

ITU-T STUDY GROUP 9

Broadband Cable and TV

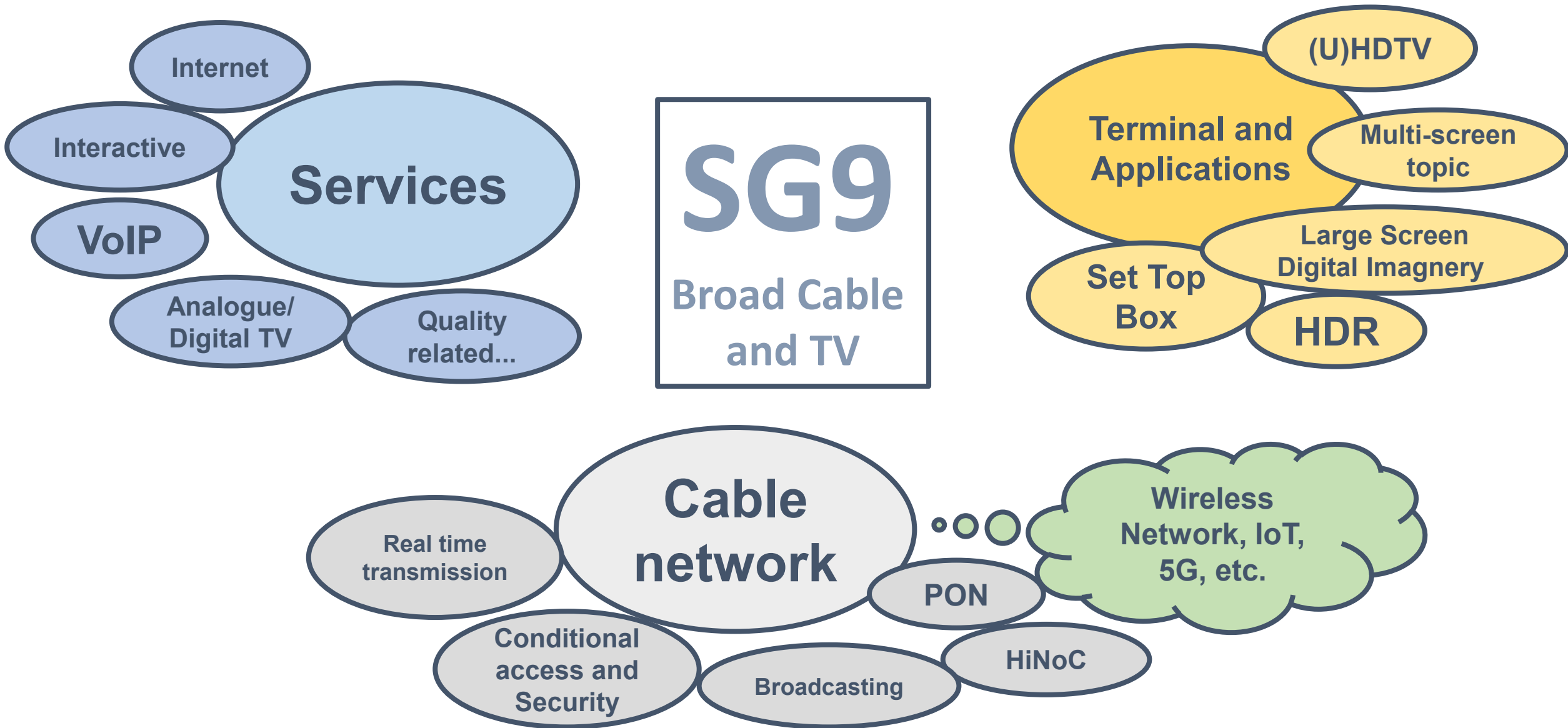


Arthur Webster
Chairman, SG9

- ✓ Key areas of work
- ✓ Achievements
- ✓ Commercializing SG9 Recs
- ✓ Future work
- ✓ Additional Slides



Key areas of Work





Achievements

Ultra high-definition cable television

Scalable ultra high-definition (UHD)

IP-VOD DRM

Hybrid perceptual bitstream

Set-top box (STB)

High speed transmission over coaxial network

Integrated broadcast and broadband digital TV systems

Cable STB for 4K ultra high-definition television

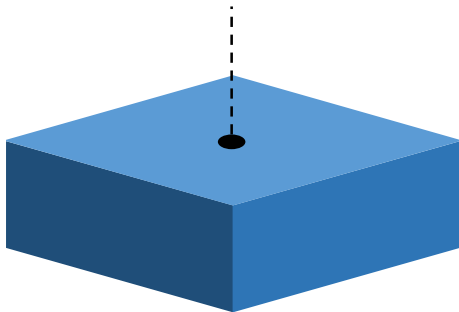


Development
of Recs on

Achievements

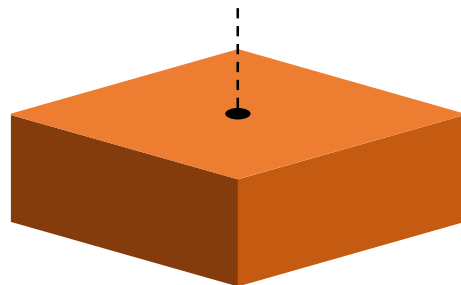
59

Recs approved in
this study period
(2013-2016)

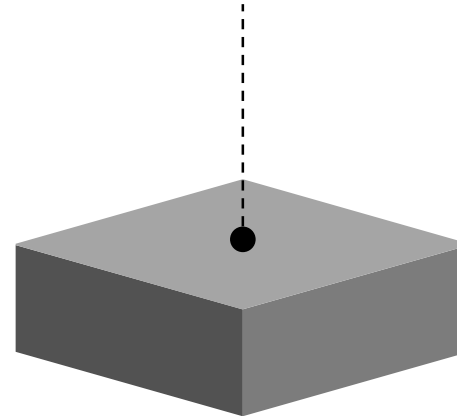


132.5%

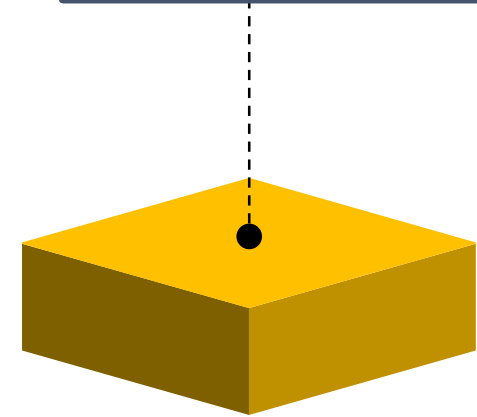
Increase from
the last
study period



Focus Group
on Smart
Cable
Television



Pilot trial of
WTSA-12
Resolution
80



Companies Commercializing SG9 Recommendations

Sony Corporation

Hybridcast



opticom TÉLÉCOMMUNICATION

Hannuo Semicon.
Technology Co. LTD



ROHDE & SCHWARZ



SwissQual

smarttv
BOX



4K-adapter box



Additional Slides

Highlights of achievements (I)

- ❑ Achievements
 - ❑ Development of Recommendations on;
 - Ultra high-definition cable television
 - Scalable ultra high-definition (UHD)
 - IP-VOD DRM
 - Hybrid perceptual bitstream
 - High speed transmission over coaxial network
 - Set-top box (STB)
 - Integrated broadcast and broadband digital TV systems
- Cable STB for 4K ultra high-definition television

Highlights of achievements (II)

- ❑ In this study period (2013-2016) SG9 approved 53 Recommendations
 - ➔ **132.5% increased!**
- ❑ Focus Group on **Smart Cable Television**;
Deliverable: Technical Report of the FG on Smart Cable Television
- ❑ **Pilot trial** of WTSA-12 Resolution 80
 - SG9 developed guidelines
Implemented in SG9; <http://www.itu.int/en/ITU-T/studygroups/2013-2016/09/Pages/acknowledgements.aspx>
 - TSAG agreed to extend implementation to all SGs (3 achievements)

Commercialization of Recommendations (I)

No	ITU-T Recommendation	Contents	Company/Product
1	J.382 and J.83	industry's first commercial demodulator LSI and tuner modules for ultra-high definition television (4K/8K) broadcasting receivers	Sony Corporation
2	J.343.1	a commercial product of quality testing application software "QualiPoc Android", a smartphone tool for quality troubleshooting and RF optimization.	Rohde&Schwarz, Swiss Qual
3	J.247, J.343.5 and J.343.6	a software libraries for video quality measurement for IP-video streaming named "PEVQ-S".	Opticom
4	J.295, J.296 and J.230	"Smart TV Box", deployed to nation-wide cable TV operators.	KDDI Corporation
		integrated experience of cable TV reception and application services synchronized with TV programs	Smart TV Box
		Smart TV Box (picture)	4K-adaptor box

Commercialization of Recommendations (II)

No	ITU-T Rec.s	Contents	Company/Product
5	High Speed Network over Coax (HiNoC) LSIs: designed to provide a high performance data transmission over the 'last 100-meter' coaxial networks connected with fiber-to-the building (FTTB)		
	J.195.1~J.195.3	to provide 112Mbps with 16MHz spectrum, released compliant LSIs for HiNoC bridge and modem	Haier IC Design Co., Ltd.
	J.196.1~J.196.3	to provide gigabit-level throughput and millisecond-level latency, released compliant LSI	Hannuo Semicon. Technology Co.LTD
6	J.205, J.206 and J.207	IBB services Requirement, Architecture and Specification	
		started on 2010 in Germany, and followed by (NL, FR, ES, PL, UK, FI, CH, IT, etc.), Australia and New Zealand, Saudi Arabia, and others.	HbbTV
		started on 2013 in Japan, the Hybridcast-supported TV sets. deployed by the six television manufacturers, i.e., LG, Mitsubishi, Panasonic, Sharp, Sony, Toshiba (in alphabetical order).	Hybridcast

Future work in 2017-2020

- ❑ Telecommunication systems for broadcasting of television and sound programs, including advanced television services.
- ❑ Quality assessment of video and multimedia over cable networks.
- ❑ Use of cable TV networks to provide interactive video services, telephone and data services, including Internet access, e.g. Integrated Broadcast and Broadband (IBB), cable modems, set top boxes
- ❑ Transmission of Large Screen Digital Imagery (LSDI) and new services such as HDR, 3DTV and UHDTV
- ❑ Conditional Access (e.g. protection of subscription services etc.)

Intersector Rapporteur Group

- **IRG-AVQA:** (ITU-T SG9 / ITU-T SG16 / ITU-R SG6) Intersector Rapporteur Group on **“*audivisual quality assessment*”**. 1st IRG established after WTSA-12 revised Resolution 18 allowing for intersector coordination at a technical level.
- **IRG-AVA:** Intersector Rapporteur Group on **“*Audiovisual Media Accessibility*”**. 2nd IRG established aiming at developing draft Recommendations for "Access Systems" that can be used for all media delivery systems, including broadcast, cable, Internet, and IPTV.
- **IRG-IBB:** Intersector Rapporteur Group on **“*integrated broadcast-broadband systems*”**
3rd IRG established to form a framework for collaboration on this topic.

Pilot trial of WTSA-12 Resolution 80

- **SG9 developed guidelines:**
 - ✓ Encourage the use of bibliography references
 - ✓ List ITU-T Recommendations within e.g. IEEE Xplore, Web of Science (cost for both), Google Scholar (free).
 - ✓ On the SG's webpage acknowledge all participants (i.e., chairs, rapporteurs, editors, contributors, attendees).
 - ✓ On the publication page of a given ITU-T Recommendation, create a page which lists the authors who did submit at least one Contribution that was accepted to progress the Recommendation.
- **Implemented in SG9** <http://www.itu.int/en/ITU-T/studygroups/2013-2016/09/Pages/acknowledgements.aspx>
- **TSAG agreed to extend implementation to all SGs**
- **Refer to the report issued by TSB [TD 1052]**

Statistics

- 48 Rapporteurs meetings held
- 171 contributions received
- 6 Study Group meetings held
- SG 9 participants: during last 4 years average participants are 43
 - ✓ Developing countries participation **24** countries **60** participants
- Total of 53 Recommendations approved [new (42) / revised (11)]