ITU Workshop on

TV and content delivery on Integrated Broadband Cable Networks

Hangzhou, China, 26 May 2017

http://www.itu.int/en/ITU-T/Workshops-and-Seminars/201705/Pages/programme.aspx

Conclusion and Way Forward

Satoshi Miyaji
Chairman of ITU-T SG9, KDDI, Japan

Outline of today's sessions

- **Opening and keynote**

- **Session 1**: Latest trends on business and deployment of cable television, *moderated by Hideki Yamamoto*

- **Session 2**: Innovative type of TV services, experiences, standards and technologies (AR, VR, 3D, 4k/8k displays, smart home, IoT, etc.), *moderated by Sung-Kwon Park*

- **Session 3**: Technologies and terminals for advanced cable television services, *moderated by Heming Wang*

- **Exhibition**:
  - Beijing Hannuo Semiconductor Technology
  - IEEE
  - Japan Cable Labs
  - KDDI Corporation
  - Sumavision
  - Wasu

Summary: Opening and Keynote

- Welcome remarks
by Ms. Xiaojie Wang (CTO, SAPPRFT, China)
  – China's leading technologies for the cable television industry
  – e.g., C-DOCSIS, HiNoC, TVOS…
- Keynote presentation
by Mr. Chris J. Lammers (COO, CableLabs, US)
  – Pay TV industry consolidation
  – Fierce competition of high-speed broadband in US
  – Cable TV industry is in a strong positioning

ITU SG9 Key Mission in 2017 – 2020

- **Bridging the Standardization Gap (BSG)**
  - **considering requirements from various regions**
  - **implementation and deployment guidelines (Q4/9)**

- **Evolution of integrated broadband cable networks and systems**
  - **ultra-high speed cable modems**
  - **robust and flexible security**
  - **high-efficiency transport technology, etc.**

- **Innovative services**
  - **advanced definition video experiences (4K/8K/HDR etc.)**
  - **high realistic experiences (VR/AR etc.)**
  - **integrated broadcast and broadband services, etc.**

Session 1

Latest trends on business and deployment of cable television

Moderator: Hideki Yamamoto
(Oki Electric Industry Co., Ltd., Japan)

Presentations of Session 1

- *The national converged cable service platform / The China's distributed cable cloud,* **Zeng Qingjun**, (Deputy General Manager, China Broadcasting Network Co. Ltd, China)

- *Telecommunications: diffuse borders in terms of income and investment in Latin America,* **Pablo Daniel Roque**, (ICT consultant, Universidad Nacional De Rio Negro, Argentina)

- *Impact of cable TV on economy in developing countries,* **Emmanuel Harelimana**, (Network Design Engineer, Liquid Telecom Rwanda, Rwanda)

Take away from Session 1 (1/2)

- *Mr.* Zeng Qingjun's *presentation*

-> CBN is developing distributed cloud systems and "wired and wireless converged cable services", and plans several trial services to realize the huge cloud based systems. We think there are or will be lots of topics to be standardized to reduce cost and time

- *Mr. Pablo Daniel Roque's presentation*

-> Network (NW) providers must increase the bandwidth (50% year-to-year), according to the growth of OTT. It is time to wonder what would happen if Netflix covered 70% of the contents circulating in local NW: it will surely be consulted about decisions made regarding their future income and investment to NW. New services (that is standardized) by CATV may be important.

- *Mr.* Emmanuel Harelimana's presentation

-> Beyond the entertainment, CATV service can influence a wide range of attitudes and behavior (education, job creation). Countries need to take decisions on the political and technological issues, based on technical and economic analysis in order to achieve a sustainable growth and poverty reduction through the development of infrastructure. Standards of broad areas are important for this change.

To deploy CATV services

1. Standards for CATV and other ICT services/infrastructure is important.
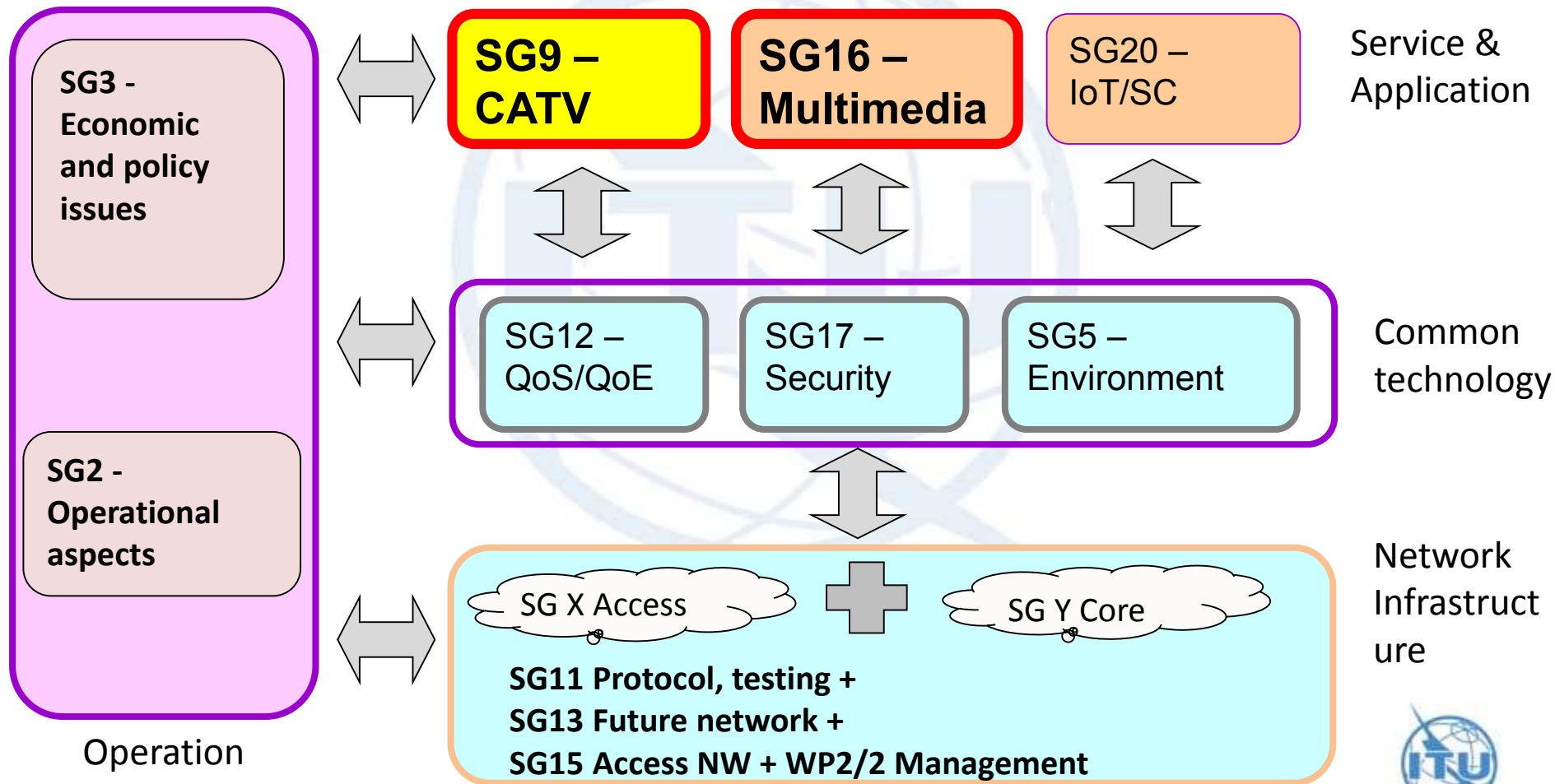
Session 2

Innovative type of TV services, experiences, standards and technologies (AR, VR, 3D, 4k/8k displays, smart home, IoT, etc.)

Sung-kwon PARK
(Professor, Hanyang University, Rep. of Korea)

Presentations of Session 2

- *Shaping the technology roadmap of virtual reality (VR) and augmented reality (AR): Challenges and standardization needs,* **Yu Yuan**, (Chair, IEEE Digital Senses Initiative, IEEE)

- *Future cable services: Communication and recognition,* **Tomoyuki Shimizu**, (Research Engineer, KDDI Research, Inc., Japan)

- *High-realistic viewing and 4K linear TV,* **Hideki Yamamoto** (Oki Electric Industry Co. Ltd., Japan)

Take away from Session 2 (1/2)

- *Mr. Yuan's Presentation*
  - *Presented the latest innovation trends and efforts of AR and VR*
  - *Introduced IEEE digital Senses Initiative and IEEE VR/AR Working Group*
  - *Addressed the needs for standardization in the above areas and the outcomes*

- *Mr. Shimizu's Presentation*
  - *Addressed the latest trend of cable set top boxes toward 4K Super Hi-Vision video, smart phones and pads, PCs, and IoT services*
  - *In addition, it introduces prospects of user friendly intelligent cable services*
  - *Using machine learning, home and personal devices recognize our lifestyle, activities in home, health condition, interests, concerns, etc.*

Take away from Session 2 (2/2)

- *Mr. Yamamoto's Presentation*
  - *NHK in Japan has a plan to broadcast the 2020 Olympic Games in via 8K Super Hi-Vision. The test broadcasting has started in August, 2016*
  - *From 2018, commercial 4K broadcast will start through BS*
  - *4K linear TV service linked with IBB (Hybridcast) over Cable network and telecom network are reported as future service. Also SG16 was introduced in these efforts. An OKI media server is an enabler of such services*

Session 3

Technologies and terminals for advanced cable television services

Heming WANG
(SW Director, Hisilicon, China)

Presentations of Session 3

- *The smart cable terminals,* **Liu Jiuping** (General Manager, Oriental Cable Network Co., Ltd, China)

- *Cable television in Japan,* **Tatsuo Shibata**, (Director, Japan Cable Laboratories, Japan)

- *Intelligent inclusive TV,* **Pradipta Biswas**, (Assistant Professor, Indian Institute of Science, India)

- *TV operating system software for smart IBB cable terminals,* **Sheng Zhifan**, (CTO, ABS, China)

Take away from Session 3

- *A sustainable platform for Smart terminal is very important for cable TV industry. Sustainable platform has to*
  - *enable more app developers*
  - *enable value-added service operation*
  - *Scale to support Peripheral extension*
- Japan Cable is leading the way to deploy 4k/8k service
  - Cable Broadcasting is embracing broadband to support 4K with advanced features like HDR, MMT, ACAS.
- *Accessible TV should be a multi-stakeholder approach requiring both new research and quality assurance of existing accessibility options*
- *TVOS with* a high security and high converged media processing capability, *accelerates Cable network evolving in China. TVOS also*
  - *Get Cable STB smart to enable new business model*
  - *Be proposed to be* smart IBB terminals