Strategy and Activities on 5G Development in Japan and 5GMF

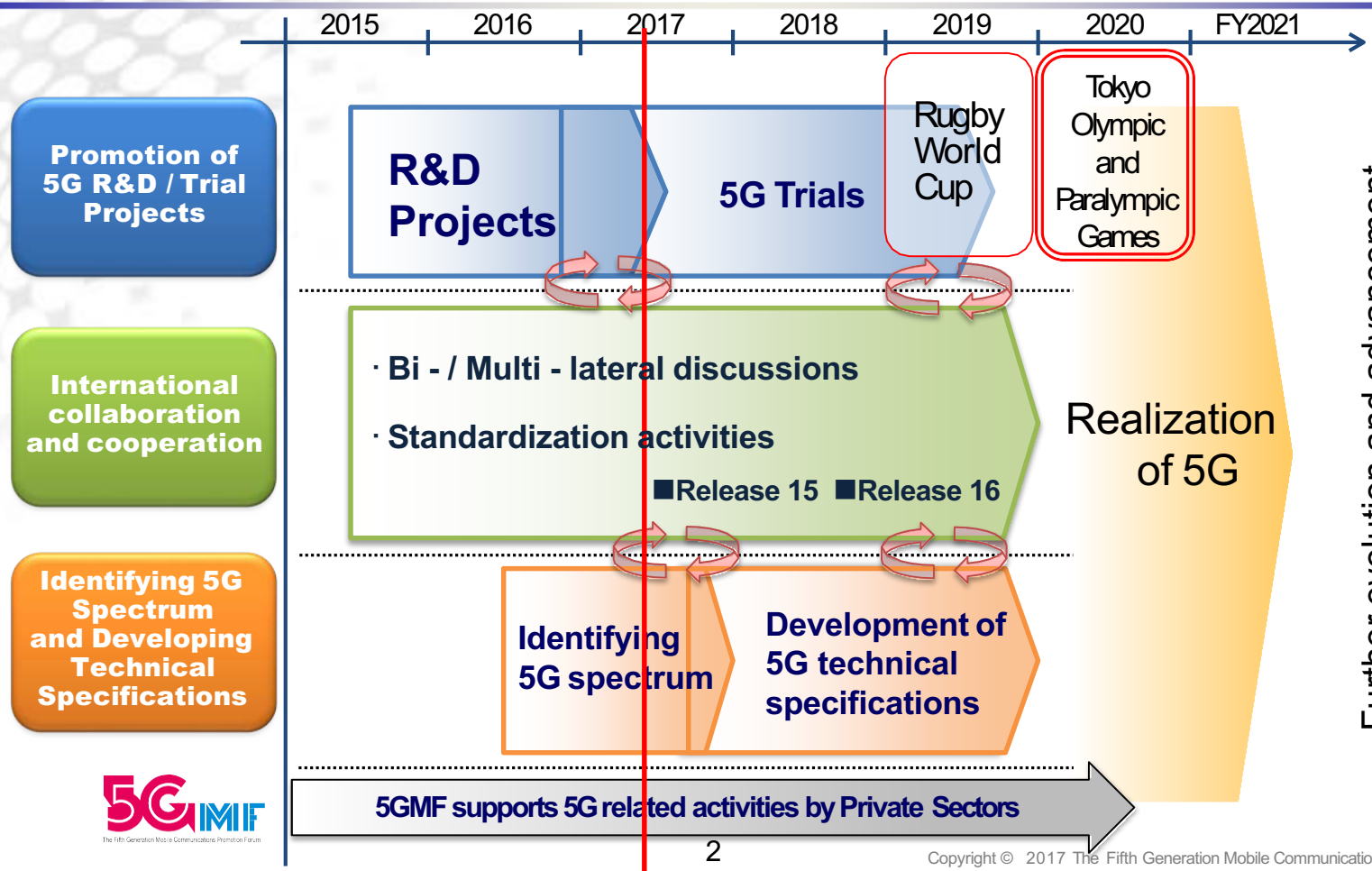
Kohei SATOH
Secretary General of 5GMF
satoh@arib.or.jp

5G Spectrum and Policy Forum
Kerry Hotel Pudong, Level 3 Pudong Ballroom 4
12 June 2017

Overview of Strategy and Activities on 5G Development

- Ministry of Internal Affairs and Communications (MIC) developed and released clear “5G Development Roadmap toward 2020” in the Round-table Conference on Radio Policies 2020;
- MIC started a comprehensive demonstration test on the 5G system for the creation of a new market with the realization on the 5G. Stakeholders in various utilization fields in Japan will participate in the test; and
- 5GMF supports and cooperate with MIC’s strategy and activities from private sector’s point of view.
  - 5GMF released the White Paper on “5G Mobile Communications Systems for 2020 and Beyond” in May 2016
    http://5gmf.jp/en/whitepaper/
  - 5G Trial Promotion Group developed and released a report on 5G trial concepts, contents, and plans of “5G Utilization Projects” addressed in 5G System Trial in March 2017
    http://5gmf.jp/wp/wp-content/uploads/2017/03/5g-tpg_report_ver_1_0_public.pdf

5G Development Roadmap toward 2020 in Japan



Candidate Frequency bands below 6GHz for 5G

The bands below 6GHz will play important roles for 5G as providing;

- Wide and contiguous coverage (e.g. below 2GHz) for;
  - IoT/M2M service with low bit rate and low power consumption,
  - conventional services, and
  - reliable C-plane in a C/U-split heterogeneous network
- Relatively large bandwidth for higher capacity (e.g. above 3GHz) for advanced mobile broadband services.

New candidate bands in Japan are **4GHz band (3.6 – 4.2GHz)** and **4.5GHz band (4.4 – 4.9GHz).** In these frequency ranges

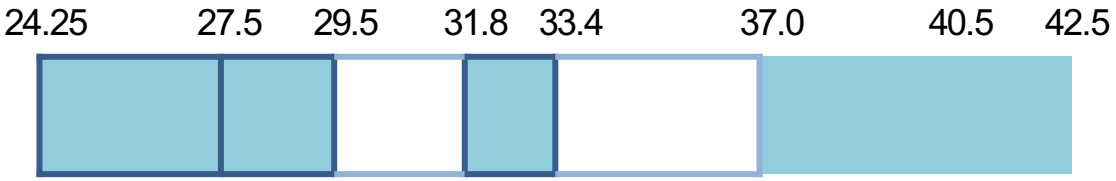
- Global or regional harmonized frequency arrangement, and
- Sharing and compatibility with the incumbent radio systems

should be considered.

Candidate Frequency bands above 6GHz for 5G

- Considering the information obtained at this point of time, a part of or whole of the following bands are preferred for initial use, from the view point of global/regional harmonization.

  - 24.25 – 27.5 GHz
  - 27.5 – 29.5 GHz
  - 31.8 – 33.4 GHz
  - 37.0 – 40.5 GHz
  - 40.5 – 42.5 GHz



5G Field Trials in Japan(1)

[Period]

FY 2017 – FY 2019 (3years)

[Places]

Tokyo + Local areas

[Test Environments]

- Urban micro-cell or Urban macro-cell
- Suburban macro-cell or Rural macro-cell
- Indoor hotspot

[Key Capabilities]

- eMBB (10Gbps peak data rate)
- mMTC (1million connected devices/km²)
- URLLC (1ms over-the-air latency)

[Radio Spectrum]

below 6 GHz (3.7 & 4.5 GHz),
28 GHz

5G Field Trials in Japan(2)

	Responsible Organization	Main Partners	Trial Overview	Main Trial Locations	Technology
I	NTT DOCOMO	・TOBU TOWER SKYTREE ・ ALSOK ・Wakayama Pref.	・ Sightseeing ・Smart Cities ・Medical Services	・ Tokyo ・ Wakayama	eMBB
II	NTT Communications	・Tobu Railways ・ Infocity	・ Transport	・ Tochigi ・ Shizuoka	eMBB
III	KDDI	・Obayashi Corp. ・ NEC	・ Construction	・ Saitama	URLLC
IV	ATR	・Naha City ・Keikyu Railways	・ Entertainment	・ Okinawa ・ Tokyo/HND	eMBB
V	Softbank	・Advanced Smart Mobility Co., Ltd. ・SB Drive Corp.	・ Transport	・ Yamaguchi	URLLC
VI	NICT	(TBD)	・ Logistics ・Smart office	・ Hokkaido ・ Osaka	mMTC

* Based on current plans, which are subject to change.

5GMF
The Fifth Generation Mobile Communications Promotion Forum

Thank you for your kind attention.