INTERNATIONAL TELECOMMUNICATION UNION

TELECOMMUNICATION STANDARDIZATION SECTOR

STUDY PERIOD 2017-2020

SG11-TD83/WP1

STUDY GROUP 11

Original: English

Question(s):	1/11	virtual, 16 July 2021

TD

Source: Rapporteur Q1/11

Title: Draft Report of interim Q1/11 RGM e-meeting Q1/11 “Signalling and protocol architectures for telecommunication networks and guidelines for implementations” (e-meeting, 7-16 July 2021)

Purpose: Information

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Keywords: Report; Q1/11; interim e-meeting; RGM; SG11

Abstract: This document contains the draft report of interim Q1/11 RGM e-meeting which took place from 7 to 16 July 2021

1 Introduction

Question 1/11 was addressed in four sessions during the interim SG11 RGM e-meetings from 7 to 16 July 2021, under the chairmanship of Rapporteur Huan Deng (China Telecom, China). The group adopted the agenda in DOC61.

The agenda was approved without modification.

The objectives for this meeting were:

- To consider any possible new work items related to signalling architecture such as Q.NICE-SA and Q.DC-SA;
- To review relevant liaison statements related to Q1/11 and consider appropriate response.

1.1 IPR Call

The Rapporteur, Dr Huan Deng, the meeting participants of the ITU-T IPR Policy (see http://www.itu.int/en/ITU-T/ipr/Pages/default.aspx) and asked those present whether anyone had knowledge of intellectual property rights issues, including patents, copyright for software or text, marks, the use of which may be required to implement or publish the Recommendation being considered.

The Rapporteur reminded the participants that any ITU-T member organization putting forward a standardization proposal should draw the attention of the TSB Director to any known or pending patent and any other applicable IPR issues.

No declarations were made during the plenary.

2 Documentation and emailing lists

2.1 Documentation

The list of input documents for the meeting is found in Annex A.

Documents considered at this meeting are available at:

- Input documents – https://extranet.itu.int/meetings/ITU-T/T17-SG11RGM/19171-210707/SitePages/Welcome.aspx
- TDs – https://www.itu.int/md/T17-SG11-210715-TD/en

The complete list of documents which are addressed to Q1/11 is presented below.

Input documents	DOC22R1; DOC31; DOC34
TDs	TD1657/GEN, TD1658/GEN, TD1659/GEN, TD1660/GEN, TD1662/GEN, TD1663/GEN, TD1664/GEN, TD1665/GEN, TD1666/GEN

2.2 Emailing list subscription

E-mail correspondences pertaining to the activities of this group are routinely conducted using the e-mail reflector t17sg11q1@lists.itu.int. Those wishing to subscribe or unsubscribe to this or other SG11 email reflectors should visit the mailing list web page at:

https://www.itu.int/en/ITU-T/studygroups/2017-2020/11/Pages/ifa-structure.aspx

3 Results

3.1 Question 1/11 summary

Question 1 (Q1/11) on Signalling and protocol architectures for telecommunication networks and guidelines for implementations met online from 7 to 16 July 2021. Q1/11 Rapporteur, Dr Huan Deng (China Telecom, China), chaired the meeting. The meeting received 3 input documents, and reviewed some liaison statements, all documents have been well discussed during the meeting. Q1 has initialled two new work items for this meeting which is ITU-T Q.NICE-SA and ITU-T DC-SA, and leave one proposal with interesting topic in the living list Annex C. Q1/11 decides to send 2 outgoing LSs to SG13 and to 3GPP, IETF to inform them on our new work items about enhanced IMS and signalling of NGNe implementation.

3.2 Draft Recommendations for Approval

None

3.3 Recommendations proposed for Consent in accordance with Rec. A.8.

None

3.4 Other documents for Approval/Agreement

None

3.5 New work items

Question	Working title	Title	Baseline text
Q1	Q.NICE-SA	Signalling architecture of NICE in support of awareness capabilities	SG11-TD101/WP1
Q1	Q.DC-SA	Signalling architecture of data channel enhanced IMS network	SG11-TD102/WP1

Note: the A.1 description of the proposed new work items is to be found in Annex B.

4 Discussions

4.1 Incoming Liaison Statements

TD/DOC number	Title	Action	Discussion
TD1657/GEN	LS/i/r on WTSA-20 preparations (TSAG-LS42) [from ITU-T SG3]	I	This Liaison provides interesting information, Q1 noted.
TD1658/GEN	LS/i on work progress on the network aspects of Quantum Information Technology (QIT) in FG-QIT4N (as of May 2021)	I	This Liaison provides interesting information, Q1 noted.
TD1659/GEN	LS/i on work progress on Quantum Key Distribution Network (QKDN) in FG QIT4N (as of May 2021)	I	This Liaison provides interesting information, Q1 noted.

TD1660/GEN	LS/i/r on terms and definitions defined in new SG16 work items (SCV-LS31) [from ITU-T SG16]	A	This Liaison provides interesting information, Q1 noted.
TD1662/GEN	LS/i/r on WTSA-20 preparations (TSAG-LS42) [from ITU-T SG9]	I	This Liaison provides interesting information, Q1 noted.
TD1663/GEN	LS/i/r on approval of new terms and definitions (SCV-LS31) [from ITU-T SG9]	I	This Liaison provides interesting information, Q1 noted.
TD1664/GEN	LS/i on the latest results on the Vehicular Multimedia deliverables from ITU FG-VM	I	This Liaison provides interesting information, Q1 noted.
TD1665/GEN	LS/i on six deliverables of ITU-T FG-AI4EE [from FG-AI4EE]	I	This Liaison provides interesting information, Q1 noted.
TD1666/GEN	LS/i on collaboration between ITU-T and IEEE [from ITU-T SG20]	I	This Liaison provides interesting information, Q1 noted.

4.2 Outgoing liaison statements

TD/DOC number	Title	To	Related to iLS
TD103/WP1	LS/o on the new work item on “Signalling architecture of NICE (Network intelligence capability enhancement) in support of awareness capabilities(Q.NICE-SA)” [to ITU-T SG13]	ITU-T SG13	-
TD104/WP1	LS/o on the new work item on “Signalling architecture of data channel enhanced IMS network(Q.DC-SA)” [to IETF/3GPP]	IETF,3GPP	-

4.3 Discussion of input documents

DOC	Title	Discussion
DOC22R1	proposal to initiate a new work item on the Signalling architecture of NICE (Network intelligence capability enhancement) in support of Awareness	Experts agree to initial a new work item on signalling architecture of NICE (Network intelligence capability enhancement) in support of awareness capabilities.
DOC31	Proposal for initiating a new work item on the signalling architecture of Intent-Based Network for network evolution	Experts consider that it is better to initial this new work item after relevant Recommendation has been approved by ITU-T SG13. Therefore, we put it in the living list and will discuss it on next meeting.

DOC34	Proposal for initiating a new work item on signalling architecture of data channel enhanced IMS network	Experts agree to initial a new work item on signalling architecture of data channel enhanced IMS network

5 Work programme

The SG11 Work Programme can be found at: http://itu.int/itu-t/workprog/wp_search.aspx?sg=11

5.1 New/deleted work items

The meeting agreed to start work on the following new work items:

Acronym	Title	Editor	Time Consent / Approval	Reference	Question
Q.NICE-SA	Signalling architecture of NICE (Network intelligence capability enhancement) in support of awareness capabilities	Huan Deng, China Telecom, China denghuan@chinatelecom.cn Jianyin Zhang, China Mobile, China zhangjianyin@chinamobile.com Cheng Li, CAICT, MIIT, China licheng@caict.ac.cn Ying Sun， China Telecom, China suny22@chinatelecom.cn	2023 Q4		Q1
Q.DC-SA	Signalling architecture of data channel enhanced IMS network	Jianyin Zhang, China Mobile, China zhangjianyin@chinamobile.com Huan Deng, China Telecom, China denghuan@chinatelecom.cn Xueqian Bai, China Mobile, China baixueqian@chinamobile.com	2023 Q4		Q1

Note: the A.1 description of the proposed new work items is to be found in Annex B.

5.2 Updated work programme

In accordance with the WORK PROGRAMME DATABASE, the current work items for Q1/11 are as follows (the requested changes are shown in red):

Question	Work Item	Title	Editors	Timing	Base Text
Q1	Q.LiteIMS-SA	Signalling architecture of Lite IMS for IMT-2020 advanced network	Jianyin Zhang, China Mobile P.R.China zhangjianyin@chinamobile.com Huan Deng, China Telecom P.R.China denghuan.bri@chinatelecom.cn Muyin Liu, China Unicom P.R.China liumy91@chinaunicom.cn	2022-06	SG11-TD1609/GEN

Question	Work Item	Title	Editors	Timing	Base Text
			Nanxiang Shi, China Mobile P.R.China shinanxiang@chinamobile.com		
Q1	Q.CPN-TP-SA	signalling architecture of transaction platform in CPN	Qianying Zhao, China Telecom, China zhaoqy50@chinatelecom.cn Bo Lei, China Telecom, China leibo@chinatelecom.cn Chang Cao, China Unicom, China E-mail: caoc15@chinaunicom.cn Xu Zhou, CNIC, China Email: zhouxu@cnic.cn Taixin Li, CNIC, China	2023-03	SG11-TD1610/GEN
Q1	Q.NICE-SA	Signalling architecture of NICE (Network intelligence capability enhancement) in support of awareness capabilities	Huan Deng, China Telecom, China denghuan@chinatelecom.cn Jianyin Zhang, China Mobile, China zhangjianyin@chinamobile.com Cheng Li, CAICT, MIIT, China licheng@caict.ac.cn Ying Sun, China Telecom, China suny22@chinatelecom.cn	2023 Q4	SG11-TD101/GEN
Q1	Q.DC-SA	Signalling architecture of data channel enhanced IMS network	Jianyin Zhang, China Mobile, China zhangjianyin@chinamobile.com Huan Deng, China Telecom, China denghuan@chinatelecom.cn Xueqian Bai, China Mobile, China baixueqian@chinamobile.com	2023 Q4	SG11-TD102/GEN

6 Future meetings

6.1 Question meetings at the next SG11 meeting

Q1/11 is planning to meet again during the next ITU-T SG11 meeting (1-10 December 2021, TBC). Annex D highlights proposals for Q1/11 sessions during next SG11 meeting.

The objectives of the next Q1/11 meeting are:

- To progress ongoing signalling architecture work items such as Q.LiteIMS-SA, Q.CPN-TP-SA, Q-NICE-SA and Q.DC-SA.
- To consider any new work item related to signalling architecture aspects.

Details will be posted on the ITU-T SG11 website: http://itu.int/go/tsg11.

6.2 Rapporteur meetings (interim meetings)

None

7 Other business

Q1/11 Rapporteur thanked all the participants for their valuable input and active involvement in the Q1/11 activities especially Denis Andreev and TSB Secretariat.

Annex A

List of input documents addressed to Q1/11

DOC	Source	Title
DOC22R1	China Telecom	proposal to initiate a new work item on the Signalling architecture of NICE (Network intelligence capability enhancement) in support of Awareness
DOC31	China Telecom	Proposal for initiating a new work item on the signalling architecture of Intent-Based Network for network evolution
DOC34	China Mobile	Proposal for initiating a new work item on signalling architecture of data channel enhanced IMS network

Annex B

A.1 justification for proposed draft new Recommendation ITU-T Q.NICE-SA " Signalling architecture of NICE (Network intelligence capability enhancement) in support of awareness capabilities "

Question:	1/11	**Proposed new ITU-T Recommendation**	Virtual, 7-16 July 2021	
Reference and title:	Q.NICE-SA "Signalling architecture of NICE (Network intelligence capability enhancement) in support of awareness capabilities"			
Base text:	TD101/WP1		**Timing:**	December, 2023
Editor(s):	Huan Deng, China Telecom, China denghuan@chinatelecom.cn Jianyin Zhang, China Mobile, China zhangjianyin@chinamobile.com Cheng Li, CAICT, MIIT, China licheng@caict.ac.cn Ying Sun, China Telecom, China suny22@chinatelecom.cn		**Approval process:**	AAP

Scope (defines the intent or object of the Recommendation and the aspects covered, thereby indicating the limits of its applicability):

This draft Recommendation will provide the signalling architecture of NICE in support of awareness capabilities. Based on the functional architecture and the awareness functions of NICE, it introduces the reference points and specifies the mapping of reference points to interfaces in the architecture of NICE especially in support of awareness capabilities. It also provides the signalling requirements of the interfaces and defines the protocols used for interfaces. This draft Recommendation builds on ITU Y.2301, ITU-T Y.2302 and ITU-T Y.2303 and will be aligned with them.

Summary (provides a brief overview of the purpose and contents of the Recommendation, thus permitting readers to judge its usefulness for their work):

NICE is an enhancement for NGNs which support some intelligence capabilities for the provisioning of services according to the requirements of users and application providers. These intelligence capabilities (termed as "NICE capabilities") enable operators to assign and dynamically adjust specific network resources based on the requirements, as well as support interfaces for users and applications enabling on-demand resource and service provision. In NICE architecture, the content and context analysis functional entity and the content and context detection functional entity are two main FEs that play the role of awareness functions. These two FEs interact with other FEs and functions in NICE, such as the policy control FE, the traffic scheduling FE, and the open environment FE to provide awareness analysis data or results.

One of the main tasks of Q1/11 is to develop the signalling and protocol architectures for the future emerging telecommunication network taking into account of new services and new applications. As the widely recognition and implementation of SDN and NFV technologies in the existing networks, we propose to continue the work of NICE in support of awareness capabilities especially concerning its signalling architecture in Q1/11.

Relations to ITU-T Recommendations or to other standards (approved or under development):

ITU-T Y.2301, ITU-T Y.2302, ITU-T Y.2303

Liaisons with other study groups or with other standards bodies:

SG13 Q2

Supporting members that are committing to contributing actively to the work item:

China Telecom, China Mobile

A.1 justification for proposed draft new Recommendation ITU-T Q.DC-SA " Signalling architecture of data channel enhanced IMS network "

Question:	1/11	**Proposed new ITU-T Recommendation**	Virtual, 7-16 July 2021
Reference and title:	Q.DC-SA "Signalling architecture of data channel enhanced IMS network"		
Base text:	TD102/WP1	**Timing:**	2023-12
Editor(s):	Jianyin Zhang, China Mobile, China zhangjianyin@chinamobile.com Huan Deng, China Telecom, China denghuan@chinatelecom.cn Xueqian Bai, China Mobile, China baixueqian@chinamobile.com	**Approval process:**	AAP

Scope (defines the intent or object of the Recommendation and the aspects covered, thereby indicating the limits of its applicability):

This Recommendation presents the requirements, framework, interfaces and security considerations of signalling architecture of data channel enhanced IMS network.

The following issues are addressed in this Recommendation.

- Present the requirements of data channel enhanced IMS network, including the requirements of framework and reference points
- Specify the framework of data channel enhanced IMS network, which includes signalling architecture and network framework.
- Specify the interfaces between IMS network and data channel function elements, and corresponding protocols.

Specify the security considerations of data channel enhanced IMS network.

Summary (provides a brief overview of the purpose and contents of the Recommendation, thus permitting readers to judge its usefulness for their work):

Data channel is based on WebRTC data channel protocol stack which is defined as the framework to carry media data between web browsers as defined in RFC8831. It is adapted to be used by new procedures in 3GPP TS R16 26.114 and through minor extensions to existing call procedures in 3GPP R17 TS 24.229.

Data Channel enables adding real-time communication between people and things, alongside the current HD voice and video calling services. With the application of data channel technology, the IMS network can make use of data channel functionality to diversify new services and widen business opportunities. To fully utilize Data Channel advantages, further research and analysis on the signalling architecture of data channel enhanced IMS network is quite essential. And in ITU, there's no dedicated research or standard on data channel based IMS network yet.

On the basis of research on IMS network as well as data channel, this Recommendation approaches the issues of requirement, framework and interfaces for signalling architecture of data channel enhanced IMS network. This Recommendation presents the requirements of signalling architecture of data channel enhanced IMS network, specifies the framework of data channel based IMS network, and specifies the interfaces between data channel elements to IMS elements.

Relations to ITU-T Recommendations or to other standards (approved or under development):

Data channel is analyzed in 3GPP TS 26.114 and IETF RFC8831. This recommendation will apply data channel technology for the IMS network, which is standardized in ITU-T Y.3104.

Liaisons with other study groups or with other standards bodies:

3GPP, IETF

Supporting members that are committing to contributing actively to the work item:

China Mobile, China Telecom

Annex C

Living list

DOC	Title	Discussion
DOC31	Proposal for initiating a new work item on the signalling architecture of Intent-Based Network for network evolution	Experts consider that it is better to initiate this new work item after relevant Recommendation has been approved by ITU-T SG13. Therefore, we put it in the living list and will discuss it on next meeting.

Annex D

Plans of Q1/11 sessions during next SG11 meeting (1-10 December 2021, TBC)

(First week)

	Wednesday, 1 December 2021						Thursday, 2 December 2021						Friday, 3 December 2021					
	0	1	2	3	4	5	0	1	2	3	4	5	0	1	2	3	4	5
Q1/11	▨					▨	▨			**V**	**V**	▨	▨					▨

Sessions times (Geneva time)

**Session 0: 0900-1015; Session 1: 1030-1145; Session 2: 1200-1315; Session 3: 1330-1445;
Session 4: 1500-1615; Session 5: 1630-1745**

Key: V - virtual meeting via ITU MyMeetings 📹 - webcast

(Second week)

	Monday, 6 December 2021						Tuesday, 7 December 2021						Wednesday, 8 December 2021						Thursday, 9 December 2021						Friday, 10 December 2021					
	0	1	2	3	4	5	0	1	2	3	4	5	0	1	2	3	4	5	0	1	2	3	4	5	0	1	2	3	4	5
Q1/11	▨					▨	▨			**V**	**V**	▨	▨					▨	▨					▨	▨					▨

Sessions times (Geneva time)

Session 0: 0900-1015; Session 1: 1030-1145; Session 2: 1200-1315; Session 3: 1330-1445; Session 4: 1500-1615; Session 5: 1630-1745

Key: V - virtual meeting via ITU MyMeetings 📹 - webcast
