# Executive summary of ITU-T SG9 meeting (Bogotá, Colombia, 21-28 Nov 2018)

The third Study Group 9 (Broadband cable and TV) meeting in the study period 2017-2020 was held in Bogotá, Colombia, from 21 to 28 Nov 2018 at the kind invitation of the Comisión de Regulación de Comunicaciones of Colombia. The SG9 meeting was attended by 40 participants (of which, nine attended remotely) from 13 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 luck of Contributions Q8/9 meeting was cancelled.

Co-located with the SG9 meeting, the ITU organized a **workshop** on "The Future of TV for the Americas" on *26 November 2018*. This event, which was jointly organized by the ITU Standardization Sector (ITU-T) 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 of the Americas region to assess challenges, dynamics and opportunities. The event acted as a platform to share best practices and case studies on related roll-outs as well as provided an opportunity to discuss on the future of TV-related regional and international standardization. Keeping in mind that the future should promote equal opportunities, avoid waste and optimize the use of resources, the event aimed at enhancing the local TV services to their full potential, to enable a future ecosystem which ideally provides advanced services, e.g. virtual and augmented reality, taking advantage of the internet of things (IoT) and artificial intelligence (AI) as well as integrated 5G networks. Finally this event aimed to support a future where the fast flow of information is provided at affordable costs in order to ensure to everyone accessibility and a more inclusive life.

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

During the SG9 meeting in November 2018, a total of seven draft Recommendations were finalized and agreed for AAP Consent.

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

| Question | AAP/TAP | Rec | Status | Title | Final TD | A.5 justification |
|---|---|---|---|---|---|---|
| Q1/9 | AAP | J.383 (J.atrans-tlvts) | New | Conversion of type length value (TLV) packet and transport stream for advanced cable transmission systems | TD472R1 | TD473R1 |
| Q5/9 | AAP | J.1201 (J.stvos-spec-req) | New | The functional requirements of smart TV operating system | TD456R1 | TD465 |
| Q6/9 | AAP | J.298 (ex J.stb-cts) | New | Requirements and technical specifications of cable TV hybrid set-top box that has the compatibility with terrestrial and satellite TV transport | TD470 | TD471 |

| Question | AAP/TAP | Rec | Status | Title | Final TD | A.5 justification |
|---|---|---|---|---|---|---|
| Q7/9 | AAP | J.1108 (J.roip-trans) | New | Transmission specification for Radio over IP transmission systems | TD466R1 | N/A |
| Q7/9 | AAP | J.1109 (J.fdx-req) | New | Requirement for in-band full-duplex in HFC based network | TD467 | N/A |
| Q9/9 | AAP | J.302 (ex J.302amd-1) | Amd | J.302amd-1" System specifications of augmented reality smart television service" | TD453R1 | N/A |
| Q10/9 | AAP | J.1 (ex J.tda) | New | Terms, definitions and acronyms for television and sound transmission and integrated broadband cable networks | TD483 | N/A |

### 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 | | | | | | |

### 1.3 Results on draft Recommendations planned for approval

The following draft Recommendations were planned for approval.

– Draft Recommendation ITU-T J.1012 (ex J.dmcd-part3).

– Draft Recommendation ITU-T J.1013 (ex J.dmcd vm).

– Draft Recommendation ITU-T J.1014 (ex J.dmcd-eci-as).

– Draft Recommendation ITU-T J.1015 (J.dmcd-kl-as).

At the last SG9 meeting (Bogotá, Colombia, 21-28 November 2018), it was agreed to defer the consideration for approval (TAP) of these draft Recommendations to the next Study Group 9 meeting in June 2019.
Additionally, it was agreed to split draft Recommendation ITU-T J.1015 (J.dmcd-kl-as) in two:

– Recommendation ITU-T J.1015 (J.dmcd-kl-as), *Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; The Advanced Security system - Key Ladder block*.

– Recommendation ITU-T J.1015.1 (ex J.dmcd-kl-as Annex A), *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*.

Splitting draft ITU-T J.1015 into two draft Recommendations is considered an editorial change, which was motivated by the desire to maintain a direct correspondence between the ETSI ISG ECI specifications and the related ITU-T Recommendations.

TSB Circular 139 provides information in this regard. See: www.itu.int/md/T17-TSB-CIR-0139.

The list of draft Recomemdnations planned for approval at next SG9 meeting in June 2019 is reported below:

| 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 |

## 2. Supplements, Amendments, Corrigenda and other deliverables

### 2.1 Supplements

No Supplement was proposed for agreement at this meeting.

### 2.2 Amendments

One Amendment to J.302 (ex J.302amd-1) was proposed for AAP Consent at this meeting. See item 1.1 for details

### 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 15 new work items:

| # | Question | Work item (kind of publication) | Status | Title | Editor | TD | A.1 Justification template |
|---|---|---|---|---|---|---|---|
| 1 | Q1 | 5GDOCSIS | New | Fifth-generation transmission systems for interactive cable television services – IP cable modems | Tomoyuki Shimizu (tm-shimizu@kddi.com) TaeKyoon Kim (tkkim@etri.re.kr) | N/A | Annex C of TD431 Rev1 |
| 2 | Q1 | J.MHAv2 | New | Second-generation Modular Headend Architecture in systems for interactive cable television services – IP cable modems | Tomoyuki Shimizu tm-shimizu@kddi.com TaeKyoon Kim tkkim@etri.re.kr | N/A | Annex D of TD431 Rev1 |
| 3 | Q2 | J.sup-eg | New | Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; ECI guide (EG) | Peter Mann (peter.mann@bnetza.de) Han-Seung Koo, (koohs@etri.re.kr) | N/A | Annex C of TD432 Rev1 |
| 4 | Q2 | J.sup-te | New | A proposed new work item of J.sup-te, "Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; Trust Environment (TE) | Peter Mann (peter.mann@bnetza.de) Han-Seung Koo, (koohs@etri.re.kr) | N/A | Annex D of TD432 Rev1 |
| 5 | Q2 | J.sup-val | New | Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; System Validation (VAL) | Peter Mann (peter.mann@bnetza.de) Han-Seung Koo, (koohs@etri.re.kr) | N/A | Annex E of TD432 Rev1 |
| 6 | Q5 | J.stvos-sec | New | The security of smart TV operating system | Mr. Haifeng YAN (yanhaifeng@hisilicon.com) | N/A | Annex D of TD435 Rev1 |
| 7 | Q5 | J.stvos-hal | New | The HAL API of smart TV operating system | Mr. Haifeng YAN (yanhaifeng@hisilicon.com) | N/A | Annex E of TD435 Rev1 |
| 8 | Q5 | J.207rev | Rev | Specification for an integrated broadcast and broadband digital television application control framework | Mr. Shinya TAKEUCHI (takeuchi.s-js@nhk.or.jp) | TD462 | Annex C of TD435 Rev1 |
| 9 | Q6 | J.pcnp-smgw | New | Functional requirements for Smart Home Gateway | Shizhu Long (longshizhu@skyworth.com) | N/A | Annex C of TD436 Rev1 |

| # | Question | Work item (kind of publication) | Status | Title | Editor | TD | A.1 Justification template |
|---|---|---|---|---|---|---|---|
| 10 | Q6 | J.acs-stb | New | Functional Requirements for interface between Auto Configuration Server (ACS) and STB | Kenji Obata (k-obata@jlabs.or.jp) Tatsuo Shibata (t-shibata@jlabs.or.jp) | N/A | Annex D of TD436 Rev1 |
| 11 | Q7 | TP.fdx-asi | New | Analysis of the spectrum interference of In-band Full Duplex | TaeKyoon Kim (tkkim@etri.re.kr) Mr. Evan Sun (mailto:evan.sun@huawei.com) | N/A | Annex C of TD437 Rev1 |
| 12 | Q7 | J.ipvb-req | New | Requirements of IP Video Broadcast (IPVB) for CATV Networks | Mr. Lijie Zhang (zhanglijie@jishihuitong.com) | N/A | Annex C of TD437 Rev1 |
| 13 | Q9 | J.pcnp-fmw | New | Premium Cable network platform with embedded intelligent analyzer and controller for enabling advanced multimedia services | Evan Sun (evan.sun@huawei.com) | TD460 | Annex C of TD439 Rev1 |
| 14 | Q9 | J.cable-ott | New | System architecture and interfaces between a cable television operator and an OTT service provider | Tomoyuki Shimizu (tm-shimizu@kddi.com) | N/A | Annex D of TD439 Rev1 |
| 15 | Q9 | TP.b-catv | New | Broadband CATV system using server-side reception and processing | Shinya Takeuchi (takeuchi.s-js@nhk.or.jp) | TD461 | N/A |

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

SG9 decided to discontinue the work on the following work items: **J.docsis31-gen**, **J.docsis31-phy** and **J.docsis31-mac**.

## 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 Kyoon 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 TD329.
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<br><br>Zhifan SHENG<br>(WP1/9 Chairman)<br>ABS, China<br><br>Bryant TAN<br>(WP1/9 Vice-chair)<br>Broadcom, USA | Q1 | Transmission and delivery control1 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<br><br>Taekyoon KIM<br>(WP2/9 Chairman)<br>ETRI, Korea | 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 |

[1] The modification of the title of Question 1 result from the merging of Question 1 and Question 3 (which was eventually deleted). TSAG has endorsed the merging of Q1 and Q3 and SG9 approved the new modified ToR for Question 1 at this meeting.

| | WP titles and MGT | Q/IRG | Titles |
|---|---|---|---|
| | Blaise MAMADOU (WP2/9 Vice-chair) Central African Republic | 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<br><br>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:

Taking into consideration that in this new Study Period Q3/9 did not receive any contribution and that the Rapporteur position has been vacant, at the last SG9 meeting it was agreed to revise the terms of reference of Q1/9 to include the applicable responsibilities of Q3/9. In this way, Q3/9 was merged into Q1/9 and the updated terms of reference are found in TD313. As per normal procedure, a liaison statement was drafted to inform TSAG on this change and request its endorsement, see TD 312. At this SG9 meeting in Bogotá the merger of Question 1/9 and Question 3/9 was approved, including the revised terms of reference for Question 1. TSB Circular 140 announces the merger of Question 1/9 and Question 3/9. See: www.itu.int/md/T17-TSB-CIR-0140.

Also at this meeting SG9 agreed to update the terms of reference for Question 4/9 (TD485) and Question 9/9 (TD452). Relevant liaison statements to TSAG were drafted to seek for TSAG endorsement (see item 9).

## 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 TD330R4. The following experts were appointed as Associate Rapporteurs:

– Mr Pradipta Biswas (Indian Institute of Science, India) was appointed Associate Rapporteur for Question 6/9;

– Mr Evan Sun (Huawei Technologies, China) was appointed Associate rapporteur for Question 7/9.

## 7. Liaison officers to external groups

SG9 has agreed on the List of SG9 liaison officers for the Study Period 2017-2020, with the following changes as found in TD331R2.

– Mr Pradipta BISWAS (Indian Institute of Science, India) replaces Amal PUNCHIHEWA as the new Co-Chairman of the Intersector Rapporteur Group Audiovisual Media Accessibility; he is also the new liaison officer to JCA-AHF (JCA on accessibility and human factors).

– Mr Shinya TAKEUCHI (NHK, Japan) is appointed liaison officer to ITU-R WP6B;

– Mr Eric WANG (Huawei, China) is the new liaison officer to ITU-T SG12 on video quality issues.

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

SG9 has agreed to continue its involvement with two of the three 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-AVA a new co-chair was appointed, as Amal PUNCHIHEWA retired from that position. SG9 welcomed the appointed of Pradipta Biswas as IRG-AVA co-chair.

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

## 9. Outgoing Liaison Statements

The following table shows the list of the 22 agreed outgoing liaison statements, as indicated in TD333R1:

| # | Questions | WP/ PLEN | To | For | Title | TD |
|---|---|---|---|---|---|---|
| 1 | Q1/9 | WP1 | ITU-R WP6B<br>ETSI TC CABLE | Information | LS on approval of new Recommendation ITU-T J.atrans-tlvts “Conversion of type length value (TLV) packet and transport stream for advanced cable transmission systems” | TD474R1 |
| 2 | Q1/9,<br>Q7/9 | WP1, WP2 | ETSI TC CABLE<br>SCTE<br>ITU-T SG15 | Information | Reply LS on Status of work items related to DOCSIS (SG9-LS166, (SG9-LS33) | TD481 |

| # | Questions | WP/ PLEN | To | For | Title | TD |
|---|---|---|---|---|---|---|
| 3 | Q4/9 | WP1 | ITU-D SG1 | Action | LS/o on Request for information on ITU-D Question 2/1 Report on Digital Television Broadcasting Transition | TD504 |
| 4 | Q5/9 | WP2 | ITU-R WP6B,<br>ITU-T SG16,<br>IRG-IBB | Information | LS/o/r on Recent activities of Recommendations related to IBB systems [from ITU-T SG9] | TD464 |
| 5 | Q5/9 | WP2 | ITU-T SG16,<br>IRG-IBB | Information | LS/o/r on smart TV operating system [from ITU-T SG9] | TD458R1 |
| 6 | Q6/9 | WP2 | ITU-T SG16 | Information | LS/o on draft Recommendation ITU-T J.298 "Requirements and technical specifications of cable TV hybrid set-top box that has the compatibility with terrestrial and satellite TV transport" | TD480 |
| 7 | Q6/9 | WP2 | ITU-T SG16, IRG-AVA, ITU-R WP6C, ISO/IEC JTC1/SC35 | Information | LS/o/r on cooperation on accessible audiovisual media standardization | TD495 |
| 8 | Q7/9 | WP2 | SCTE, ETSI TC-cable | Information | LS/o on AAP Consent of draft new Recommendations | TD469R1 |
| 9 | Q7/9 | WP2 | SCTE, ETSI TC-cable, CableLabs, CCSA | Information | LS/o new work programme for J.fdx-asi | TD468R1 |
| 10 | Q9/9 | WP2 | SG12, SG16 | Information | LS/o on J.302amd-1 "System specifications of augmented reality smart television service" | TD475 |
| 11 | Q9/9 | WP2 | SG3, SG15, SG16 | Information | LS/o on start of new draft Recommendations J.cable-ott "System architecture and interfaces between a cable television operator and an OTT service provider" [to ITU-T SG3, SG15, SG16] | TD476 |
| 12 | Q9/9 | WP2 | ITU-T SG12, ITU-T SG20, Broadband Forum | Information | LS/o on draft new recommendation J.pcnp-fmw "Premium Cable Network Platform (PCNP) – Framework" | TD477R1 |
| 13 | Q10/9 | N/A | ITU-T SCV, ITU-R CCV, SG2, 3, 5, 11, 12, 13, 15, 16, 17, 20 and TSAG | Information | LS/o on AAP consent of draft new Recommendation ITU-T J.1 (ex. J.tda) "Terms, definitions and acronyms for television and sound transmission and integrated broadband cable networks" | TD482 |

| # | Questions | WP/ PLEN | To | For | Title | TD |
|---|---|---|---|---|---|---|
| 14 | Q4/9, Q10/9 | N/A | TSAG, ITU-T SG15, ITU-D SG1 and SG2 | Information | LS/o on the amendment of Q4/9 ToR | TD484R1 |
| 15 | Q9/9, Q10/9 | N/A | TSAG, ITU-T SG 12, 13, 15, 16, 20 | Information | LS/o on the amendment of Q9/9 ToR | TD486R1 |
| 16 | Q10/9 | N/A | ITU-T SG11, SG2, SG3, SG5, SG12, SG13, SG15, SG16, SG17, SG20 | Information | LS/o/r updated reference table of ITU-T Recommendations to be used for conformity and interoperability testing | TD487 |
| 17 | Q10/9 | N/A | TSAG, ISCT, TDAG, all ITU-D SGs, RAG, all ITU-R SGs, ITU-T SGs 2, 3, 5, 11, 12, 13, 15, 16, 17, 20 | Information | LS/o/r on ITU inter-Sector coordination | TD488R1 |
| 18 | Q10/9 | N/A | ITU-D SG1, SG2, ITU-T SG2, SG3, SG5, SG11, SG13, SG15, SG17, SG20 | Information | LS/o/r on matching of ITU-D SG1 and SG2 Questions of interest to ITU-T Study Groups | TD489R1 |
| 19 | Q10/9 | N/A | ITU-T SG15, BROADBAND FORUM, IEEE 802.3 Working Group, ETSI TC ATTM, SG12, SG13, SG16, SG17, TSAG | Information | LS/o/r on the new version of the Access Network Transport (ANT) Standards Overview and Work Plan | TD491 |
| 20 | Q10/9 | N/A | ITU-T SG15, BROADBAND FORUM, ITU-R SG 1, ITU-R SG 5, ITU-R SG 6, ISO/IEC JTC1/SC25, IEEE 802.3 Working Group, ETSI TC ATTM, MoCA, SG5, SG13, SG16, SG17, TSAG | Information | LS/o/r on the new version of the Home Network Transport (HNT) Standards Overview and Work Plan | TD492 |
| 21 | Q10/9, Q1/9 | N/A | SG2, TSAG, SG3, SG5, SG11, SG12, SG13, SG15, SG16, SG17, SG20 | Information | LS/o/r on Telecommunication Management and OAM Project Plan | TD493 |
| 22 | Q10/9 | N/A | TSAG, SG2, SG3, SG5, SG11, SG12, SG13, SG15, SG16, SG17, SG20 | Information | LS/o/r on hot topics | TD494R2 |

# 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-TD431-R1. It was approved.

Question 1/9 discussed three contributions and six TDs, including four incoming liaison statements. Question 1/9 decided to propose AAP consent of ITU-T J.383 (ex. J.atrans-tlvts) in this SG9 meeting. Question 1/9 agreed to initiate the following two new work

items, J.5GDOCSIS and J.MHAv2, which aim to provide the specifications of "Fifth-generation transmission systems for interactive cable television services – IP cable modems" and "Second-generation Modular Headend Architecture in systems for interactive cable television services – IP cable modems", respectively. Question 1/9 decided to submit two outgoing liaison statements to the SG9 plenary. Q1/9 decided to discontinue working on the work items J.docsis31-gen and J.docsis31-phy. Question 1/9 and 7/9 planned one interim meeting to discuss the text of the draft Recommendation J.5GDOCSIS and J.MHAv2.

### 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-TD432-R1. It was approved.

Three output documents of J.oneway-dcas-part1, J.oneway-dcas-part2, and J.oneway-dcas-part3 were developed based on the contributions from China. Five output documents of ITU-T J.1012, J.1013, J.1014, J.1015, and J.1015.1 were developed for TAP approval. During Q2/9 sessions, participants did not reach consensus on the approval of these draft Recommendations. The start of three new work items (supplements), J.sup-eg, J.sup-te, and J.sup-val, was agreed. Two interim meetings were planned.

### 10.3 Question 3/9 "Digital programme delivery controls for multiplexing, switching and insertion in compressed bit streams and/or packet streams"

Q3/9 was discontinued and merged with Q1/9.

### 10.4 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-TD434. It was approved.

Question 4/9 now has 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 C70R1 from Japan Cable Laboratories added text about selection of recommendations, and new Appendix II which describes the use case of UHDTV (4K/8K) services. In response to Contributions C50R1 from Central African Republic, it was agreed that use case of IPTV over optical fibre connected with ADSL can be written in Appendix I "IPTV over HFC and FTTH," with reference to ADSL work by ITU-T Study Group 15. It was also agreed that some part of the text on TCP/IP provided by C45R1 from Congo (Democratic Republic of) will also be used in Appendix I.

There was no contribution received to update the contents of J.dtc-distribution-req, but the meeting noted C76R1 from the Public Utilities Regulatory Authority (PURA) Gambia, which proposed the continuation of this work item. A figure in the current baseline text was modified, and reflected in the output document.

The meeting agreed the revision of the Question 4/9 ToRs as proposed in C69R1, which includes the addition of the term "HFC" to the question title and the text of ToR, and addition of a ninth study item that clearly states that this Question supports developing countries to deploy digital television services on optical fibres and HFC.

### 10.5 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-TD435R1. It was approved.

Q5/9 agreed three new work items (J.207rev, J.stvos-hal and J.stvos-sec). The group output one draft revision of Recommendation ITU-T J.207 (J.207rev) and one draft new Recommendation (J.acf-hrm) for progressing. The group agreed to seek consent of draft new Recommendation ITU-T J.stvos-spec-req "The functional requirements of smart TV operating system". The group updated the text of draft new Recommendation of J.stvos-spec-arch for progressing. The group reviewed two liaison statements. The group prepared a reply liaison for TD358 from ITU-T SG16 to inform the result of discussion about smart TV operating system. The group also prepared liaison statements to ITU-R WP6B, ITU-T SG16 and IRG-IBB to inform the work related with IBB systems. The group planned two interim meetings.

### 10.6 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-TD436R1. It was approved.

Contribution C48 was reviewed and draft J.stb-cts was sent to the SG9 closing Plenary for consent with changes, the main change was to add ISDT-T supporting in the Recommendation to cover the requirement of South American countries. It was agreed to submit SG9-TD470 for consent at the plenary session of SG9, with corresponding A.5 justification information for draft new ITU-T J.298 (ex J.stb-cts) as TD471.

TD: 339, 340, 409, 410 were reviewed.

Two new work items were agreed, J.pcnp-smgw, J.acs-stb

One interim meeting was proposed before next SG9 plenary meeting

An outgoing liaison statement SG9-TD480 to SG16 was drafted for information.

Mr Pradipta Biswas (India) was appointed as Q6/9 Associate Rapporteur to support for issues related to Accessibility.

### 10.7 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-TD437R1. It was approved.

Question 7/9 met in four sessions to discuss four contributions, 14 TDs including three incoming liaison statements. The group agreed to propose J.roip-trans and J.fdx-req for AAP Consent at the closing Plenary meeting of SG9. The group also agreed to initiate the

following new work items: TP.fdx-asi and J.ipvb-req. Two outgoing liaisons statement were also agreed at this meeting. Question 7/9 met in one joint session with Q1/9 to discuss two contributions from CableLabs, the group agreed to start two new work items: J.5GDOCSIS and J.MHAv2. The group also agreed to delete the fourth generation DOCSIS related work items from SG9 work programme as these are encompassed by the fifth generation. Mr Evan Sun (Huawei, China) was appointed as Q7/9 Associate Rapporteur to support full duplex Recommendation issues.

### 10.8 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.

### 10.9 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-TD439R1. It was approved.

The Q9/9 sessions operated under WP2, under the chairmanship of Rapporteur Eric Wang, with Q9/9 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 six (6) sessions with about 14 people attending and addressed four (4) contribution and three (3) incoming liaison statements. The group submitted J.302amd-1 "System specifications of augmented reality smart television service Amd #1" for consent; progressed the J.pcnp-fmw "Premium Cable network platform with embedded intelligent analyzer and controller for enabling advanced multimedia services"; agreed to start two draft new recommendation J.cable-ott and J.pcnp-fmw; and agreed to start to develop a new technical paper on broadband CATV system using server-side reception and processing. The A.1 justification for the two draft new Recommendations can be found in Annex C and D, also see TD455 and TD459. The group used the "issues list" tool for maintaining the work of Q9/9. The agreed updates to "Q9 issues list" is found in TD478. Also, the group produced three (3) outgoing liaison statements. The group also reviewed the terms of references of Q9/9 and agreed to an updated text for agreement by the study group to be submitted to TSAG for endorsment, see TD452.

### 10.10 Question 10/9 "Work programme, coordination and planning"

The report of Q10/9 can be found in TD440R2.

Question 10/9 reviewed C58 and developed the final draft new Recommendation of ITU-T J.1 (ex. J.tda), see TD483, and agreed to propose it for AAP consent at the SG9 closing plenary. An outgoing LS to inform of this achieved milestone was prepared.

The group also reviewed twenty-eight (28) TDs, including twenty-seven (27) incoming liaison statements and its meeting agenda, as well as agreed to draft seven (7) reply liaison statements.

Also, Q10/9 discussed in the joint session held by this group and Q4/9 the revision of Q4/9 ToR. The revision of the mandate of Q4/9 proposed in C69R1 was discussed and agreed. The revised ToR of Q4/9 is found in TD485. Furthermore, Q9/9 has discussed and

agreed the revision of Q9/9 ToR, which is found in TD452. The group has prepared two outgoing liaison statements to TSAG for endorsement as found in TD484 and TD486. A total of 10 outgoing LSs were prepared. No interim meetings for Q10 are planned.

# 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 6-13 June 2019, Geneva.

## 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 |
|---|---|---|---|---|
| **Joint 1/9, 7/9 (TBD)** | 15-17 April 2019 | Wuhan/Huawei | Progress on J.5GDOCSIS, J.MHAv2, etc. | Tomoyuki Shimizu (tm-shimizu@kddi.com) TaeKyoon Kim (tkkim@etri.re.kr) |
| **2/9** | 6am-8am Geneva time 6 March 2019 | e-meeting | Progress on J.oneway-dcas-part1, J.oneway-dcas-part2, J.oneway-dcas-part3, etc. | Han-Seung Koo (koohs@etri.re.k) |
| **2/9** | (TBD) | e-meeting | Address UK and Israel Concerns to proceed with TAP approval for J.1012-J.1015 and J.1015.1 | Han-Seung Koo (koohs@etri.re.k) |
| **2/9** | 15-17 April, 2019 | Wuhan/Huawei | Progress on J.oneway-dcas-part1, J.oneway-dcas-part2, J.oneway-dcas-part3 . Address UK and Israel Concerns to proceed with TAP approval for J.1012-J.1015 and J.1015.1 (TBC) | Han-Seung Koo (koohs@etri.re.k) |
| **5/9** | (900am-1230pm) 23 January 2019 (2 sessions) | e-meeting | Progress on J.stvos-spec-arch | Shinya Takeuchi (takeuchi.s-js@nhk.or.jp) |
| **5/9** | 15-17 April 2019 | Wuhan/Huawei | Progress on J.stvos-spec-arch, J.stvos-sec, and J.stvos-hal | George LEE (george.lee@huawei.com) |

| Question/WP | Date | Place / Host | Terms of reference | Contact |
|---|---|---|---|---|
| **6/9** | 15-17 April, 2019 | Wuhan, China | Progress on J.jcpn-smga, J.acs-stb, etc. | Mr Shizhu Long (longshizhu@skyworth.com) |
| **7/9** | 11 Jan, 2019 | e-meeting | Progress on TP.fdx-asi, J.ipvb-req | Mr TaeKyoon KIM (tkkim@etri.re.kr) |
| **7/9** | 7 March, 2019 | e-meeting | Progress on TP.fdx-asi, J.ipvb-req | Mr TaeKyoon KIM (tkkim@etri.re.kr) |
| **7/9** | 15-17 April, 2019 | Wuhan, Huawei | Progress on TP.fdx-asi, J.ipvb-req | Mr TaeKyoon KIM (tkkim@etri.re.kr) |
| **9/9** | 7am-9am (Geneva time) 14 January | e-meeting | AAP for J.302amd-1<br>Progress J.pcnp-fmw;<br>Progress J.cable-ott<br>Progress TP.b-catv;<br>Discuss any other contribution(s); | Eric Wang eric.wangxiang@huawei.com |
| **Q9/9** | 7am-9am (Geneva time) 6 March | e-meeting | AAP for J.302amd-1<br>Progress J.pcnp-fmw;<br>Progress J.cable-ott<br>Progress TP.b-catv;<br>Discuss any other contribution(s); | Eric Wang eric.wangxiang@huawei.com |
| **Q9/9** | 15-17 April | Wuhan/Huawei | AAP for J.302amd-1<br>Progress J.pcnp-fmw;<br>Progress J.cable-ott<br>Progress TP.b-catv;<br>Discuss any other contribution(s); | Eric Wang eric.wangxiang@huawei.com |

## 12. Next Study Group 9 meeting

Next SG9 meeting is currently scheduled in Geneva, 6-13 June 2019.