Report of mini-workshop on ILE (Geneva, 14 September 2016, PM)

Summary

This document provides the brief report on the mini-workshop on Immersive Live Experience services, held on the afternoon (14:30 – 17:50) of 14 September 2016. Five speakers presented from all over the world, including non ITU-T member.

1. Introduction

The mini-workshop on Immersive Live Experience (ILE) was held on the afternoon (14:30-17:50) of 14 September, 2016. As the Rapporteur of QILE/16, Mr Hideo Imanaka, NTT, Japan, moderated the workshop and around 20 persons participated. The purpose of this workshop was to exchange information about immersive services within participants for future standardization work in ITU-T. Including non ITU-T member, five speakers presented their latest work on immersive services.

2. The major results of the meeting

The program is shown in Annex A of this document, and also can be found in IPTV-GSI web pages:

http://www.itu.int/en/ITU-T/gsi/iptv/Pages/201609WSILE.aspx

ITU-T SG16, especially QILE/16, recognized that several kinds of immersive services including immersive telepresence and VR were studied in all over the world, and such immersive services could become one of major ICT services in near future. Since QILE/16 had just started standardization work on immersive live experience, it was needed to gather more information from all over the world. In order to progress this work, it was agreed to have the second workshop on ILE at the next SG16 meeting on January 2017.

3. Brief introduction of presentations

3.1 Opening remarks (TSB director)

Mr Chae-sub Lee, TSB director, addressed opening remarks at the beginning of workshop. He pointed out that ILE was the quite new study area in ITU-T, and ILE could open new door for challenging new study area, since ITU-T has continued new challenges. He concluded this remarks with hoping success of ILE standardization work.

3.2 Session 1: USE CASES ON IMMERSIVE LIVE EXPERIENCES

This session was moderated by Mr Marcelo Moreno (Rapporteur of Q13/16, UFJF, Brazil), and aimed to explore use cases, scenarios and technologies of immersive live experience (ILE) services and solutions, in order to understand what is ILE.

3.2.1 Immersive Telepresence System called "Kirari!", [including demos]: Yoshihide TONOMURA (NTT, Japan)

This presentation introduced NTT's activities related to ILE, which was named "Kirari!." During and after this presentation, small sized "Kirari!" was demonstrated. "Kirari!" was a research project to

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realize high-realistic public viewing or live viewing services for big sports games, music concerts and cultural events. Live transmission of Karate Enbu case and Kabuki stage case were shown in videos.

In this presentation, the presenter pointed out that several technologies used by "Kirari!" such as media transmission technologies could be the candidates of standardization topics.

3.2.2 Immersive viewing technologies and VR market, [including videos]: Thierry FAUTIER (Harmonic)
This presentation introduced expectation of VR market trends, and VR related activities in DVB. The presenter pointed out that this year, 2016, was the first year for VR because several commercial services used VR were launched in this year. This presentation reported that VR market would reach 1 Billion USD in 2020, and 6B USD in 2025 (36% of them would be live programs).

The presenter expected that standards on this area in DVB, MPEG and ITU were needed to deploy VR market smoothly.

3.3 Session 2: ILE TECHNOLOGIES AND STANDARZATION GAPS
This session was moderated by Mr Yoshihide Tonomura (NTT, Japan), and aimed to introduce the urgent technologies related to ILE, which may include virtual reality, 360-dgree video, synchronous media transport, surrounding sound, and codecs of spatial and environmental information.

3.3.1 High Quality Video for VR Streaming: Cornelius HELLGE(Fraunhofer HHI)
This presentation introduced the latest research activities in Fraunhofer, especially on camera systems, CG integration and VR video transmission. In order to overcome parallax issue of existing 360-degree cameras, study activities on multi (24) cameras were introduced. Regarding CG integration, the presenter pointed out that there were several issues on mixture with real person images and CG, and on transmission methods of integrated images. He also pointed out that high-quality VR transmission could be achieved with reduced bandwidth by using multi quality image transmission.

3.3.2 Researches on Immersive services in B<>Com and DVB activities: Ludovic Noblet (B<>Com)
This presentation introduced the current VR standardization activities in DVB. DVB had just started VR standardization activities in January 2016, and some reports including VR definition and 360-dgree cameras were already published.

The presenter also introduced research activity related to VR in B<>COM, the private research organization in France. One of VR research topics was how to use VR into technical training which aimed to transfer know-hows from experts to new comers.

He pointed out that 5G might be a key factor for expansion of VR market, however, VR standardization must be required to confirm users' needs.

3.3.3 Toward ultra-realistic telework, broadcasting and IPTV: Hideki Yamamoto (OKI)
This presentation introduced the status of immersive services, including 4K and 8K broadcasting, in Japan. OKI had launched high-realistic remote office services, which connected several office rooms remotely by high-resolution display and sound systems. Japanese government planed 8K public viewing services at Tokyo Olympic/Paralympic games 2020, and OKI had started 8K IPTV transmission trial.

3.4 Wrap-up

The moderator of this workshop, Mr Imanaka, concluded that all information provided in this workshop was very helpful for studying standards on immersive live experience since QILE work had just started in this week. He proposed to have the second workshop on ILE for further information exchange and discussion about ILE standardization activities at the next SG16 meeting on January 2017. Because MPEG meeting would be collocated in the same time of SG16 meeting, MPEG-VR activities might be introduced at the second workshop. All participants and speakers were agreed his proposals.

3.5 Closing remarks (the Chairman of SG16)

The Chairman of SG16, Mr Yushi Naito, gave closing remarks. Current study period would terminate at the end of this year, and new study period would start from the beginning of next year. ILE would surely be one of key research areas of the next study period. Since SG16 has been collaborating with other organizations extensively, he expected that ILE standardization work could also be successful through collaboration and coordination with other SDOs.

4. Conclusion

In this mini-workshop, participants learned some kinds of immersive services and its technologies. Since QILE/16 work had just started, it should need to gather more information about immersive services including its standardization activities. Holding the second workshop on ILE was agreed, and contributions were invited.

Acknowledgement:

The moderator of this workshop thanked all presenters for providing useful information about immersive services all over the world, and participants for their active discussion, and also thanked to TSB, Mr Simão Campos.

ANNEX A

Programme of mini-workshop on Immersive Live Experience

14:30-14:40	**Opening Session** • ***Moderator: Mr Hideo IMANAKA (QILE/16 Rapporteur)*** • ***Opening remarks: Mr Chae-Sub LEE (Director TSB)***
SESSION 1 **USE CASES ON IMMERSIVE LIVE EXPERIENCES** *The session will explore use cases, scenarios and technologies of immersive live experience (ILE) services and solutions, in order to understand what is ILE.*	
14:40-15:40	***Moderator: Mr Marcelo MORENO (UFJF)*** **Presenters** • *Immersive Telepresence System called "Kirari", [including demos]: Yoshihide TONOMURA (NTT)* • *Immersive viewing technologies and VR market, [including videos]: Thierry FAUTIER (Harmonic)*
15:40-16:10	***Coffee break***
SESSION 2 **ILE TECHNOLOGIES AND STANDARZATION GAPS** *This session will introduce the urgent technologies related to ILE, which may include virtual reality, 360-dgree video, synchronous media transport, surrounding sound, and codecs of spatial and environmental information. In this session, standardization gaps may be identified.*	
16:10-17:40	***Moderator: Yoshihide TONOMURA (NTT)*** **Presenters** • *High Quality Video for VR Streaming: Cornelius HELLGE(Fraunhofer HHI)* • *Researches on Immersive services in B<>Com and DVB activities: Ludovic NOBLET (B<>Com)* • *Toward ultra-realistic telework, broadcasting and IPTV: Hideki YAMAMOTO(OKI)* • **Discussions**
17:40-17:50	**Closing Session** • ***Wrap up: Mr Hideo IMANAKA (QILE/16 Rapporteur)*** • ***Closing remarks: Mr Yushi NAITO (Chairman of SG16)***

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