3GPP TSG SA1 Meeting #69
Sanya, China, Feb 2 ~ Feb 6 2015

5G Core Network
(SKT's view)

S1-150083

Agenda Item: xx

Source: SK Telecom
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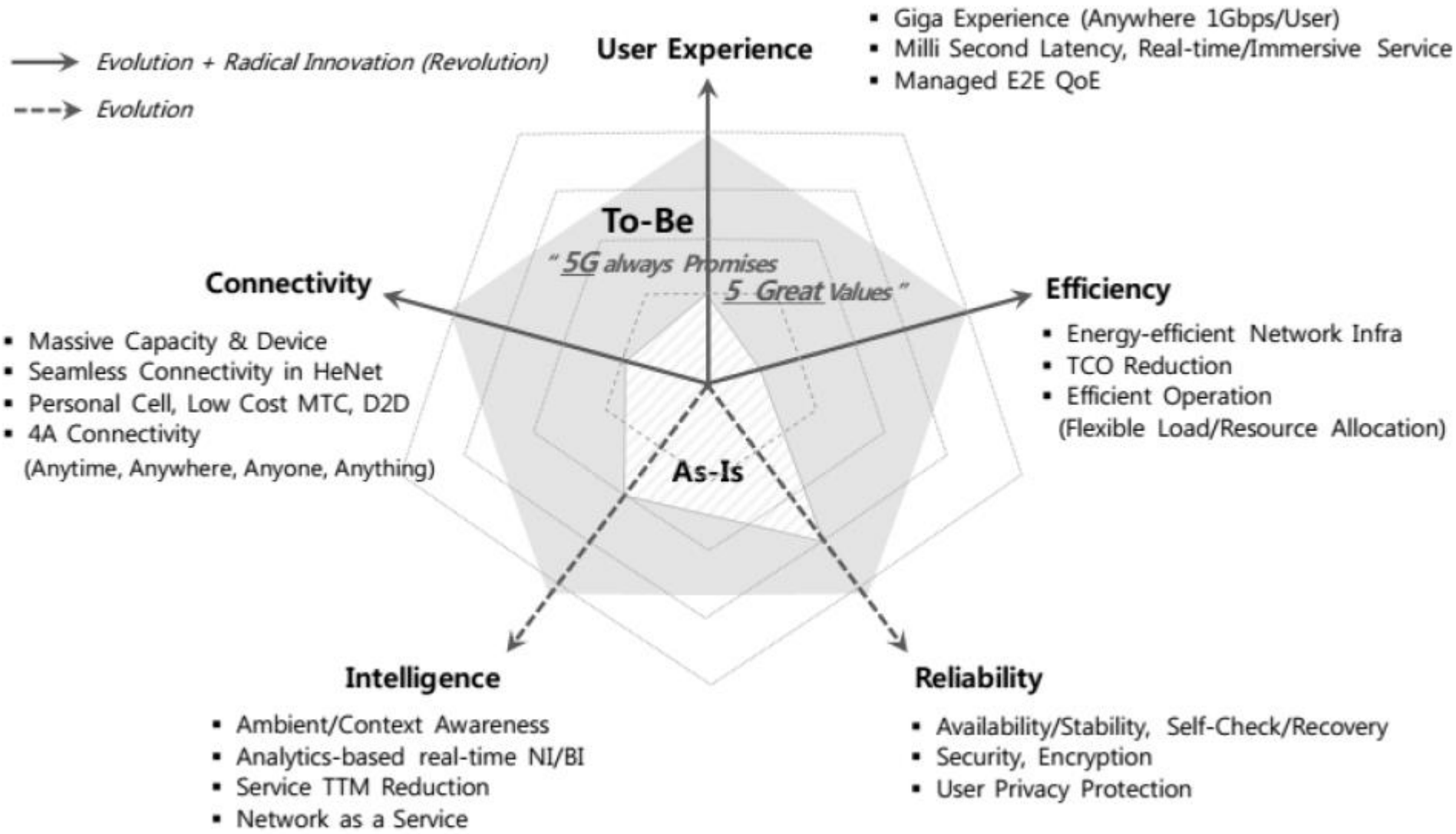
Partner for New Possibilities

SKT's 5G Vision: 5G always promises 5 Great Values



SKT's 5G White Paper: http://www.sktelecom.com/img/pds/press/SKT_5G%20White%20Paper_V1.0_Eng.pdf

5G Key Requirements (from SK Telecom's White Paper)

① User Perspective: **"Ultra High Speed & Low Latency"**

- Achieve 1000x fast data transfer speeds as LTE, ultra-low latency response time of less than a few milliseconds and realistic contents

② Performance Perspective: **"Massive Connectivity"**

- Accommodate 1000x more devices and traffic and secure seamless connectivity (4A Connectivity – Anytime, Anywhere, Anyone, Anything)

③ Architecture Perspective: **"Flexible/Intelligent Network"**

- Provide S/W-based structure, analyse data in real time and provide intelligent/personalized services

④ Operation Perspective: **"Reliable/Secure Operation"**

- Secure more than 99% of network availability and reliability as well as self-healing/reconfiguration

⑤ Management Perspective: **"Energy/Cost-Efficient Infra"**

- Achieve a 50-100x higher energy efficiency as LTE and low-cost infrastructure/devices

SKT's 5G White Paper: http://www.sktelecom.com/img/pds/press/SKT_5G%20White%20Paper_V1.0_Eng.pdf

5G Service Examples (from SK Telecom's White Paper)

6.1. Hologram & Immersive Multimedia Services

6.2. Large-scale Immersive AR/VR Services

1 Immersive Multimedia Services

6.3. Ultra-Low Latency Services

6.6. Public Safety & Disaster Recovery Services

2 Real time & Reliable Services

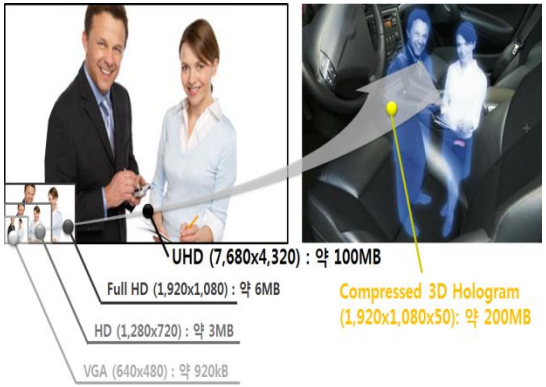
6.4. Massive Connectivity IoT Services

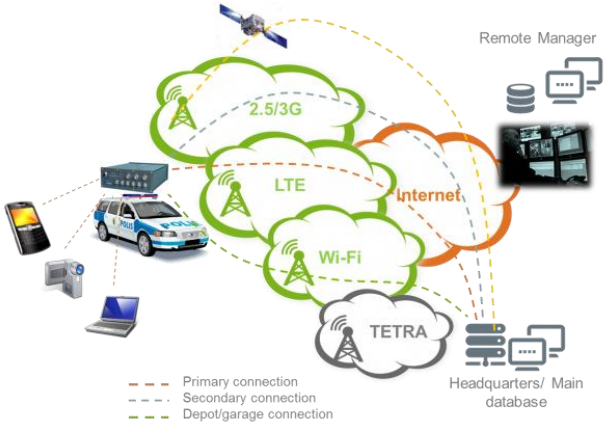
6.5. Big Data based Intelligent Services

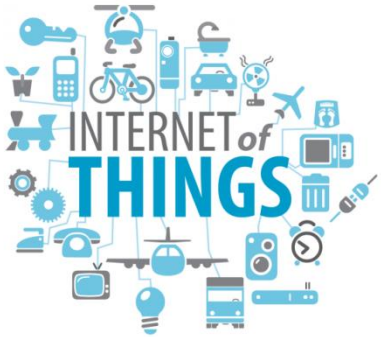
3 Personalized / Specialized Services

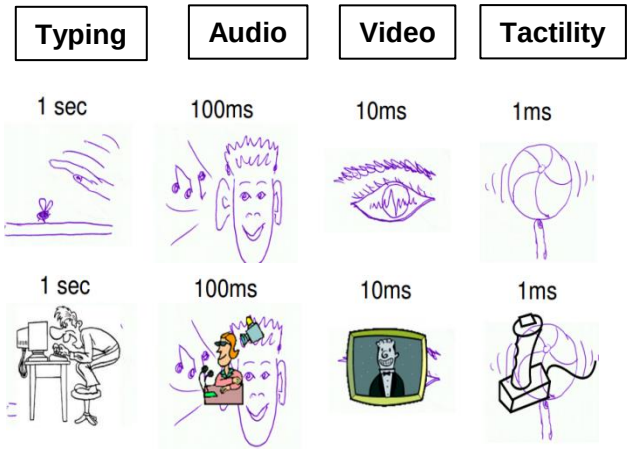
5G Core Network Evolution

1. Immersive Multimedia Services
2. Real time & Reliable Services
3. Personalized / Specialized Services





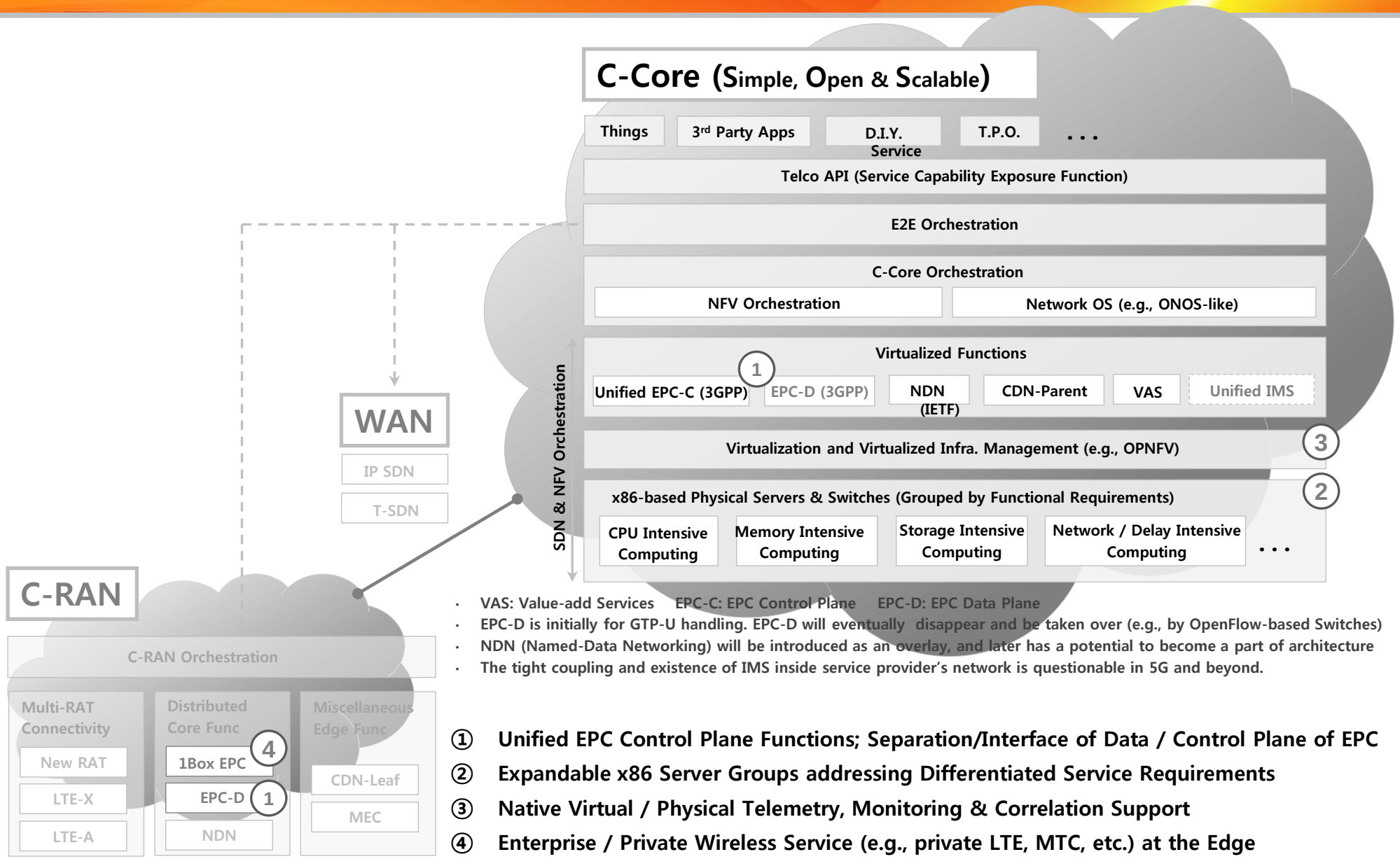




Main Concerns: Higher Scalability, Performance & Reliability

- Network & Big Data Infra CAPEX/OPEX (Scalability)
- Ultra low latency & High bandwidth for Tactile Internet Services (Performance)
- Highly reliable communication, even during the disasters (Reliability)

C-Core High Level Architecture (Logical View) & Potential Study Items



- VAS: Value-add Services EPC-C: EPC Control Plane EPC-D: EPC Data Plane
- EPC-D is initially for GTP-U handling. EPC-D will eventually disappear and be taken over (e.g., by OpenFlow-based Switches)
- NDN (Named-Data Networking) will be introduced as an overlay, and later has a potential to become a part of architecture
- The tight coupling and existence of IMS inside service provider's network is questionable in 5G and beyond.

① Unified EPC Control Plane Functions; Separation/Interface of Data / Control Plane of EPC

② Expandable x86 Server Groups addressing Differentiated Service Requirements

③ Native Virtual / Physical Telemetry, Monitoring & Correlation Support

④ Enterprise / Private Wireless Service (e.g., private LTE, MTC, etc.) at the Edge