

TTC Activity Report

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Agenda

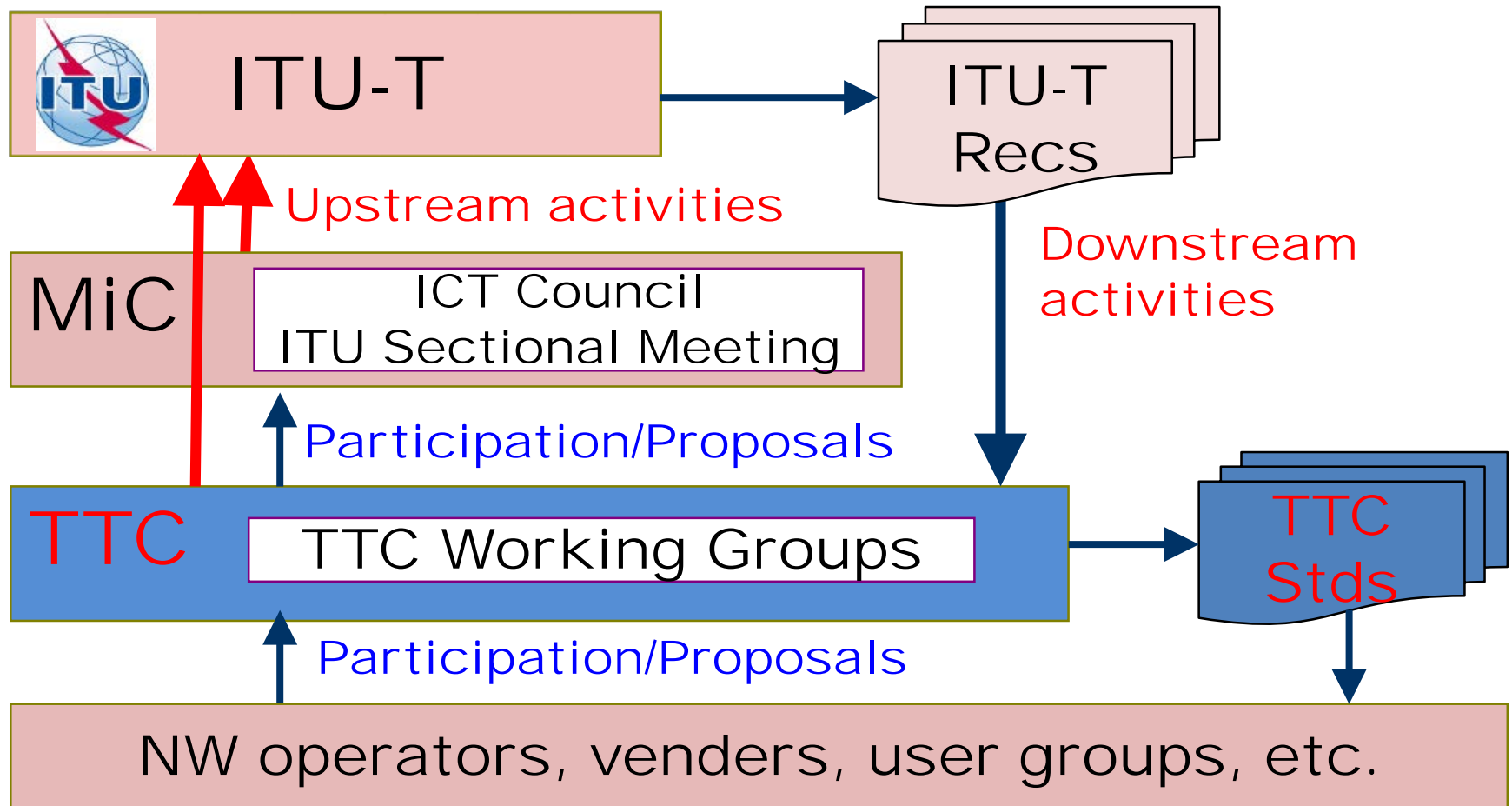
1. TTC's mission and organization
 2. TTC's hot standardization topics
 - 5G
 - IoT/M2M
 - All IP Interconnection
 3. TTC's challenge
 4. TTC's hot issues for ASTAP
- Appendix; Supplementary slides

1. TTC's mission

- ❑ TTC is a private and non-profit organization **accredited by the Japanese Administration** as an SDO (standards development organization) in Japan
- ❑ Established in **1985** (NTT's privatization)
- ❑ TTC is an SDO **qualified by ITU-T Recommendation A.5 & A.6**
- ❑ Our mission is to **develop and disseminate the TTC standards** and their applications/solutions on ICTs (information & communication technologies) applicable both in Japan and in other areas, in particular in the Asia-Pacific region

TTC Standards Development

TTC standards are developed by the TTC approval process in accordance with WTO TBT agreement.



[Notes] MiC: Ministry of Internal Affairs and Communications
WTO: World Trade Organization TBT: Technical Barriers to Trade

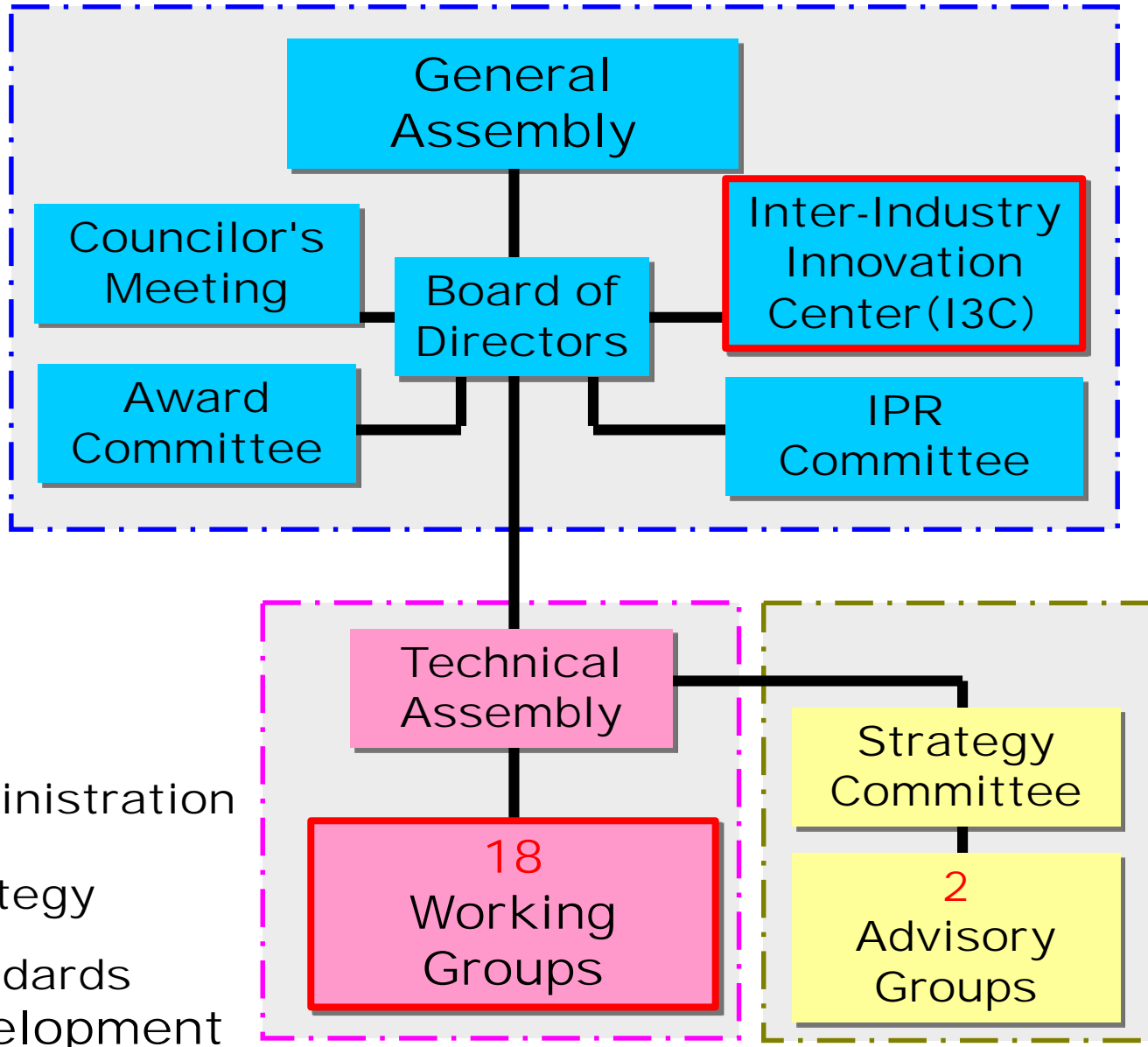
Importance of national SDO

WTO TBT agreement (since 1995) : The agreement imposes **an obligation to coordinate all of their domestic mandatory and voluntary standards with international standards** on member states.

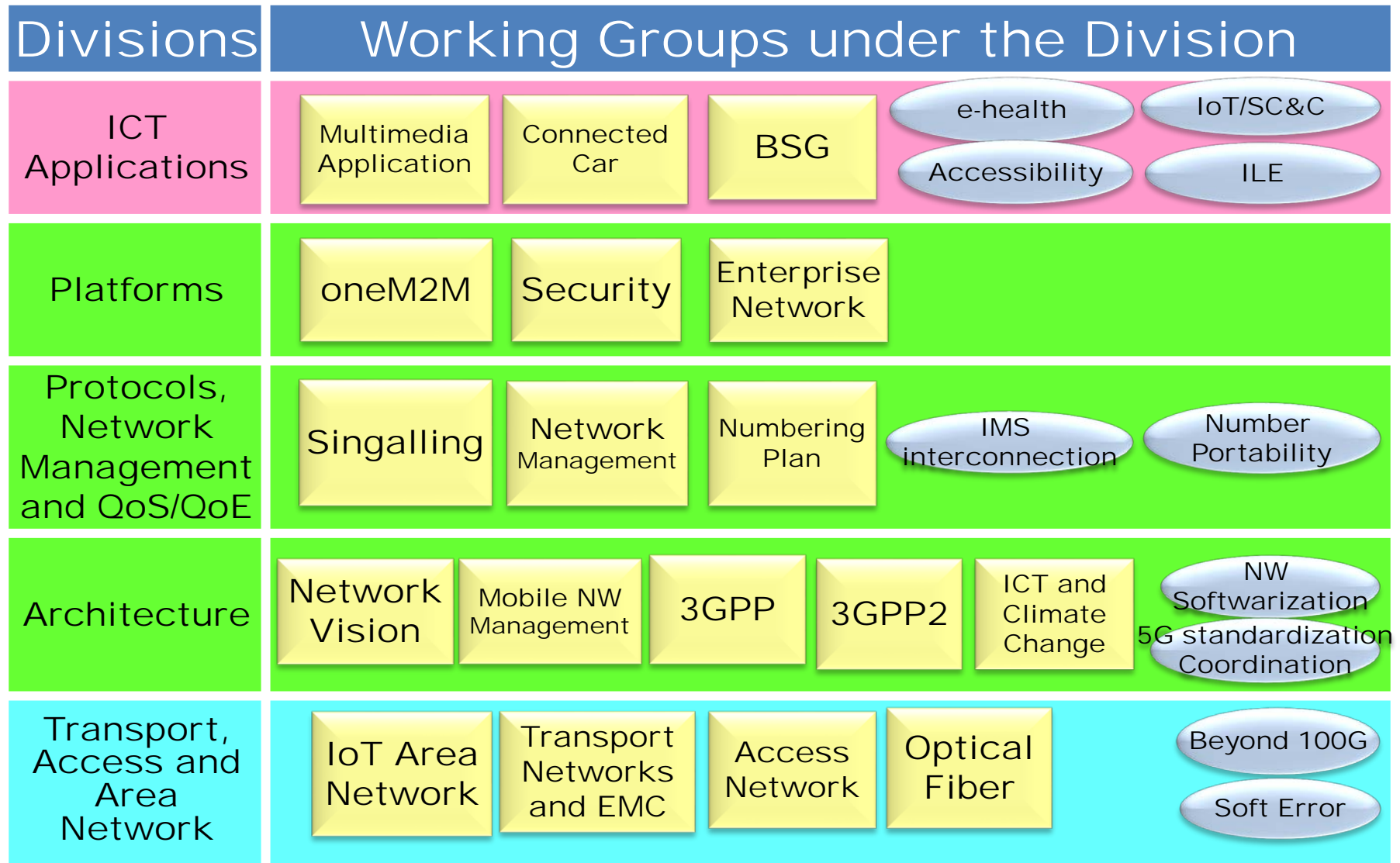


- ◆ It is important that domestic standards/regulations should reflect the international standards, but
- ◆ International standards may sometimes include **a lot of options/ambiguity**, which result in **end-to-end interoperability** problems.
- ◆ International standards do not always reflect adequately **national market demands/requirements** including regulations.

TTC's Organization Chart



Working Groups structure in TTC



[Notes]

Working Group

Subgroup on a topic

Inter-Industry Innovation Center

- Step forward of ICT global standardization from intra-industry innovation to **inter-industry innovation**
- TTC has established “**Inter-Industry Innovation Center (I3C)**” in April 2011, which surveys the trends of the inter-industry collaboration, identifies the areas where TTC should play an active role of innovation and develops new strategies of ICTs.
- The identified topics include **IoT/M2M, Big Data, ITS (Connected Car), E-health, Smart cities, Disaster relief and emergency communications, etc.**



2. Hot Standardization topics

- ❑ Promotion of strategic standardization activities
 - **IMT-2020/5G** (Future mobile) : refer to A.1.3
ITU-T SG13 & SG15, 3GPP
 - **IoT/M2M** : refer to A.1.4
oneM2M, ITU-T SG20
 - **All IP interconnection** for PSTN migration:
refer to A.1.5
- ❑ Global collaboration with the standardization organizations including **ITU-T, APT/ASTAP, CJK, GSC, 3GPP, oneM2M** and other Fora
- ❑ Promotion of TTC standardization publicity, especially by holding seminars and workshops on various emerging technical topics such as;
NFV/SDN, Big Data, IoT area networks, e-health, ITS, Artificial Intelligence, Blockchain, etc.

3. TTC's challenge

- Interest of ICT users are moving to **services/applications**, where not only telecom operators but also OTT players are active.
 - How to make our activity more attractive to not only existing ICT industry but also other industries using ICT services?
 - How to increase TTC members and make our financial status balanced?
- TTC has established **IoT innovation promotion committee** in I3C in June 2017, where various industry groups can form a forum (we call it **IoT Working Party**) across different IoT fields and discuss idea creation, business collaboration, etc. It is expected that their discussions could trigger new standardization activity in TTC.

4. TTC's hot issues for ASTAP

- TTC contributes to ASTAP to promote the aspects of **BSG (Bridging the Standardization Gaps)** and **Disaster response** in APT region.
- TTC has contributed to development of ASTAP Report on **"ICT solution handbook"** and plans to update its revision to enhance the applications.
- In APT Project "Publication in 2016", TTC plans to invite government officials and/or researchers of ASEAN countries to Japan and to hold a **workshop on "Policy research on Smart city in Asian countries"** in Tokyo on 14th September 2017.
- TTC supports a development of **the V-HUB (Vehicle-hub) system specification** based on the use cases of disaster responses in Asian countries and proposes it to the ASTAP-29 meeting as a draft ASTAP Recommendation.

APPENDIX:

Supplementary slides

A.1.1 TTC's mission

- TTC is an SDO qualified by ITU-T Rec. A.5 & Rec. A.6 so that;
 - ◆ ITU-T Recommendations can include references to TTC Standards.
 - **ITU-T Rec. A.5:** Generic procedures for including references to documents of other organizations in ITU-T Recommendations
 - ◆ Information exchange with ITU-T
 - **ITU-T Rec. A.6:** Cooperation and exchange of information between ITU-T and national and regional standards development organizations

A.1.2 TTC's mission

- Substantial and preparatory discussions on the upstream activities to ITU-T are extended by TTC Working Groups (WGs) and Advisory Groups (AGs), and their outcomes will be submitted to MiC for authorization as formal Japanese opinions.
- Examples:
 - ◆ Optical Transport Networks and EMC WG for SG15
 - ◆ Network Vision WG for SG13
 - ◆ ICT&CC (Climate Change) WG for SG5
 - ◆ Global collaboration AG (GCAG) for TSAG

(Note) MiC: Ministry of Internal Affairs and Communications

A.1.3 TTC Homepage

TTC: <http://www.ttc.or.jp/e/>



THE TELECOMMUNICATION TECHNOLOGY COMMITTEE

Site Search

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Organization

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Publication

Brochure



As of July 2016

Global
Collaboration

ITU-T

GSC

ASTAP

CJK IT Standards
Meetings

Forum Survey
Reports

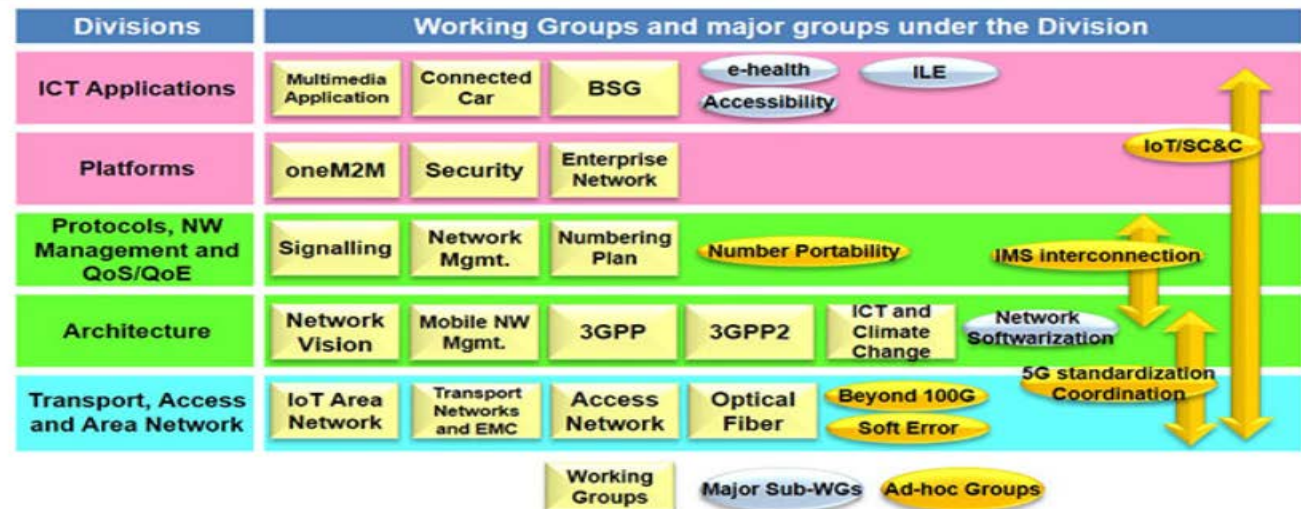
External

Mission

TTC is an incorporated association that contributes to standardization activities in the field of information and communication technology (ICT) by developing and disseminating standards for Information and communications networks. It thus participates in the creation of a safe and comfortable society supported by the rapid development of ICTs.

TTC Standardization Activity Structure

[Working Group Top](#)



Topics

[Topics Top](#)

2017-07-28

[TTC documents on 3GPP technical specifications and report completed](#)

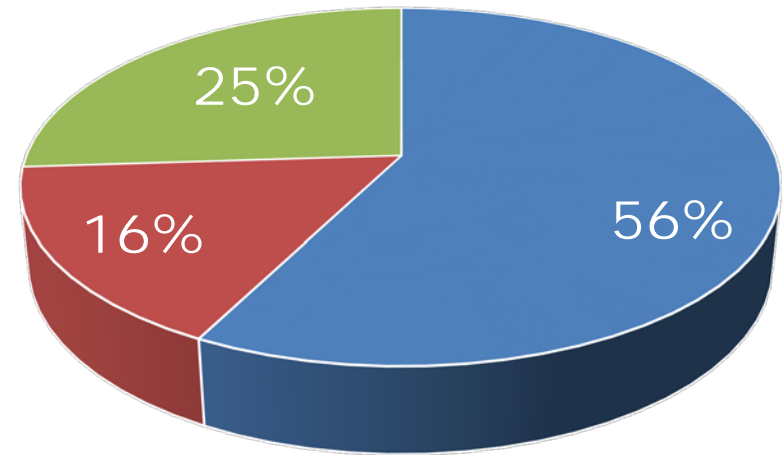
A.1.4 TTC's Officers

- Chairman of the Board:
Prof. Mitsutoshi HATORI
- CEO & Senior Vice President:
Mr. Yoichi MAEDA
- Secretary General:
Mr. Shuichi INADA
- Director General of I3C:
Mr. Hiroshi HAMANO

A.1.5 TTC Membership

Category	No.
Vendors	43
NW operators	13
Others	19
Total	75

[Note] As of March 2017



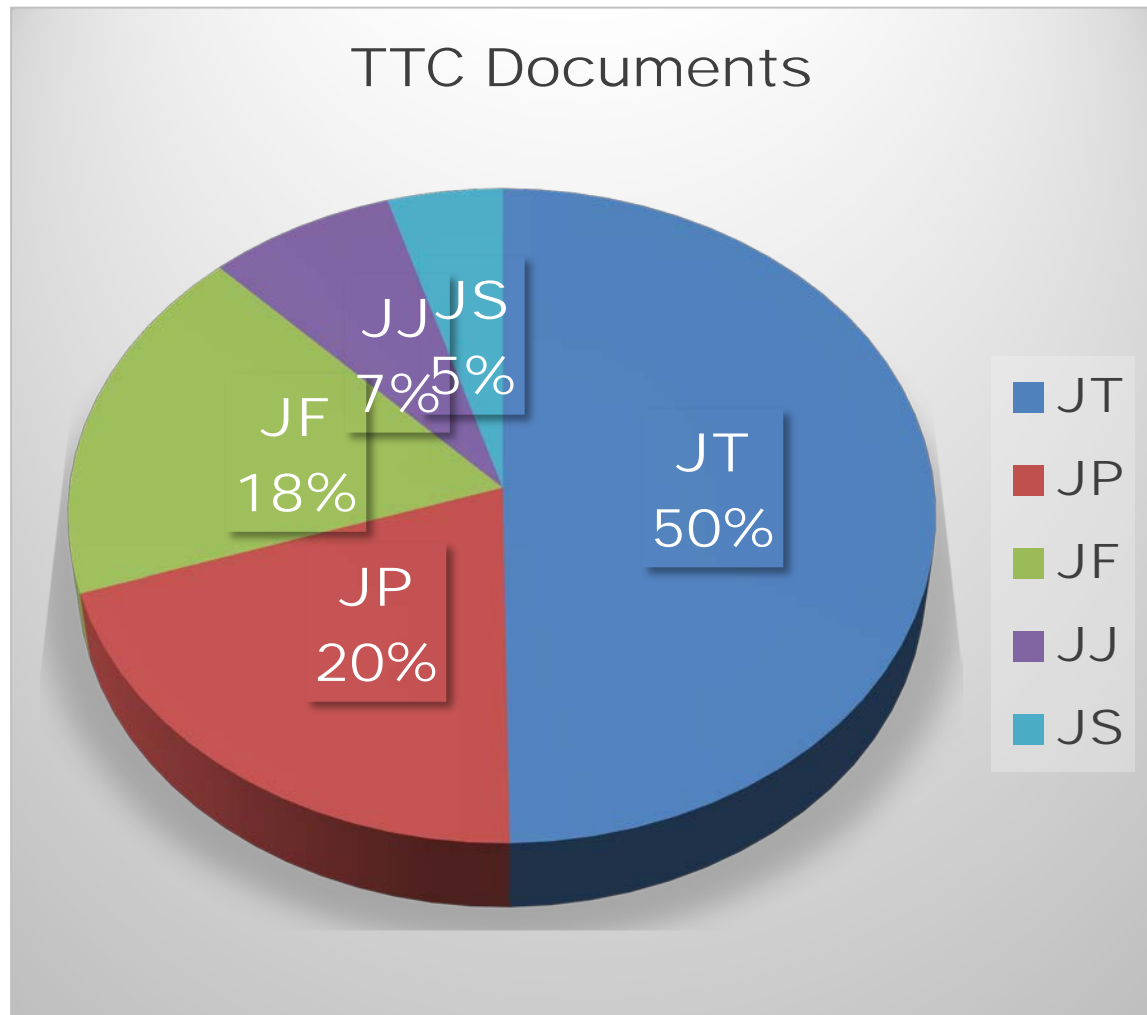
- Vendors
- NW operators
- Others

A.1.6 Categories of TTC Documents

Category	Description	Relevant SDOs
JT	TTC Standards based on ITU-T Recommendations	ITU-T
JP	TTC Standards based on deliverables developed by regional SDOs or partnership projects	3GPP, 3GPP2, oneM2M
JF	TTC Standards based on the de-facto standards/deliverables developed by <u>f</u> ora	IETF, IrDA, NMF, IEEE, etc.
JJ	TTC Standards developed originally by Japan/TTC	Japan/TTC original
JS	TTC Standards based on ISO Stds	ISO
TS	Technical Specifications	3GPP, 3GPP2, oneM2M, etc.
TR	Technical Reports	3GPP, 3GPP2, oneM2M, etc.

A.1.7 Number of TTC documents

Category	No.
JT	428
JP	173
JF	154
JJ	65
JS	40
TS	11,803
TR	537



[Note] As of March 2017

[Note] This graph does not include TS or TR.

A.2.1 IMT-2020 / 5G

- Started an initial study of IMT-2020/5G networking (Sept 2014 - March 2015) and developed **White Paper on 5G networking** (non-radio aspects):
<http://www.ttc.or.jp/e/topics/20150413/download>
- The second phase of study was completed in September 2015, which identified the networking study issues such as **network softwarization, mobile front/back-haul, mobile edge computing.**
- Support **5GMF** (the Fifth Generation Mobile Communications Promotion Forum) in Japan with keeping close collaboration with ARIB:
<http://5gmf.jp/en/>
- TTC's **5G Standardization Adhoc** comprised of Network Vision WG, 3GPP WG, Mobile Network Management WG, IoT Area Network WG members to keep the collaborative studies on 5G networking

A.2.2 IoT/M2M

- ❑ **IoT Acceleration Consortium** (<http://www.iotac.jp/en/>) was established in October 2015 in Japan with the aim of creating an adequate environment for attracting investment in the future with IoT through public-private collaboration. TTC contributes to the management of **Smart IoT Acceleration Forum** in the Consortium in Japan
- ❑ Promotion of **oneM2M** partnership project in Japan in cooperation with ARIB
- ❑ **TTC's IoT/Smart Cities and Communities Adhoc** is comprised of Multimedia Application WG, IoT Area Network WG, Connected Car WG, oneM2M WG, ICT & CC WG, Security WG, Network Vision WG & Signalling WG members and discussing how Japanese industry should contribute to the relevant SDOs and ITU-T SG20 activity.

A.2.3 All IP – IMS Interconnection

■ All IP Interconnection : 3GPP, GSMA

- ◆ PSTN migration to all IP networks (by year 2025) project in Japan
- ◆ VoIP/VoLTE interworking guideline between IMS (JJ-90.30) in cooperation with GSMA (GSM Association)
- ◆ ENUM (JJ-90.31)
- ◆ Number portability (JT-E164 Sup.2)
- ◆ VoLTE speech quality assessment guideline

■ All IP Interconnection Adhoc comprised of Signalling WG, 3GPP WG & Mobile Network Management WG members to realize smooth transition from the existing PSTN to all IP networks.

Thank you very much
for your attention !



If you have any comments or questions,
please contact to

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&

<http://www.ttc.or.jp/e>