

Korea's Roadmap Towards 5G

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Ministry of Science and ICT



Ministry of Science

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Information
Technology

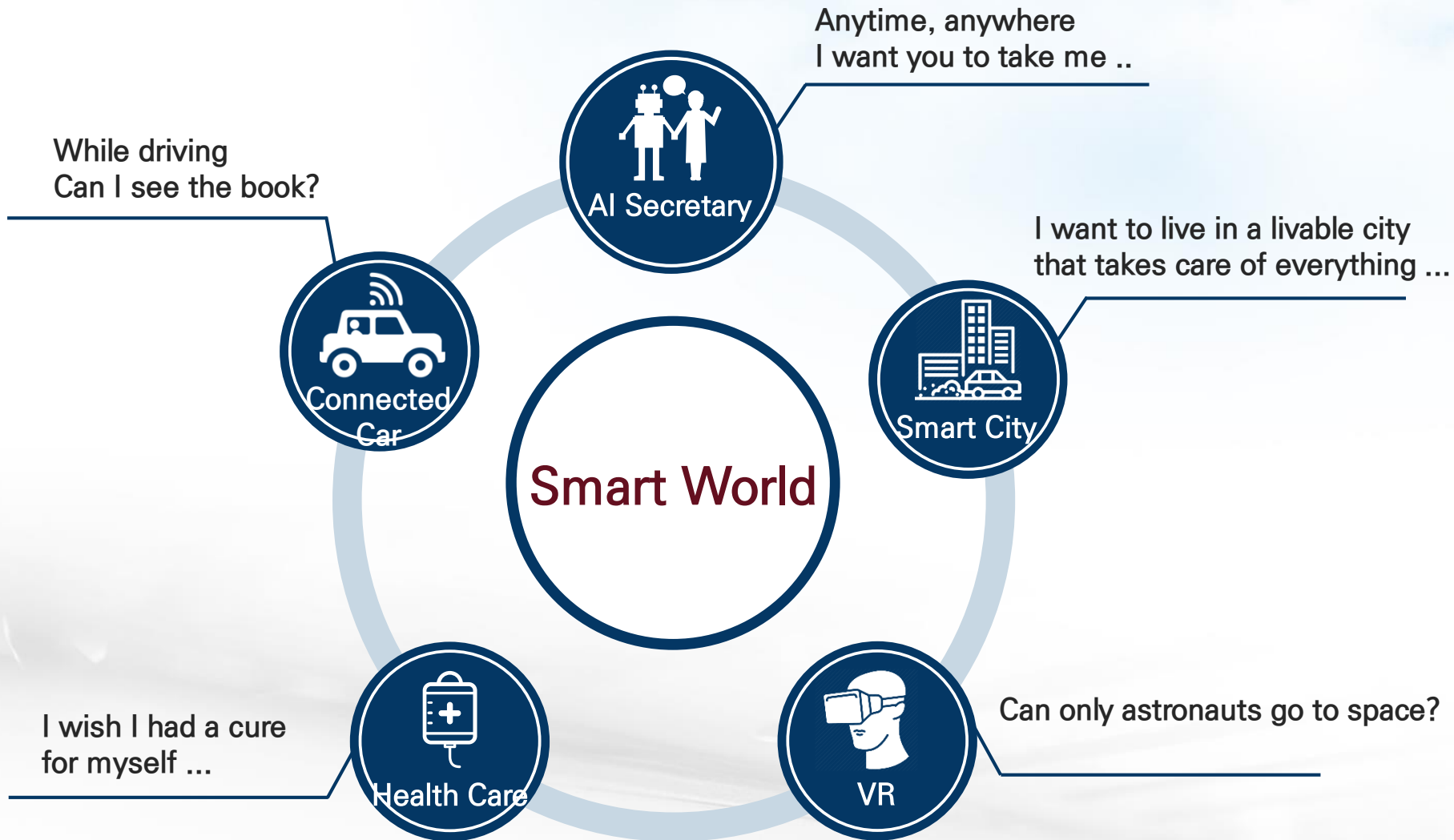
5G Vision – Smart World

A company

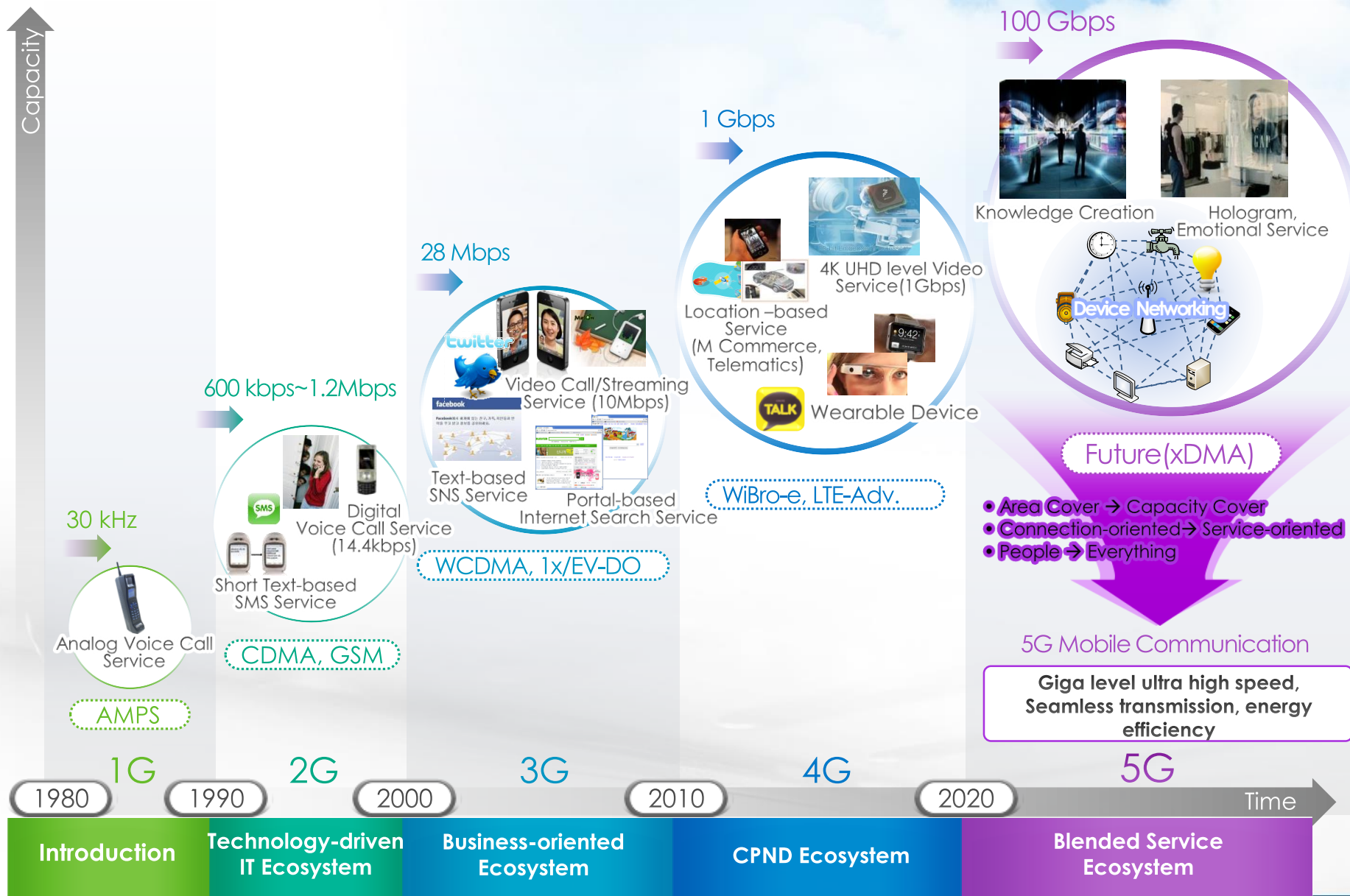
B company

C company

Smart World = The Fourth Industrial Revolution Era



Evolution of Mobile Communication Service



5G as a Key Tools of The Fourth Industrial Revolution

National Core Industry

Domestic mobile communication industry as a national core industry leading economic growth with forward and backward linkage effects

※ 19% of ICT production

Melting Pot for Whole Industry

In association with contents, platform, and device, expected to play a role as a melting pot for the whole industry

Enhancement of Competitiveness

by securing 5G technology and constructing infrastructure

Intensive investment in R&D project in National level to secure the initiative in 5G

Competition over Initiative in 5G

Able to create national growth engines by taking a preemptive action toward evolution of 5G mobile communication

Creating National Growth Engines

5G as a Key Tools of The Fourth Industrial Revolution

5G is a key infrastructure of the 4th Industrial Revolution including Connected Cars, Smart factory, and Smart city beyond inter-personal communication

Enhanced Mobile Broadband

High data rate

4K/8K UHD

Hologram



VR/AR(Virtual/Augmented Reality)



Demanding conditions

Broadband Access in Dense Areas

High-speed Mobility



Massive hot spots /Smart office



Moving hot spots/ High-speed train

Low Latency Services

Ultra-high reliability/low latency

Tactile Internet



Remote-control robot/machines



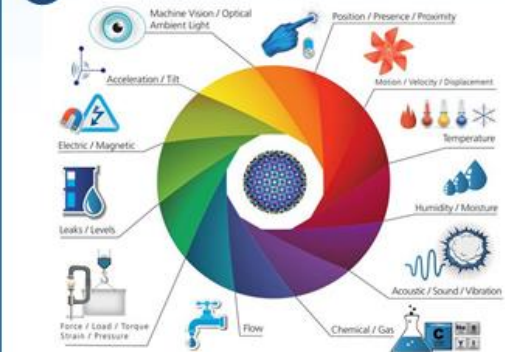
Connected cars (V2X)



Massive Internet of Things

Massive connectivity

Remote sensors/actuators



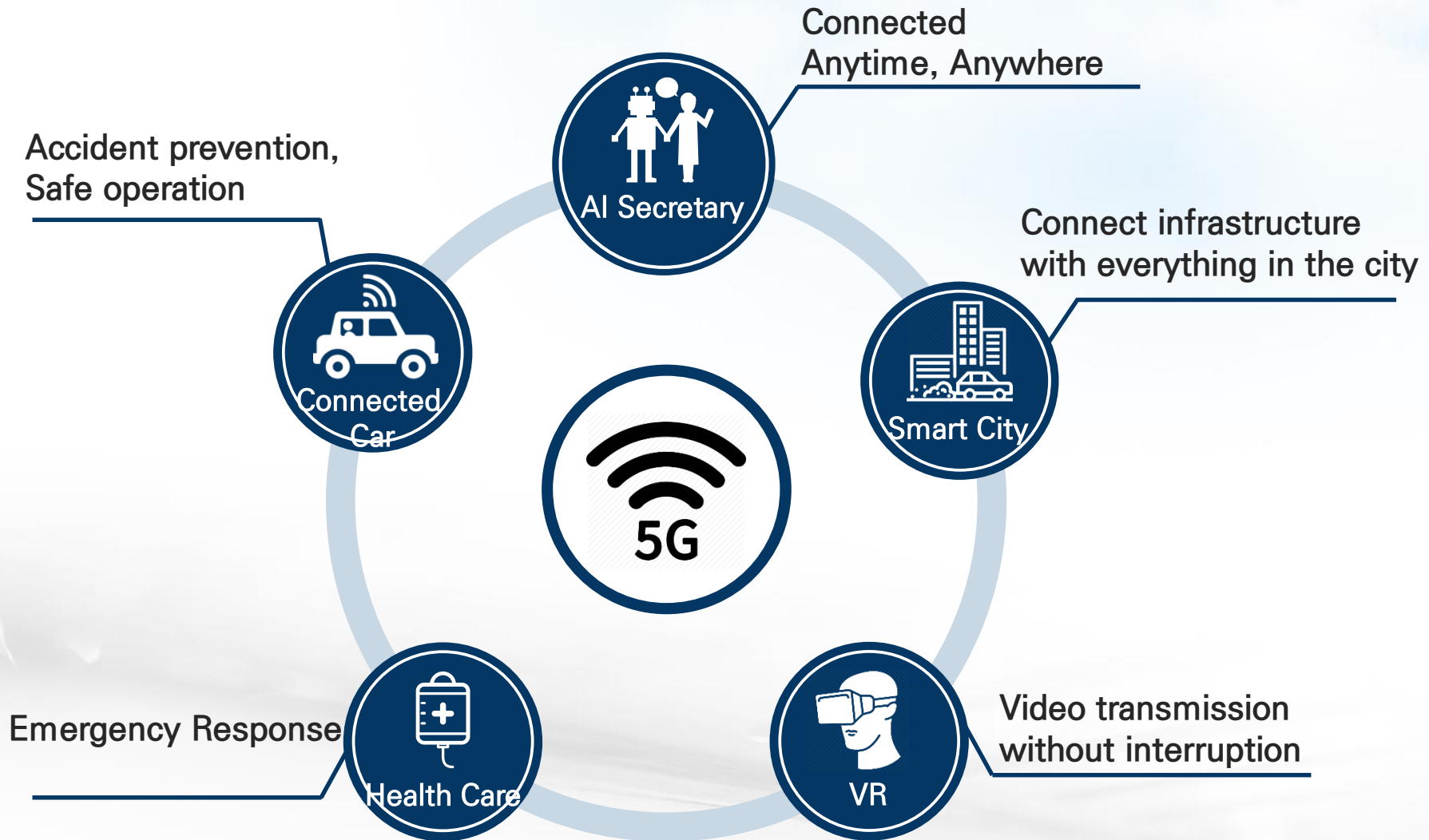
Smart city-home



IoT 5G IoT



Realization of the 4th Industrial Revolution: 5G Essential !





Information
Technology



- A company
- B company
- C company

Roadmap towards 5G

PyeongChang Olympic (9th~25th Feb, 2018)

World's 1st
5G Olympics



Convenient
IoT Olympics



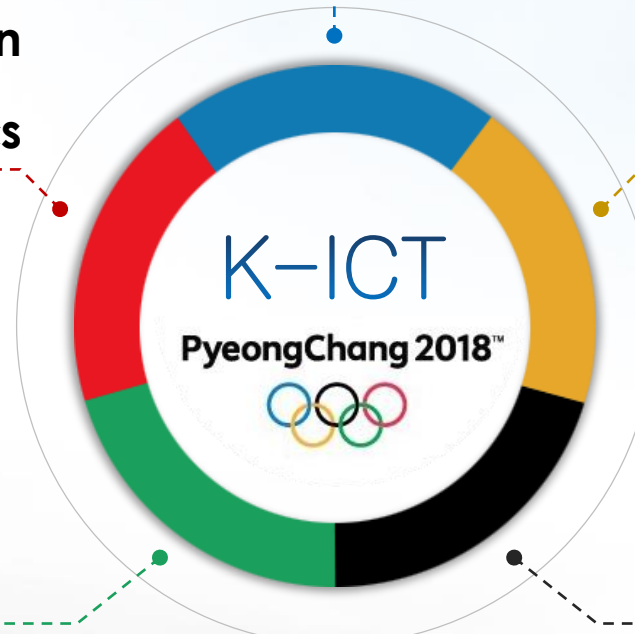
Inspirational
UHD Olympics



Smart
AI Olympics



Fun
VR Olympics



Test/Upgrade 5 Key ICT Services

Promote to the World

Prepare for Global Markets

PyeongChang 5G Trial Service

2015 2016 2017 2018 2019

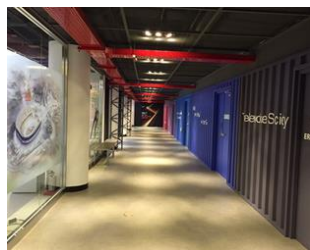
5G Test Lab Open

5G Test N/W (Seoul, PyeongChang)



5G trial

5G Commercial service



First test event

Second test event



SYNC VIEW



SYNC VIEW



Massive drone



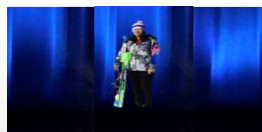
360° VR



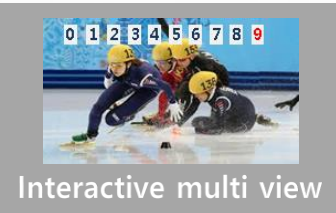
Omni point view



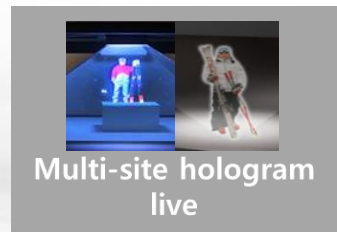
5G autonomous bus



Hologram live



Interactive multi view



Multi-site hologram live



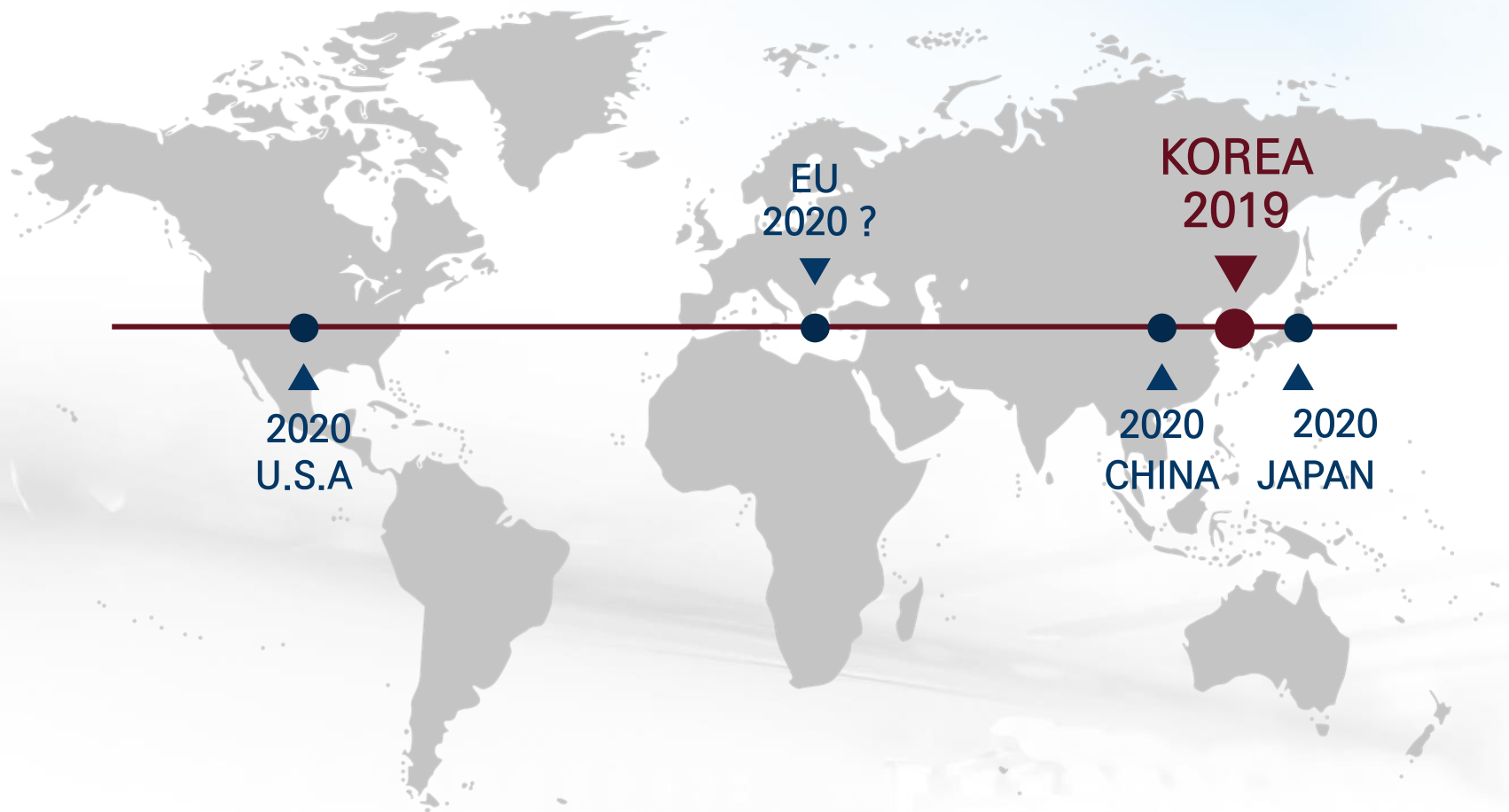
Time slice

5G Commercialization



Commercialization

2019 1st Half, World First **5G Commercialization**



5G Frequency Auction Plan

Source: MSIT


	Frequency Band	Bandwidth	Timeline	Block width
Sub 6GHz	3.3 ~ 3.6G	300M	'18.6 ¹⁾	100M, 50M, 20M
Above 6GHz	26.5 ~ 27.5G	1GHz	'18.6 ²⁾	400M, 200M, 100M
	27.5 ~ 28.5G	1GHz	'18.6 ¹⁾	400M, 200M, 100M
	28.5 ~ 29.5G	1GHz	'18.6 ²⁾	400M, 200M, 100M

Note 1) Decided
2) Planned

Pilot Project for 5G Convergence Service

1 Background

- 1 5G Commercialization ('19.1H)
- 2 5G = Key Infrastructure for the 4th Industrial revolution
- 3 New growth engines for Mobile industry



[5G + Verticals
Convergence
Services]

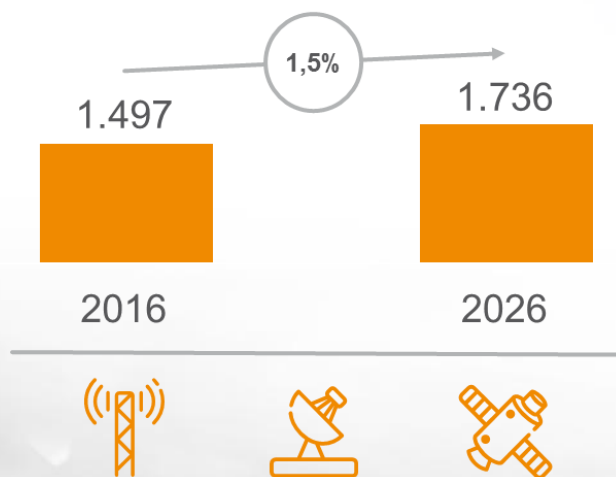
➔ Demonstrate regulatory improvements
Reduce private investment risks

Pilot Project for 5G Convergence Service

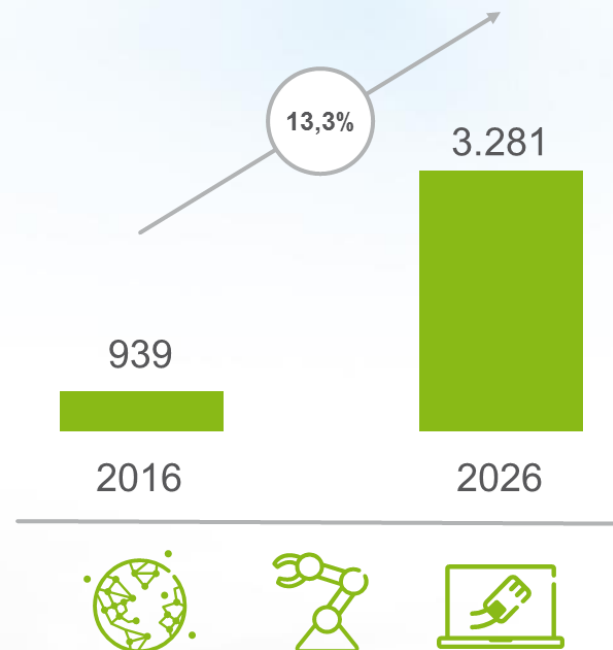
2 Market Forecast

Current operator service revenues

USDbn
CAGR
16'-26'



Industry Digitalization revenues for ICT players

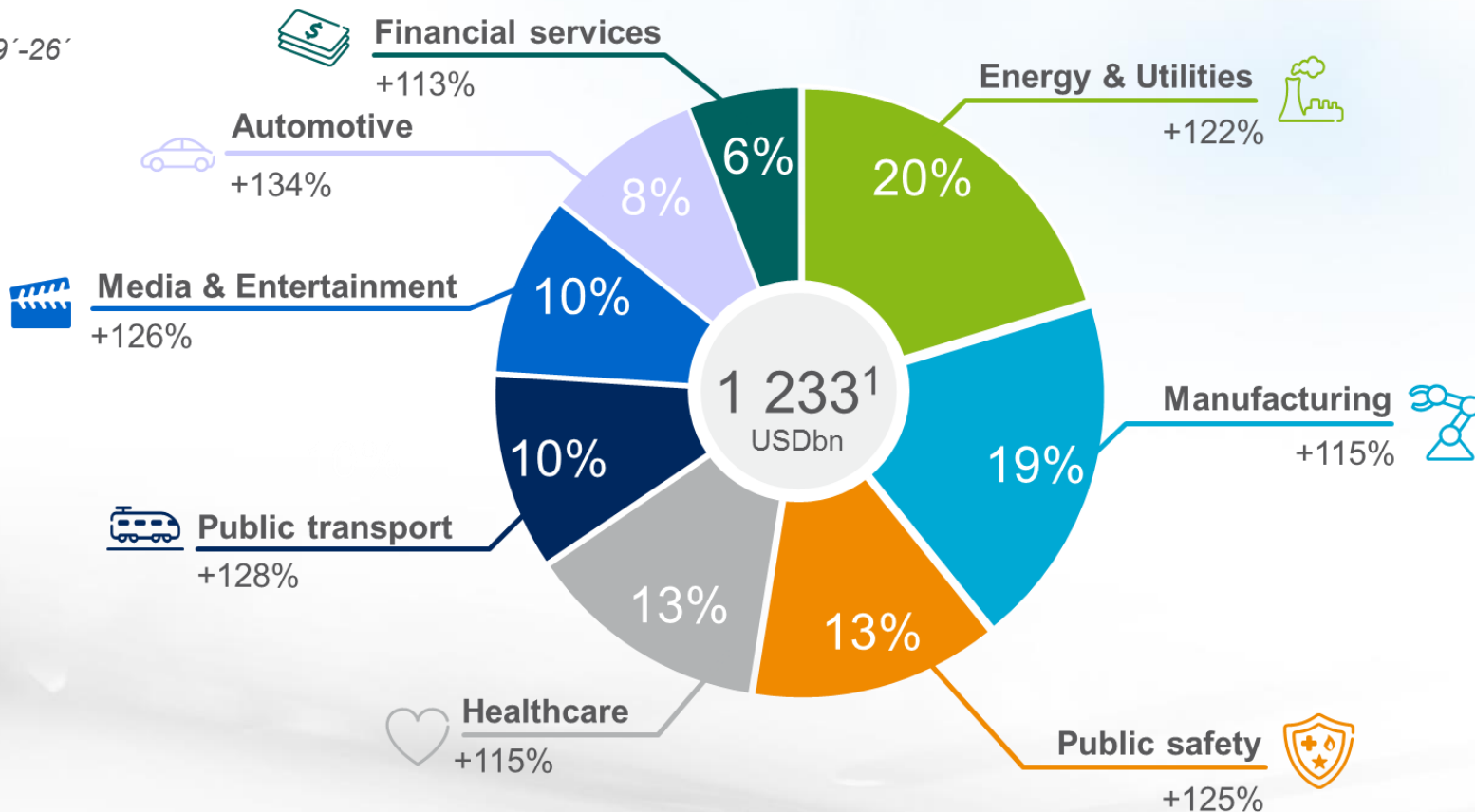


Source: The 5G business potential, Ericsson with A.D. Little, 2017

Pilot Project for 5G Convergence Service

3 5G-enabled industry digitalization revenues for ICT players, 2026

CAGR 19'-26'



Source: The 5G business potential, Ericsson with A.D. Little, 2017

Note 1) Year 2026

Pilot Project for 5G Convergence Service

4 Vertical Industries

- Selection of Promotion Industries
 - Overseas Case
 - Economic Ripple Effect
 - Preference of Private Enterprise

(Example)

Transportation

Manufacturing

Smart City

Energy

(2019)



Connected Car



Connected Factory



Traffic Safety Monitor



Power Brokerage

(2022)



Infrastructure for
Autonomous driving



Cloud Autonomous
Factory



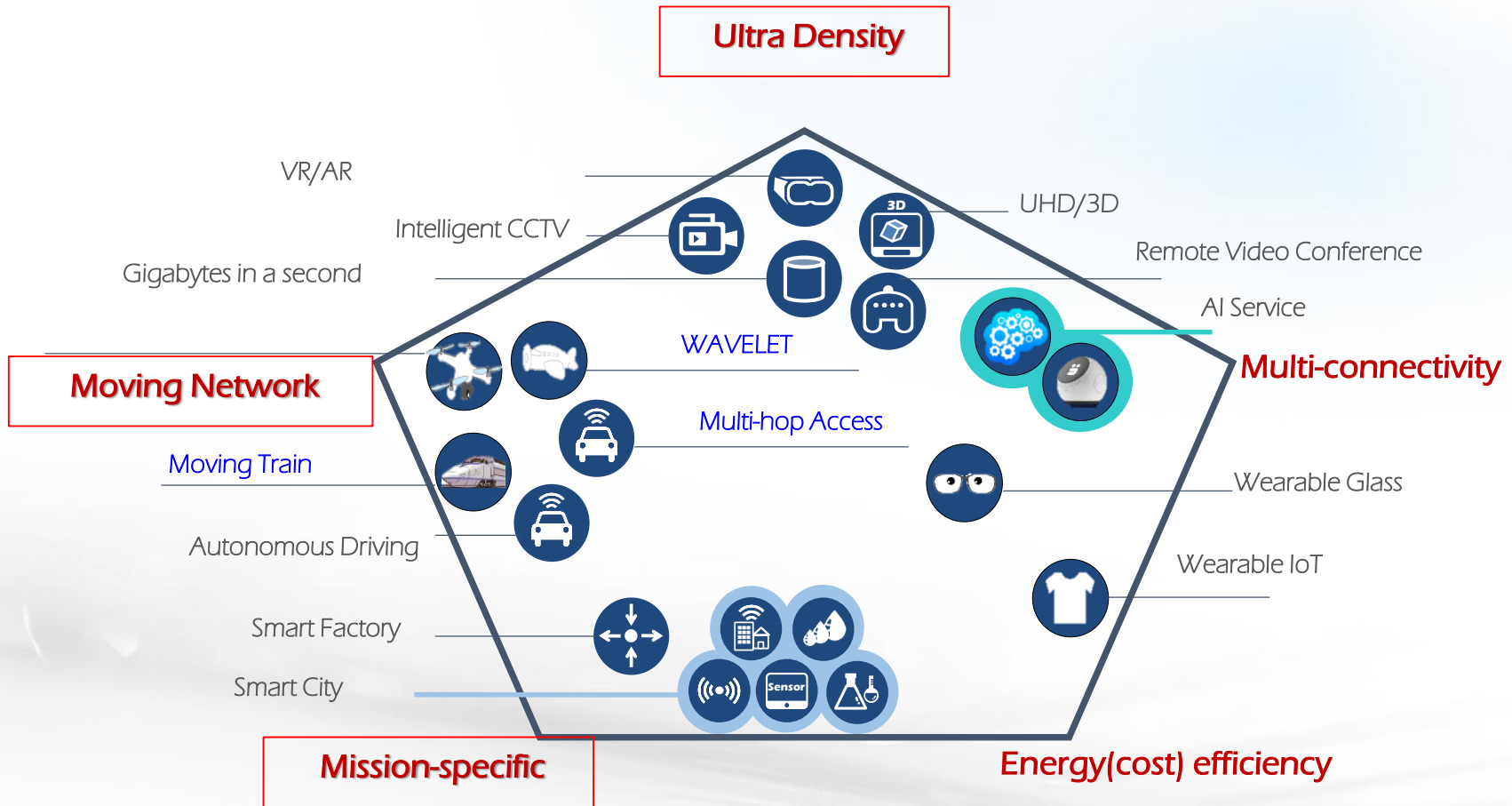
High quality
Video Monitoring



P2P Power Trading

Beyond 5G R&D

Source: ETRI 5G Insight 2.0



Beyond 5G – Moving Networks

Background

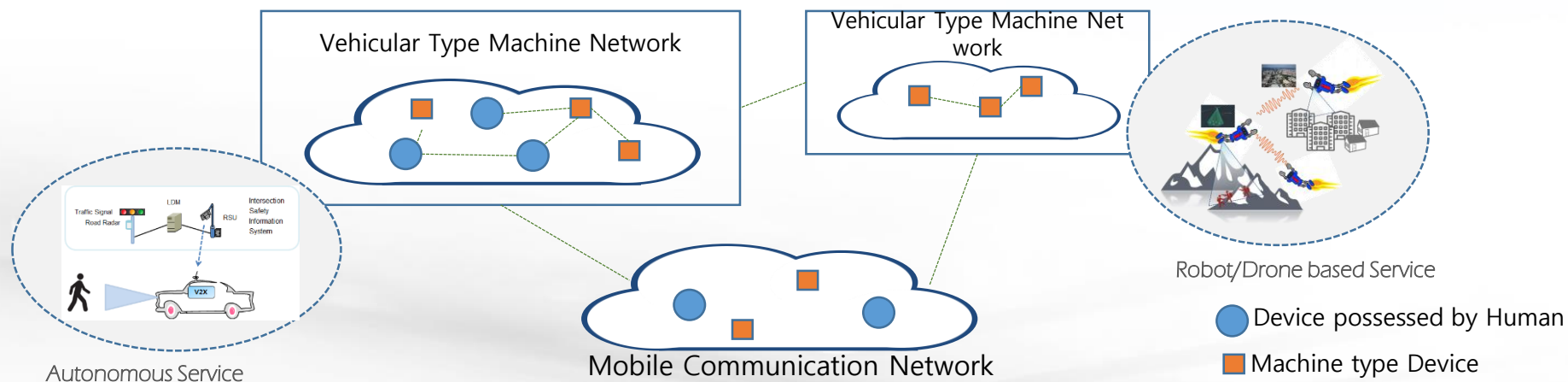
An Opportunity to launch brand new services

- Prospect of new industries using various mobile vehicles (Autonomous vehicles, robot/drone service)
- The universalization of VR/AR technology using high-resolution image technology

Concept

A communication network for vehicular type machines

- Control and Information Exchange Mobile-to-Human or Mobile-to-Mobile
- Information Processing/Delivery Infrastructure for Future New Industry Creation



Beyond 5G – UDN

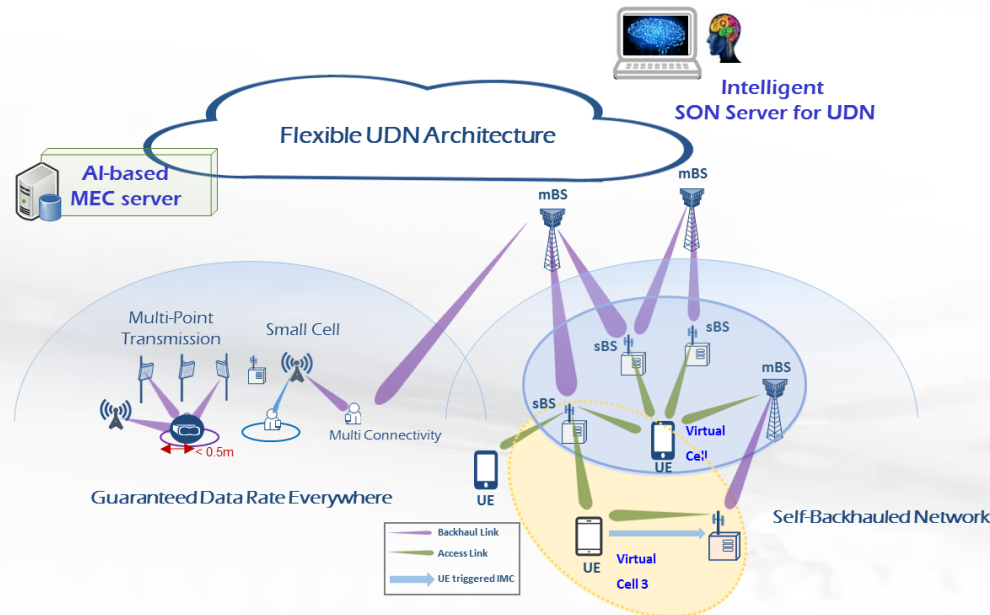
Concept

Ultra Dense Network

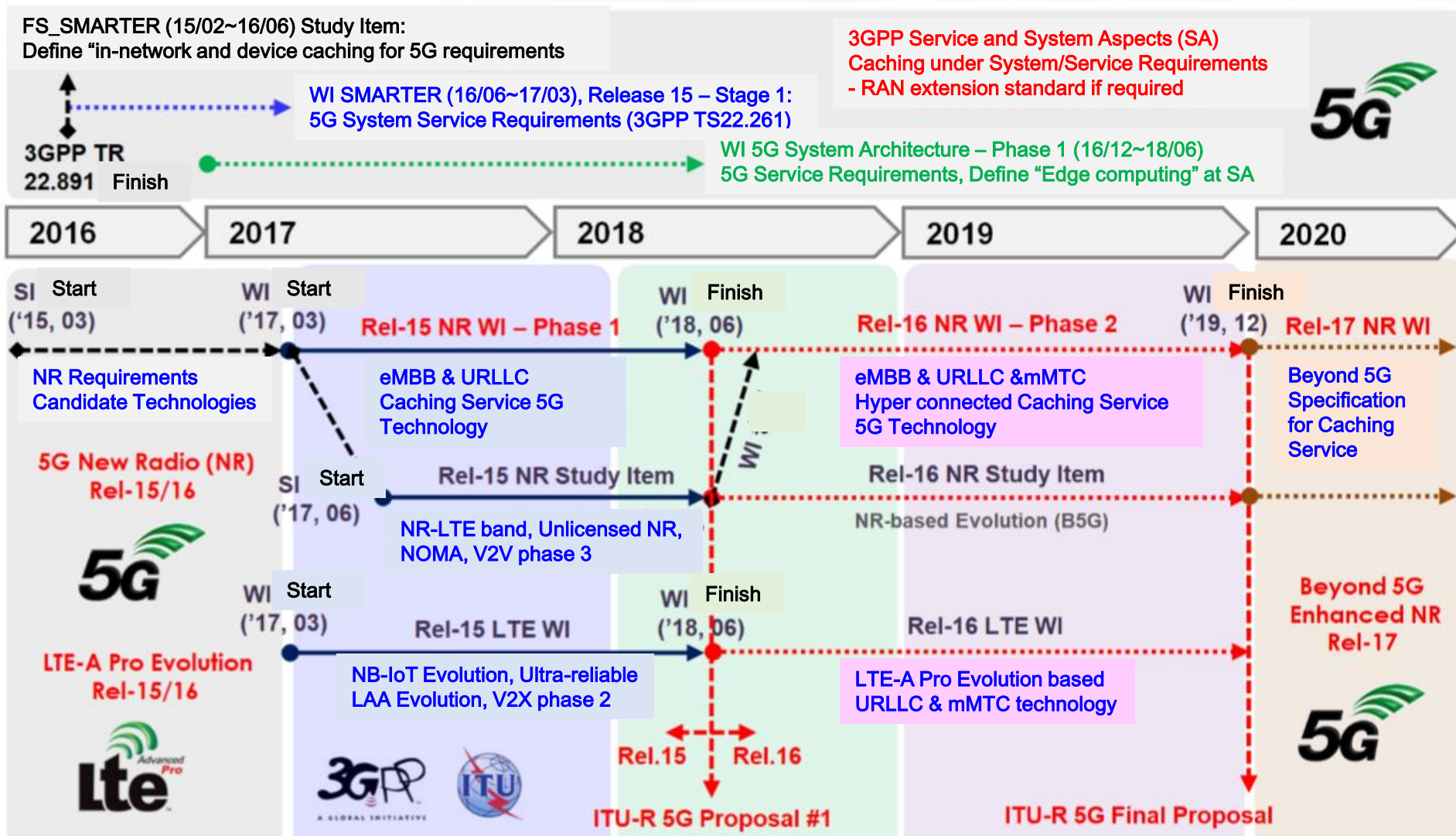
Achieve the same transmission capacity without increasing the edge area by increasing the capacity per unit area with the network technology that places the transmission point ultra-dense without limiting the broadband transmission to the transmission technology

Goal

10 times over 5G: Area Traffic Capacity, User Data Rate



Beyond 5G – In Network Caching & Edge Computing



Thank You

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