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2. IMT-2020 Evaluation Group of 5GMF
Overview of 5GMF
Roadmap towards implementation on 5G Mobile in Japan

Promoting Body

- ARIB 2020 and Beyond Adhoc
- 5GMF: established 30 Sep., 2014

Activities by The Fifth Generation Mobile Communications Promotion Forum (5GMF)

Giving strategic guidance on R&Ds, standardization, international cooperation & public relations

R&Ds

- R&Ds on 5G through Industry - Academia - Government Cooperation
- Investigation into potential spectrum for 5G through R&D activities
- Amend regulations, allocating spectrum, deploy base stations, etc.

International Affairs

- ITU, World Radio Conf. (WRC-12)
- World Radio Conf. (WRC-15)
- 5G Standardization Activities
- Propose & Evaluate Interface
- Secure additional spectrum to 4G
- 5G Discussion of spectrum for 5G
- Possibilities of identification of 5G bands

Study on spectrum for 5G as a preparation of WRC-18 with attention to international harmonization

5GMF (The Fifth Generation Mobile Communications Promotion Forum)

- **Established**: 30 September 2014 (taking over ARIB 2020 and Beyond Ad Hoc.)
- **Members**: 132 (Special:3, Individual:15, Ordinary:114 as of 8 September 2017)

Organizational Structure of 5GMF

- General Assembly
- Secretariat ARIB, TTC
- 5G Trial Promotion Group
- Advisory Board
- Strategy & Planning Committee
- Technical Committee
- Service & Application Committee
- Network Architecture Committee

Number of 5GMF Members

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
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<tbody>
<tr>
<td>2014</td>
<td>12</td>
</tr>
<tr>
<td>2015</td>
<td>20</td>
</tr>
<tr>
<td>2016</td>
<td>40</td>
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<td>2017</td>
<td>132</td>
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## Action plan (mid-term) of 5GMF

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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>▲ WRC15 (2-27 Nov.)</td>
<td>▲ IMT-2020 Workshop</td>
<td>▲ WRC19</td>
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<tr>
<td>Future IMT Vision</td>
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<tr>
<td>▲ AWG in Japan (9-13 Mar.)</td>
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### 3GPP

- **Rel. 13**
  - Channel Model SI
  - Workshop (17-18 Sep.)

- **Rel. 14**
  - Requirement SI
  - Technology SI
  - WIs

- **Rel. 15**
  - WIs

- **Rel. 16**
  - WIs

### 5GIF

- **White Paper**
  - ▲ May 2016

- **General assembly (5th Jul.)**

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**Proof of 5G mobile concept**
Schedule overview of Verification

● Verification to commence from FY2017 ●

Survey on user needs, studies on applications / services

5G commercialization

Integrated Verification Trial services / functions
- Radio + Network + Applications -

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>FY2015</td>
<td>Basic studies (Venue, frequency band, budget, participating organizations / soliciting enterprises, etc.)</td>
</tr>
<tr>
<td>2016</td>
<td>Detail studies</td>
</tr>
<tr>
<td>2017</td>
<td>Trial environment construction</td>
</tr>
<tr>
<td>2018</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>Tokyo Olympic/Paralympic Games</td>
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<td>2021</td>
<td></td>
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<tr>
<td>2022</td>
<td>Rugby World Cup</td>
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</tbody>
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Image of Verification Trial

- Verification commencing from FY2017
- Held not only in Tokyo but also in local cities

Coverage and outdoor driving experiments in a large premise

Outdoor trial in open square environments crowded with people

Trial in indoor environments crowded with people
Global Collaboration on 5G

Collaborate bilaterally with other organizations

- **5G PPP**
  - Meeting, Munich, 11 April 2014, MOU signed, Frankfurt, 25 March 2015

- **Korea 5G Forum**
  - Meetings: Tokyo, 19 August 2013, Tokyo, 3 July 2014
  - MOU signed, Tokyo, 6 April 2015

- **Wireless World Research Forum (WWRF)**
  - MOU signed, e-mail, 21 August 2015

- **Indonesia 5G Forum**
  - Meeting & MOU signed, Bali (Indonesia), 21-22 September 2015

- **IMT Sub-WG 5G, Malaysian Technical Standards Forum (MTSFB)**
  - Meeting & MOU signed, Kuala Lumpur (Malaysia), 6 April 2016

- **IMT-2020 PG**
  - MOU signed, Beijing (China), 2 June 2016
**Goals of 5GMF**

**Lead R&D and international standardization to implement 5G mobile for 2020 and beyond**

**Demonstrate verification tests on Proof of Concept**
- **Perform verification tests from FY 2017** after basic studies, detailed studies and trial environment construction

**Contribute actively internationally through collaboration with international organizations**
- Promote the sharing information and vision for 5G mobile with overseas organizations in Europe (5G-PPP), Korea (5G Forum), China (IMT-2020 PG, FuTURE Forum), America (5G-America) etc.

**To play a major role in 5G mobile implementation**
Goals of 5GMF

International collaboration and Standardization

Innovation by R&D through Industry - Academia - Government Cooperation
IMT-2020 Evaluation Group of 5GMF
Structure of 5GMF with IMT-2020 Evaluation Group

General Assembly

5G Trial Promotion Group

Strategy & Planning Committee

Technical Committee

Service & Application Committee

Network Architecture Committee

IMT-2020 Evaluation Group
**Membership of 5GMF IMT-2020 Evaluation Group**

<table>
<thead>
<tr>
<th>Company</th>
<th>Member</th>
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<tbody>
<tr>
<td>Ericsson Japan</td>
<td>Nihon Dengyo Kosaku</td>
</tr>
<tr>
<td>FUJITSU</td>
<td>Nokia Solutions and Networks Japan</td>
</tr>
<tr>
<td>Huawei Japan</td>
<td>NTT</td>
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<tr>
<td>KDDI</td>
<td>NTT docomo</td>
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<tr>
<td>Kyoto University</td>
<td>Sharp</td>
</tr>
<tr>
<td>Mitsubishi Electric</td>
<td>Sophia University</td>
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<tr>
<td>NEC</td>
<td>ZTE Japan</td>
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</table>
Collaboration with related entities

ITU-R  SG5 WP5D

Ministry of Internal Affairs and Communications, Japan
The Information and Communications Council
ITU-R Sub-Council

Association of Radio Industries and Businesses (ARIB)
Advanced Wireless Communications Study Committee (ADWICS)
Standardization Subcommittee

5GMF
Technical committee
IMT-2020 Evaluation Group

Entities in Japan
(Study/Evaluate IMT-2020 SRIT/RIT)
Overall schedule for the development of IMT-2020 radio interface Recommendation (WP5D)

Ref: IMT-2020/2 “SUBMISSION, EVALUATION PROCESS AND CONSENSUS BUILDING FOR IMT-2020,” ITU-R WP5D

Thank you for your kind attention.