

Executive summary of ITU-T SG9 meeting (Geneva, Switzerland, 6-13 June 2019)

The fourth Study Group 9 (Broadband cable and TV) meeting in the study period 2017-2020 was held in Geneva, Switzerland, from 6 to 13 June 2019 at ITU Headquarters. The SG9 meeting was attended by 55 participants (of which, 7 attended remotely) from 18 countries. Along with face-to-face meetings, a few sessions were supported by remote participation, as requested by SG9 Management. At this meeting, Q8/9 did not meet; due to lack of Contributions Q8/9 meeting was cancelled.

Co-located with the SG9 meeting, the ITU organized a **workshop** on “[The Future of Television for Europe](#)” on 7 June 2019. This event, which was jointly organized by the ITU Standardization Sector (ITU-T), the ITU-Radiocommunication Sector (ITU-R) and the ITU Development Sector (ITU-D), focused on the diverse emerging broadband and broadcast technologies, including cable TV, with the aim to assist countries in the region of Europe to assess challenges, dynamics and opportunities. The aim of the workshop was to discuss the future of television in the region with relevant European and international stakeholders, covering regulatory and policy frameworks, emerging and convergent ICT Infrastructures and services, as well as user interfaces and accessibility issues.

Exhibition: The workshop also provided an opportunity to showcase, through an exhibition, the latest video-related technologies. Exhibitors included Hisilicon, KDDI, EBU, Keio University & ASTEM, UAIRT, Huawei, UAB, Iglor Soluciones Audiovisuales Avanzadas S.L.

In addition, we had the 14th IRG-AVA meeting session “Intersector Rapporteur Group on Audiovisual Media Accessibility” under the auspices of ITU-T SG9. [IRG-AVA](#) meeting took place on 6 June afternoon (1615-1730).

1. List of Consented/Determined Recommendations and other deliverables for approval

During the SG9 meeting in June 2019, a total of ten draft Recommendations were finalized and agreed for AAP Consent.

1.1 List of ten Consented draft Recommendations using AAP (ITU-T A.8)

Question	AAP/TAP	Rec	Status	Title	Final TD	A.5 justification
Q1/9	AAP	J.288 (J.288-rev)	Rev	Encapsulation of type length value (TLV) packet for cable transmission systems	SG9-TD634	-
Q1/9 Q7/9	AAP	J.224 (ex.J.5GDOCSIS)	New	Fifth-generation transmission systems for interactive cable television services – IP cable modems	SG9-TD640R2	SG9-TD644

Question	AAP/TAP	Rec	Status	Title	Final TD	A.5 justification
Q1/9 Q7/9	AAP	J.216 (ex. J.MHAv2)	New	Second-generation Modular Headend Architecture in transmission systems for interactive cable television services – IP cable modems	SG9-TD641R2	SG9-TD643
Q2/9	AAP	J.1026 (J.oneway-dcas-part1)	New	Downloadable Conditional Access System for Unidirectional Network; Requirements	SG9-TD645R1	-
Q2/9	AAP	J.1027 (J.oneway-dcas-part2)	New	Downloadable Conditional Access System for Unidirectional Network; System Architecture	SG9-TD646R1	-
Q2/9	AAP	J.1028 (J.oneway-dcas-part3)	New	Downloadable Conditional Access System for Unidirectional Network; The Terminal	SG9-TD649R1	-
Q5/9	AAP	J.207	Rev	Specification for integrated broadcast and broadband digital television application control framework	SG9-TD613	-
Q5/9	AAP	J.1202 (ex J.stvos-spec-arch)	New	The architecture of smart TV operating system	SG9-TD615	-
Q7/9	AAP	J.1210 (ex J.ipvb-req)	New	Requirements of IP Video Broadcast (IPVB) for CATV Networks	SG9-TD609	SG9-TD659
Q9/9	AAP	J.1600 (ex J.pcnp-fmw)	New	Premium Cable Network Platform (PCNP) – Framework	SG9-TD593R1	-

1.2 List of Determined draft Recommendations using TAP (WTSA Resolution 1, section 9)

Question	AAP/TAP	Rec	Status	Title	Current TD	A.5 justification
None						

At this meeting no Recommendations were Determined. However ITU-T SG9 has five determined Recommendations which reached the “determined” status at previous meetings. See the list of determined Recommendation in next section 1.3.

1.3 Results Recommendations, Supplements, Technical Reports or other documents for approval or agreement

The following reproduces the draft Recommendations that were planned for approval, according to TAP process. It was agreed to postpone their approval according to the agreement in section 4.2 of WP1 report (see [TSB Circular 180](#)). To ensure the TAP approval smoothly progresses until next SG9 meeting (February 2020), it was agreed to develop concrete action items and a timeline for the planned interim rapporteur meetings of Q2/9. SG9 participants agreed with the action items and timeline posted as [TD 670](#).

Question	AAP/TAP	Rec	Status	Title	Current TD	A.5 justification
Q2/9	TAP	ITU-T J.1012 (ex J.dmcd-part3)	New	Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; CA/DRM Container, Loader, Interfaces, Revocation	SG9-TD499	SG9-TD314
Q2/9	TAP	ITU-T J.1013 (ex J.dmcd-vm)	New	Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; The Virtual Machine	SG9-TD500	SG9-TD283R1
Q2/9	TAP	ITU-T J.1014 (ex J.dmcd-eci-as)	New	Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; Advanced Security - ECI-specific functionalities	SG9-TD501	SG9-TD316
Q2/9	TAP	ITU-T J.1015 (ex J.dmcd-kl-as)	New	Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; The Advanced Security system - Key Ladder block	SG9-TD502	SG9-TD315
Q2/9	TAP	ITU-T J.1015.1 (ex J.dmcd-kl-as Annex A)	New	Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; Advanced Security system - Key Ladder block: Authentication of control word-usage rules information and associated data 1	SG9-TD503	N/A

1.4 Modification of the category names of J-series Recommendations

The following reproduces the revised category names of ITU-T J-series Recommendations, initially proposed as [SG9-TD654R3](#).

As a consequence of the work on fifth generation DOCSIS and relevant specifications, there are many ITU-T Recommendations related to various generations of DOCSIS in different categories of J-series with the same category name. For the purpose of clarification, SG9 Management decided the following modification in the category names of J-series Recommendations with regard to DOCSIS:

- J.110-J.129: Interactive systems for digital television distribution (*DOCSIS first and second generations*)
- J.210-J.229: Interactive systems for digital television distribution (*DOCSIS third to fifth generations*)

In addition it was agreed to create two new category names as follows:

- *J.1026 to J.1029: Downloadable conditional access system for unidirectional networks*
- *J.1210-J.1219: IP-video broadcast*

Finally it was agreed to create a new category name and related sub-categories for AI related platforms as follows:

- J.1600-1649: Artificial intelligence (AI) assisted cable networks*
- *J.1600-J.1609: General requirements for the AI-assisted cable network platform*
- *J.1610-1619: Requirements for the set-top box*
- *J.1620-1629: Interfaces between the AI-assisted cable network platform and set-top box*
- *J.1630-1639: Data models of the communicated data for the AI-assisted cable network platform*
- *J.1640-1649: Migration and applications of the AI-assisted cable networks*

2. Supplements, Amendments, Corrigenda and other deliverables

2.1 Supplements

There was no time to discuss in detail the approval of the following Supplements. This was mainly because they are related to the ECI draft recommendations and their approval will be discussed when the TAP approval is concluded. Therefore their approval was postponed to the next meeting in February 2020.

Question	Kind of Publication	Status	Title	Final TD
Q2	Supplement	New	J.Suppl.7 (ex. J.sup-eg), Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; ECI guide (EG)	SG9-TD575-R1
Q2	Supplement	New	J.Suppl.8 (ex. J.sup-te), Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; Trust Environment (TE)	SG9-TD576-R1
Q2	Supplement	New	J.Suppl.9 (ex. J.sup-val), Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; System Validation (VAL)	SG9-TD577-R1

2.2 Amendments

No Amendment was proposed for agreement/approval at this meeting.

2.3 Corrigenda

No Corrigenda was proposed for agreement at this meeting.

3. New and deleted work items

3.1 SG9 agreed to start the following 9 new work items:

#	Question	Work item (kind of publication)	Status	Title	Editor	TD	A.1 Justification template
1	Q1	J.288-rev (Draft Rec.)	Rev.	Encapsulation of type length value (TLV) packet for cable transmission systems	Tomoyuki Shimizu (tm-shimizu@kddi.com)	SG9-TD634	N/A
2	Q1	J.cable-rf-ip (Draft Rec.)	New	Requirements of cable network for RF and IP secondary distribution of television programmes	Tatsuo Shibata (t-shibata@jilabs.or.jp) Kenji Obata (k-obata@jilabs.or.jp)	SG9-TD637	ANNEX C of SG9-TD663
3	Q5/9	J.stvos-spec (Draft Rec.)	New	The specification of smart TV operating system	Mr. Haifeng YAN (yanhaifeng@hisilicon.com)	SG9-TD533	ANNEX C of SG9-TD664
4	Q7/9	J.ipvb-spec	New	Specifications of IP Video Broadcast (IPVB) for CATV Networks	Ms. Lijie Zhang (zhanglijie@jishihuitong.com) Mr. TaeKyoon Kim(tkkim@etri.re.kr)	N/A	ANNEX C of SG9-TD664
5	Q7/9	J.uoc	New	Unified Optical and Coaxial Platform for Cabinet-DOCSIS	Mr. Evan Sun (evan.sun@huawei.com) Mr. TaeKyoon Kim(tkkim@etri.re.kr)	N/A	ANNEX C of SG9-TD664
6	Q7/9	TP.ipvb-ucase	New	User case and service scenario of IP Video Broadcast (IPVB) for CATV Networks	Ms. Lijie Zhang (zhanglijie@jishihuitong.com) Mr. TaeKyoon Kim(tkkim@etri.re.kr)	N/A	ANNEX C of SG9-TD664
7	Q7/9	J.fdx-fspec	New	Functional specification for in-band full-duplex in HFC based network	TaeKyoon Kim, Electronics and Telecommunications Research Institute, tkkim@etri.re.kr	N/A	ANNEX C of SG9-TD664

#	Question	Work item (kind of publication)	Status	Title	Editor	TD	A.1 Justification template
8	Q9/9	J.cloud-vr	New	Functional requirement of the cable network platform to deliver 360/VR video services	Evan Sun Huawei Technologies China Tel: +86-27-59267213 E-mail: evan.sun@huawei.com	N/A	ANNEX C of SG9-TD664
9	Q10/9	J.1-rev	Rev	Terms, definitions and acronyms for television and sound transmission and integrated broadband cable networks	Mr Zhongzhao Li (lizhongzhao@abp2003.cn)	ANNEX D of SG9-TD630	ANNEX C SG9-TD630

3.2 SG9 agreed to stop working on the following work items at this meeting

SG9 decided to not discontinue any of the work items.

4. SG9 Management for the Study Period 2017-2020

SG9 confirmed the composition of the management of ITU-T Study Group 9.

Role	Name
Chairman:	Mr Satoshi MIYAJI (KDDI, Japan)
Vice-chairman:	Mr Blaise Corsaire MAMADOU (Central African Rep.)
Vice-chairman:	Mr Tae Kyoong KIM (ETRI, Korea Rep. of)
Vice-chairman:	Mr Zhifan SHENG (ABS, China)
Advisor	Mr Stefano POLIDORI (SGD, TSB)
Administrative assistant	Ms Rosa ANGELES-LEON DE VIVERO (SGD, TSB)

5. SG9 Structure for the Study Period 2017-2020

SG9 confirmed its structure and leadership for the Study Period 2017-2020 as proposed in [SG9-TD521R1](#).

SG9 appointed Mr Blaise MAMADOU as WP1/9 vice-chair and Mr Eric WANG as WP2/9 vice-chair.

SG9 is composed of two Working Parties reporting to the SG9 Plenary:

- WP1 “*Video transport*” (Q1, 2 and 4);
- WP2 “*Cable-related terminals and applications*” (Q5, 6, 7, 8 and 9)

In addition, Q10 and the established Intersector Rapporteur Groups (IRGs) will report to the SG9 Plenary.
See the table below for more details.

	WP titles and MGT	Q/IRG	Titles
WP1	Video transport Zhifan SHENG (WP1/9 Chairman) ABS, China Blaise MAMADOU (WP1/9 Vice-chair) Central African Republic	Q1	Transmission and delivery control of television and sound programme signal for contribution, primary distribution and secondary distribution
		Q2	Methods and practices for conditional access, protection against unauthorized copying and against unauthorized redistribution ("redistribution control" for digital cable television distribution to the home)
		Q4	Guidelines for implementations and deployment of transmission of multichannel digital television signals over optical access networks
WP2	Cable-related terminals and applications Taekyoon KIM (WP2/9 Chairman) ETRI, Korea Eric WANG (WP2/9 Vice-chair) Huawei, China	Q5	Software components application programming interfaces (APIs), frameworks and overall software architecture for advanced content distribution services within the scope of Study Group 9
		Q6	Functional requirements for residential gateway and set-top box for the reception of advanced content distribution services
		Q7	Cable television delivery of digital services and applications that use Internet protocol (IP) and/or packet-based data over cable networks
		Q8	The Internet protocol (IP) enabled multimedia applications and services for cable television networks enabled by converged platforms
		Q9	Requirements, methods, and interfaces of the advanced service platforms to enhance the delivery of sound, television, and other multimedia interactive services over cable television network
SG9 PLEN	Plenary of SG9 Satoshi MIYAJI (SG9 Chairman) KDDI, Japan	Q10	Work programme, coordination and planning
		IRG-IBB	Integrated Broadcast-Broadband systems
		IRG-AVA	Audiovisual Media Accessibility

5.1 SG9 Questions texts:

During the SG9 meeting, it was discussed and agreed to start a new Question on Accessibility issues in SG9. At the same time it was decided to modify the ToR of Question 6/9 to remove its responsibility with respect to accessibility. The following documents provide the latest version of the terms of reference for the new Question and the revised Q6/9. A liaison statement will be sent to TSAG for their review and endorsement, as per usual procedure.

Question	Kind of Publication	Status	Title	Final TD
Q6/9	Question ToR	New	Proposed new Question on Accessibility issues in SG9	SG9-TD658-R3
Q6/9	Question ToR	Revised	Updated text of Q6/9 Terms of Reference	SG9-TD668R1

SG9 approved the revision of Tor for Q4/9 and Q9/9, which was agreed at last SG9 meeting in Bogotá, as follow up of TSAG endorsement, which was reported in [SG9-TD602](#).

To follow up on TSAG liaison on WTSA-20 preparations, which is available as [SG9-TD573](#), all Rapporteurs were requested to reflect on a possible revision of their Questions terms of reference. Some did so and their results were posted as TDs. These documents as well as new membership Contributions will be discussed at an interim meeting on SG9 restructuring in September 2019. All Questions will be involved and remote participation will be possible. The aim is to finalize SG9 inputs to WTSA in February 2020. The reason is to allow TSAG for review as the last meeting of SG9 in this study period is planned in September 2020, after the last meeting of TSAG before WTSA.

6. SG9 Management, Rapporteurs and Associate Rapporteurs

SG9 has updated the List of SG9 Rapporteurs and Associate Rapporteurs for the Study Period 2017-2020 as found in [SG9-TD522R1](#). The following experts were appointed:

- Mr Zhijian LIANG replaces Qiang WANG as Associate Rapporteur for Q2/9.
- Mr Haifeng Yan replaces George Lee as Rapporteur for Q5/9.
- Mr Zhongzhao Li was appointed Rapporteur for Q10/9, and
- Mr Tae Kyoon Kim was replaced by Mr Satoshi MIYAJI as Associate Rapporteur for Q10/9.

7. Liaison officers to external groups

SG9 agreed on the list of liaison officers for the Study Period 2017-2020, with the following changes as found in [SG9-TD523-R3](#).

- Mr Masayoshi Ohnishi was appointed as IRG-IBB co-Chairman, replacing his colleague Mr Masaru TAKECHI;
- Mr Tomoyuki Shimizu was appointed as the new liaison officer to ITU-T SG16.

- Mr Shen Zhiang will also be acting as liaison officer in Public Relations together with Mr Satoshi Miyaji.
- Mr Zhongzhao Li is the new liaison officer to SCV (Standardization Committee for Vocabulary).

8. Intersector Rapporteur Groups (IRG-AVQA; IRG-AVA; IRG-IBB)

SG9 continues to act as parent study group for two Intersector Rapporteur Groups between ITU-T and ITU-R, as mentioned in the table below.

The appointment of co-chairs for IRG-AVA and IRG-IBB was confirmed as follows.

Note that for IRG-IBB a new co-chair was appointed, as Masaru TAKECHI is leaving that position.

IRG	Title	Co-chair from SG9	Parent Groups	Website
IRG-IBB	Integrated Broadcast-Broadband systems	Masayoshi Ohnishi (NHK, Japan)	ITU-R SG6 ITU-T SG16	https://itu.int/en/irg/ibb
IRG-AVA	Audiovisual Media Accessibility	Pradipta BISWAS (Indian Institute of Science, India)	ITU-R SG6 ITU-T SG16	https://itu.int/en/irg/ava

9. Outgoing Liaison Statements

The following table shows the list of the 19 agreed outgoing liaison statements, as indicated in [SG9-TD525](#):

#	Questions	WP/ PLEN	To	For	Title	TD
1	Q1/9, Q7/9	WP1, WP2	ETSI TC CABLE, SCTE	Information	LS/o on approval of new Recommendations J.224 “Fifth-generation transmission systems for interactive cable television services – IP cable modems” and J.216 “Second-generation Modular Headend Architecture in transmission systems for interactive cable television services – IP cable modems”	SG9-TD642-R1
2	Q1/9	WP1	ITU-T SG16, ITU-R WP6B, SCTE, ETSI TC Cable	Information	LS/o on approval of revised Recommendation J.288-rev “Encapsulation of type length value (TLV) packet for cable transmission systems”	SG9-TD635-R1
3	Q1/9	WP1	ITU-T SG12 and SG16	Information	LS/o on start of new draft Recommendations J.cable-rf-ip “Requirements of cable network for RF and IP secondary distribution of television programmes”	SG9-TD636

#	Questions	WP/ PLEN	To	For	Title	TD
4	Q2/9	WP1	ITU-T SG17	Information	LS/r on the proposal for an amendment of ITU-T X.1197 (SG17-LS164) [to ITU-T SG17]	SG9-TD638
5	Q4/9	WP1	ITU-D SG1	Information	reply LS on collaboration	SG9-TD648
6	Q5/9	WP2	ITU-T SG16, IRG-IBB, ITU-R SG6 WP6B	Information	LS/o/r on recent activities of Recommendations related to TVOS (reply to IRG-IBB-LS4 and SG16-LS121)	SG9-TD617
7	Q5/9	WP2	ITU-R SG6 WP6B, ITU-T Study Group 16, IRG-IBB	Information	LS/o/r on recent activities of Recommendations related to IBB systems (reply to ITU-R WP 6B-LS62)	SG9-TD633
8	Q6	WP1	IRG-AVA, ITU-R SG6, ITU-SG16, ITU D SG1 and SG2, FG-VM, JCA- AHF	Information	LS/i on new Question for accessibility to cable systems and services [from ITU-T SG9]	SG9-TD667-R1
9	Q7/9	WP2	SCTE, ETSI TC- cable	Information	LS/o on AAP Consent of draft new Recommendations	SG9-TD610
10	Q7/9	WP2	SCTE, ETSI TC- cable, CCSA	Information	LS/o new work item for J.ipvb-spec, TP.ipvb-ucase	SG9-TD611
11	Q7/9	WP2	SCTE, ETSI TC- cable	Information	LS/o new work item for J.uoc	SG9-TD612
12	Q9/9	WP2	SG13	Information	LS/o on ITU-T Recommendation Y.3172 “Architectural framework for machine learning in future networks including IMT-2020” [from ITU-T Study Group 9]	SG9-TD666
13	Q9/9	WP2	FG-VM	Information	LS on FG-VM, “Use Cases and Requirements for the Vehicular Multimedia Networks”	SG9-TD665-R1
14	Q4/9, Q10/9	N/A	ITU-D SG1, SG2	Action	LS/o on request of ITU assistance to the DRC	SG9-TD618
15	Q10/9	N/A	ITU-T SG11, SG2, SG3, SG5, SG12, SG13, SG15, SG16, SG17, SG20	Information	LS/o/r on reference table to be used for Conformance and Interoperability testing (SG11-LS82)	SG9-TD619
16	Q10/9	N/A	TSAG, SG2, SG3, SG5, SG11, SG12,	Information	LS/o/r on hot topics	SG9-TD620

#	Questions	WP/ PLEN	To	For	Title	TD
			SG13, SG15, SG16, SG17, SG20			
17	Q10/9	N/A	JCA-IoT and SC&C	Information	LS/o/r on "Request to update the IoT and SC&C Standards Roadmap and the list of contact points" (JCA-IoTandSC&C-O-57)	SG9-TD631
18	Q10/9	N/A	SG2, TSAG, SG3, SG5, SG11, SG12, SG13, SG15, SG16, SG17, SG20	Information	LS/o/r on Telecommunication Management and OAM Project Plan (Reply to SG2-LS86 -E)	SG9-TD632
19	PLEN	N/A	TSAG	Action	LS/o on new Question A/9 and modified Question 6/9	SG9-TD669

10. SG9 results per Question

10.1 Question 1/9 “Transmission and delivery control of television and sound programme signal for contribution, primary distribution and secondary distribution”

The report of Q1/9 can be found in [SG9-TD621-R2](#).

Question 1/9 discussed 6 contributions and 4 TDs, including 2 incoming liaison statements. Question 1/9 agreed to initiate the following new work item: J.cable-rf-ip, that aims to provide the specifications of “*Requirements of cable network for RF and IP secondary distribution of television programmes*”. Question 1/9 agreed to propose for AAP consent:

- ITU-T J.224 (ex. J.5GDOCSIS),
- ITU-T J.216 (ex. J.MHAv2), and
- Revised version of ITU-T J.288.

As a result of the discussion, the meeting confirmed the following agreement between ITU-T SG9 and US CableLabs:

Agreement between ITU-T SG9 and US CableLabs:

“Cablelabs will submit contributions to SG9, proposing a revision of the related Recommendations, when a new release of the CableLabs specification related to DOCSIS 3.1 (Full Duplex) is available. This way CableLabs specifications will be reviewed and the corresponding revised Recommendations may be consented by a Plenary meeting of SG9 or Working Party 1/9 or Working Party 2/9. SG9 meets every nine (9) months in average and could organize a timely interim meeting of either WP1/9 or WP2/9 between two SG9 meetings to consent these revised Recommendations.”

It was also agreed that future revisions to these Recommendations that reflects updates to the referenced CableLabs specifications will be consented by SG9 or interim WP1/9 or WP2/9 meetings on a timely basis. CableLabs will ensure that contributions to revise the DOCSIS 3.1 (full duplex) will be submitted one month before the Plenary meeting that plans their consent along with the PDFs of the referenced documents for informative purposes and review by subject matter experts of ITU-T SG9.”

10.2 Question 2/9 “Methods and practices for conditional access, protection against unauthorized copying and against unauthorized redistribution (“redistribution control” for digital cable television distribution to the home)”

The report of Q2/9 can be found in [SG9-TD622-R2](#).

Q2/9 agreed to propose for AAP consent three draft new Recommendations regarding one-way DCAS:

- ITU-T J.1026 (SG9-TD645),
- ITU-T J.1027 (SG9-TD646), and
- ITU-T J.1028 (SG9-TD649).

Q2/9 agreed to issue a reply liaison statement to SG17 and SG16.

Q2/9 has a plan to have one face to face meeting and two other e-Meetings before the next SG9 plenary meeting.

Finally, Q2/9 discussed the TAP approval regarding J.1012 – J.1015.1, but fail to reach an agreement.

WP1/9 revisited the decision of Q2 related to the approval of the five Recommendations under TAP (J.1012 – J.1015.1) during the WP1 Plenary. During the discussion USA, UK, Israel and MovieLabs expressed their opinion to have more time to improve the text of J.1012 – J.1015.1. Germany and the Rapporteur of Q2 were reluctant to provide additional time, as there was no progress since the last SG9 meeting in Bogotá, even if two interim meetings were planned for the purpose to update these Recommendations.

During the discussion, Movielabs offered to submit a limited range of modifications during interim meetings to improve some aspects of J.1012–J.1015.1. The idea is not to modify the entire specifications but to concentrate efforts on some essential points, with the intention to try to find a middle ground for a compromised solution that could be accepted by all parties. Germany, who represents also the ECI group of experts that developed these draft Recommendations, agreed to discuss further the scope of the additional work requested by MovieLabs.

As a follow up the SG9 members agreed to the scope of work and related timeline as provided in [SG9-TD670](#).

Based on the discussion results mentioned above, WP1 decided to continue working on the J.1012 – J.1015.1 so that SG9 can produce high quality J.1012 – J.1015.1 Recommendations.

10.3 Question 4/9 “Guidelines for implementations and deployment of transmission of multichannel digital television signals over optical access networks”

The report of Q4/9 can be found in in [SG9-TD624](#).

Question 4/9 has confirmed two work items: Sup-digTV and J.dtc-distribution-req.

Sup-digTV "Installing a digital TV service for cable networks and relating Recommendations" provides a text book for engineers in developing countries. Contribution C101 from Japan Cable Laboratories added a comparison table for different optical transmission recommendations (ITU-T J.186 and J.185), and text for Appendix I “IPTV over HFC and FTTH.” Appendix I includes the use case of ADSL and concept of J.ipvb (IP Video Broadcasting). During the meeting additional text for J.ipvb was provided by China, and noting C80 from Central African Republic, the meeting agreed to expand the current text of Appendix I to include the use cases of G.fast. The meeting agreed to finalize this supplement at the next meeting of SG9.

There was no contribution received to update the content of J.dtc-distribution-req.

The meeting noted with thanks, a liaison statement from ITU-D SG1 on collaboration and decided to send out a liaison statement to ITU-D SG1 to ask for a continued collaboration with regard to deployment of digital television and others.

The meeting discussed if it is necessary to modify the current Terms of Reference of Question 4. Since Q4 ToR were just modified during the November 2018 meeting, it was concluded to keep the ToR as they are also for the next study period.

10.4 Question 5/9 “Software components application programming interfaces (APIs), frameworks and overall software architecture for advanced content distribution services within the scope of Study Group 9”

The report of Q5/9 can be found in [SG9-TD625](#).

The group reviewed

- two reports of Rapporteur meeting of Q5/9.
- the text of J.207rev and agreed to seek consent of this draft revision of Recommendation at this Study Group meeting.
- the text of J.acf-hrm and expected to make further progress of this draft new Recommendation with more contributions.
- two liaison statements about TVOS from IRG-IBB and ITU-T SG16. The group discussed the issue identified by the liaison statements and agreed to an outgoing liaison statement to reply to IRG-IBB and SG16.
- a liaison statement from ITU-R SG6 WP6B about Report ITU-R BT.2267, Question ITU-R 131/6 and Report ITU-R BT [SIGNING].
- the meeting report of the IRG-IBB meeting in Geneva, 01 April 2019.
- a liaison statement from ITU-T SG11 about the progress of the ITU-T CASC and its achievements.

- and updated the text of draft new Recommendation J.stvos-spec-arch and agreed to seek consent of this draft revision of Recommendation at this Study Group meeting.
- and updated the text of draft new Recommendation J.stvos-sec for progressing.

A new work item J.stvos-spec was agreed to make a new Recommendation for the specification of a Smart TV Operating System.

10.5 Question 6/9 “Functional requirements for residential gateway and set-top box for the reception of advanced content distribution services”

The report of Q6/9 can be found in [SG9-TD626-R2](#).

The group reviewed

- one report of Rapporteur meeting of Q6/9.
- the updated text of J.pcnp-smgw and agreed to submit for consent at next SG9 plenary meeting in February 2020.
- the updated text of J.acs-stb and agreed to refine the text further before next plenary.
- the liaison statements TD571 “LS/i on draft new Question ITU-R (AVA)/6 and draft new report ITU-R BT (Signing) [from ITU-R WP 6B]” and proposed that a new Question will be established within SG9 to address accessibility requirements and solutions for cable TV system (TD658R1), therefore the term of reference for Q6 will be changed to reflect this arrangement.
- the liaison statements found in [SG9-TD596](#) and [SG9-TD587](#). The group agreed to note them for information.

Q6/9 made an updated ToR for WTSA, and will be further reviewed in the interim meetings. The latest version is [SG9-TD662](#).

10.6 Question 7/9 “Cable television delivery of digital services and applications that use Internet protocol (IP) and/or packet-based data over cable networks”

The report of Q7/9 can be found in [SG9-TD627-R1](#).

Question 7/9 met in 4 sessions to discuss 6 contributions, 10 TDs including 3 incoming liaison statements. The group agreed to propose ITU-T J.1210 (J.ipvb-req) for AAP Consent at the closing Plenary meeting of SG9. The group also agreed to initiate the following four new work items: J.ipvb-spec, TP.ipvb-ucase, J.uoc and J.fdx-fspec. Three outgoing liaisons statement were also agreed at this meeting.

10.7 Question 8/9 “The Internet protocol (IP) enabled multimedia applications and services for cable television networks enabled by converged platforms”

Question 8/9 was cancelled for lack of contributions.

10.8 Question 9/9 “Requirements, methods, and interfaces of the advanced service platforms to enhance the delivery of sound, television, and other multimedia interactive services over cable television network”

The report of Q9/9 can be found in [SG9-TD629](#).

Q9/9 sessions operated under WP2, under the chairmanship of Rapporteur Eric Wang (Huawei, China), with Q9 covering requirements, methods, and interfaces of the advanced service platforms to enhance the delivery of sound, television, and other multimedia interactive services over cable television network. Q9/9 met for seven (7) sessions with about 14 people attending and addressed three (3) contribution and four (4) incoming liaison statements. The group submitted for consent J.pcnp-fmw “Premium Cable Network Platform (PCNP) – Framework”; progressed the J.cable-ott and TP.b-catv; agreed to start a draft new recommendation J.cloud-vr. The A.1 justification for the draft new Recommendation can be found in Annex C of Q9 report. The group used the “issues list” tool for maintaining the work of Q9/9. The approved “Q9 issues list” is [SG9-TD650](#). Also, the group produced two (2) outgoing liaison statements.

10.10 Question 10/9 “Work programme, coordination and planning”

The report of Q10/9 can be found in [SG9-TD630R1](#).

Question 10/9 reviewed C79 from DRC containing their request to ITU in terms of financial, human resource and other point of view, and agreed to draft an outgoing liaison statement to ITU-D SG1 and SG2 to request of their assistance to the DRC.

The group also reviewed fourteen (14) TDs, including thirteen (13) incoming liaison statements and its meeting agenda, as well as agreed to draft four (4) reply liaison statements.

In view of the fact that, since Recommendation ITU-T J.1 was approved, seven draft Recommendations were consented at last SG9 meeting (Bogota, 21-28 November 2018) and ten draft Recommendations are planned for Consent at this meeting (Geneva, 6-13 June 2019), Q10/9 agreed to start a revision of Recommendation ITU-T J.1 (J.1-rev) to reflect newly-approved terms and definitions.

11. Work plan for interim Rapporteur meetings and working party meetings

11.1 Working party meetings

No interim working party meetings will be held before next SG9 meeting, currently planned in February 2020.

11.2 Interim Rapporteurs’ groups meetings

The following interim Rapporteurs’ groups meetings are agreed by SG9 meeting. For updates please see the Rapporteur meetings webpage: <https://www.itu.int/net/ITU-T/lists/rgm.aspx?Group=9&type=interim>

Question/WP	Date	Place / Host	Terms of reference	Contact
2/9	2-6 September 2019	Guangzhou, China	<ul style="list-style-type: none"> - Generate new work items following the normal contribution deadline for Q2 rapporteur meetings - Receive Contributions related to the Recommendations under TAP by 19 August for discussion at an informal subsequent meeting (planned on 9-12 September 2019 in Europe) 	Han-seung KOO (koohs@etri.re.kr)
5/9	2-6 September 2019	Guangzhou, China (remote access required)	Progress on J.stvos-sec and J.stvos-spec Consider any new contribution	Mr. Haifeng YAN (yanhaifeng@hisilicon.com)
6/9	2-6 September 2019 (2 sessions)	Guangzhou, China	Progress on J.pcnp-smgw and J.acs-stb	Mr. Shizhu Long (longshizhu@skyworth.com)
7/9	2-6 September 2019	Guangzhou, China	Progress on TP.fdx-asi, J.ipvb-spec, J.ipvb-ucase, J.uoc, TP.ipvb-acc, J.fdx-spec	Mr TaeKyoon KIM (tkkim@etri.re.kr)
8/9	2-6 September 2019	Guangzhou, China	Progress on J.qamip-req Consider new contributions	Mr Sung-kwon Park (sp2996@hanyang.ac.kr) Mr Tae Kyoon Kim (tkkim@etri.re.kr)
9/9	2-6 September 2019	Guangzhou, China (remote access required)	AAP for J.1600; Progress J.cable-ott; Progress TP.b-catv; Progress J.cloud-vr; Discuss any other contribution(s);	Eric Wang (eric.wangxiang@hauwei.com)

Question/WP	Date	Place / Host	Terms of reference	Contact
ALL/9	2-6 September 2019	Guangzhou, China (remote access required)	- Review the Questions terms of references in view to WTSA-2020. - Call for contributions to improve the Question structure of SG9 including new Question if applicable.	Satoshi Miyaji (sa-miyaji@kddi.com)
2/9	[TBD] October 2019	e-meeting	Generate and progress work items and review and discuss the output documents from the informal meeting in Europe	Han-seung KOO (koohs@etri.re.kr)
7/9	28 October (09:00 -12:00)	e-meeting	Progress on J.ipvb-spec, J.ipvb-ucase, J.uoc, TP.ipvb-acc, J.fdx-spec	Mr TaeKyoon KIM (tkkim@etri.re.kr)
2/9	[TBD] November 2019	e-meeting	Generate and progress work items and finalize the TAP approval discussion at Q2 level	Han-seung KOO (koohs@etri.re.kr)
5/9	[TBD] December 2019	e-meeting	Progress on J.stvos-sec and J.stvos-spec	Mr. Haifeng YAN (yanhaifeng@hisilicon.com)
7/9	12 December 2019 (09:00 - 12:00)	e-meeting	Progress on J.ipvb-spec, J.ipvb-ucase, J.uoc, TP.ipvb-acc, J.fdx-spec	Mr TaeKyoon KIM (tkkim@etri.re.kr)

12. Next Study Group 9 meeting

Next ITU-T SG9 meeting is currently scheduled to be held in February 2020. We are looking for a host in Asia Pacific, more information will be available on the SG9 website when available. The following meeting of SG9 is planned in Gambia, Africa in September 2020. See the TD providing information on future meetings of SG9 until WTSA-20 and the related ITU inter-sectoral workshops on the “Future of TV”, posted as [SG9-TD653R1](#).