Global Standardization Activities

ITU-T Study Group 16 Meeting Report and Recent Development in Standardization of Immersive Live Experience Technologies

Jiro Nagao

Abstract

The recent meeting of the International Telecommunication Union - Telecommunication Standardization Sector (ITU-T) Study Group (SG) 16 was held in October 2022, with the new management members. An SG vice-chairman and two Working Party chairmen were appointed from Japan. Regarding immersive live experience, four draft documents including one new work item were discussed, and the definition of the descriptor of haptic information was added to one of the documents during the meeting. In the meeting, a Correspondence Group on Metaverse was held and sent a liaison statement to the Telecommunication Standardization Advisory Group (TSAG) asking for TSAG's decision on whether to start a Focus Group on Metaverse. With the newly appointed director of the Telecommunication Standardization Bureau, Mr. Seizo Onoe, a positive cycle of technology development and dissemination is expected by incorporating industry into the standardization activities of ITU-T.

Keywords: ITU-T, Study Group (SG) 16, immersive live experience (ILE)

1. New Study Group 16 administration

The administrations of Study Groups (SGs) of the International Telecommunication Union - Telecommunication Standardization Sector (ITU-T) are renewed every four years. The Plenipotentiary Conference (PP)*1 decides the general policy for the whole ITU and World Telecommunication Standards Assembly (WTSA)*2 for ITU-T, including appointments of SG chairmen and vice-chairmen. The recent ITU-T SG16 meeting was held between October 17 and 28, 2022. The new SG16 administration under the chairman (re-appointed) was formed as it was the first meeting after WTSA. The chairman and vice-chairmen of SG16 are listed in **Table 1**. Mr. Yamamoto (OKI) from Japan was appointed as a vice-chairman.

The rapporteurs and associate rapporteurs who lead Questions (Q) and Working Party (WP) chairmen were also appointed during the SG16 meeting. **Table 2** lists the WP chairmen. Mr. Yamamoto and Mr. Imanaka (National Institute of Information and Communications Technology (NICT)) from Japan were appointed as WP2 and WP3 co-chairmen, respectively. The rapporteurs and associate rapporteurs are listed in **Table 3**. Three rapporteurs (Q8 Mr. Imanaka, Q27 Mr. Yamamoto, Q26 and Q28 Mr. Kawamori (Keio University)) and two associate rapporteurs (Q8 the author, Q27 Mr. Shimizu (Mitsubishi Electric)) from Japan were appointed.

^{*1} PP: The highest policy-making body of ITU. It is held every four years. Delegates from about 190 member states gather.

^{*2} WTSA: WTSA is held every four years and defines the next period of study for ITU-T.

Name	Country			
Mr Zhong (Noah) LUO	China			
Mr Ashok KUMAR	India			
Mr Hideki YAMAMOTO	Japan			
Mr Shin-Gak KANG	Korea (Rep. of)			
Ms Sarra REBHI	Tunisia			
Mr Charles Zoé BANGA	Central African Republic			
Mr Per FRÖJDH	Sweden			
Mr Justin RIDGE	United States			
Mr Akmal SAVURBAEV	Uzbekistan			
	Mr Zhong (Noah) LUO Mr Ashok KUMAR Mr Hideki YAMAMOTO Mr Shin-Gak KANG Ms Sarra REBHI Mr Charles Zoé BANGA Mr Per FRÖJDH Mr Justin RIDGE			

Table 1. Chairman and vice-chairmen of SG16.

Table 2. WP chairmen (co-chairmen) of SG16.

WP	WP title	Chairmen (Country)	Questions
WP1	Infrastructure for multimedia systems	Shin-Gak KANG (Rep. of Korea) Marcelo MORENO (Brazil)	11, 13, 21, 22, 27
WP2	Multimedia digital services and human aspects	Mohannad EL-MEGHARBEL (Egypt) Hideki YAMAMOTO (Japan)	23, 24, 26, 28
WP3	Audiovisual technologies and intelligent immersive applications	Hideo IMANAKA (Japan) Yuan ZHANG (China)	5, 6, 8, 12

2. SG16 meeting topics

2.1 Immersive live experience

The Q8 of SG16 studies immersive live experience (ILE). NTT has been contributing actively to Q8 since the beginning of the Question. Five Recommendations (From ITU-T H.430.1 to H.430.5) have been published thus far. Study on interactive immersive services (IIS) started recently, and NTT proposed to start the draft Recommendation H.ILE-Haptic. Other topics are described below.

(1) H.430.3 V2 (Service scenario of ILE)

This draft Recommendation explains service scenarios and use cases of ILE. Transport of haptic information and IIS are considered to be added to the document. Descriptions of the relevant service scenarios were revised, and information on the related technologies provided by SG13 was added to the draft Recommendation during the meeting.

(2) H.IIS-Reqts (Requirements of IIS)

This document defines the requirements of IIS. Consent of the draft was proposed, but it was post-poned because a relatively large revision was made to the draft including elaboration and change of sections.

(3) H.ILE-Haptic (Media transport protocols, sig-

nalling information of haptic transmission for ILE systems)

NTT proposed to start this draft Recommendation to add haptic transmission technology to ILE. The current Recommendations on ILE describe transport of video, audio, location, etc., but the draft aims to add the transmission technology of haptic information to achieve even higher sense of immersiveness. Stiffness and other information have been added to the draft along with the definition of the descriptor of haptic information during the meeting.

(4) H.IIS-FA (Functional architecture of IIS system)

This is a new work item consented to start during the meeting. High-level architecture of IIS and functional architecture are expected to be studied. Details will be discussed in future meetings.

2.2 Metaverse

Correspondence Group (CG) on Metaverse had been held in the previous SG16 meeting (January 2022). Focus Group (FG)*3 on Metaverse was proposed from Japan in this meeting (October 2022).

^{*3} FG: A group created by ITU-T to augment the SG work program or when the issue is not covered within an existing SG. Non-ITU member can join FGs.

Table 3. Questions, rapporteurs and associate rapporteurs (* indicate rapporteurs).

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	Q28 (WP2) Multimedia framework for digital health applications	*Masahito KAWAMORI	Japan

The CG was also held in this meeting, and issues, such as whether to start the FG, the parent group of the FG, name of the FG, were sent to the Telecommunication Standardization Advisory Group (TSAG)*4.

3. Future prospect

In PP-22 [1] held from 26 September to 14 October 2022, Mr. Onoe from Japan (then NTT chief standardization strategy officer) was elected as the next director of the Telecommunication Standardization Bureau at ITU-T. He started his post in January 2023. This appointment is expected to stimulate the telecommunication standardization activities in Japan, resulting in more active discussion in SG16. NTT

plans to continue contributing to the work items such as H.ILE-Haptic. Not only the standardization communities but also the market is interested in the metaverse. Collaboration between the industry, who implements technologies, and ITU-T, who deploys technology standards worldwide, is expected to create a positive cycle of technology development and dissemination.

Reference

[1] PP-22, https://pp22.itu.int/en/

^{*4} TSAG: The advisory body to SGs in administration and operation of ITU-T. TSAG meets during the years when WTSA is not held.



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Senior Manager, Standardization Office, Research and Development Planning Department, NTT Corporation. He received a Ph.D. in information science

He received a Ph.D. in information science from Nagoya University, Aichi, in 2007. He joined NTT the same year. From 2007 to 2011, he was engaged in research and development of image processing and content distribution technology. From 2012 to 2017, he worked for NTT Communications, serving as the technical leader of commercial video streaming services. From 2017 to 2021, he was engaged in research and development of immersive media and presentation technology at NTT Service Evolution Laboratories. Since 2019, he has contributed to the international standardization efforts on ILE of ITU-T SG16. He served as an editor of ITU-T H.430.4 (ex H.ILE-PMT) and H.430.5 (ex H.ILE-PE) from 2019 to 2020. He received the ITU Association of Japan Encouragement Award in 2021. He is currently an associate rapporteur of ITU-T SG16 Q8 (Immersive Live Experience, since 2022) and the leader of ILE Sub Working Group of the Telecommunication Technology Committee (since 2020). He is a member of the Institute of Electrical and Electronics Engineers (IEEE), the Institute of Electronics, Information and Communication Engineers (IEICE), and the Japanese Society of Medical Imaging Technology (JAMIT).