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MONTREUX, SWITZERLAND
IEC
ISO

TTC Activity Update

Yoichi Maeda, CEO & S.V.P
TTC, Japan

GSC22, 26-27 March 2019

Agenda

1. Changes in ICT standardization
2. Strategic standardization activities
    - 5G Mobile / IMT-2020
    - IoT/M2M
3. International standardization activities
4. TTC's Standardization key topics

Appendix: Supplementary slides on TTC's organization

Background

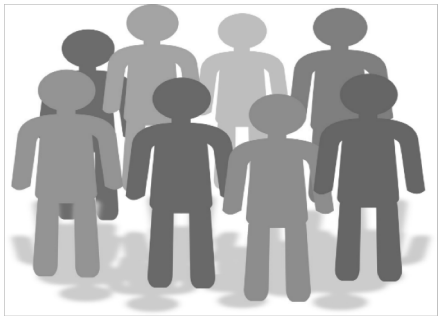
- With all kinds of goods and services connected to the network, a great expectation is given to IoT, big data and AI as a driving force to create new innovation in each industry and solve social problems.
- Movements to utilize open source software (OSS) are also becoming active in the softwarization of network functions when constructing a rapid and flexible network including the demonstration and experiments of the 5G and beyond 5G

New Trends

- Standardization becomes more and more important for the development of global expansion as a part of open innovation and the development of communication infrastructure that responds to various expectations.
- the place of standardization activities has also shifted to higher layers and it is getting more and more diversified.
- The scope of standardization activities extends not only to the creation of conventional standard documents but also to all activities supporting technological and business aspects of open innovation including them.

Strategic standardization activities (1)

- Collaboration between de-jure standards and forum standards in TTC
  - ✓IoT Working Party was implemented to promote IoT innovation activities to conduct forum functions
  - ✓Strengthen collaboration with forum standards: IETF/ISOC-JP, IEEE, W3C, TM Forum, oneM2M, etc.
  - ✓Cooperation with the open source community on NFV and AI



Strategic standardization activities (2)

- Approach to strategic standardization task

  - ✓ 5G Mobile / IMT-2020
    - Full-scale development of standardization of access technology in network software, MBH/MFH, edge computing, etc.
    - Utilization of slicing technology aimed at ultra low latency and network flexibility, response to standardization tasks from demonstration experiments and application development
    - 3GPP Release 15 standardization promotion
  - ✓ IoT / M2M based on OneM2M
    - PoC, tutorials and hands-on activities
    - Promotion of ITU-T Recs. (Y.4500 series) for oneM2M specs.
    - TTC transformed a ad-hoc to "IoT Smart city" WG

International standards activities (1)

- Management-related contributions for promoting international standardization in APT and ITU-T
  - ✓ Co-rapporteur of Rapporteur Group on Standards Strategy in ITU-T TSAG (until 2020):
    Mr. Yoichi Maeda (TTC)
  - ✓ ITU-T TSAG Liaison Rapporteur to ISO/IEC JTC1 :
    Mr. Shigeru Miyake (Hitachi)
  - ✓ ASTAP Chairman (until 2020):
    Mr. Yoichi Maeda (TTC)
    - APT's 1st WTSA-20 Preparatory meeting and ASTAP-31 meeting will be held in Tokyo in June 2019

International standards activities (2)

- Improvement of TTC working system

✓ Standard Collaboration with SDOs: ARIB/5GMF, 3GPP, ISO/IEC JTC 1, ISOC-JP, Automotive Engineering Society, IEEE etc.

✓ ITU-T Focus Group: the 4th FG-ML5G (Nov. 2018) and the 2nd FG-VM (Jan. 2019) were invited to TTC

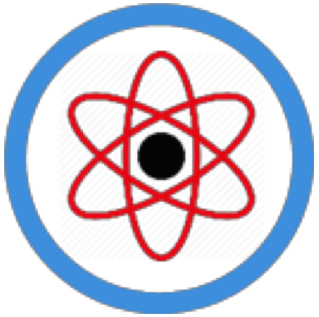
✓ CJK collaboration meeting: 17th CJK (Oct. 2018) was hosted by ARIB and TTC in Japan

TTC's standardization key topics (1)

- AI: AI should be studied based on use cases for digital business and ICT network operation & maintenance.
- 5G mobile communication system: Collaboration with ARIB as the secretariat of the 5GMF (5G Mobile Promotion Forum). TTC focuses on the networking issues on softwarization/ slicing, edge computing, MFH/MBH etc.
- IoT Smart-city: Promotion and examination of cross-sectoral standardization issues should be enhanced in the various IoT applications. "oneM2M" is an IoT standard platform to be used globally but needs more promotion.

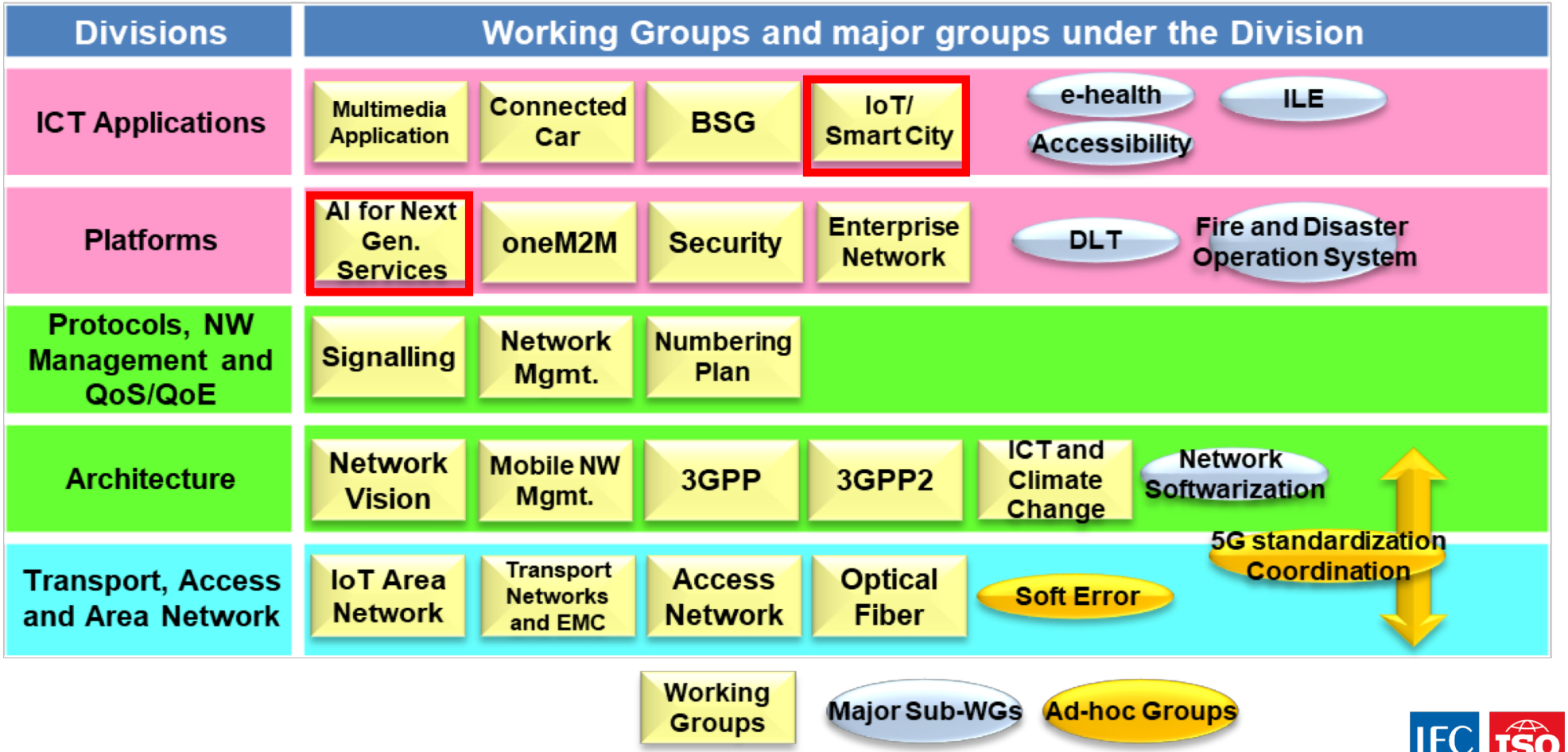
TTC's standardization key topics(2)

- Quantum Communication: QKD (Quantum Key Distribution) is a prioritized issue in SG17 (security) and SG13 (architecture)
- ILE(Immersive Live Experience): Recs. H.430 series in SG16
  - ✓ H.430.1(requirements for services that provide ILE)
  - ✓ H.430.2(architectural framework)
  - ✓ H.430.3(service scenario)
- Soft error*: Five Recommendations in SG5.
  - ✓ K.124 (12/2016) (overview of soft error effects)
  - ✓ K.130 (01/2018) (test methods of neutron irradiation)
  - ✓ K.131 (01/2018) (design methods of soft error measures)
  - ✓ K.138 (09/2018 consented) (quality estimation methods)
  - ✓ K.139 (09/2018 consented) (reliability requirement)



* Soft error is phenomenon in which electronic devices and equipment fail due to particle radiation from space. It does not constitute damage in hardware.

Working Groups structure in TTC

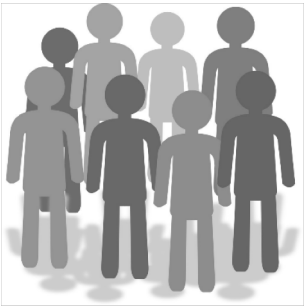


TTC's activities and SDGs

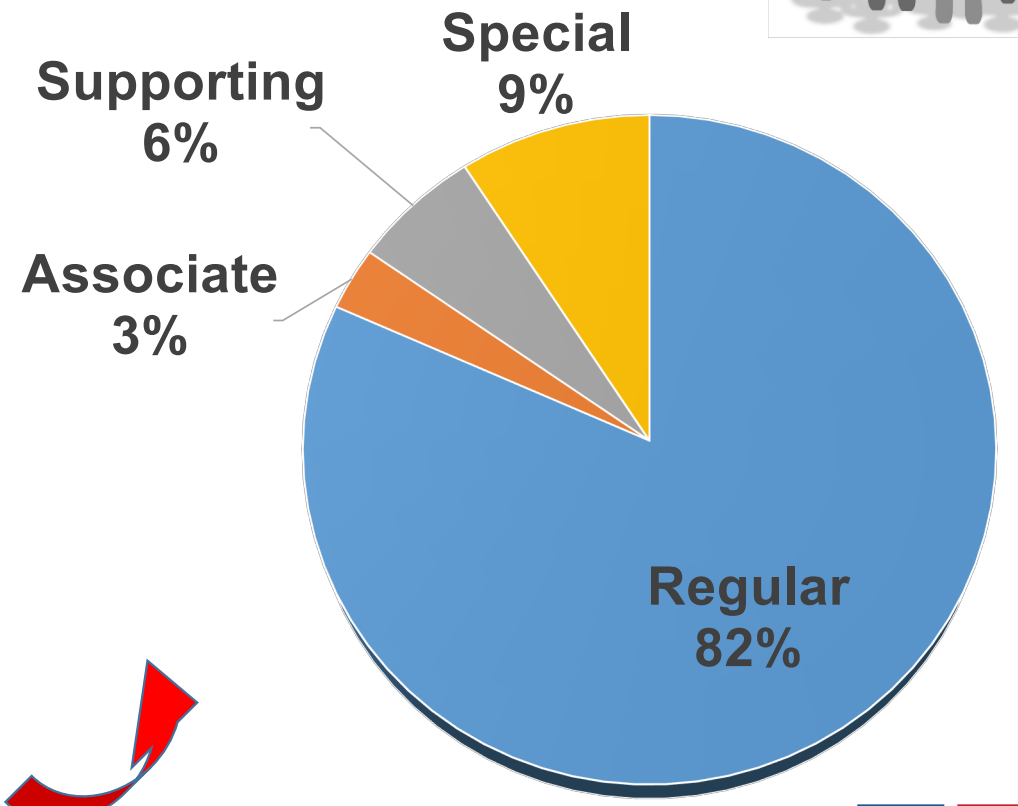
Japan has various social issues in areas such as super-aging and population declining, responding to natural disasters, cyber security, medical and healthcare, efficiency of corporate management.
To solve these social issues, TTC has stated to contribute to SDGs in the international standardization as well as its promotion activities.

SDGs (Sustainable Development Goals): In September 2015, unanimously adopted at UN headquarters in New York, 17 goals aimed at 2030 and development targets consisting of 169 targets

TTC Membership



Member types	2018 As of March	2019 As of March
Regular	75	80
Associate	2	3
Supporting	7	6
Special (SME, Academia)	7	9
Total	91	98

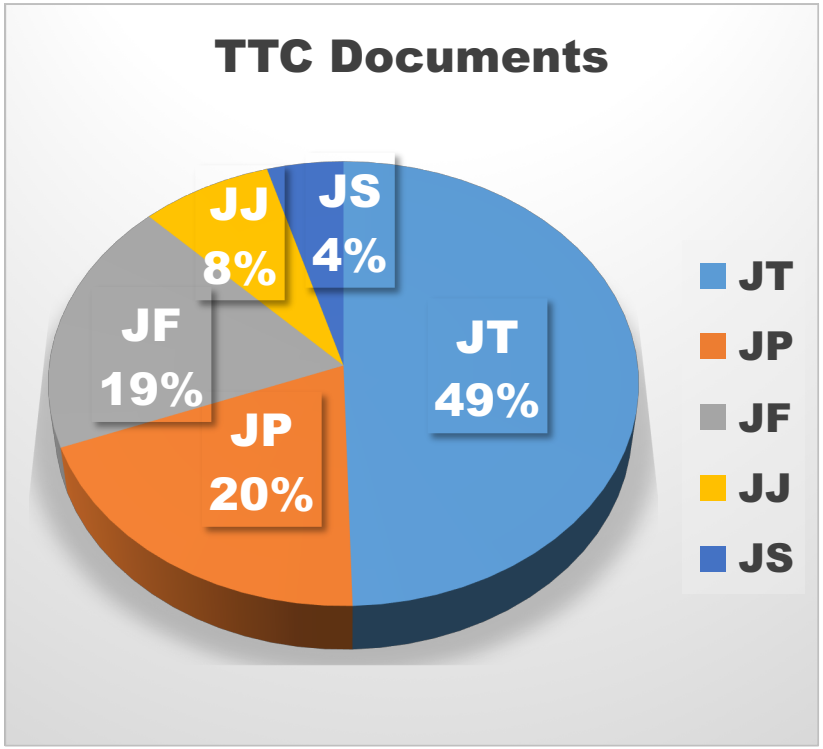


Number of TTC documents

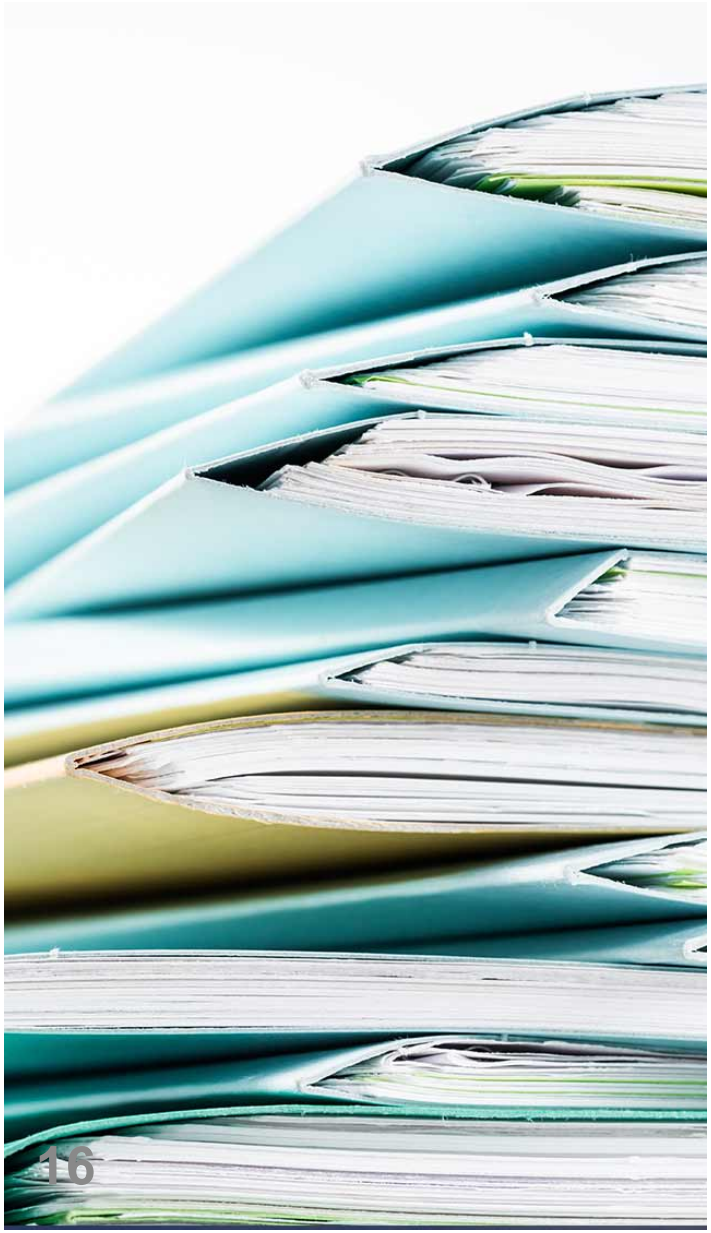
- Conventional TTC standards development is in progress as planned according to the annual project plan

Type	No.	Increase in 2018
JT	438	+6
JP	173	0
JF	164	+7
JJ	69	+2
JS	40	0
TS	13,734	+1736
TR	635	+89

[Note] As of Jan. 2019



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



Thank you very much for your attention !

If you have any comments or questions, please contact to

yoichi.maeda@s.ttc.or.jp
&
http://www.ttc.or.jp/e

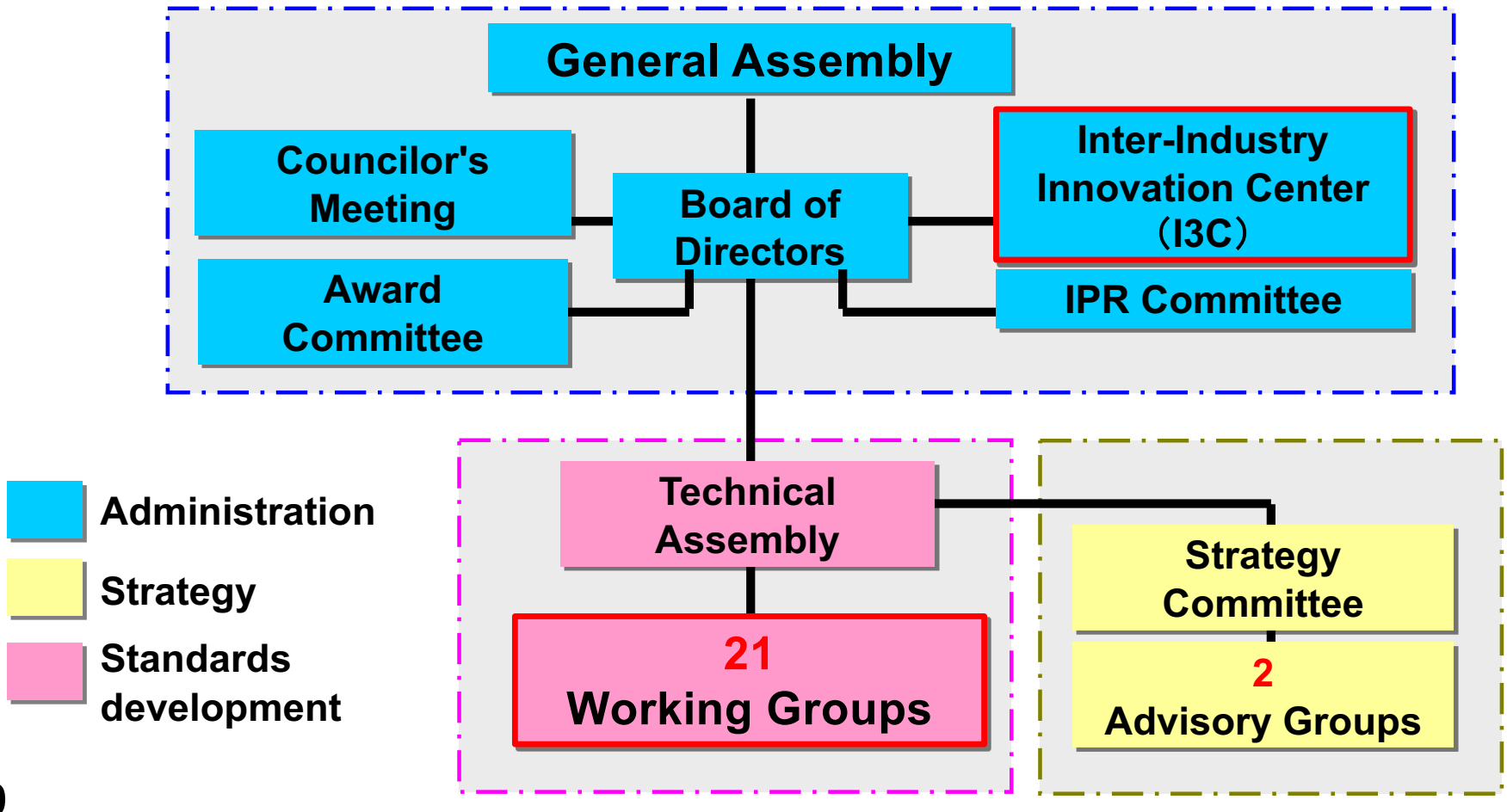
APPENDIX:

Supplementary slides on TTC's organization

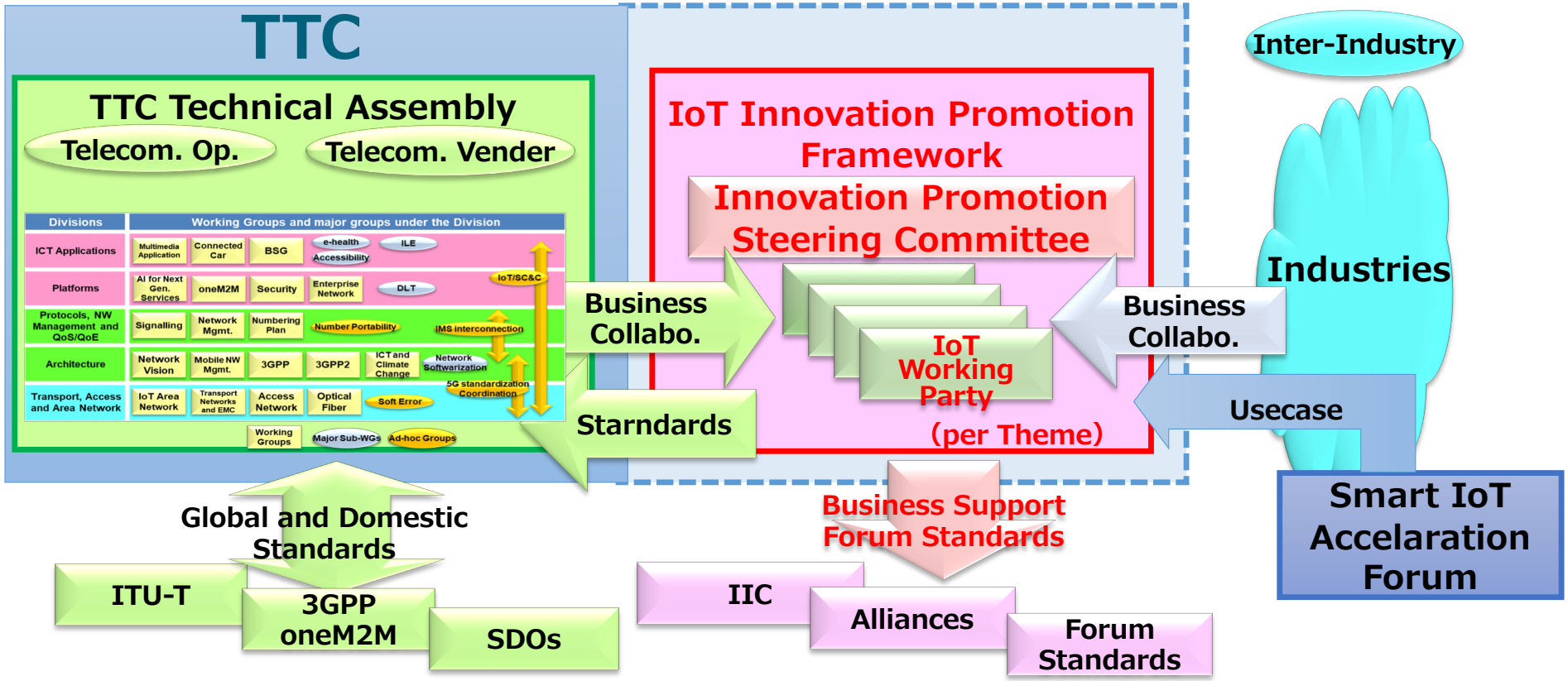
TTC's mission

- TTC is a private and non-profit organization accredited by the Japanese Administration as an SDO in Japan
- Established in 1985 (NTT's privatization)
- TTC is an SDO qualified by ITU-T Recommendation A.5 & A.6
- TTC's mission is to develop and disseminate the TTC standards applicable both in Japan and in other areas in particular in the Asia-Pacific region
- Substantial and preparatory discussions on the upstream activities to ITU-T are extended by TTC Working Groups and their outcomes should be submitted to MIC for authorization as the formal Japanese contribution

TTC's Organization Chart



Inter-Industry Innovation Center

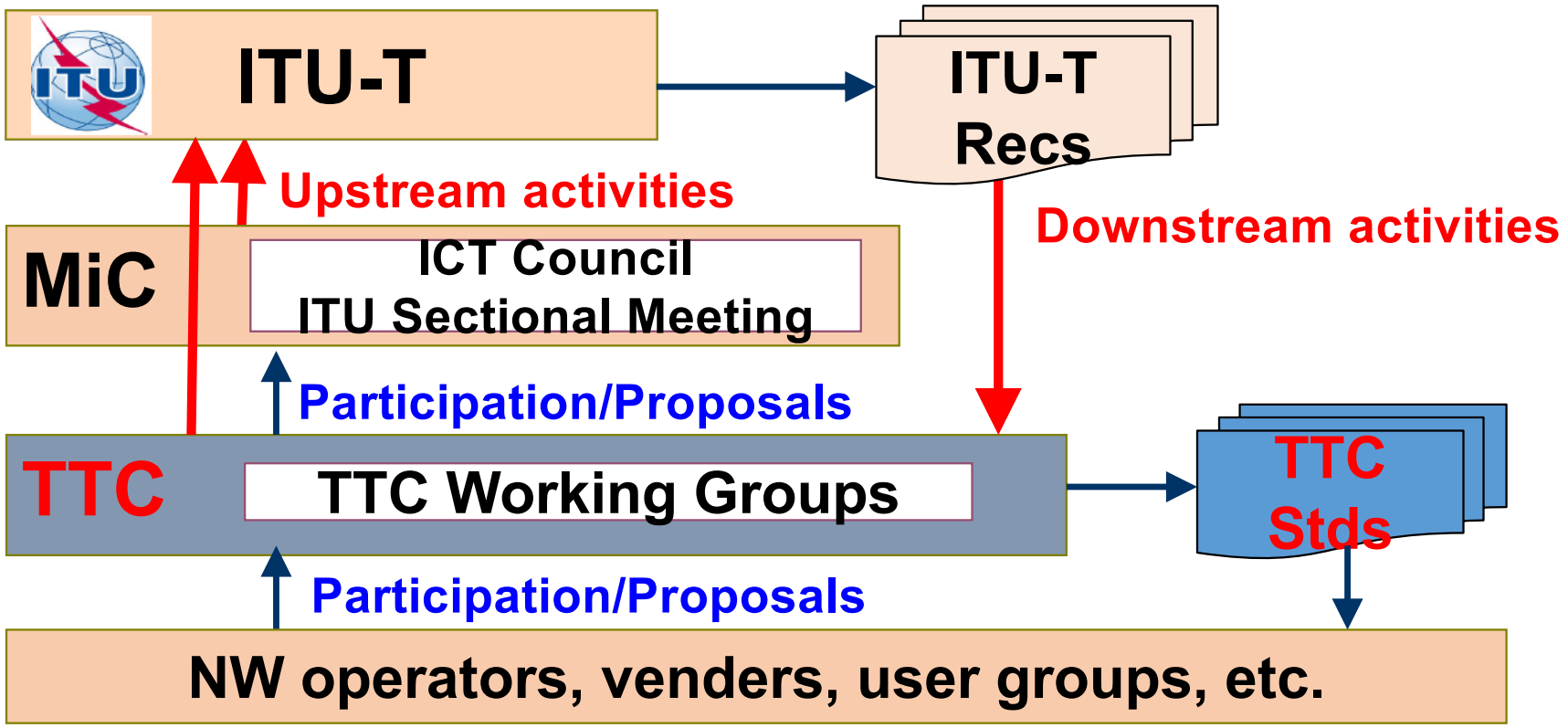


A new framework promoting innovation activities and inter-industry community bridges to stimulate practical business and technology studies in IoT service/application development.

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

TTC Standards Development Process



[Notes] MiC: Ministry of Internal Affairs and Communications in Japan

Categories of TTC Documents

Type	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 fora	IETF, IrDA, NMF, IEEE, etc.
JJ	TTC Standards developed originally by Japan/TTC	-
JS	TTC Standards based on ISO Standards	ISO
TS	Technical Specifications	3GPP, 3GPP2, oneM2M, etc.
TR	Technical Reports	3GPP, 3GPP2, oneM2M, etc.