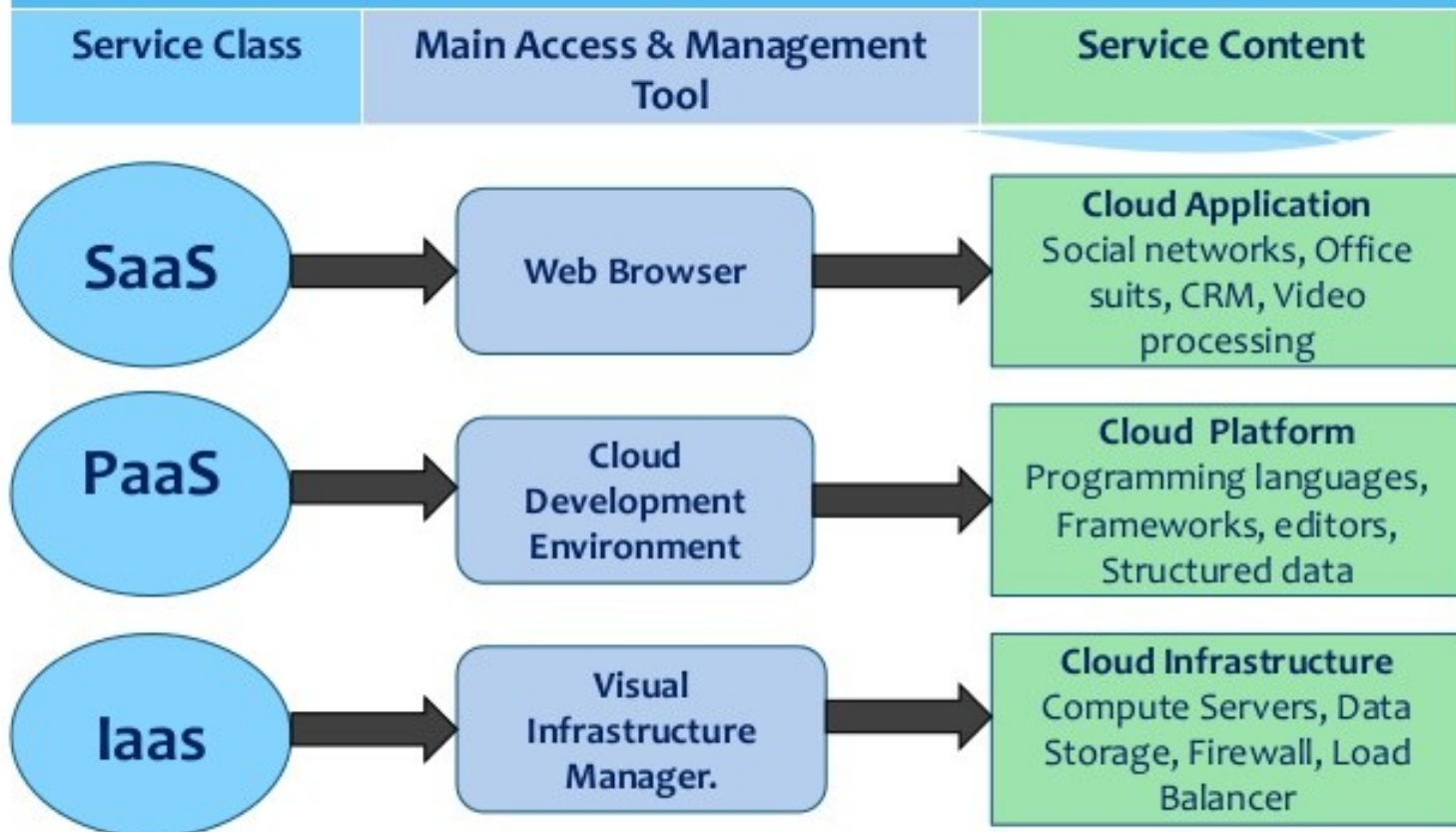
Topology Big Picture



Introduction

- 1. Introduction and motivation
- 2. Background and basic concepts
 - 2.1. Internet of Things
 - RFID
 - (Wireless) sensor networks
 - Addressing
 - Middleware
 - 2.2 Cloud
 - SaaS
 - PaaS
 - IaaS

Service Models

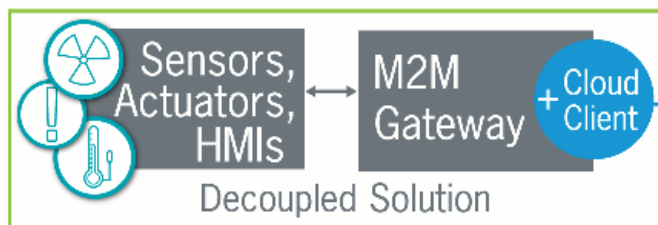


Types of clouds

- Cloud and IoT
- Applications
- Challenges
 - Security and privacy
 - Multi-tenancy
 - Heterogeneity
 - Cloud services
 - Performance
 - Large scale
 - Big data
 - Fog computing



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[click to discover the Decoupled Solution](#)



Everyware Cloud™



Business/
Application
Logic &
Infrastructure



Distributed Device Logic & Infrastructure



“ With Superfast Connectivity, Intelligent Management, and Data Capabilities, the 5G network enables new possibilities in healthcare (Internet of Medical Things) “

Network

SDN and NFV for Back-end Services

Clinical wearables

Smart Gadgets

Remote sensors

Points of Care

- ...

What Internet of Medical Things can Offer?

Imaging

High-speed transmission of X-rays or CT scans

Rural areas or underserved urban populations

Diagnostics

Wearable Gadgets to monitor People and Prevent Emergency

Senior Citizens with Lack of Mobility

Babies


Data Analytics and Treatment

Cancer and Genetics

Real time Data Analysis and Machine Learning

Remote Surgery

Impact

- Bringing High Quality Healthcare Services to Rural areas and Underserved communities
 - Point of care Testing (POCT)
 - Home health therapies for chronic diseases
 - Less Hospital Admission and Occupation
 - Less Shortage in Nurses and Doctors
- 

Companies with the Insight

AT & T (Center for Connected Health in Texas)

Siemens (Point of Care)

Qualcomm (qualcommmlife)

Philips (HealthSuite)

- OHSU and Intel (Cancer Cloud)

Patient monitoring system using IOT

- share Info's faster and more accurately
- 500 million people use medical App on their smartphone (telehealth system)
- monitoring of patients with heart diseases, cancer and blood pressure

How the IOT is Revolutionizing Healthcare

- IOT increase the quality of care
- IOT reduce the cost of care
- Patient's data in Remote locations
- Clinical care
- Remote monitoring

Advantages of using the Internet of Things in the healthcare system

- Low Costs (reducing the doctor visits, cut down on hospital stays)
- better results of treatment (ability to access real time information)
- Improved Disease Management
- Reduce Errors
- timely intervention by physicians lead to better results

Disadvantages of using the Internet of Things in the healthcare system

- Monitoring Devices controlled by hackers
- Monitoring Devices are able to take the decisions

Telemedicine using IOT





Questions?

Thank You

