

## Executive summary of Working Party 1 meeting of ITU-T SG9 (fully virtual, 26 January 2021)

A Working Party 1 meeting of ITU-T SG9 was held fully virtual on 26 January 2021. About 19 delegates attended. The session was held from 0900 to 1030 hours (CET) and through the remote connection tool available at ITU [MyMeetings](#). The meeting was chaired by Mr Satoshi Miyaji (SG9 Chairman, KDDI Corporation, Japan) on behalf of the WP1 Chairman Mr Zhifan Sheng (ABS, NRTA, China), and assisted by Mr Stefano Polidori (TSB Advisor).

The purpose for this meeting was to Consent two draft Recommendations, results from previous Q1/9 Rapporteur e-meetings.

The Chairman informed the meeting about the recent results from TSAG, which endorsed the new list of Questions of SG9 at its recent meeting (11-18 January 2021). TSAG acted on them due to the postponement of WTSA-20 (currently planned in 2022). See as a reference ([TSB Circular 295](#), [TSAG-R15](#)). Even if the list of SG9 Questions found in TSAG-R15 is already in force, there was no time for TSB to update the relevant webpages for this meeting. SG9 plans to update its webpages and to consider the new list of Questions at next SG9 meeting planned in April 2021.

### 1. List of Consented/Determined Recommendations

During these meetings, a total of two draft Recommendations were finalized and agreed for AAP Consent.

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

Question	AAP/TAP	Rec	Status	Title	Final TD	A.5 justification
1/9	AAP	<b>J.481</b> (J.cable-rf-ip)	New	Requirements of cable network for RF and IP secondary distribution of television programmes	<a href="#">SG9-TD981</a>	N/A
1/9	AAP	<b>J.482</b> (J.rfip-switching-req)	New	Requirements of RF/IP switching system	<a href="#">SG9-TD982</a>	N/A

#### 1.2 Results on draft Recommendations:

- **Consent of ITU-T J.1481 (J.cable-rf-ip)** . The cable television system requires to provide a set of high-quality multi-channel video programs using HFC or fibre optic cables. These are now mostly in RF format, but as cable television infrastructure migrates to support IP, the signal format should support both IP and RF formats. The use of IP format, as compared to the RF format, is expected to grow in the future.

This Recommendation defines the requirements and architecture of a cable television system able to provide video services in both RF and IP formats. This Recommendation is expected to support cable operators to continue their current cable television business during the transition to IP and in mixed RF and IP environments.

- **Consent of ITU-T J.482 (J.rfip-switching-req).** Recommendation ITU-T J.rfip-switching-req defines the Requirements of RF/IP switching system. This Recommendation is Part 1 of a multi-part deliverable including
  - Part 1: Requirements;
  - Part 2: Architecture and functional specifications.

Cable television operators provide subscribers with a variety of video services composed of RF-signal-based video (RF-video) and IP-signal-based video (IP-video), e.g., linear and non-linear Video On Demand (VOD) over cable networks where the bandwidth is finite. Meanwhile, cable operators are facing the problem to correspond the 4K RF/IP video demands of subscribers while it is difficult to extend the network bandwidth due to the network cost.

In general, with RF-video distribution scheme, the received video quality is stable since the video is distributed and received at a fixed coding bitrate over quality-guaranteed network where a fixed transmission bandwidth is reserved for each video. Utilization efficiency of cable networks is, however, low since the transmission bandwidths are occupied by the videos regardless audience ratings.

In contrast, with the IP-video distribution scheme, the received video quality is unstable since the video is distributed and received at a variable or adaptive coding bitrate over best-effort network where a transmission bandwidth is not reserved for each video. Utilization efficiency of cable networks is, however, high since the transmission bandwidths are used for not only video but also Internet data according to subscribers' requests.

For the response to the current situation, highly efficient cable transmission scheme that takes the advantages of both RF-video and IP-video distributions has been studied in order to maintain the received video quality and to improve the utilization efficiency of cable networks. The point is to share the RF and IP network bandwidth and to switch the distribution scheme adaptively between RF and IP according to the video content audience ratings, available network bandwidths, and attribute (e.g., emergency degree) of video content on cable headend (HE) side. On the receiver side, either RF-video or IP-video signals are received by turns, but seamlessly to form an uninterrupted video stream.

### **1.3 Creation of a new sub-series under J-series Recommendations**

It was agreed to create a new sub-series under J-series Recommendations as follows:

- J.480-J.489 Digital transmission of television signals - Part 4.

## 2. Outgoing liaison statements

The list of outgoing liaison statements was made available in [SG9-TD980](#). The following liaison statements were approved during the WP1/9 meeting.

#	Questions	WP	To	For	Title	TD
1	1/9	WP1	CableLabs	Action	LS/o on withdrawal of IEEE Std 802.1D-2004	<a href="#">SG9-TD984</a>
2	1/9	WP1	ITU-T SG16	Information	LS/o/r on the current text of new draft Recommendations J.cable-rf-ip "Requirements of cable network for RF and IP secondary distribution of television programmes" (reply to SG16-LS196)	<a href="#">SG9-TD985</a>
3	1/9	WP1	ITU-T SG16	Information	LS/o/r on start of new draft Recommendations J.rfip-switching "RF/IP adaptive video distribution scheme over cable television networks" (reply to SG16-LS195)	<a href="#">SG9-TD986</a>
4	1/9	WP1	ETSI TC Cable, ITU-T Q13/SG16, CableLabs, SCTE	Information	LS/o on AAP Consent of draft new Recommendation ITU-T J.481 (ex J.cable-rf-ip) and J.482 (ex J.rfip-switching-req)	<a href="#">SG9-TD987-R1</a>

## 3. Work programme

### 3.1 New work items

None. However the meeting took note of Q1/9 decision to split its work item "J.rfip-switching" into two work items, which were named J.rfip-switching-req and J.rfip-switching-arch respectively.

### 3.2 Total ongoing work items for progressing at next meeting

The current list of open work items, including eventual new work items agreed at this meeting (see item 10.1 above) are as follows:

#	Q	Acronym (kind of publication)	Status	Subject / Title	Editor(s)	Base text(s)	Timing
1	1/9	J.481 (ex J.cable-rf-ip) (Rec)	Consented	Requirements of cable network for RF and IP secondary distribution of television programmes	Kenji Obata, Tatsuo Shibata	<a href="#">SG9-TD981</a>	2021-01

#	Q	Acronym (kind of publication)	Status	Subject / Title	Editor(s)	Base text(s)	Timing
2	1/9	J.rfip-switching-arc (Rec)	Under study	Architecture and functional Specifications of RF/IP switching system	Yoshitaka Kidani, Kenji Obata, Tatsuo Shibata	<a href="#">SG9-TD983</a>	2021-11
3	1/9	J.482 (ex J.rfip-switching-req) (Rec)	Consented	Requirements of RF/IP switching system	Yoshitaka Kidani, Kenji Obata, Tatsuo Shibata	<a href="#">SG9-TD982</a>	2021-01
4	4/9	J.dtc-dist-req (Rec)	Under study	Television Content Distribution Platforms: Requirements for Open Access and Signal Quality	Burama Jammeh, Tatsuo Shibata	<a href="#">SG9-TD828</a>	2021-11
5	4/9	Sup-digTV (Suppl)	Under study	Installing a digital TV service for cable networks and relating Recommendations	Tatsuo Shibata	<a href="#">SG9-TD827</a>	2021-04

NOTE: The SG9 Work Programme can be found at: <http://handle.itu.int/11.1002/db/wp-sg9>.

#### 4. Next Study Group 9 meeting

There are no planned interim meeting of WP1/9 nor its Questions Rapporteur meetings until next SG9 meeting, which is planned from 19 to 28 April 2021, fully virtual. The SG9 meeting, which was to be held in Japan in October 2020, was eventually postponed due to the COVID19 worldwide situation and agreed to be held in fully virtual mode.