



Question(s): 14/11

Geneva, 6-15 July 2022

TD

Source: Rapporteur Q14/11

Title: Draft Report of Q14/11 meeting “Testing of cloud, SDN and NFV” (Geneva, 6-15 July 2022)

Contact: Wu Linze
China Telecom
China
E-mail: wulinz@chinatelecom.cn

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1 Introduction

Question 14/11 was addressed in five sessions during the ITU-T SG11 meeting in Geneva, on 6-15 July 2022, under the chairmanship of Wu Linze (China telecom, China) with the help from Uwe BAEDER (Rohde & Schwarz GmbH & Co. KG, Germany) and Biren KARMAKAR (Centre for Development of Telematics, India), who were appointed as Acting Rapporteurs for this particular SG11 meeting. The group adopted the agenda in [SG11-TD86/GEN](#).

The agenda was approved without modification.

The objectives for this meeting were:

- Progress ongoing work items Q.vbng-iop-ts and Q.N-att-framework
- Initiate one new work item
- iLS and oLS review

1.1 IPR Call

The Rapporteur, Ms Wu Linze, reminded 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 contributions for the meeting is found in Annex A.

A list of documents provided by TSB is available in [SG11-TD61/GEN](#) and subsequent revisions.

The following documents were examined:

Contributions	C35 , C57 , C58-R2 , C59
TDs	SG11-TD133/GEN ; SG11-TD128/GEN ; SG11-TD131/GEN ; SG11-TD134/GEN ; SG11-TD118/GEN ; SG11-TD116/GEN ; SG11-TD117/GEN ; SG11-TD049/GEN ; SG11-TD55/GEN ; SG11-TD141/GEN ; SG11-TD135/GEN ; SG11-TD35/GEN ; SG11-TD33/GEN ; SG11-TD34/GEN ; SG11-TD4/GEN ; SG11-TD32/GEN ; SG11-TD5/GEN ; SG11-TD6/GEN ; SG11-TD28/GEN ; SG11-TD30/GEN ; SG11-TD3/GEN ; SG11-TD26/GEN ; SG11-TD50/GEN ; SG11-TD10/GEN ; SG11-TD9/GEN ; SG11-TD8/GEN ; SG11-TD7/GEN ; SG11-TD17/GEN ; SG11-TD18/GEN ; SG11-TD22/GEN ; SG11-TD23/GEN

2.2 Emailing list subscription

E-mail correspondences pertaining to the activities of this group are routinely conducted using the e-mail reflector t22sg11q14@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/2022-2024/11/Pages/ifa-structure.aspx>

3 Results

3.1 Question 14/11 summary

Q14/11 progressed on-going draft Recommendation Q.vbng-iop-ts and Q.N-att-framework. We initiate one NWI Q.Scvh-iopt and prepared oLS for the NWI. Besides we reviewed several iLS and all are noted.

3.2 Draft Recommendations for Approval

None.

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

3.3.1 Revised Recommendations

None.

3.3.2 New Recommendations

None.

3.4 Other documents for Approval/Agreement

None.

3.5 New work items

Question	WI acronym	Title	Baseline text
14/11	Q.Scvh-iopt	Interoperability testing between SDN and hypervisor based computing virtualization	SG11-TD177/GEN

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 number	Title	Action	Discussion
SG11-TD133/GEN	LS on SG12 liaison representatives to ITU-T Study Groups, SCV and JCAs	Information	Noted
SG11-TD128/GEN	LS on call for use cases on testbeds federation	Action	Noted
SG11-TD131/GEN	LS on the appointment of a vocabulary rapporteur	Action	Noted
SG11-TD134/GEN	LS on highlights from the first meeting of the Joint Coordination Activity on Digital COVID-19 Certificates (JCA-DCC)	Action	Noted
SG11-TD118/GEN	LS on TSAG roadmap until WTSA-24	Information	Noted
SG11-TD116/GEN	LS/r on deletion of UPT recommendations (reply to SG2-TD065R1/GEN)	Information	Noted
SG11-TD117/GEN	LS/r on terms and definitions proposed by ITU-T SG11	Information	Noted
SG11-TD049/GEN	LS on deletion of UPT recommendations	Action	Noted

TD number	Title	Action	Discussion
SG11-TD55/GEN	LS on request to update security contacts and to provide information on security-related Recommendations or other texts under development	Action	Noted
SG11-TD141/GEN	LS on Current Activities of FG-AI4A	Action	Noted
SG11-TD135/GEN	LS on one approved deliverable of ITU-T FG-AI4EE	Information	Noted
SG11-TD35/GEN	LS/r on the first deliverable on use cases for autonomous networks from ITU FG-AN	Information	Noted
SG11-TD33/GEN	LS on the outcomes of the first meeting of the ITU-T Focus Group on Testbed Federations for IMT-2020 and beyond (FG-TBFxG)	Information	Noted
SG11-TD34/GEN	LS on progress of FG-TBFxG and appointment of new Vice-chairmen	Information	Noted
SG11-TD4/GEN	LS on “Call for contribution to ITU FG AN Build-a-thon 2022”	Action	Noted
SG11-TD32/GEN	LS on Information on the Progress of ITU-R Study Group 6 Rapporteur Group on A Vision for the Future of Broadcasting (RG-FOB)	Information	Noted
SG11-TD5/GEN	LS on terms and definitions proposed by ITU-T SG11	Information	Noted
SG11-TD6/GEN	LS on blockchain-related terms and definitions proposed by ITU-T SG20	Action	Noted
SG11-TD28/GEN	LS on terms and definitions from approved new work items [to SCV/CCV]	Action	Noted
SG11-TD30/GEN	LS on the progress of DLT standardization in Q22/16 [to ITU-T SG2, SG3, SG11, SG13, SG17, SG20; JPEG]	Information	Noted
SG11-TD3/GEN	LS on the establishment of JCA on digital COVID-19 certificates (JCA-DCC)	Action	Noted
SG11-TD26/GEN	LS on Intelligent Transportation Systems (ITS)	Action	Noted
SG11-TD27/GEN	LS on Consideration for accessible meetings	Action	Noted
SG11-TD10/GEN	LS on invitation to review Big data and data handling standardization roadmap and provide missing or updated information	Action	Noted
SG11-TD9/GEN	LS on invitation to review Artificial Intelligence Standardization Roadmap and provide missing or updated information	Action	Noted

TD number	Title	Action	Discussion
SG11-TD8/GEN	LS on new Recommendation ITU-T Y.3535: "Cloud computing - Functional requirements for container" and revised Recommendation ITU-T Y.3505: " Cloud computing - Overview and functional requirements for data storage federation"	Information	Noted
SG11-TD7/GEN	LS on the consent of ITU-T Y.3528 (formerly Y.ccfrcm) and ITU-T Y.3529 (formerly Y.ccvnf-dm) and the initiation of new work item ITU-T Y.PCNA-frame [to ISO/IEC JTC1 SC38, ETSI ISG NFV, ITU-T SGs]	Information	Noted
SG11-TD17/GEN	LS/r on New SG5 "L" recommendation terms and definitions from the SG5 May 2021 meeting (reply to SCV-LS31)	Information	Noted
SG11-TD18/GEN	LS/r on terms and definitions defined in SG3 work items (reply to SG3-LS98)	Information	Noted
SG11-TD22/GEN	LS on initiation of new work item Y.JDEVOP-req "Requirements for joint development and operation for IMT-2020 and beyond"	Information	Noted
SG11-TD23/GEN	LS on initiation of new work item Y.M&O-CNC-fra "Management and orchestration related requirements and framework for computing and network convergence in IMT-2020 networks and beyond"	Information	Noted

4.2 Outgoing liaison statements

TD number	Title	To	Related to iLS
SG11-TD178/GEN	LS/o on the initiation of a new work item Q.Scvh-iopt "Interoperability testing between SDN and hypervisor based computing virtualization" [to ITU-T SG13, IETF]	ITU-T SG13, IETF	None

4.3 Discussion of contributions

Contribution	Title	Discussion
C35	Proposal for a new work item on interoperability testing between SDN and computing virtualization	Accepted with modification
C57	Contribution to test cases for vBNG in chapter 8 of Q.vbng-iop-ts	Accepted with modification
C58-R2	Proposal to add test case template use case and requirements for draft Recommendation ITU-T Q N-att-framework	Accepted with modification
C59	Proposal to add test reliability use case and requirements for draft Recommendation ITU Q N-att-framework	Accepted

5 Work programme

The SG11 Work Programme can be found at:

https://www.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	Timing	Reference	Question
Q.Scvh-iopt	Interoperability testing between SDN and hypervisor based computing virtualization	Huilei Ren (China Telecom), Linze Wu (China Telecom), Baohong Lin (China Telecom)	Q3 2024	SG11-TD177/GEN	14/11

Note: the A.1 and A.13 description of the proposed new work items is to be found in Annex B and Annex C respectively.

5.2 Updated work programme

In accordance with the [WORK PROGRAMME DATABASE](#), the current work items for Q14/11 are as follows (*the requested changes are shown in red*):

Question	Work Item	Title	Editors	Timing	Base Text
14/11	Q.BaaS-iop-reqts	Interoperability testing requirements of blockchain as a service	Xiaoou Liu (China Telecom) Zheng Huang (ZTE Corporation) Wei Liang (China Telecom)	Q4-2023	SG11-TD85/WP3
14/11	Q.vbng-iop-ts	Test suite for interoperability testing of virtual BNG	Xia Gong (China Telecom) Aipeng Guo (China Unicom) Yongqing Zhu (China Telecom)	Q4-2022	SG11-TD175/GEN
14/11	Q.N-att-framework	Framework of NFV automated testing	Linze Wu (China Telecom)	Q4-2023	SG11-TD176/GEN
14/11	Q.Scvh-iopt	Interoperability testing between SDN and hypervisor based computing virtualization	Huilei Ren (China Telecom), Linze Wu (China Telecom), Baohong Lin (China Telecom)	Q3 2024	SG11-TD177/GEN

6 Future meetings

6.1 Question meetings at the next SG11 meeting

Q14/11 is planning to meet again during the next ITU-T SG11 meeting (26 April - 5 May 2023, TBC). Annex D highlights proposals for Q14/11 sessions during next SG11 meeting.

The objectives of the next Q14/11 meeting are:

- Progress draft Q.BaaS-iop-reqts;
- Progress draft Q.N-att-framework;
- Progress draft Q.Scvh-iopt;
- Discuss new work item introduced by contributions if any;
- But are not limited to.

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

6.2 Interim Rapporteur Group meetings

Q14/11 proposes to organize the following interim Rapporteur Group meetings for approval by SG11 (see Annex E):

Q	Date	Place / Host	Terms of Reference	Contact
14/11	15-16 September, 2022	E-meeting	Progress draft Q.vbng-iop-ts	wulinz@chinatelecom.cn
14/11	28 November - 7 December 2022	Geneva	<ul style="list-style-type: none">· Progress draft Q.BaaS-iop-reqts;· Progress draft Q.N-att-framework;· Progress draft Q.Scvh-iopt;· Discuss new work item introduced by contributions if any;· But are not limited to.	wulinz@chinatelecom.cn

Details will be circulated through e-mail reflector t22sg11q14@lists.itu.int and will be posted on the ITU-T SG11 Rapporteur Group meetings website:

<https://www.itu.int/net/ITU-T/lists/rgm.aspx?Group=11&type=interim>.

7 Other business

None.

Annex A

List of contributions addressed to Q14/11

C	Source	Title
C35	China Telecommunications Corporation	Proposal for a new work item on interoperability testing between SDN and computing virtualization
C57	China Telecommunications Corporation	Contribution to test cases for vBNG in chapter 8 of Q.vbng-iop-ts
C58	China Telecommunications Corporation	Proposal to add test case template use case and requirements for draft Recommendation ITU-T Q N-att- framework
C59	China Telecommunications Corporation	Proposal to add test reliability use case and requirements for draft Recommendation ITU Q N-att-framework

Annex B

A.1 justification for proposed draft new ITU-T Q.Scvh-iopt

Question:	14/11	Proposed new ITU-T Recommendation	Geneva, 6-15 July 2022
Reference and title:	Draft Recommendation ITU-T Q.Scvh-iopt “Interoperability testing between SDN and hypervisor based computing virtualization”		
Base text:	SG11-TD177/GEN	Timing:	Q3-2024
Editor(s):	Huilei Ren, China Telecom, renhl1@chinatelecom.cn Linze Wu, China Telecom, wulinz@chinatelecom.cn Baohong Lin, China Telecom, linbaoh@chinatelecom.cn	Approval process:	AAP
<p>Scope (defines the intent or object of the Recommendation and the aspects covered, thereby indicating the limits of its applicability):</p> <p>The scope of this recommendation includes, but is not limited to:</p> <ol style="list-style-type: none"> (1) Framework for interoperability between SDN and hypervisor based computing virtualization. (2) Interoperability testing requirements between SDN and hypervisor based computing virtualization. (3) Data model framework for interoperability testing between SDN and hypervisor based computing virtualization. (4) Test cases of interoperability testing between SDN and hypervisor based computing virtualization. 			
<p>Summary (provides a brief overview of the purpose and contents of the Recommendation, thus permitting readers to judge its usefulness for their work):</p> <p>This Recommendation aims to specify the interoperability testing requirements between SDN and hypervisor based computing virtualization. Firstly, this Recommendation introduces the framework for interoperability between SDN and hypervisor based computing virtualization, which includes but not limited to the target areas, components and interoperability in different scenarios. The corresponding requirements of the interoperability testing between SDN and hypervisor based computing virtualization will be presented. Based on these analysis, the data model framework will be introduced. And test cases of interoperability testing between SDN and hypervisor based computing virtualization will be provided as annex, which will describe test procedures.</p>			
<p>Relations to ITU-T Recommendations or to other standards (approved or under development):</p> <p>Relationship with IETF RFC 8014 Recommendation IETF RFC 8014 defines a high-level overview architecture for building data-center Network Virtualization over Layer 3 (NVO3) networks, and the NVO3 architecture focus on NVE-NVA(network virtualization authority) interaction model where an NVE can obtain needed information by interacting directly with an NVA via a protocol operating over the data-center underlay network. In this recommendation, the framework and requirements would focus on the interoperability requirements between SDN and hypervisor based computing virtualization in different NVE deployment scenarios.</p> <p>Relationship with ITU-T SG 11 Q.4040 Recommendation Q.4040 defines the framework of cloud computing interoperability testing, which includes common aspects and infrastructure, platform as well as application capabilities type interoperability testing. The interoperability is mainly described and emphasized in the framework of cloud testing. In this recommendation, the framework and requirements mainly focus on the interoperability between SDN and hypervisor based computing virtualization which both belong to infrastructure capability type IOPT.</p> <p>Relationship with ITU-T SG 13 Y.3502</p>			

Recommendation Y.3502 defines the framework of cloud computing, which includes the cloud computing roles, cloud computing activities, and the cloud computing functional components and their relationships. This recommendation refer to the Cloud Computing Reference Architecture, and would focus on the interoperability between SDN and hypervisor based computing virtualization which both belong to resource abstraction and control function.

Relationship with ITU-T SG 11 Q.4043

Recommendation Q.4043 introduces the overview and requirements of interoperability testing of vswitches, based on four target areas including the interaction with VM, the interaction with network equipment, the interaction with management entity and the interaction with hypervisor based computing virtualization. In this recommendation, the framework and requirements would focus on the interoperability after SDN NVE deployment.

Relationship with ITU-T SG 13 Y.3300

Recommendation Y.3300 introduces The definitions, objectives, high-level capabilities, requirements and high-level architecture of SDN. Framework in this new work item would emphasize the interaction of SDN NVE in different deployment scenarios.

Liaisons with other study groups or with other standards bodies:

ITU-T SG13, IETF

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

China Telecom, China Unicom, MIIT

Annex D

Plans of Q14/11 sessions during next SG11 meeting (26 April - 5 May 2023, TBC)

(First week)

	Wednesday, 26 April 2023						Thursday, 27 April 2023						Friday, 28 April 2023								
	0	1	2	☉	3	4	5	0	1	2	☉	3	4	5	0	1	2	☉	3	4	5
Q14/11								R	R						R	R					
Sessions times:																					
0 - 0830-0930; 1 - 0930-1045; 2 - 1115-1230; Lunch ☉ 1230-1430; 3 - 1430-1545; 4 - 1615-1730; 5 - 1800-1915																					
Keys: R – remote participation via ITU MyMeetings																					

(Second week)

	Monday, 1 May 2023						Tuesday, 2 May 2023						Wednesday, 3 May 2023						Thursday, 4 May 2023						Friday, 5 May 2023										
	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
Q14/11								R																											
Sessions times:																																			
0 - 0830-0930; 1 - 0930-1045; 2 - 1115-1230; Lunch ☉ 1230-1430; 3 - 1430-1545; 4 - 1615-1730; 5 - 1800-1915																																			
Keys: R – remote participation via ITU MyMeetings																																			

Annex E

Proposed Time Schedule for interim Rapporteur Group meetings

Q14/11 Interim RGM e-meetings (15-16 September 2022, e-meeting)

	Monday, dd Month 2022					Tuesday, dd Month 2022					Wednesday, dd Month 2022					Thursday, 15 September 2022					Friday, 16 September 2022									
	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
Q14/11																			E	E					E	E				
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																														
Keys: E – e-meeting via ITU MyMeetings																														

Q14/11 Interim RGM meeting (Geneva, 28 November - 7 December 2022, TBC)

(First week)

	Monday, 28 November 2022					Tuesday, 29 November 2022					Wednesday, 30 November 2022					Thursday, 1 December 2022					Friday, 2 December 2022													
	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
Q14/11								R	R						R	R																		
Sessions times:																																		
0 - 0830-0930; 1 - 0930-1045; 2 - 1115-1230; Lunch ☉ 1230-1430; 3 - 1430-1545; 4 - 1615-1730; 5 - 1800-1915																																		
Keys: R – remote participation via ITU MyMeetings																																		

(Second week)

	Monday, 5 December 2022					Tuesday, 6 December 2022					Wednesday, 7 December 2022										
	0	1	2	☉	3	4	5	0	1	2	☉	3	4	5	0	1	2	☉	3	4	5
Q14/11		R																			
Sessions times:																					
0 - 0830-0930; 1 - 0930-1045; 2 - 1115-1230; Lunch ☉ 1230-1430; 3 - 1430-1545; 4 - 1615-1730; 5 - 1800-1915																					
Keys: R – remote participation via ITU MyMeetings																					