Ecosystems Promotion in Korea

Prof. Yongwan Park
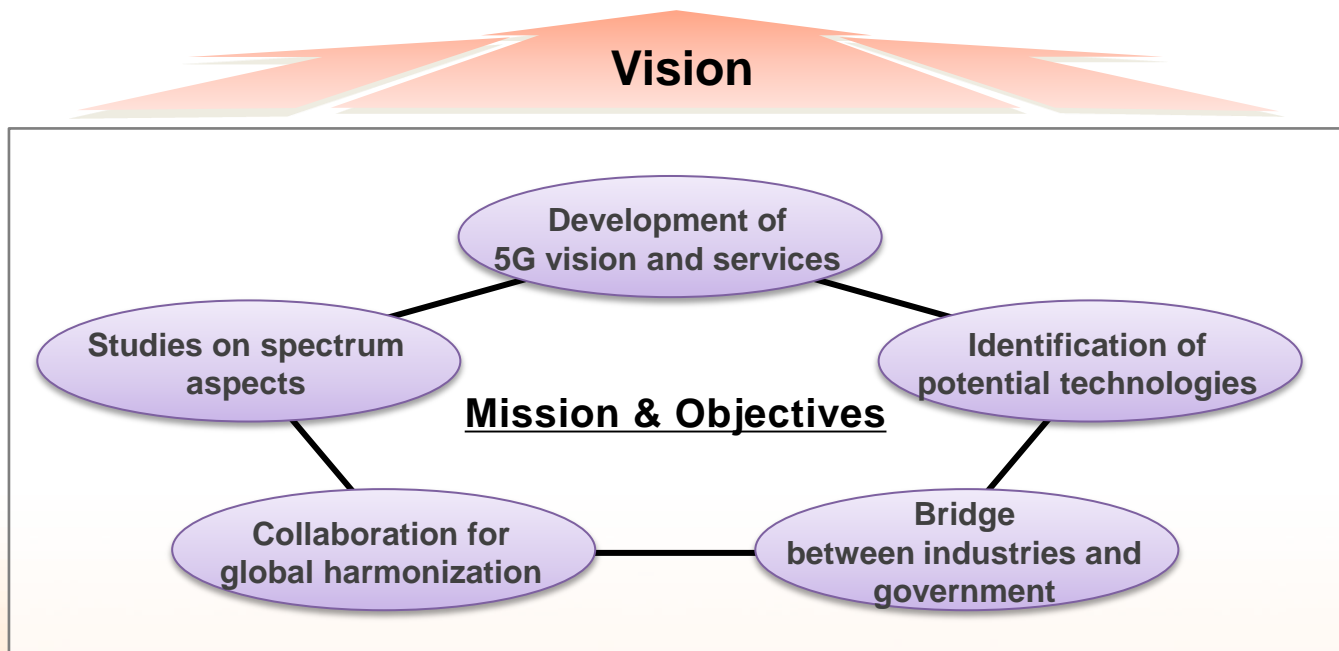
Yeungnam University

Chairman of Ecosystems Promotion Committee
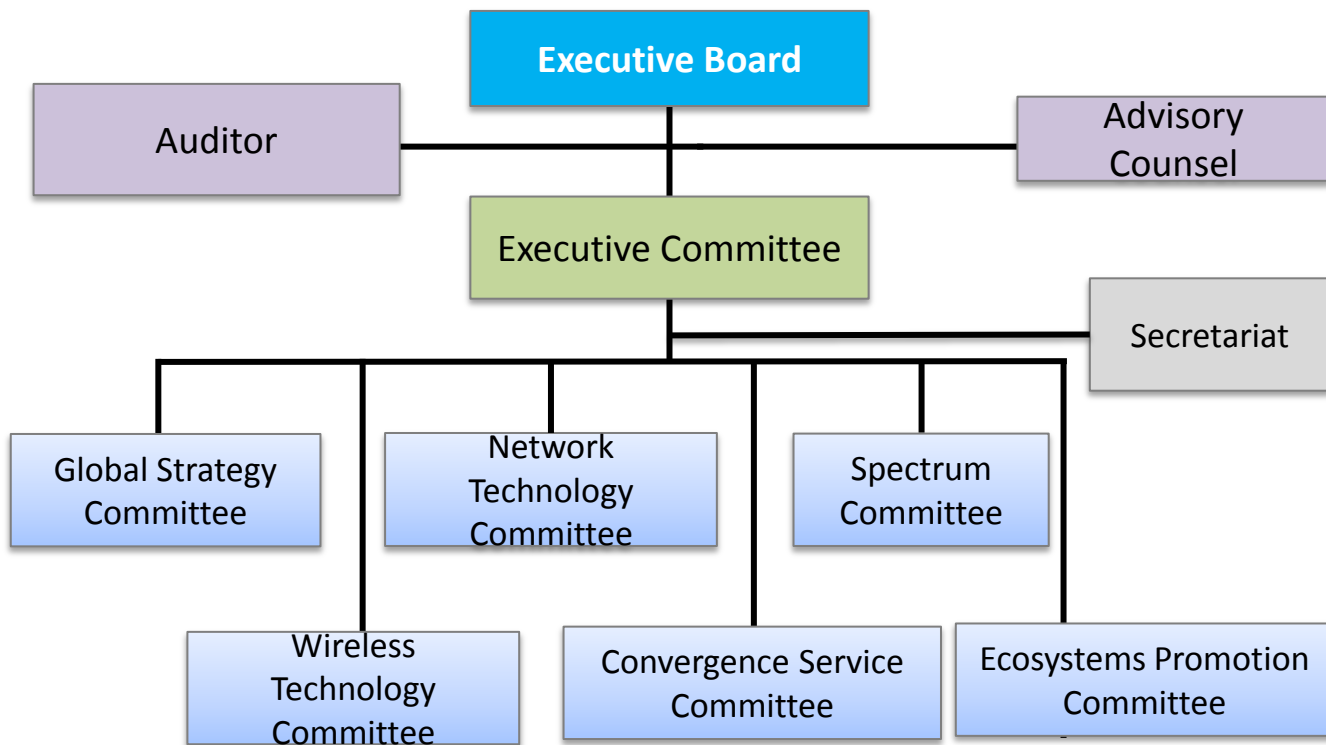
in 5G Forum

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Global Leadership and Promotion

in 5G Mobile Communications towards the 2020s

Vision

Mission & Objectives

- Development of 5G vision and services
- Studies on spectrum aspects
- Identification of potential technologies
- Collaboration for global harmonization
- Bridge between industries and government

5G Forum: Organization

ICT Megatrend

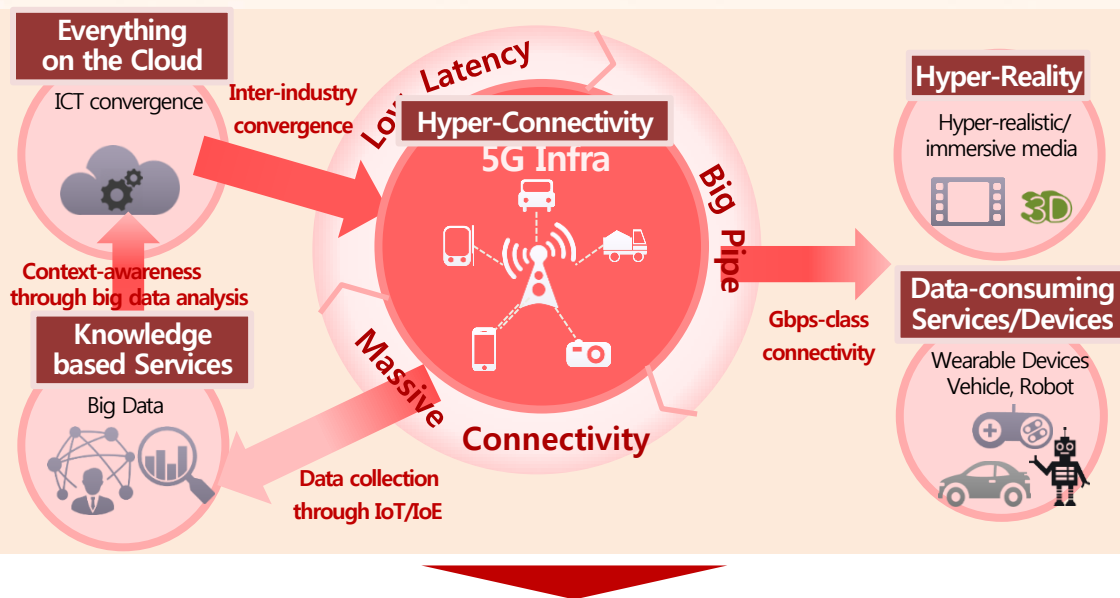|		
1	**Explosion of Mobile Data Traffic**	**Advent of new bandwidth-consuming devices and services**
2	**Rapid Increase in Connected Devices**	**Connecting People, things, data and even processes**
3	**Everything on the Cloud**	**Accelerating transformation of legacy biz to cloud-based convergence services**
4	**Proliferation of Hyper-realistic Media Services**	**Hyper-realistic media such as UHD+ and 3D, Hologram**
5	**Knowledge as a Services through Big Data Analysis**	**New value creation through context-aware capabilities**

ICT Megatrend

Everything on the Cloud
ICT convergence

Inter-industry convergence

Low Latency

Hyper-Connectivity
5G Infra

Big Pipe

Hyper-Reality
Hyper-realistic/ immersive media
3D

Context-awareness through big data analysis

Knowledge based Services
Big Data

Massive

Connectivity

Gbps-class connectivity

Data-consuming Services/Devices
Wearable Devices
Vehicle, Robot

Data collection through IoT/IoE

Immersive, Intelligent, Omni-present, Autonomous, and Public Services

Enhanced Mobile Broadband (eMBB)

Gigabytes in a second
3D video – 4K screens
Work and play in the cloud
Augmented reality
Industry & vehicular automation
Mission critical broadcast
Self Driving Car

Smart city cameras

Voice

Sensor NW

Future IMT

Massive Machine Type Communications (mMTC)

Ultra-reliable and Low Latency Communications (uLLC)

Intelligence

eMBB

User-Centric Computing

Crowded Area Service

Virtual Reality/Augmented Reality

Massive Contents Streaming

Internet of Things (Smart Person/Building/City)

mMTC

Omnipresence

Immersiveness

Private Security/Public Safety

Robot

Teleoperation

Disaster Monitoring

Smart Transportation

Drone

Emergency Service

uLLC

Autonomy(Mobility)

Publicness

Tech. Centric vs. User Centric

NW Requirements for 5G Services

	Immersive 5G		Intelligent 5G		Omni-present 5G	Autonomous 5G			Public 5G		
	AR/VR	MCS	UCC	CA	IoT	ST	Drone	Robot	DM	PS/PS	ES
Ultra High Data Rate	◉	◉		◉			◎	◎			
Massive Connection				○	◉				◎		
High Reliability					○	◉	◉	◉	◉	◉	◉
Ultra Low Latency	◉	◎	◉		◎	◉	◉	◉		◉	◉
High Mobility						◉	◎		◎		
High Energy Efficiency					◉		◎		◉	◉	○
Cost Effectiveness			◉	◉	◉				○		

◉: 1st tier requirement, ◎:2nd tier requirement, ○: 3rd tier requirement
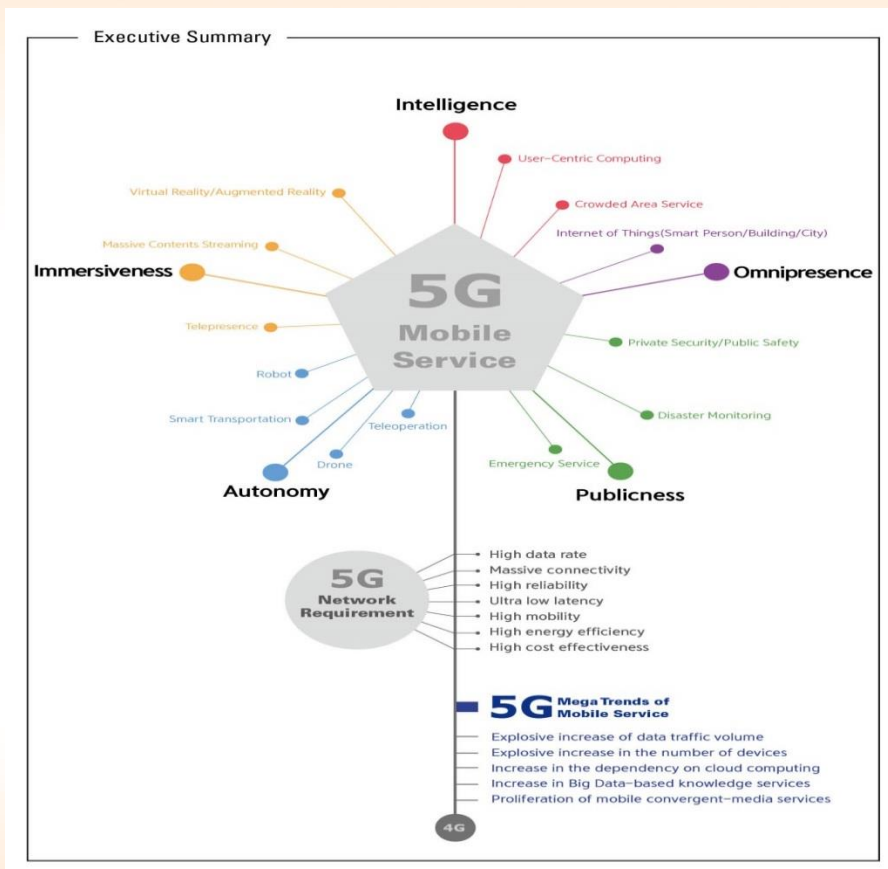MCS: Massive Contents Streaming, UCC: User-Centric Computing,
CA: Crowded Area, ST: Smart Transportation
DM: Disaster Monitoring, PS/PS: Private Security/ Public Safety,
ES: Emergency Service

5G System: 5G Mobile Service

Executive Summary

Intelligence
- User-Centric Computing
- Crowded Area Service
- Internet of Things(Smart Person/Building/City)

Omnipresence
- Private Security/Public Safety
- Disaster Monitoring

Publicness
- Emergency Service

Autonomy
- Drone
- Teleoperation
- Smart Transportation
- Robot
- Telepresence

Immersiveness
- Massive Contents Streaming
- Virtual Reality/Augmented Reality

5G Mobile Service

5G Network Requirement
- High data rate
- Massive connectivity
- High reliability
- Ultra low latency
- High mobility
- High energy efficiency
- High cost effectiveness

5G Mega Trends of Mobile Service
- Explosive increase of data traffic volume
- Explosive increase in the number of devices
- Increase in the dependency on cloud computing
- Increase in Big Data-based knowledge services
- Proliferation of mobile convergent-media services

4G

About Committee

Vision

Promote to the development of the 5G ICT industry ecosystems and 5G verticals market

Role

Support to the industries needs of 5G mobile communication market and verticals market

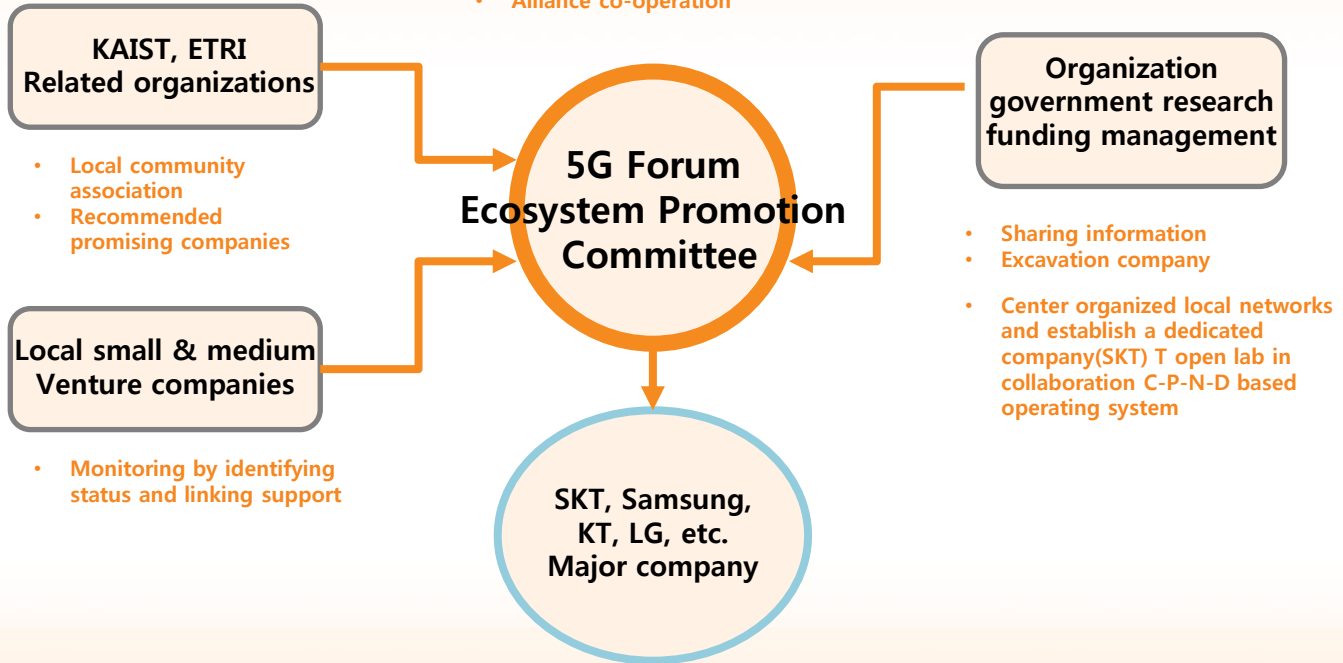*** Activities of technical advice, policy cooperation**

➡ **Phase1 : Present of ecosystem development direction of 5G C-P-N-D on the ICT categories**

➡ **Phase2 : Present of 5G ecosystem development direction which will be converged in other industries**

Cooperation structure

- **Support policy & consultation with local business**
- **Provides domestic & world wide technology trends and information**
- **Alliance co-operation**

KAIST, ETRI Related organizations

- **Local community association**
- **Recommended promising companies**

Local small & medium Venture companies

- **Monitoring by identifying status and linking support**

5G Forum Ecosystem Promotion Committee

Organization government research funding management

- **Sharing information**
- **Excavation company**

- **Center organized local networks and establish a dedicated company(SKT) T open lab in collaboration C-P-N-D based operating system**

SKT, Samsung, KT, LG, etc. Major company

Activity Directions(1)

Build & Support 5G C-P-N-D domestic ecosystem

Promoting and compatibility operability for ecosystems between C-P-N-D based on 5G standard

Sharing 5G standard status

- ○ 5G standard progress & share information in a timely
- ○ Enhance responsiveness to 5G C-P-N-D involved companies

  * Standardization bodies: 3GPP, ETSI / other organizations : NGMN, OPNFV, etc)

Providing 5G environment verification

- ○ 5G standards-based interoperability verification environment support

  * Core network & open community base service on compatibility & interoperability

Establishing 5G ecosystem strategy

- ○ Provided 5G mobile ecosystem strategy plan

  * Identification and status information reflects to the 5G mobile communication relation to ecosystem

  * 5G ecosystem development & policies for early deployment, regulatory review and suggestions

★ **Establish 5G Small Cell Subcommittee**

Activity Directions(2)

strategy2 **Build & Support 5G vertical markets**

**Provide paly-ground for synergies through
combination 5G mobile C-P-N-D & new technology of vertical market**

Promote Vertical participation

- ○ Participation and information sharing vertical industries in Forum
  - * Object : vehicle, factory, energy, health, entertainment
  - * Periodically seminars, workshops for information sharing

Vertical cooperation support

- ○ Vertical industries, technical cooperation, ideas, proven foundation
  - * 5G CPND & Vertical industries support to build commercial service level test bed
  - * Spread of utilizing test bed results
  - * Reflects the result of the test bed utilized to the international standards and policy

International cooperation

- ○ Build 5G Vertical ecosystem & cooperation with world wide
  - * Status of 5G global test bed identification & sharing, international cooperation and joint projects

5G Vertical Ecosystem strategy

- ○ Provided 5G mobile ecosystem strategy plan
  - * Reflect to the 5G vertical ecosystems identification & information
  - * 5G ecosystem development & policies for early deployment, regulatory review and suggestions

ICT Convergence in Korea

Smart Traffic
Build Intelligent Traffic Signal System on the main road

Energy
Intelligent Power Management of New Building/Apartment

Tourism
Smart tour based on IoT

Smart City
Build 10 Innovative and Smart cities

Education
N-Screen learning through Gigabit Wired/Wireless environment

U-Health
Customized Medical demonstration through Health Park

Thank you