

Executive summary of ITU-T SG9 meeting (fully virtual, 19-28 April 2021)

The sixth Study Group 9 (Broadband cable and TV) meeting in the study period 2017-2022 was held fully virtual, from 19 to 28 April 2021. The SG9 meeting was attended by 65 participants from 18 countries. All sessions were held using [MyMeetings](#) remote participation tool.

Co-located with the SG9 meeting, the ITU organized a **workshop** on “[The Future of TV for Asia & Pacific](#)” on 23 April 2021, which was earlier planned in October 2020 in Tokyo and further postponed due to the evolving situation of COVID-19. This event, which was jointly organized by the ITU Standardization Sector (ITU-T), the ITU-Radiocommunication Sector (ITU-R), the ITU Development Sector (ITU-D) and the ITU Regional office for Asia & Pacific, focused on the diverse emerging broadband and broadcast technologies, including cable TV, with the aim to assist countries in the region of Asia & Pacific to assess challenges, dynamics and opportunities. The workshop was attended by **320** participants and discussed the future of television in the region with relevant stakeholders including the Asia Pacific Broadcasting Union (ABU) and the Asia-Pacific Institute for Broadcasting Development (AIBD), covering regulatory and policy frameworks, emerging and convergent ICT Infrastructures and services, as well as user interfaces and accessibility issues. It also provided an opportunity to discuss TV-related regional and international standardization and to share best practices and case studies on cable TV implementations and other new TV services. Full recorded presentations on related standardization activities from ITU-T SG9, ITU-R SG6, ITU-T SG16 and ITU-D Q2/1 were made available on the [event webpage](#) for offline access. The full event can be watched as the [offline recording](#) is made available online.

In addition, an IRG-IBB meeting "Intersector Rapporteur Group on Integrated Broadcast-Broadband (IBB)" was held under the auspices of ITU-T SG9. [IRG-IBB](#) meeting took place on 21 April 2021 (13:15-14:45) and was attended by 14 participants.

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

During the SG9 meeting in April 2021 a total of three draft Recommendations were finalized and agreed for AAP Consent.

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

Question	AAP/TAP	Rec	Status	Title	Final TD	A.5 justification
Q7	AAP	J.1110 (ex. J.fdx-fspec)	New	Functional specification for in-band full-duplex in HFC based network	SG9-TD1110	N/A
Q8	AAP	J.1032 (ex. J.CBCMS-part2)	New	The specification of cloud-based converged media service to support IP and Broadcast Cable TV - System Architecture	SG9-TD1103-R2	N/A
Q9	AAP	J.1631 (ex J.cloud-vr-req)	New	Requirements of E2E Network Platform for Cloud-VR Services	SG9-TD1127	N/A

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

No Recommendations were Determined at this meeting.

1.3 List of Draft Recommendations for AAP approval

Question	AAP/TAP	Rec	Status	Title	Current TD
Q1	AAP	J.481 (ex J.cable-rf-ip)	Consented 2021-01-26	Requirements of cable network for RF and IP secondary distribution of television programmes	SG9-TD1118

1.4 Modification of the category names of J-series Recommendations

No change to the J-series structure was required by this SG9 meeting.

2. List of Draft Supplements, Technical Reports/Papers or other documents for agreement

2.1 Supplements

The following reproduces the three draft Supplements, which were Agreed for publication by SG9.

Question	Kind of Publication	Status	Title	Final TD
Q2	J.Sup7-rev (Supplement)	Revised	Embedded common interface (ECI) for exchangeable CA/DRM solutions; Guidelines for the implementation of ECI	SG9-TD1101
Q2	J.Sup8-rev (Supplement)	Revised	Embedded common interface for exchangeable CA/DRM solutions; Trust environment	SG9-TD1102
Q4	J Sup.11 (ex. Sup-DigTV) (Supplement)	New	Installing a digital TV service for cable networks and relating Recommendations	SG9-TD1122-R1

In order to support developing countries, TSB was requested to consider translating at least in French and Spanish the newly agreed J Supplement 11 “Installing a digital TV service for cable networks and relating Recommendations”.

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.

2.4 Implementers’ Guides

The following reproduces the draft Implementer’s guide, which was Agreed for publication by SG9.

Question	Kind of Publication	Status	Title	Final TD
Q2	IG-J.1012 (Implementers’ Guide)	New	Embedded common interface for exchangeable CA/DRM solutions; CA/DRM container, loader, interfaces, revocation	SG9-TD1100

3. New and deleted work items

3.1 New work items

The meeting agreed to start work on the following 14 new work items.

#	Question	Work item (kind of publication)	Status	Title	Editor	TD	A.1 Justification template
1	Q2	IG-J.1012 (Implementers' Guide)	New	Embedded common interface for exchangeable CA/DRM solutions; CA/DRM container, loader, interfaces, revocation	Karsten Hoellerer (karsten.hoellerer@bnetza.de) Zhijian Liang (liangzhijian1@hisilicon.com)	SG9-TD1100	ANNEX C of SG9-TD1082- R2
2	Q2	J.Sup7-rev (Supplement)	Rev. Supp.	Embedded common interface for exchangeable CA/DRM solutions; Guidelines for the implementation of ECI	Karsten Hoellerer (karsten.hoellerer@bnetza.de) Zhijian Liang (liangzhijian1@hisilicon.com)	SG9-TD1101	ANNEX D of TD1082-R2
3	Q2	J.Sup8-rev (Supplement)	Rev. Supp.	Embedded common interface for exchangeable CA/DRM solutions; Trust environment	Karsten Hoellerer (karsten.hoellerer@bnetza.de) Zhijian Liang (liangzhijian1@hisilicon.com)	SG9-TD1102	ANNEX E of TD1082-R2
4	Q5	J.1201rev	Rev.	Functional requirements of a smart TV operating system	Haifeng YAN (yanhaifeng@hisilicon.com)	ANNEX C of SG9-TD1085- R2	ANNEX C of TD1085-R2
5	Q5	J.1202rev	Rev.	The architecture of a smart TV operating system	Haifeng YAN (yanhaifeng@hisilicon.com)	ANNEX D of SG9-TD1085- R2	ANNEX D of TD1085-R2
6	Q5	J.1203rev	Rev.	The specification of a smart TV operating system	Haifeng YAN (yanhaifeng@hisilicon.com)	ANNEX E of SG9-TD1085- R2	ANNEX E of TD1085-R2
7	Q5	J.1204rev	Rev.	The security framework of a smart TV operating system	Haifeng YAN (yanhaifeng@hisilicon.com)	ANNEX F of SG9-TD1085- R2	ANNEX F of TD1085-R2
8	Q6	J.1611-rev (Recommendation)	Rev	Functional requirements for Smart Home Gateway	Shizhu Long (longshizhu@skyworth.com)	SG9-TD1130	N/A

#	Question	Work item (kind of publication)	Status	Title	Editor	TD	A.1 Justification template
					Changqing Hu (huchangqing@skyworth.com) Tu Lai (tulai@hust.edu.cn)		
9	Q6	J.299-rev	Rev	Functional requirements for remote management of cable set-top-box by auto configuration server	Kenji Obata (k-obata@jlabs.or.jp) Shizhu Long (longshizhu@skyworth.com)	Q6 report SG9-TD1086-R1	N/A
10	Q6	J.290-corr-amd	Corr/Amd	Next generation set-top box core architecture	Kenji Obata (k-obata@jlabs.or.jp) Shizhu Long (longshizhu@skyworth.com)	Q6 report SG9-TD1086-R1	N/A
11	Q7	J.HiNoC3-REQ	New	Functional requirements for High performance Network over Coax 3.0	Ms Zhao Cui (zhaocui@abs.ac.cn)	ANNEX C of SG9-TD1087	ANNEX C of TD1087
12	Q7	J.AIP-SDV	New.	Requirements for advanced IP-based SDV services	TaeKyoon Kim (tkkim@etri.re.kr)	ANNEX D of SG9-TD1087	ANNEX D of TD1087
13	Q9	J.cloud-vr-arch	New	Architecture of E2E Network Platform for Cloud-VR Services	Jerry Liu (jianfei.liu@huawei.com)	SG9-TD1132	ANNEX C of TD1089-R2
14	Q9	J.cloud-game-req	New	Requirements of E2E Network Platform for Cloud Gaming Services	Jerry Liu (jianfei.liu@huawei.com)	ANNEX D of SG9-TD1089-R2	ANNEX D of TD1089-R2

3.2 Discontinued work items

SG9 did not discontinue any work item at this meeting.

4. SG9 Management for the Study Period 2017-2022

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 TaeKyoon 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 2017-2022

ITU-T SG9 Working Party structure and leadership was reviewed in view of the recent TSAG deliberation on SG9 study Questions for 2017-2022. The new ITU-T SG9 WP structure, as contained in [SG9-TD998](#), was approved and reported below as follows:

- WP1 “*Cable transport and terminals, including video and data*” (Q1, 2, 4, 6 & 7), and
- WP2 “*Cable-related platforms and applications*” (Q5, 8, 9, 11 & 12).

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	Cable transport and terminals, including video and data	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 and content protection
		Q4	Guidelines for implementations and deployment of transmission of multichannel digital television signals over optical access networks and Hybrid Fibre-Coaxial (HFC)
		Q6	Functional requirements for terminal devices of the integrated broadband cable network
		Q7	Transmission control and interfaces (MAC layer) for IP and/or packet-based data over integrated broadband cable networks
	Zhifan SHENG (WP1/9 Chairman) ABS, China		
	Blaise MAMADOU (WP1/9 Vice-chair) Central African Republic		
WP2	Cable-related platforms and applications	Q5	Software components application programming interfaces (APIs), frameworks and overall software architecture for advanced content distribution services within the scope of Study Group 9

	Taekyoon KIM (WP2/9 Chairman) ETRI, Korea	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 audiovisual content, and other multimedia interactive services over integrated broadband cable networks
	Eric WANG (WP2/9 Vice-chair) Huawei, China	Q11	Accessibility to cable systems and services
	Q12	AI-enabled enhanced functions over integrated broadband cable 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:

At the last TSAG meeting held online, 11-18 January 2021, TSAG followed the *ITU-T work continuity plan until WTSA in 2022* (see [TSAG-R11-R1 Annex C](#)) and endorsed the set of Questions for all the ITU-T study groups, as found in [TSAG-R12 to TSAG-R22](#).

The set of Questions had been agreed by each study group for submission to WTSA-20, before its postponement due to the COVID-19 pandemic. These Questions became effective on 18 January 2021, for the remainder of the study period.

The list of SG9 Questions texts are reproduced in TSAG Report 15 ([TSAG-R15](#)), also attached to [SG9-TD1009](#).

See for more details [TSAG -CIR295](#): Entrance in force of the updated set of Questions for all study groups following TSAG endorsement (18 January 2021).

Accordingly, in addition to revision of some of the Questions texts and titles, SG9 established a new Question 12/9 dedicated to AI:

- Q12/9 “*AI-enabled enhanced functions over integrated broadband cable network*”.

5.2 Preparation to WTSA-20 (planned 1-9 March 2022)

To follow up on TSAG liaison on WTSA-20 preparations (TSAG-LS42), which is available as ([SG9-TD1061](#)), SG9 agreed to continue the preparatory process for WTSA-20 for the next study period 2022-2024 and will reserve a session on this purpose at next November 2021 meeting of SG9. SG9 plans to provide its final view of SG9 Questions and mandate for next Study Period, after its last meeting in November 2021. Therefore, TSAG will receive it at their ninth TSAG meeting (10-14 January 2022). See outgoing liaison statement posted in ([SG9-TD1099](#)).

6. SG9 Management, Rapporteurs and Associate Rapporteurs

SG9 has updated the List of SG9 Rapporteurs and Associate Rapporteurs for the Study Period 2017-2022 as found in [SG9-TD999-R3](#). The following experts were appointed:

- Mr Masayoshi Onishi no longer acts as an Associate Rapporteur for Q5/9;
- As Mr Steven Epstein will no longer continue his role as a Rapporteur for Q8/9, Mr TaeKyoon Kim was appointed as an acting Rapporteur for this Question and a call for interest in Q8/9 Rapporteur position was issued. Interested candidates may contact the TSB Advisor or WP2/9 Chairman;
- Ms Qiong Yao was appointed as an Acting Rapporteur for Q10/9, to replace Mr Zhongzhao LI, who could not continue in that position;
- Mr Yanbin (Evan) Sun was appointed as Rapporteur for the new Q12/9.

7. Liaison officers to external groups

SG9 agreed on the list of liaison officers for the Study Period 2017-2022, with the following changes as found in [SG9-TD1000-R1](#).

- Mr Satoshi Miyaji was appointed as IRG-IBB Co-chairman, replacing Mr Masayoshi Ohnishi, who could not continue in that position;
- Mr Satoshi Miyaji was also appointed as ITU-R WP6B Representative, replacing Mr Masayoshi Ohnishi, who could not continue in that position;
- Mr Satoshi Miyaji was appointed as SCV (Standardization Committee for Vocabulary) liaison officer, replacing Mr Zhongzhao Li, who could not continue in that position.

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

SG9 continues to act as a 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 updated as follows.

IRG	Title	Co-chair from SG9	Parent Groups	Website
IRG-IBB	Integrated Broadcast-Broadband systems	Satoshi Miyaji (KDDI, 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 23 agreed outgoing liaison statements, as indicated in [SG9-TD1002](#):

#	Q	WP	To	For	Title	TD
1	Q1	WP1	ETSI TC Cable	Information	LS/o/r on Approval of draft new Recommendation ITU-T J.481 (ex J.cable-rf-ip)	SG9-TD1125-R2
2	Q1	WP1	ITU-T Q13/SG16, CableLabs, SCTE	Information	LS/o on Approval of draft new Recommendation ITU-T J.481 (ex J.cable-rf-ip)	SG9-TD1124-R2
3	Q2, Q7, Q10	WP1	ITU-T SG2	Information	LS/o/r on SCV activity in SG2 (reply to SG2-LS150)	SG9-TD1108-R2
4	Q2, Q10	WP1	SCV	Information	LS/o/r on terms and definitions being developed by ITU-T Study Group 9 (reply to SCV - LS33)	SG9-TD1107-R2
5	Q4	WP1	ITU-D SG1 Q2/1	Action	LS/o on completion of J Supplement 11 to ITU-T J-series Recommendations (ex. Sup-DigTV) "Installing a digital TV service for cable networks and related Recommendations"	SG9-TD1123
6	Q5	WP2	IRG-IBB, ITU-T SG16, ITU-R SG6 WP6B	Information	LS/o/r on smart TV Operating System (reply to IRG-IBB-LS6)	SG9-TD1139-R1
7	Q6	WP1	BBF, ITU-T SG15, ITU-T SG16, ITU-T SG20	Information	LS/o/r on AAP Consent of draft new Recommendation ITU-T J.1611 "Functional requirements for Smart Home Gateway" (reply to BROADBAND FORUM-LIAISE-447)	SG9-TD1129-R2
8	Q7	WP1	ITU-T SG15, ETSI TC-Cable, IEC TC100, SCTE, RRA, TTC, IEEE 802.3 Ethernet WG, CCSA	Information	LS/o new work item for J.HiNoC3-REQ "Functional requirements for High performance Network over Coax 3.0"	SG9-TD1115
9	Q7	WP1	SCTE, ETSI TC-Cable, RRA	Information	LS/o on AAP Consent of draft new Recommendation ITU-T J.1110 (ex J.fdx-fspec) "Functional specification for in-band full-duplex in HFC based network"	SG9-TD1113

#	Q	WP	To	For	Title	TD
10	Q7	WP1	SCTE, ETSI TC-Cable, RRA	Information	LS/o new work item for J.AIP-SDV “Requirement for advanced IP-based SDV services”	SG9-TD1114
11	Q8, Q12	WP2	ITU-T SG13 IEEE, Khronos Group, ISO/IEC JTC1/SC42, SC29, ITU-T Study Groups, ITU-R SG6 and WP6C, W3C, DMG, FG-AI4H, FG-AI4EE, FG-AI4AD, FG-AI4NDM, EUOS (EU Observatory for ICT Standardization) TWG-AI	Action Information	LS/o/r on invitation to review Artificial Intelligence Standardization Roadmap and provide missing or updated information (reply to SG13-LS196)	SG9-TD1104-R1
12	Q9	WP2	DVB, CableLabs, ETSI TC Cable	Action	LS/o on the current baseline text of new draft Recommendations J.cable-mabr “Requirements of multicast adaptive bitrate (M-ABR) IP delivery”	SG9-TD1136-R1
13	Q9	WP2	ITU-T SG12, SG13, ETSI ISG F5G, ETSI TC Cable, CableLabs	Information	LS/o on the consent of new recommendation J.1631 (ex. J.cloud-vr-req) "Requirements of E2E Network Platform for Cloud-VR Services"	SG9-TD1137
14	Q10	Plen	TSAG RG-SC; Inter Sector Coordination Group (ISCG)	Information	LS/o on Updated mapping tables of common interest areas of work between the ITU-D and ITU-T study groups and between the ITU-R and ITU-T study groups	SG9-TD1140
15	Q10	Plen	SCV/CCV, All ITU-T Study Groups	Information	LS/o/r on approval of new terms and definitions (Reply to SCV-LS31)	SG9-TD1133-R1

#	Q	WP	To	For	Title	TD
16	Q10	Plen	ITU-T SG15 ITU-T TSAG; ITU-T SG12, SG13, SG16, SG17, ITU-R SG1, SG5, SG6, ETSI TC ATM, IEEE 802.3, Broadband Forum	Action Information	LS/o/r on the new version of the Access Network Transport (ANT) Standards Overview and Work Plan (Reply to SG15-LS266)	SG9-TD1134
17	Q10	Plen	IEEE 802.1	Information	LS/o/r on withdrawal of IEEE Std 802.1D-2004 (Reply to SG9-TD1032)	SG9-TD1135
18	Q10	Plen	ITU-T SG11 ITU-T SG2, SG3, SG5, SG12, SG13, SG15, SG16, SG17, SG20	Action Information	LS/o/r on reference table to be used for Conformance and Interoperability testing (Reply to SG11-LS190)	SG9-TD1141
19	Q11	WP2	IRG-AVA ITU-R SG6, ITU-T SG16	Action Information	LS/o/r on suggested revision of the IRG-AVA Terms of Reference (ToR) (reply to IRG-AVA-LS14)	SG9-TD1105
20	Q11	WP2	IRG-AVA, ITU-T SG16 ITU-R SG6, JCA-AHF	Action Information	LS/o/r on Draft ITU-T Recommendation J.acc-us-prof "Common user profile format for audiovisual content" (reply to IRG-AVA-LS15)	SG9-TD1106
21	Q11	WP2	ITU-R WP 6C, ITU-T SG16 and SG2, IRG-AVA, FG-AI4NDM	Information	LS/o/r on Working Party 6C contributions that may be informative to the studies of IRG-AVA on Accessible Disaster Management Systems (reply to ITU-R WP 6C-6C/TEMP/78)	SG9-TD1116-R1
22	Q12	WP2	ITU-T SG2, FG-AI4NDM	Information	LS/o/r on establishment of a new ITU-T Focus Group on Artificial Intelligence for Natural Disaster Management (reply to SG2-LS177)	SG9-TD1121

#	Q	WP	To	For	Title	TD
23	Plen	Plen	TSAG	Information	LS/o/r on WTSA-20 preparations (reply to TSAG-LS42)	SG9-TD1099

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-TD1081-R1](#). It was approved.

Executive summary:

Question 1/9 discussed two contributions and 11 TDs, including two incoming liaison statements.

The group discussed C166 which was submitted to provide a revision to ITU-T J.481 based on AAP comments received from ETSI TC Cable through an incoming liaison statement (TD1047) which is a reply to (SG9-LS122) on AAP Consent of draft new Recommendation ITU-T J.481 and J.482. Question 1/9 and the representative of ETSI TC Cable found a compromise solution to modify the text of ITU-T J.481 (ex J.cable-rf-ip). Question 1/9 reached a consensus to present J.481 for AAP approval at the SG9 closing meeting (28 April 2021). The text for Approval is made available as [TD1118](#).

A second Contribution (C165-R1) which proposes to revise draft Recommendation J.rfip-switching-arch, was discussed. Question 1/9 agreed on a baseline text for the work item J.rfip-switching-arch. This was made available in [TD1138](#).

Question 1/9 reviewed all incoming liaison statements. In particular, [TD1032](#) on withdrawal of IEEE Std 802.1D-2004 from IEEE 802.1. Question 1/9 discussed with a CableLabs member on the IEEE decision to withdraw one of their standards and confirmed to keep close collaboration to revise DOCSIS related Recommendations. The group agreed to submit two outgoing liaison statements to inform:

- ETSI TC Cable on the discussion and approval of the Recommendation J.184 (J.cable-rf-ip), the draft outgoing liaison is available as [TD1125-R2](#).
- ITU-T Q13/SG16, CableLabs and SCTE on the AAP approval of ITU-T Recommendation J.184 (J.cable-rf-ip), the draft outgoing liaison is available as [TD1124-R2](#).

One interim meeting of Q1 was planned to be held in September 2021 to progress J.rfip-switching-arch through contributions, consider incoming and outgoing liaison statements and consider any new contributions.

10.2 Question 2/9 “Methods and practices for conditional access and content protection”

The report of Q2 can be found in [SG9-TD1082-R2](#). It was approved.

Executive summary:

Three new work items (IG-J.1012, J.Sup7-rev, and J.Sup8-rev) were agreed and were proposed for agreement by SG9 closing Plenary. Draft new Implementers Guide IG-J.1012 for Recommendation ITU-T J.1012 and two draft revised Supplements J.Sup7-rev & J.Sup8-rev were agreed at Q2 level, and were proposed for agreement by SG9 closing Plenary. The TD numbers for them are [TD1100](#), [TD1101](#), and [TD1102](#), respectively.

A liaison statement from SCV on terms and definitions being developed by ITU-T Study Group 9 was reviewed and we would accept the suggestion from SCV. We will consider it in future revisions.

A liaison statement from SG2 on SCV activity in SG2 was reviewed. We understand that the current terms may not be clear for users outside ITU-T Study Group 9. We will consider redefining some of these terms in future revisions of these Recommendations. We have noted that J.1012 is highly associated with ETSI ECI standards, and we will collaborate with ETSI ECI to improve the terminology definitions, in case we will decide to revise J.1012-series in the future.

During WP1 meeting that was held on 27 April 2021, the participants agreed to organize an interim meeting in July 2021, upon China's request. This meeting will be organised to propose new work items to revise the ITU-T Recommendations-series for the downloadable conditional access system for unidirectional networks, to solve the typos and some of the technical errors, such as omissions and inconsistencies in Recommendations (ITU-T J.1026, J.1027, and J.1028).

10.3 Question 4/9 “Guidelines for implementations and deployment of multichannel digital television signals over optical access networks and Hybrid Fibre-Coaxial (HFC)”

The report of Q4 can be found in [SG9-TD1084-R1](#). It was approved.

Executive summary:

Q4/9 received two contribution C167 and C168 from Japan Cable Laboratories.

C167 provided a revised text for the new ITU-T Supplement to J-series Recommendations Sup-digTV "Installing a digital TV service for cable networks and relating Recommendations." Based on the output document from the April 2020 SG9 meeting, it contained some editorial changes, in particular to reflect the latest status of IEC standards in Appendix I.

After reviewing this draft Supplement, the meeting agreed to send it to SG9 plenary for agreement, along with a request to translate this document into Spanish and French. An output document for agreement was developed and is available as [TD1122-R1](#). It is named as J Supplement 11.

C168 provided a revised baseline text for draft new Recommendation ITU-T J.dtc-distribution-req “Television Content Distribution Platforms: Requirements for Open Access and Signal Quality. Based on the previous version, it refined requirements and interface definitions for DTC Platform. Question 4/9 plans to finalize this draft new Recommendation during the next SG9 meeting in November 2021. An output document for further progressing is available as [TD1109](#).

One interim meeting was planned during 13-17 September 2021, via email exchange, to progress J.dtc-distribution-req.

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-TD1085-R2](#). It was approved.

Executive summary:

Q5/9 addressed six contributions and three incoming liaison statements.

The group reviewed the following three liaison statements: TD1032 on withdrawal of IEEE Std 802.1D-2004 from IEEE 802.1, TD1066 on Artificial Intelligence Standardization Roadmap from ITU-T SG13, and TD1071 from ITU-R WP 6B on AAP Consent of draft new Recommendation ITU-T J.208 (J.acf-hrm) "Harmonization of Integrated Broadcast-Broadband DTV application control framework" which is a reply to (SG9-LS118). These liaisons were noted with thanks by the group.

As for contributions, C158 was submitted to progress the work on (J.stvos-hal), the group reviewed the text of J.stvos-hal and expected to make further progress of this draft new Recommendation with more contributions. An output document containing the draft new Recommendation for progressing was developed and made available as [TD1119](#).

The following contributions were discussed: C159R1, C172, C173, C174 and C175, and the group agreed to start four new work items J.1201rev, J.1202rev, J.1203rev and J.1204rev. The A.1 justifications for the draft new recommendations was provided and recorded in Annexes.

The group produced one outgoing liaison statements as a reply to (IRG-IBB-LS6) on smart TV Operating System, this draft outgoing liaison statement is available as [TD1139-R1](#).

Q5/9 agreed to organize an interim meeting to discuss with IRG-IBB and other related parties the revision of the TVOS-related Recommendations. The meeting will be organized in July 2021 and the Rapporteur of Q5/9, Mr Haifeng Yan, will coordinate with IRG-IBB co-chairs for a date that would be suitable for them to attend.

10.5 Question 6/9 “Functional requirements for terminal devices of the integrated broadband cable network”

The report of Q6 can be found in [SG9-TD1086-R1](#). It was approved.

Executive summary:

The meeting was proceeded according to the agenda, two Q6/9-related incoming liaison statement [TD1032](#) and [TD1073](#) were discussed in detail. TD1073 is from BBF and informs about the latest published version of TR-069. It also suggests referring to the latest version of TR-369 in ITU-T J.1611. Corresponding to this LS, a revised version of J.1611 was agreed to be developed by the team (the corresponding output document was posted as [TD1130](#), according to contribution C171). In addition, two additional Recommendations will be revised to address the liaison statement: ITU-T J.299 and J.290. The group will propose contribution to propose a way to address the needed update via revision, corrigendum or amendment, as appropriated. The three new work items to revise existing Recommendations will be added in the work programme (J.299-rev; J.290-corr-amd; J.1611-rev). Another contribution, C161, was received to propose an updated draft for J.pcnp-smgw-arch. Accordingly, a new updated draft was developed

([TD1128](#)) and it is proposed for progressing as the team believed that further internal discussion is needed to refine the draft Recommendation. Two interim meeting were set up in June and September 2021 to progress J.pcnp-smgw-arch.

10.6 Question 7/9 “Transmission control and interfaces (MAC layer) for IP and/or packet-based data over integrated broadband cable networks”

The report of Q7 can be found in [SG9-TD1087](#). It was approved.

Executive summary:

Q7 achieved the following results:

- Three outgoing liaison statements were approved; [TD1113](#) (ETSI TC Cable, SCTE, RRA), [TD1115](#) (ITU-T SG15, ETSI TC-Cable, IEC TC100, SCTE, RRA, TTC, IEEE 802.3 Ethernet WG, CCSA), and [TD1114](#) (SCTE, ETSI TC-cable, RRA);
- One Recommendation was proposed for consent; [TD1110](#) (Consent-Draft new Recommendation ITU-T J.1110 (ex.J.fdx-fspec) “Functional Specification for in-band full-duplex in HFC based network”);
- Two new work items were agreed; J.HiNoC3-REQ, J.AIP-SDV;
- Three interim meetings were planned.

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

The report of Q8/9 can be found in [SG9-TD1088-R1](#). It was approved.

Executive summary:

1. Contribution [C160](#) was submitted by ABS, China and presented by Ms Yanhua Niu. It is related to specifying the requirements for specifying cloud-based converged media services to support next generation IP and Broadcast cable TV.
2. Consideration was given whether this specification should be sufficient to answer both part 2 and part 3. It was decided to leave this specification as a standard describing ONLY the high level architecture (part 2) and producing yet another specification for part 3 – the detailed specification
3. Mr Sheng recommended that part 3 focus on the coordination of the cable service cloud with production media cloud as deployed in media studio and TV stations. It will detail issues such as how do these cloud interact and coordinate. This is happening in China now.
4. Review of title of part 3 as described in the part 2 document will be reviewed in the WP2 Plenary with Mr. Steven Sheng and possibly backfitted to the part 1 document as well.
5. Recommendation to approve the part 2 specification as provided in [TD1103-R2](#) in the plenary meeting.
6. An initial draft of part 3, the CBCMS Detailed Specification, should be drafted in future meetings.

7. We also reviewed 2 liaison statements that pertained to Question 8 ([TD1032](#) and [TD1066](#))
8. [TD1032](#) was deemed not relevant and was noted for information, but a draft liaison statement was drafted and posted as [TD1104-R1](#) to be further revised by other Questions as complete reply to SG13-LS196 (posted in [TD1066](#)). The output liaison statement was approved by Q8/9.
9. Two interim meetings will be needed in order to complete the part 3 document and gain consent in November 2021.
 - 1st interim meeting may be held at the end of June 2021.
 - 2nd interim meeting may be held in September 2021.

During the WP1 meeting held on 27 April 2021, it was clarified that the 3 parts of the Recommendations in the J.CBCMS-series should be identified as follows:

- Part 1: Requirements (ITU-T J.1301);
- Part 2: System architecture (ITU-T J.1302);
- Part 3: System specification on collaboration between production media cloud and cable service cloud (planned ITU-T J.1303).

10.8 Question 9/9 “Requirements, methods, and interfaces of the advanced service platforms to enhance the delivery of audiovisual content, and other multimedia interactive services over integrated broadband cable networks”

The report of Q9/9 can be found in [SG9-TD1089-R2](#). It was approved.

Executive summary:

Q9/9 sessions operated under WP2, under the chairmanship of Rapporteur Eric Wang, with Q9 covering Requirements, methods, and interfaces of the advanced service platforms to enhance the delivery of audiovisual content, and other multimedia interactive services over integrated broadband cable networks. Q9/9 met for three sessions with about 16 people attending and addressed seven contributions and three incoming liaison statements. The group submitted ITU-T J.1631 “E2E Network Characteristics Requirement for Video Services” for consent, the final text is available as [TD1127](#). The group also progressed the work on J.cable-ott and J.cable-mabr. The output document with the updated text for J.cable-mabr is made available as [TD1126](#), while the output document for J.cable-ott was produced based on C164 as no further updates to the text were required, and it's made available as [TD1131](#). The group agreed to start two new work items: J.cloud-vr-arch and J.cloud-game-req. The A.1 justifications for the draft new Recommendations can be found in [Annex C](#) and [Annex D](#) of Q9/9 meeting report ([SG9-TD1089-R2](#)). The group discussed further J.cloud-vr-arch, and produced the output document, available as [TD1132](#). The work item J.pcnp-char (planned J.1630) is transferred to Q12 for their maintenance as this work item is mainly on the AI usage. The group used the “issues list” tool for maintaining the work of Q9/9. The approved “Q9 issues list” is available as [SG9-TD1079-R1](#). The group also produced two outgoing liaison statements, the first one is available as [TD1136-R1](#) which is a liaison on the current baseline text of new draft Recommendations J.cable-mabr “Requirements of multicast adaptive bitrate (M-ABR) IP delivery” to be sent to DVB, CableLabs and ETSI TC Cable. The second one is available as

[TD1137](#), which is on the new recommendation J.1631 “Requirements of E2E Network Platform for Cloud-VR Services” to be sent to ITU-T SG12, SG13, ETSI ISG F5G, ETSI TC Cable and CableLabs.

One interim Rapporteur meeting of Q9/9 was planned in August 2021.

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

The report of Q10/9 can be found in [SG9-TD1090-R2](#). It was approved.

Executive summary:

Question 10/9 reviewed twenty five (25) TDs, including twenty-one (21) incoming liaison statements. Question 10/9 agreed to draft seven (7) reply liaison statements as follows:

- 1) to SCV, found in [TD1107-R2](#) “LS/o/r on terms and definitions being developed by ITU-T Study Group 9 (reply to [SCV – LS33](#))”,
- 2) to ITU-T SG2, found in [TD1108-R2](#) “LS/o/r on SCV activity in SG2 (reply to [SG2-LS150](#))”,
- 3) to SCV/CCV and all ITU-T Study Groups, found in [TD1133-R1](#) “LS/o/r on approval of new terms and definitions (Reply to [SCV–LS31](#))”,
- 4) to ITU-T SG15, ITU-T TSAG; ITU-T SG12, SG13, SG16, SG17, ITU-R SG1, SG5, SG6, ETSI TC ATTM, IEEE 802.3 and Broadband Forum, found in [TD1134](#) “LS/o/r on the new version of the Access Network Transport (ANT) Standards Overview and Work Plan (Reply to [SG15-LS266](#))”,
- 5) to IEEE 802.1, found in [TD1135](#) “LS/o/r on withdrawal of IEEE Std 802.1D-2004 (Reply to SG9-TD1032)”,
- 6) to ITU-T SG11, found in [TD1141](#) “LS/o/r on reference table to be used for Conformance and Interoperability testing (Reply to [SG11-LS190](#))”,
- 7) to TSAG RG-SC and Inter Sector Coordination Group (ISCG), found in [TD1140](#) “LS/o/r on Updated mapping tables of common interest areas of work between the ITU-D and ITU-T study groups and between the ITU-R and ITU-T study groups (Reply to TD015)“.

Q10 is normally maintaining updated the ITU-T J.1 on terminology. As the current editor and ex Rapporteur of Q10 is not able to continue in this role, Q10 asked the Acting Rapporteur to identify the proper candidate to take the editorship of ITU-T J.1 and ensure that a contribution be submitted to next SG9 meeting in November 2021 to update its content. Also, Q10 expressed sincere appreciation to the Acting Rapporteur for the excellent work and SG9 Chairman proposed to Ms Yao to take the Q10 Rapporteur position on a permanent basis. However, this may need more time for consideration.

10.10 Question 11/9 “Accessibility to cable systems and services”

The report of Q11/9 can be found in [SG9-TD1091-R1](#). It was approved.

Executive summary:

The Q11/9 meeting started with approval of the agenda. The chair presented the input contribution C177 on Common User Profile Format. Mr David Fourney, of G3iCT highlighted requirement of a specific section 6 in the draft recommendation and volunteered to help in drafting as a co-editor. The chair presented reports on earlier Q11/9 meeting and IRG-AVA meetings. Prof Pilar Orero from University of Barcelona presented the input liaison statement from IRG-AVA available as [TD1042](#) on studies of subtitling for immersive systems, and Mr Stefano Polidori from ITU presented two incoming liaison statements from IRG-AVA available as [TD1093](#) on suggested revision of the IRG-AVA Terms of Reference and [TD1094](#) on draft ITU-T Recommendation J.acc-us-prof "Common user profile format for audiovisual content" that identifies a possible overlap of scope between SG9 and SG16 in relation of Q11/9 work item J.acc-us-prof.

Two draft output liaison statements to IRG-AVA were agreed by the group, available as [TD1105](#), which is a reply to confirm that the suggested revision of the IRG-AVA Terms of Reference were approved by ITU-T SG9, and [TD1106](#) that's is a reply on draft ITU-T Recommendation J.acc-us-prof which proposes to Q27/16 to collaborate for the development of the aforementioned wok item. The chair briefly presented remaining input liaison statements as follows: [TD1032](#) from [IEEE 802.1](#) on withdrawal of IEEE Std 802.1D-2004, [TD1066](#) from ITU-T SG13 on Artificial Intelligence Standardization Roadmap and [TD1072](#) from ITU-R WP6C on their contributions that may be informative to the studies of IRG-AVA on Accessible Disaster Management Systems. For the latter, experts agreed to contribute offline to the output liaison statements from SG9, to be sent to ITU-R WP6C, which will be drafted by the rapporteur and circulate via email. This draft outgoing liaison statement is available as [TD1116-R1](#).

A joint meeting was planned between experts of Q11/9 and Q26/16 (as described in oLS [TD1106](#)) to further discuss the draft Recommendation J.acc-us-prof, through input contribution on Common User Profile Format. The updated draft Recommendation J.acc-us-prof was posted as an output document available as [TD1117](#). The chair thanked everyone and closed the meeting.

10.11 Question 12/9 “AI-enabled enhanced functions over integrated broadband cable network”

The report of Q12/9 can be found in [SG9-TD1092-R1](#). It was approved.

Executive summary:

In this SG9 plenary meeting, Question 12/9 received 2 contributions and 4 incoming liaisons.

The contributions C170 and C181 were discussed, and both proposed using AI technologies to enhance the network performance. The contributors plans to propose the new work item within the following e-meetings or plenary meeting. [TD1032](#) was discussed, Q12 noticed that IEEE withdrawn the IEEE 802.1D-2004. [TD1041](#) has passed the response deadline, so no response to related organization. Q12 decides to response to [TD1049](#) as would like to be kept updates from SG2 and an outgoing liaison was approved ([TD1121](#)). Another outgoing liaison ([TD1104-R2](#)) which is an oLS to reply TD1066, has been agreed. Q12 has added the information about establishment of the dedicated Question related to Artificial intelligence to inform SG13. [TD997](#) was also reviewed, about current work item J.pcnp-char (planned J.1630) from Q9, which was agreed to be moved to Q12. The rapporteurs of Q9 and Q12 had achieved consensus on this move.

Q12/9 has planned two e-meetings before the next plenary meeting (November, 2021) to discuss J.pcnp-char (planned J.1630) and a new proposed work item contribution.

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 November 2021.

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>

Q/SG	Date	Place / Host	Terms of reference	Contact
1/9	15 September 2021 9:00-12:30 (CEST)	E-meeting	- Progress J.rfip-switching-arch through contributions, and - Consider incoming and outgoing liaison statements from Q1/9. - Consider any new contributions	Kei Kawamura (ki-kawamura@kddi.com)
2/9	9 July 2021 11:30-13:00 (CEST)	E-meeting	- Consider new work items to solve issues related to Recommendations ITU-T J.1026, J.1027, and J.1028	Zhijian Liang (liangzhijian1@hisilicon.com)
4/9	13-17 September 2021	Via e-mail ¹	To progress J.dtc-distribution-req	Tatsuo Shibata (t-shibata@jilabs.or.jp)
5/9	TBD July 2021 (2 sessions)	E-meeting	- To discuss how to revise the TVOS-related Recommendations (ITU-T J.1201-rev, J.1202-rev, J.1203-rev and J.1204-rev) with IRG-IBB stakeholders. - Discuss the new terminology application as found in iLS posted as SG9-TD1057	Haifeng Yan (yanhaifeng@hisilicon.com)
6/9	8 June 2021 9:00-10:30 (CEST)	E-meeting	Progress on J.pcnp-smgw-arch.	Shizhu Long (longshizhu@skyworth.com)

¹ This rapporteur meeting of Question 4 will be organized using e-mail exchange only, without the need to have an audio teleconference. The Rapporteur will send documents for review by the members one week before the meeting. After receiving comments from members during the e-mail session, the Rapporteur will send the harmonization of the comments received as well as the Q4 meeting report for comments with another deadline. The results will be submitted to SG9 plenary

Q/SG	Date	Place / Host	Terms of reference	Contact
6/9	8 September 2021 9:00-10:30 (CEST)	E-meeting	Progress on J.pcnp-smgw-arch.	Shizhu Long (longshizhu@skyworth.com)
7/9	14 June 2021 11:30-13:00 (CEST)	E-meeting	Progress on J.uoc, J.HiNoC3-REQ, J.AIP-SDV etc.	TaeKyoon Kim (tkkim@etri.re.kr)
7/9	9 August 2021 11:30-13:00 (CEST)	E-meeting	Progress on J.uoc, J.HiNoC3-REQ, J.AIP-SDV etc.	TaeKyoon Kim (tkkim@etri.re.kr)
7/9	4 October 2021 11:30-13:00 (CEST)	E-meeting	Progress on J.uoc, J.HiNoC3-REQ, J.AIP-SDV etc.	TaeKyoon Kim (tkkim@etri.re.kr)
8/9	30 June 2021 11:15-13:00 (CEST)	E-meeting	Progress on <u>J.CBCMS-part3</u>	TaeKyoon Kim (tkkim@etri.re.kr)
8/9	29 September 2021 11:00-12:30 (CEST)	E-meeting	Progress on <u>J.CBCMS-part3</u>	TaeKyoon Kim (tkkim@etri.re.kr)
9/9	20 August 2021 09:00-12:00 (CEST)	E-meeting	Progress on J.cable-ott, J.cloud-vr-arch, J.cable-mabr, etc.	Eric Wang (eric.wangxiang@huawei.com)
11/9	TBD June 2021	E-meeting	Joint meeting with Q26/16 to progress on J. acc-us-prof	Pradipta Biswas (pradipta@iisc.ac.in)
12/9	30 June 2021 9:00-11:00 (CEST) 1 session	E-meeting	Progress on J.pcnp-char (planned J.1630)	Evan Sun (evansun@huawei.com)
12/9	24 September 2021 9:00-11:00 (CEST) 1 session	E-meeting	Progress on J.pcnp-char (planned J.1630) New proposed work item discussion	Evan Sun (evansun@huawei.com)

12. Next Study Group 9 meeting

Next ITU-T SG9 meeting is currently scheduled to be held fully virtual, from 15 to 24 November 2021 (TBC). More information will be provided on the SG9 website when available. A co-located workshop on “The Future of TV for Europe” will be organized by ITU-T SG9 on Friday 19 November in collaboration with ITU-R, ITU-D and ITU regional office for Europe. 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-TD1006-R2](#).