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| **Abstract:** | This document provides SG9 report as lead study group activities on integrated broadband cable and television networks. |

# Lead study group activities on integrated broadband cable and television networks

Study Group 9 held its first meeting on 24 – 31 May 2017 in Hangzhou, China and the second meeting on 22 – 31 January 2018 in Geneva, Switzerland, respectively. SG9 would like to highlight that SG9 in this Study Period adopted a strategy having workshops co-located to SG9 meetings. We had the first one in China, APT, and the second one in Geneva, Europe. We also plan to hold future workshops in El Salvador, America (TBC) and Africa (TBC). We hope with these initiatives to encourage regional participation to SG9 meetings and better serve the needs of the membership.

## The first SG9 meeting (24 – 31 May 2017)

The first Study Group 9 meeting in the Study period 2017-2020 was held in Hangzhou, China from 24 to 31 May 2017, at the kind invitation of the Academy of Broadcasting Science (ABS), State Administration of Press, Publication, Radio, Film and Television of the People’s Republic of China (SAPPRFT), China. The SG9 meeting was attended by 44 participants from 10 countries. Along with face-to-face meetings a few sessions were supported by remote participation, as requested by SG9 Management.

Co-located with the SG9 meeting, the ITU hosted a workshop on “[TV and content delivery on Integrated Broadband Cable Networks](https://www.itu.int/en/ITU-T/Workshops-and-Seminars/201705/Pages/default.aspx)” on 26 May 2017. The workshop was attended by 74 participants from 14 countries. Remote participation was available to attend the workshop. All presentations given at the workshop are available from the programme website at: <http://itu.int/go/GFC9>

During the SG9 meeting in May 2017, two draft Recommendations were consented (AAP).

* ITU-T J.1020 (ex. J.dmobile-sma), *Downloadable System for Multi-CA/DRM service of mobile broadcasting; Service Model and Architecture*
* ITU-T J.1106 (ex. J.roip-req), *Requirement for Radio over IP transmission system*

## The second SG9 meeting (22 – 30 January 2018)

The second Study Group 9 (Broadband cable and TV) meeting in the Study period 2017-2020 was held in Geneva, Switzerland from 22 to 30 January 2018. The SG9 meeting was attended by 45 participants from 15 countries. Along with face-to-face meetings a few sessions were supported by remote participation, as requested by SG9 Management. At this meeting, Q3/9 did not meet; due to luck of Contributions Q3/9 meeting was cancelled. Taking into consideration that in this new Study Period Q3/9 did not receive any contribution and that the Rapporteur position has been vacant, SG9 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 SG9-TD313. As per normal procedure, a liaison statement was sent to TSAG to inform this change and request its endorsement, see SG9-TD312.

Co-located with the SG9 meeting, the ITU hosted a workshop on “[The Future of Cable TV](https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Pages/Events/2018/FCTV/The-Future-of-Cable-TV.aspx) ” on 25 and 26 January 2018. The workshop has been organized by the TSB jointly with BDT within the context of the European Regional Initiative approved by WTDC-17 on "Broadband Infrastructure, Broadcasting and Spectrum Management", whereby assistance is to be provided to countries in need on the assessment of dynamics, challenges and opportunities of diverse broadband technologies across Europe, including cable TV. The collaboration among the two ITU Sectors proven to be effective and the workshop was an opportunity to also discuss cable TV related regional and international standardization. A diversified representation of stakeholders joined the event and shared best practices and case studies on Cable TV roll-outs, which was highly appreciated by the ITU Membership. The workshop was attended by 85 participants from 30 countries. Remote participation was available to attend the workshop. All presentations given at the workshop are available from the detailed programme accessible from the event website at: <http://itu.int/go/SG9-FCTV>.

During the SG9 meeting in January 2018, a total of eight draft Recommendations were finalized, of which four through AAP Consent and four through TAP Determination.

<AAP consent>

* ITU-T J.207 rev, *Specification for integrated broadcast and broadband digital television application control framework*
* ITU-T J.297 rev, *Requirements and functional specification of cable set top box for 4K ultra high definition television*
* ITU-T J.382 rev, *Advanced digital downstream transmission systems for television, sound and data services for cable distribution*
* ITU-T J.1107 (ex. J.roip-arch), *Architecture and specification for Radio over IP transmission systems*

<TAP determination>

* ITU-T J.1012 (ex. J.dmcd-part3), *Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; CA/DRM Container, Loader, Interfaces, Revocation*
* ITU-T J.1013 (ex. J.dmcd-vm), *Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; The Virtual Machine*
* ITU-T J.1014 (ex. J.dmcd-eci-as), *Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; Advanced Security - ECI-specific functionalities*
* ITU-T J.1015 (ex. J.dmcd-kl-as), *Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; The Advanced Security system - Key Ladder*

# Collaboration with external organizations

SG9 has agreed on the appointment of SG9 liaison officers for the Study Period 2017-2020 as found in SG9-TD177R3.

SG9 also 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. However, ITU-T SG9 will discontinue its participation in the IRG-AVQA, since it was not possible to find any appropriate expert to co-chair and follow up on IRG-AVQA matters. As indicated in SG9-TD318, a liaison has been drafted to explain this decision to both ITU-T SG12 and ITU-R WP6C. The appointment of co-chairs for IRG-AVA and IRG-IBB was confirmed as follows.

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| **IRG** | **Title** | **Co-chair from SG9** | **Parent Groups** | **Website** |
| IRG-IBB | Integrated Broadcast-Broadband systems | Masaru TAKECHI (NHK, Japan) | ITU-R SG6 ITU-T SG16 | <https://itu.int/en/irg/ibb> |
| IRG-AVA | Audiovisual Media Accessibility | Amal PUNCHIHEWA (ABU, Malaysia) | ITU-R SG6 ITU-T SG16 | <https://itu.int/en/irg/ava> |

# Work programme

There are twenty-four draft new/revised Recommendations for progressing in ITU-T SG9.

| **Work item** | **Question** | **Status** | **Timing** | **Approval process** | **Version** | **Liaison relationship** | **Subject / Title** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| [J.382](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13991) | Q1/9 | Consented 2018-01-30 | 2018-01 | AAP | Rev. | - | Advanced digital downstream transmission systems for television, sound and data services for cable distribution |
| [J.atrans-tlvts](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14506) | Q1/9 | Under study | - | AAP | New | - | Conversion of type length value (TLV) packet and transport stream for advanced cable transmission systems |
| [J.docsis31-gen](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14177) | Q1/9 | Under study | 2018 | AAP | New | ETSI TC CABLE | Fourth Generation Transmission Systems for Interactive Cable Television Services - IP Cable Modems: General |
| [J.docsis31-phy](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14178) | Q1/9 | Under study | 2018 | AAP | New | ETSI TC CABLE | Fourth Generation Transmission Systems for Interactive Cable Television Services - IP Cable Modems: Physical Layer Specification |
| [J.1012 (ex J.dmcd-part3)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13992) | Q2/9 | Determined 2018-01-30 | 2018-11 | TAP | New | SG17, ETSI ISG ECI, ARIB | Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; CA/DRM Container, Loader, Interfaces, Revocation |
| [J.1013 (ex J.dmcd-vm)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14179) | Q2/9 | Determined 2018-01-30 | 2018-11 | TAP | New | SG17, ETSI ISG ECI, ARIB | Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; The Virtual Machine |
| [J.1014 (ex J.dmcd-eci-as)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14180) | Q2/9 | Determined 2018-01-30 | 2018-11 | TAP | New | SG17, ETSI ISG ECI, ARIB | Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; Advanced Security - ECI-specific functionalities |
| [J.1015 (ex J.dmcd-kl-as)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14181) | Q2/9 | Determined 2018-01-30 | 2018-11 | TAP | New | SG17, ETSI ISG ECI, ARIB | Embedded Common Interface (ECI) for exchangeable CA/DRM solutions; The Advanced Security system - Key Ladder |
| [J.dcas-oneway](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14507) | Q2/9 | Under study | - | AAP | New | - | Downloadable Conditional Access System for One-Way TV Networks |
| [J.dtt-dist-req](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14182) | Q4/9 | Under study | 2019 | AAP | New | ITU-T SG3 | DTT Platforms: Requirements for Open Access and Signal Quality |
| [Sup-digTV](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13717) | Q4/9 | Under study | 2018 | Agreement | New | ITU-T SG 15 | Installing a digital TV service for cable networks and relating Recommendations |
| [J.207](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14018) | Q5/9 | Consented 2018-01-30 | 2018-01 | AAP | Rev. | ITU-T SG16, ITU-R WP6B | Specification for integrated broadcast and broadband digital television application control framework |
| [J.acf-hrm](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=13722) | Q5/9 | Under study | 2018 | AAP | New | ITU-R Study Group 6, ITU-T Study Group 16, IRG-IBB | Harmonization of Integrated Broadcast-Broadband DTV application control framework |
| [J.stvos-spec](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14183) | Q5/9 | Under study | 2019 | AAP | - | ITU-T SG16, ITU-R WP6B | Specification for the architecture and functional requirement of smart TV operating system |
| [J.stvos-spec-arch](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14508) | Q5/9 | Under study | 2019 | AAP | - | - | The Architecture of Smart TV Operating System |
| [J.297](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14184) | Q6/9 | Consented 2018-01-30 | 2018 | AAP | Rev. | ITU-T SG16, ISO/IEC JTC1 SC29 | Requirements and functional specification of cable set top box for 4K ultra high definition television |
| [J.stb-cts](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14185) | Q6/9 | Under study | 2019 | AAP | New | ITU-T SG16, ITU-R SG6 | Requirements and technical specifications of cable TV hybrid set-top box that has the compatibility with terrestrial and satellite TV transport |
| [J.1107 (ex J.roip-arch)](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14187) | Q7/9 | Consented 2018-01-30 | 2018-11 | AAP | New | SCTE, RRA, ETSI TC CABLE | Architecture and specification for Radio over IP transmission systems |
| [J.docsis31-mac](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14186) | Q7/9 | Under study | 2018 | AAP | New | ETSI TC CABLE | Fourth Generation Transmission Systems for Interactive Cable Television Services - IP Cable Modems: MAC and Upper Layer Protocols Interface |
| [J.fdx-req](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14188) | Q7/9 | Under study | 2018-11 | AAP | New | SCTE, RRA, ETSI TC CABLE | Requirement for in-band full-duplex in HFC based network |
| [J.roip-trans](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14509) | Q7/9 | Under study | - | AAP | New | - | Transmission specification for Radio over IP transmission system |
| [J.qamip-req](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14032) | Q8/9 | Under study | 2018-11 | AAP | New | ETSI TC CABLE, DVB, IETF, SCTE | Requirements on QAM to IP Conversion for IP Multi-Room/House Services |
| [J.302amd-1](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14189) | Q9/9 | Under study | 2018-11 | AAP | New | IEEE | System specifications of augmented reality smart television service Amd #1 |
| [J.tda](http://www.itu.int/itu-t/workprog/wp_item.aspx?isn=14504) | Q10/9 | Under study | 2018-10 | AAP | New | ITU-T SCV and ITU-R CCV | Terms, definitions and acronyms for television and sound transmission and integrated broadband cable networks |

# Future meeting

The next SG9 meeting is currently scheduled in Geneva, 1-5 October 2018 but we are discussing for it to be hosted in Latin America.

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