

SG11-TD637-R1/GEN STUDY GROUP 11

Original: English

STUDY PERIOD 2022-2024 **Question(s):** Geneva, 10-20 October 2023 4/11 TD Source: Rapporteur Q4/11 Draft Report of Q4/11 meeting "Protocols for control, management and Title: orchestration of network resources" (Geneva, 10-20 October 2023) +86-10-66259394 **Contact:** Ying Cheng Tel: China Unicom E-mail: chengying10@chinaunicom.cn P.R.China Tel: +86-20-38639366 **Contact:** Cancan Huang China Telecom E-mail: huangcanc@chiantelecom.cn China This is the draft report for Q4/11 meeting "Protocols for control, management and **Abstract:** orchestration of network resources" (Geneva, 10-20 October 2023). It provides the major discussion results of Q4/11 sessions and the future work plan of Q4/11. 1 1.1 2 2.1 Documentation 3 2.2 3 3.1 Question 4/11 summary......4 Draft Recommendations for Approval4 3.2 3.3 Recommendations proposed for Consent in accordance with Rec. A.8......4 Other documents for Approval/Agreement......5 3.4 3.5 4 4.1 Incoming Liaison Statements5 4.2 Outgoing liaison statements9 4.3 Discussion of contributions 10 5 5.1 5.2 Updated work programme......14

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1 Introduction

Question 4/11 was addressed in 11 sessions during the ITU-T SG11 meeting in Geneva, on 10-20 October 2023, under the chairmanship of Ying Cheng (China Unicom, China). The group adopted the agenda in SG11-TD618/GEN.

The agenda was approved with modification.

The objectives for this meeting were:

- Progress the on-going draft Recommendations Q.SCC and Q.SD-DCI to be more mature;
- Discuss the new work item proposals introduced by contributions;
- Review the work program and modify the action plan;
- Review the related iLSs and prepare the oLSs if needed;
- Discuss ToR for Q4 in next study period by contributions;
- But not limited to.

1.1 IPR Call

The Rapporteur, Ms Ying Cheng, 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 <u>SG11-TD597/GEN</u> and subsequent revisions.

The following documents were examined:

Contributions	<u>SG11-C237</u> , <u>SG11-C239</u> , <u>SG11-C243</u> , <u>SG11-C263</u> , <u>SG11-C264</u> , <u>SG11-C276</u> , <u>SG11-C279</u> , <u>SG11-C303</u> , <u>SG11-C317</u> , <u>SG11-C318</u> , <u>SG11-C327</u>
	<u>SG11-C344</u> <u>SG11-C283, SG11-C296, SG11-C320, SG11-C321</u>
TDs	SG11-TD568/GEN, SG11-TD569/GEN, SG11-TD570/GEN,

LSs	<u>SG11-TD530/GEN, SG11-TD545/GEN, SG11-TD576/GEN, SG11-TD581/GEN, SG11-TD583/GEN, SG11-TD654/GEN</u>
	SG11-TD527/GEN, SG11-TD529/GEN, SG11-TD531/GEN, SG11-TD532/GEN,
	SG11-TD533/GEN, SG11-TD534/GEN, SG11-TD535/GEN, SG11-TD536/GEN,
	SG11-TD537/GEN, SG11-TD538/GEN, SG11-TD558/GEN, SG11-TD562/GEN,
	SG11-TD563/GEN, SG11-TD564/GEN, SG11-TD565/GEN, SG11-TD566/GEN,
	SG11-TD567/GEN, SG11-TD574/GEN, SG11-TD575/GEN, SG11-TD580/GEN,
	SG11-TD582/GEN, SG11-TD586/GEN, SG11-TD588/GEN, SG11-TD659/GEN,
	SG11-TD663/GEN

2.2 Emailing list subscription

E-mail correspondences pertaining to the activities of this group are routinely conducted using the e-mail reflector <u>t22sg11q4@lists.itu.int</u>. 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 4/11 summary

Question 4/11 addressed 16 contributions and 31 incoming liaison statements during the meeting. eight on-going work items, including ITU-T Q.SCC, ITU-T Q.SD-DCI, ITU-T Q.Suppl.pSFC, ITU-T Q.Suppl.pSFC, ITU-T Q.CSO, ITU-T Q.cco-mec, ITU-T Q.cpi, and ITU-T Q.SI-SAN were reviewed and updated based on the contributions and meeting discussion results.

The first round line by line review for ITU-T Q.SD-DCI and ITU-T Q.SCC were initiated for preparation for consent in 2024.

Four new work item proposals introduced by contributions were discussed and agreed with modifications to be initiated as two new draft Recommendations ITU-T Q.SARO and ITU-T Q.SFCO, and two new draft Supplements ITU-T Q.sup.sdwan-srv6 and ITU-T Q.Suppl.Inter-SDWAN. Their initial drafts were produced respectively and four corresponding oLS were prepared for informing related study groups and SDOs.

Proposal (SG11-C344) for Qs/11 ToR in next study period (including Q4/11) was reviewed and noted. Based on the NSP-WTSA discussion results, there is no agreement to take any modification specifically for Q4/11 ToR.

One oLS as the feedback to SCV was prepared to explain the current situation for the mentioned term definitions.

According to the latest progress of the work items under study in Q4/11, the work programme was reviewed and revised.

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
4/11	Q.SARO	Signalling requirements for acceleration resources orchestration in multi-access edge computing	SG11-TD784/GEN
4/11	Q.SFCO	Signalling requirements and data models for service function chaining orchestration based on SRv6	SG11-TD785/GEN
4/11	Q.sup.sdwan-srv6	Implementation of SD-WAN service based on SRv6	SG11-TD786/GEN
4/11	Q.Suppl.Inter- SDWAN	Signalling requirements for inter-domain SD-WAN service	SG11-TD787/GEN

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

4 Discussions

4.1 Incoming Liaison Statements

iLS for Q4

TD number	Title	Action	Discussion
SG11-TD530/GEN	LS/i/r on Information and request of advice on the SG13 plan to initiate a new work item on "Requirements and framework of network function enhancements of IMT-2020 networks and beyond from the energy efficiency perspective" (SG13-LS78) [from 3GPP TSG SA5]	For information	Noted.
SG11-TD545/GEN	LS/i/r on consideration of a new work item "Requirements and framework of network function enhancements of IMT-2020 networks and beyond from the energy efficiency perspective" (SG13-LS78) [from ITU-T SG 5]		Noted.
SG11-TD576/GEN	LS/i on information about the progress of draft Recommendation ITU-T Y.AN-Archfw "Architecture Framework for Autonomous Networks" [from ITU-T Working Party 1/13]		Noted.

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TD number	Title	Action	Discussion
SG11-TD581/GEN	LS/i on approval of Technical report "Study on Edge Intelligence standards for haptics related IIoT use cases"	For information	Noted. Q4 experts are encouraged to pay attention to this work because there are some on-going WIs on MEC in Q4.
SG11-TD583/GEN	LS/I on the agreement on a new draft Technical Report ITU-T TR.cpn-col-sec "Security consideration of collaboration of multiple computing power networks" [from ITU-T Study Group 17]	For information	Noted. Q4 experts are encouraged to pay attention to this work because there are some on-going WIs on CPN in Q4.
SG11-TD654/GEN	LS/i on initiation of a new work item ITU-T Y.WALNC "Functional requirements for the controller of wide area lossless network in NGNe" [from ITU-T Working party 3/13]	For information	Noted.

iLS for ALL Qs

TD number	Title	Action	Discussion
<u>SG11-</u> <u>TD527/GEN</u>	LS/i/r on comments regarding of new terms and definitions (SCV- LS5) [from ITU-T SG9]	For action	Noted.
SG11- TD529/GEN	LS/i on AAP consent of draft new Recommendation ITU-T J.cable- 5G-req "Requirements for cable television services to use 5G radio system" [from ITU-T SG9]	For information	Noted.
SG11- TD531/GEN	LS/i on metaverse work items and ITU-T Focus Group on metaverse (to all ITU-T study groups) [from TSAG] [from TSAG]	For action	Noted.
SG11- TD532/GEN	LS/i on using inclusive language in ITU-T texts [to all ITU-T SGs, SCV, ISCG] [from TSAG]	For action	Q4 will pay attention to the guidance from TSAG on using inclusive language when developing work items.
SG11- TD533/GEN	LS/i to request the appointment of an electronic working methods (EWM) liaison [to all ITU-T SGs] [from TSAG]	For information	Noted.
SG11- TD534/GEN	LS/i on status of the implementation of the action plan for analysis of ITU-T structural alternatives (to all ITU-T study groups) [from TSAG]	For information	Q4 will pay attention to the progress of the ITU-T structural alternatives analysis.
<u>SG11-</u> <u>TD535/GEN</u>	LS/i on incubation mechanism (to all ITU-T study groups) [from TSAG]	For action	Noted.

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TD number	Title	Action	Discussion
<u>SG11-</u> <u>TD536/GEN</u>	LS/i on draft analysis of operational parts (resolves, instructs, etc) of WTSA/PP/WTDC Resolutions (to all ITU-T SGs and regional telecommunication organizations) [from TSAG]	For action	Q4 will pay attention to the status of related WTSA/PP/WTDC Resolutions.
SG11- TD537/GEN	LS/i/r on SMART Subsea Cables - Science Monitoring And Reliable Telecommunications (to ITU/WMO/UNESCO IOC Joint Task Force on SMART submarine cables, to all ITU-T study groups) [from TSAG]	For information	Noted.
<u>SG11-</u> <u>TD538/GEN</u>	LS/i on progress of FG-TBFxG as of July 2023 [from FG-TBFxG]	For information	Noted.
SG11- TD558/GEN	LS/i/r on requesting collaboration on metaverse standardization work (FG-MV-LS1, TSAG-LS21) [from ITU-T SG16]	For information	Noted.
<u>SG11-</u> <u>TD562/GEN</u>	LS/i on initiation of new work item ITU-T H.FDISprot "Protocols for feature-based distributed intelligent systems" [from ITU-T SG16]	For information	Noted.
<u>SG11-</u> <u>TD563/GEN</u>	LS/i/r on MAS related work item (ISO/IEC JTC1/SC42-N1435) [from ITU-T SG16]	For information	Noted.
SG11- TD564/GEN	LS/i on two new and one revised ITU-T Recommendations: H.430.3 "Service scenario of immersive live experience (ILE)" (H.430.3 (V2)), H.430.6 "Media transport protocols, signalling information of haptic transmission for Immersive Live Experience (ILE) systems" (ex H.ILE-Haptic), H.430.7 "Requirements of interactive immersive services" (ex H.IIS-reqts) [from ITU-T SG16]	For information	Noted.
SG11- TD565/GEN	LS/i on the creation of new work item ITU-T H.ATS-P "Protocols of algorithm-training systems for intelligent video surveillance" [from ITU-T SG16]	For information	Noted.

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TD number	Title	Action	Discussion
SG11- TD566/GEN	LS/i on Invitation to provide inputs to the "Machine learning standardization roadmap" and "Glossary of terms and definitions for machine learning" [from JCA-ML]	For action	Noted.
SG11- TD567/GEN	LS/i on Results of the second meeting of the FG-MV and approval of its first deliverable [from FG-MV]	For information	Noted.
<u>SG11-</u> <u>TD574/GEN</u>	LS/i on the activities and studies on sustainable digital transformation [from TSAG]	For action	Noted.
<u>SG11-</u> <u>TD575/GEN</u>	LS/i on the progress of distributed ledger technology (DLT) standardization in Q22/16 [from ITU-T SG16]	For information	Noted.
<u>SG11-</u> <u>TD580/GEN</u>	LS/i/r on new terms and definitions proposed by ITU-T SG11[from SCV]	For action	Noted.
SG11- TD582/GEN	LS/i on definitions proposed by ITU-T SG2, SG11, SG12, SG16, SG17 and SG20 [from SCV]	For action	Q4 drafted an oLS to explain the current situation. 'abstract topology' and 'Service path' were not defined in Q.4140 (ex.Q.CPN). The comments for 'abstract topology' and 'Service path' definitions in this iLS were based on the previous output of draft Q.CPN, not the final version for consent in SG11 meeting in May 2023.
<u>SG11-</u> <u>TD586/GEN</u>	LS/i on new work item on draft new Recommendation ITU-T X- cs-ra: Cyber Security Reference Architecture [from ITU-T Study Group 17]	For information	Noted.
<u>SG11-</u> <u>TD588/GEN</u>	LS/i on request for input material related to security manual to be updated [from ITU-T Study Group 17]	For action	Noted.
<u>SG11-</u> <u>TD659/GEN</u>	LS/i on the consent of draft Recommendation ITU-T Y.4493 (ex Y.IoT-AOS-prot) "Autonomic operations support protocols in the Internet of things" (ITU-T Study Group 20)	For information	Noted.

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TD number	Title	Action	Discussion
SG11- TD663/GEN	LS/i on new Technical Paper ITU- T YSTP.AIoT "Challenges of and Guidelines to Standardization on Artificial Intelligence of Things" [from ITU-T Study Group 20]		Noted.

4.2 Outgoing liaison statements

TD number	Title	То	Related to iLS
SG11-TD788/GEN	LS/o on initiation of new work item ITU-T Q.SARO "Signalling requirements for acceleration resources orchestration in multi-access edge computing" [to ITU-T SG13,ETSI ISG NFV, ETSI ISG MEC]	ITU-T SG13, ETSI ISG NFV, ETSI ISG MEC	-
SG11-TD789/GEN	LS/o on initiation of new work item ITU-T Q.SFCO "Signalling requirements and data models for service function chaining orchestration based on SRv6" [to ITU-T SG13, IETF WG SPRING]	ITU-T SG13, IETF WG SPRING	-
SG11-TD790/GEN	LS/o on initiation of new work item ITU-T Supplement to Q.3741- Q.sup.sdwan-srv6 "implementation of SD-WAN service based on SRv6" [to ITU-T SG13, BBF]	ITU-T SG13, BBF	-
SG11-TD791/GEN	LS/o on initiation of new work item ITU-T Supplement to Q.3741- Q.Suppl.Inter-SDWAN "Supplement to Recommendation ITU-T Q.3741 - Signalling Requirements for inter-domain SD-WAN service6" [to ITU-T SG13]	ITU-T SG13	-
SG11-TD792/GEN	LS/o/r on "abstract topology"and "Service path" definitions in SG11 (SCV-LS5) [to SCV]	SCV/CCT	<u>SG11-</u> <u>TD582/GEN</u>

4.3 Discussion of contributions

Contribution	Title	Discussion
SG11-C237	ITU-T Q.SD-DCI "Signalling requirements and information model of SD-DCI service" - Proposal to update clause 4, 6 and 7 of Q.SD-DCI	This contribution proposes to update clause 4, 6 and 7 of Q.SD-DCI.
		It was accepted for drafting Q.SD-DCI, together with the meeting discussion results of SG11-C264, whose updated draft is contained in SG11-TD778/GEN.
		The first round line by line review for Q.SD-DCI was arranged for preparation for its consent in 2024.
<u>SG11-C239</u>	ITU-T Q.SCC "Signalling requirements and information model of Cooperative Controller" - Proposal to update Q.SCC	This contribution proposes some editorial modification for whole text of Q.SCC.
		It was accepted for drafting Q.SCC, together with the meeting discussion results of SG11-C263, whose updated draft is contained in SG11-TD777/GEN.
		The first round line by line review for Q.SCC was arranged from the very beginning to 7.2.6 for preparation for its consent in 2024.
<u>SG11-C243</u>	ITU-T Q.cpi "Signalling requirements for computing power identification in computing power network" - Proposal to update chapter 7, chapter 8 and chapter 9 of	This contribution proposes to update Clause 7 and Clause 8 and Clause 9 of Q.cpi.
	Q.cpi	It was accepted with modifications for drafting Q.cpi, whose updated draft is contained in SG11-TD782/GEN.

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Contribution	Title	Discussion
SG11-C263	Modifications of Chapter 6, 7, 8 and 9 for Q.SCC	This contribution proposes modifications in Clause 6, 7, 8 and 9 in Q.SCC.
		It was accepted with modification for drafting Q.SCC, together with the meeting discussion results of SG11-C239, whose updated draft is contained in SG11-TD777/GEN.
		The first round line by line review for Q.SCC was arranged from the very beginning to 7.2.6 for preparation for its consent in 2024.
<u>SG11-C264</u>	Modifications of Chapter 6, 7, 8 and 9 for Q.SD-DCI	This contribution proposes modifications in Clause 6, 7, 8 and 9 in Q.SD-DCI.
		It was accepted with modification for drafting Q.SD-DCI, together with the meeting discussion results of SG11-C237, whose updated draft is contained in SG11-TD778/GEN.
		The first round line by line review for Q.SD-DCI was arranged for preparation for its consent in 2024.
SG11-C276	Q.CSO: Propose to update clause 9.1	This contribution proposes to update clause 9.1 of Q.CSO.
		It was accepted with modifications for drafting Q.CSO, together with the meeting discussion results of SG11-C303, whose updated draft is contained in SG11-TD780/GEN.
<u>SG11-C279</u>	Q.SI-SAN: Propose to update clause 7	This contribution proposes to update clause 7 of Q.SI-SAN.
		It was accepted with modifications for drafting Q.SI-SAN, whose updated draft is contained in SG11-TD783/GEN.

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Contribution	Title	Discussion
SG11-C303	ITU-T Q.CSO "Signalling requirements for cross-domain service orchestration of the computing power network"- Proposal to update chapter 9, 10	This contribution proposes to update Clause 9 and 10 of Q. CSO.
		It was accepted for drafting Q.CSO, together with the meeting discussion results of <u>SG11-C276</u> , whose updated draft is contained in SG11-TD780/GEN.
<u>SG11-C317</u>	ITU-T Q.Suppl.pSFC Signaling requirements for parallel SFC packet processing- Proposal to update clause 7 and clause 8	This contribution proposes to update Clause 7 and 8 of Q.Suppl.pSFC.
		It was accepted for drafting Q.Suppl.pSFC, whose updated draft is contained in SG11-TD779/GEN.
<u>SG11-C318</u>	ITU-T Q.Suppl.heter_SI "Signalling requirements of SFC based on heterogeneous service index in mobile scenarios"- Proposal to update clause 8 and clause 9	This contribution proposes to update Clause 8 and 9 of Q.Suppl.heter_SI.
		It was accepted with modification for drafting Q.Suppl.heter_SI, whose updated draft is contained in SG11-TD794/GEN.
<u>SG11-C327</u>	ITU-T Q.cco-mec - proposal for updating the signalling architecture and signalling procedure in Clause 7/9	This contribution proposes to update Clause 7 and 9 of Q.ccomec.
		It was accepted with modification for drafting Q.cco-mec, whose updated draft is contained in SG11-TD781/GEN.
<u>SG11-C344</u>	Proposal for revision of ToR of Questions 1/11, 2/11, 3/11, 4/11, 6/11, 7/11, 8/11, 12/11, 13/11 and 14/11 for the next study period	This contribution proposes revision of ToR of Questions 1/11, 2/11, 3/11, 4/11, 6/11, 7/11, 8/11, 12/11, 13/11 and 14/11 for the next study period.
		It was noted. No agreement for modifying Q4 ToR for NSP.

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Contribution	Title	Discussion
SG11-C283	New: initiating a new work item on signalling requirements and information model of service function chaining orchestration based on SRv6	This contribution proposes to initiate a new draft Recommendation on signalling requirements and information model of service function chaining orchestration based on SRv6.
		It was accepted with modifications for initiating a new draft Recommendation Q.SFCO, whose initial draft is contained in SG11-TD785/GEN.
SG11-C296	Proposal for initiating a new supplement to Q.3741-Q.sup.sdwan-srv6 "implementation of SD-WAN service based on SRv6"	This contribution proposes to initiate a new draft Supplement to Q.3741 on implementation of SD-WAN service based on SRv6.
		It was accepted with modifications for initiating a new draft Supplement Q.sup.sdwan-srv6, whose initial draft is contained in SG11-TD786/GEN.
SG11-C320	Proposal to start a new work item-ITU-T Q.Suppl.Inter-SDWAN "Signalling Requirements of inter-domain SD-WAN service"	This contribution proposes to initiate a new draft Supplement to Q.3741 on signalling requirements of inter-domain SD-WAN service.
		It was accepted with modifications for initiating a new draft Supplement Q.Suppl.Inter-SDWAN, whose initial draft is contained in SG11-TD787/GEN.
<u>SG11-C321</u>	Proposal to start a new work item on - Q.SARO "signaling requirements for acceleration resources orchestration in multi-access edge computing"	This contribution proposes to initiate a new draft Recommendation on signaling requirements for acceleration resources orchestration in multi-access edge computing.
		It was accepted with modifications for initiating a new draft Recommendation Q.SARO, whose initial draft is contained in SG11-TD784/GEN.

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.SARO	Signalling requirements for acceleration resources orchestration in multiaccess edge computing	Jing Liu, Wenjuan Xing, Zhiyu Jia, Junping Song	2025-Q4	SG11- TD784/GEN	4/11
Q.SFCO	Signalling requirements and data models for service function chaining orchestration based on SRv6	Shuai Zhang,Xinxin Yi,Ran Pang, Qianying Zhao	2025-Q4	SG11- TD785/GEN	4/11
Q.sup.sd wan-srv6	Implementation of SD-WAN service based on SRv6	Jiaqi Sun, Zhihua Liu, Ying Cheng,Wulin Ze,	2025-Q4	SG11- TD786/GEN	4/11
Q.Suppl.I nter- SDWAN	Signalling requirements for inter- domain SD-WAN service	Cancan Huang, Jiayuan Hu, Jie Liang, Ying Cheng,Jinyou Dai,Dan Luo	2026-Q4	SG11- TD787/GEN	4/11

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

5.2 Updated work programme

In accordance with the <u>WORK PROGRAMME DATABASE</u>, the current work items for Q4/11 are as follows (*the requested changes are shown in red*):

Q	WI	Title	Editors	Timing	Base Text
Q4/11	Q.SCC	Signalling requirements and information model of Cooperative Controller	Peng Zhu, Bo Lei, Guiyu Zhang,Xiaoyao Huang	2024-Q2	SG11- TD777/GEN
Q4/11	Q.SD-DCI	Signalling requirements and information data models of for SD-DCI service	Peng Zhu, Jichun Ma, Bo Lei, Xiaoting Ma	2024-Q1	SG11- TD778/GEN
Q4/11	Q.Suppl.pS FC	Signalling requirements for parallel SFC packet processing	Cancan Huang, Ying Cheng, Zhiruo Liu, Yongqing Zhu	2024-Q1	SG11- TD779/GEN
Q4/11	Q.Suppl.het er_SI	Signalling Requirements of SFC based on	Cancan Huang, Ying Cheng,	2024-Q1	SG11- TD794/GEN

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Q	WI	Title	Editors	Timing	Base Text
		heterogeneous service index in mobile scenarios	Zhiruo Liu, Hong Tang		
Q4/11	Q.CSO	Signalling requirements for cross-domain service orchestration of the computing power network	Jianfei Li, Shuai Zhang, Jing Tang	2024-Q2	SG11- TD780/GEN
Q4/11	Q.cco-mec	Signalling requirements for orchestration supporting confidential computing in multi-access edge computing	Jie Ren, Miao Xue, Huan Deng, Yueming Lu	2025-03	SG11- TD781/GEN
Q4/11	Q.cpi	Signalling requirements for computing power identification in computing power network	Wenjuan Xing, Jing Tang, Ying Cheng, Ying Liu, Wei Quan,	2025-03	SG11- TD782/GEN
Q4/11	Q.SI-SAN	Signalling requirements for service identification in service aware network	Shuai Zhang, Ran Pang, Xinxin Yi, Jing Tang	2025-05	SG11- TD783/GEN
Q4/11	Q.SARO	Signalling requirements for acceleration resources orchestration in multi-access edge computing	Jing Liu, Wenjuan Xing, Zhiyu Jia, Junping Song	2025-Q4	SG11- TD784/GEN
Q4/11	Q.SFCO	Signalling requirements and data models for service function chaining orchestration based on SRv6	<u> </u>	2025-Q4	SG11- TD785/GEN
Q4/11	Q.sup.sdwa n-srv6	Implementation of SD-WAN service based on SRv6	Jiaqi Sun, Zhihua Liu, Ying Cheng,Wulin Ze,	2025-Q4	SG11- TD786/GEN
Q4/11	Q.Suppl.Int er-SDWAN	Signalling requirements for inter-domain SD-WAN service	Cancan Huang, Jiayuan Hu, Jie Liang, Ying Cheng,Jinyou Dai,Dan Luo,	2026-Q4	SG11- TD787/GEN

6 Future meetings

6.1 Interim RGM e-meetings followed by interim WPs meeting (virtual, 29 January – 7 February 2024), TBC

Q4/11 proposes to organize the following interim Rapporteur Group meetings for approval by SG11 (see Annex D):

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Q	Date	Place / Host	Terms of Reference	Contact
4/11	29 January – 7 February 2024	e-meeting	 Progress the on-going draft Recommendation Q.SD-DCI to be ready for consent; Progress the on-going draft Supplements Q.Suppl.pSFC and Q.Suppl.heter_SI to be ready for agreement; 	Ying Cheng, China Unicom, China, chengying10@chinauni com.cn
			- Progress other on-going work items under study in Q4;	
			- Discuss the new work item proposals introduced by contributions;	
			- Review the work program and modify the action plan;	
			- Review the related iLSs and prepare the oLSs if needed;	
			- Discuss ToR for Q4 in next study period by contributions.	

Details will be posted on the ITU-T SG11 Rapporteur Group meetings website: https://www.itu.int/net/ITU-T/lists/rgm.aspx?Group=11&Q=-1&From=2022-01-01&To=2024-11-30.

6.2 Question meetings at the next SG11 meeting (Geneva, 1-10 May 2024), TBC

Q4/11 is planning to meet again during the next ITU-T SG11 meeting (Geneva, 1-10 May 2024, TBC). Annex E highlights proposals for Q4/11 sessions during next SG11 meeting.

The objectives of the next Q4/11 meeting are:

- Progress the on-going draft Recommendations Q.SD-DCI and Q.CSO to be ready for consent;
- Discuss the new work item proposals introduced by contributions;
- Review the work program and modify the action plan;
- Review the related iLSs and prepare the oLSs if needed;
- Discuss ToR for Q4 in next study period by contributions.

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

7 Other business

The Rapporteur thanked all meeting and participants, as well as contributors, for their cooperation, very hard work and support in this Q4/11 meeting. Particular thanks for excellent support and hard work went to TSB SG11 Advisor, Mr Denis ANDREEV, Administrative Assistant, Ms. Erika YORIS, and other TSB staff. The wish to meet again all participants in next Q4/11 meeting was expressed by the Rapporteur.

Annex A List of contributions addressed to Q4/11

C	Source	Title
<u>SG11-C283</u>	China Unicom, China Telecom	New: initiating a new work item on signalling requirements and information model of service function chaining orchestration based on SRv6
SG11-C296	China Telecom, China Unicom	Proposal for initiating a new supplement to Q.3741-Q.sup.sdwan-srv6 "implementation of SD-WAN service based on SRv6"
SG11-C320	China Telecom, China Unicom,Ministry of Industry and Information Technology(MIIT) China,CICT	Proposal to start a new work item-ITU-T Q.Suppl.Inter-SDWAN "Signalling Requirements of inter-domain SD-WAN service"
<u>SG11-C321</u>	China Unicom, China Telecom, Computer Network Information Center of the Chinese Academy of Sciences (China)	Proposal to start a new work item on - Q.SARO "signaling requirements for acceleration resources orchestration in multi-access edge computing"
SG11-C237	China Telecommunications Corporation; China Unicom	ITU-T Q.SD-DCI "Signalling requirements and information model of SD-DCI service" - Proposal to update clause 4, 6 and 7 of Q.SD-DCI
SG11-C239	China Telecom	ITU-T Q.SCC "Signalling requirements and information model of Cooperative Controller" - Proposal to update Q.SCC
SG11-C243	China Telecom; Beijing Jiao Tong University; China Unicom	ITU-T Q.cpi "Signalling requirements for computing power identification in computing power network" - Proposal to update chapter 7, chapter 8 and chapter 9 of Q.cpi
SG11-C263	China Unicom	Modifications of Chapter 6, 7, 8 and 9 for Q.SCC
<u>SG11-C264</u>	China Unicom	Modifications of Chapter 6, 7, 8 and 9 for Q.SD-DCI
SG11-C276	China Unicom	Q.CSO: Propose to update clause 9.1
SG11-C279	China Unicom	Q.SI-SAN: Propose to update clause 7
SG11-C303	China Telecommunications Corporation; China Unicom	ITU-T Q.CSO "Signalling requirements for cross-domain service orchestration of the computing power network"-Proposal to update chapter 9, 10
SG11-C317	China Telecom,China Unicom	ITU-T Q.Suppl.pSFC Signaling requirements for parallel SFC packet processing- Proposal to update clause 7 and clause 8
SG11-C318	China Telecom,China Unicom	ITU-T Q.Suppl.heter_SI "Signalling requirements of SFC based on heterogeneous service index in mobile scenarios"- Proposal to update clause 8 and clause 9
SG11-C327	China Unicom	ITU-T Q.cco-mec - proposal for updating the signalling architecture and signalling procedure in Clause 7/9

SG11-C344	The Russian Federation,	Proposal for revision of ToR of Questions 1/11, 2/11, 3/11, 4/11,
	the Bonch-Bruevich	6/11, 7/11, 8/11, 12/11, 13/11 and 14/11 for the next study
	Saint-Petersburg State	period
	University of	
	Telecommunications	
	(Russian Federation),	
	the Russian Satellite	
	Communication	
	Company (RSCC)	
	(Russian Federation)	

Annex B A.1 justification for proposed draft new ITU-T Q.SARO

Question:	Q4/11 Proposed new ITU-T Recommendation Geneva, 10-20 October 2023			ctober 2023		
Reference and title:	_	.SARO "Signalling requirements for acceleration age computing"	resources orchestrat	ion in multi-		
Base text:	SG11-TI	SG11-TD784/GEN Timing: 2025-Q4				
Editor(s):	liuj282@ Wenjuan xingwj@ Zhiyu Jia jiazy29@ Junping the Chine	China Unicom, China Cchinaunicom.cn Xing, China Telecom, China Ichinatelecom.cn Ichina Unicom, China Ichinaunicom.cn Ichinaunicom.cn Ichinaunicom.cn Ichinaunicom.cn Ichinaunicom.ch Ichinauni	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 provides signalling requirements for acceleration resources orchestration in multi-access edge computing. The scope of this draft Recommendation consists of:

- signalling architecture of acceleration resources orchestration in multi-access edge computing;
- signalling procedures for acceleration resources orchestration in multi-access edge computing.
- signalling requirements of acceleration resources orchestration in multi-access edge computing;

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

With the development of new emerging vertical industrial applications, the traffic of users and connected devices is growing exponentially, which put forward strict requirements for network forwarding performance. Multi-access edge computing provides low latency and high bandwidth by its proximity to the users. However, the networking performance and communication capacity in multi-access edge computing may encounter bottlenecks, because of the resource limitations of multi-access edge computing, growing burden of switching to overlay networking, resource consumption of virtualisation, making it difficult to satisfy service level agreement (SLA) and QoS requirements of various applications.

The accelerating technology is effective to further improve the networking performance in multi-access edge computing by using acceleration resources as defined in [ITU-T Y.NAEC]. The networking functions and applications in multi-access edge computing are offloaded to the acceleration resources (such as DPU, ASIC, FPGA, NPU, and smartNIC). But the signalling architecture and procedure of acceleration resource orchestration including discovery, lifecycle management, fault management in multi-access edge computing have not been specified.

Therefore, this contribution proposes to initiate a new work item to clarify the signalling requirements, reference signalling architecture, enhanced interfaces and procedure for acceleration resources orchestration in multi-access edge computing.

Relations to ITU-T Recommendations or to other standards (approved or under development): (1)Relations to ITU-T Y.NAEC

The ongoing draft Recommendation ITU-T Y.NAEC studies the requirements and network architecture of network accelerating for edge computing.

This new work item focuses on signalling reference architecture and requirements of acceleration resources orchestration in multi-access edge computing, and it is not included in Y.NAEC.

(2) Relations to ETSI NFV-IFA 001, 002, and 004

The Recommendation ETSI NFV-IFA series specify the concepts, use cases, requirements for management of acceleration in NFV architecture.

This new work item focuses on signalling architecture and requirements of acceleration resources orchestration in multi-access edge computing architecture. There is no overlap between this proposal and the ETSI NFV-IFA series.

Liaisons with other study groups or with other standards bodies:

ITU-T SG13, ETSI ISG NFV, ETSI ISG MEC

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

China Unicom, China Telecom, Computer Network Information Center of the Chinese Academy of Sciences

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

Question:	Q4/11	Proposed new ITU-T Recommendation	Geneva,10-20 October 2023		
Reference and title:		SFCO "Signalling requirements and data model ation based on SRv6"	s of service function	on chaining	
Base text:	SG11-TI	D785/GEN	Timing:	2025-Q4	
Editor(s):	mail:zha Xinxin Y mail: yix Ran Pan E-mail: p Qianying	nang, China Unicom, China ngs366@chinaunicom.cn Zi, China Unicom, China xx3@chinatelecom.cn g, China Unicom, China bangran@chinaunicom.cn g Zhao, China Telecom, China zhaoqy50@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 provides the signalling requirements of service function chaining orchestration and managment layer interface for cloud network collaboration. The signalling is to support the network controller and the cloud controller to configure and manage the service function chaining based on the requirements of cloud network collaborative service orchestration. This document focuses on signalling requirements and data models of interfaces between network controller and service orchestrator, and between cloud controller and service orchestrator.

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

With the development of network and service, more and more value-added services need to be deployed and dynamically adjusted on demand, such as network security services, including FW, WAF, DPI, etc. Initially, various services can be deployed in the central cloud resource pool. With the continuous improvement of network performance requirements such as network quality and request delay, the increasing demand for flexible increase and decrease of service functions, and the development of edge computing technology, operators deploy security service functions on several edge nodes as required. Edge nodes collaborate through the network and use SFC technology to connect service functions, meeting users' demand for flexible scheduling of service functions, further shortening response time, optimizing resource layout, and improving network efficiency.

Based on the scenario of service function chaining, it's necessary to initial a work item on signalling requirements and data models of service function chaining orchestration, which is used to define interface requirements and data models between network controller, cloud controller and service orchestrator.

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

(1)Relations to ITU-T Y.3300

Recommendation ITU-T Y.3300 (2014) studies the framework of software-defined networking.

This new work item focuses on Signalling requirements and information model of service function chaining orchestration oriented to cloud network collaboration based on the SDN architecture of Y.3300.

(2) Relations to ITU-T Q.SD-DCI

The ongoing draft Recommendation Q.SD-DCI specifies the signalling requirements and information model of SD-DCI service.

This new work item focuses on signalling requirements and information model between the controller and orchestrator. This new work item focuses on SFC service orchestration, not for for SD-DCI service.

(3) Relations to IETF RFC 7665

RFC7665 describes an architecture used for the creation and ongoing maintenance of Service Function Chains (SFCs) in a network.

This new work item focuses on signalling requirements and data models of service function chaining orchestration.

This new work item focuses on signalling requirements and data models between the controller and service orchestrator.

(4) Relations to ongoing item Service Programming with Segment Routing

The ongoing item describes data plane functionality required to implement service segments and achieve service programming in SR-enabled MPLS and IPv6 networks, as described in the Segment Routing architecture.

This new work item focuses on signalling requirements and data models of service function chaining orchestration. This new work item focuses on control plane.

Liaisons with other study groups or with other standards bodies:

SG13, IETF WG SPRING

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

China Unicom, China Telecom

Annex C

A.13 justification for proposed draft new ITU-T Q.sup.sdwan-srv6

Question:	Q4/11	Proposed new ITU-T Supplement	Geneva, 10-20 October 2023		
Reference and title:	ITU-T Q.sup.sdwan-srv6 "Supplement to Recommendation ITU-T Q.3741 - Implementation of SD-WAN service based on SRv6"				
Base text:	SG11-TI	D786/GEN	Timing:	2025-Q4	
Editor(s):	Email: : Zhihua I Email: : Ying Ch E-mail:c Wulin Zo	china Telecom sunjiaq@chinatelecom.cn Liu, China Telecom liuzh41@chinatelecom.cn eng, China Unicom,China hengying10@chinaunicom.cn e, China Telecom rulinz@chinatelecom.cn	Approval process:	Agreement	

Purpose and scope (Define what this document will address and its intent or objectives in order to indicate the limits of its applicability):

This supplement provides information on implementation of SD-WAN service based on SRv6 and gives concrete information message parameters needed to carry out a SD-WAN service, the scope of this supplement includes:

- Overview of SD-WAN service based on SRv6;
- Information flow of SD-WAN services based on SRv6;
- Signalling requirements of SFi over SRv6 network.

Summary (provides a brief overview of the proposal):

Q4/SG11 had conducted a work item Q.SD-WAN during last study period and had released as formal standard(ITU-T Q.3741) in July 2019 which provides a signalling architecture of SD-WAN service and gives generally information flow and signalling requirements of signalling interface. While there are differences in definition of information message during implementation when over different underlay network, to better understand the signalling procedures of SD-WAN information flow and illustrate the brought out of SD-WAN services, this new supplement draft provides a more detailed introduction and analyse on implementation of SD-WAN service based on SRv6.

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

This new draft supplement has some relationship to the Recommendation ITU-T Q.3741, according to the scope and research object.

Recommendation ITU-T Q.3741 specifies signalling requirements for software-defined wide area networking (SD-WAN) service, including signalling architecture, generally information flow and message of SD-WAN service interface SFi.

This new supplement to Q.3741 mainly focuses on SD-WAN implementation based on SRv6 and gives more detailed information message parameters needed to carry out a SD-WAN service based on SRv6.

Liaisons with other study groups or with other standards bodies:

SG13, BBF

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

China Telecom, China Unicom

A.13 justification for proposed draft new ITU-T Q.Suppl.Inter-SDWAN

Question:	Q4/11	Proposed new ITU-T Supplement	Geneva, 10-	20 October 2023							
Reference and title:		Suppl.Inter-SDWAN "Supplement to Recommendation for inter-domain SD-WAN service"	tion ITU-T Q.3741 - Signalling								
Base text:	SG11-TI	D787/GEN	Timing:	2026-Q4							
Editor(s):		Huang, China Telecom,China uangcanc@chinatelecom.cn	Approval process:	Agreement							
	-	Hu, China Telecom,China ujy5@chinatelecom.cn									
	_	g, China Telecom, China iangjie6@chinatelecom.cn									
	_	eng, China Unicom,China hengying10@chinaunicom.cn									
	-	oai, CICT, PCL,China jy@fiberhome.com									
	(MIIT) C	, Ministry of Industry and Information Technology China, China uodan1@caict.ac.cn									

Purpose and scope (Define what this document will address and its intent or objectives in order to indicate the limits of its applicability):

This draft provides the signalling requirements of inter-domain SD-WAN service.

The scope of this draft supplement consists of:

- (1) Signalling architecture for the inter-domain SD-WAN service;
- (2) Signalling procedures of for the inter-domain SD-WAN service;
- (3) Signalling requirements for the inter-domain SD-WAN service.

Summary (provides a brief overview of the proposal):

Q.3741 defines the general signalling requirements of interface among SD-WAN controller, CPE and WAN gateway within a specific domain. The inter-domain scenario is not mentioned in the Q.3741. Since SD-WAN service is targeted to provide end-to-end network service for the enterprises, inter-domain interactions are unavoidable. It is necessary to defines the signalling requirements of SD-WAN service in inter-domain scenario to supply Q.3741.

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

Q.3741 defines the general signalling requirements of interface among SD-WAN controller, CPE and WAN gateway within a specific domain. The inter-domain scenario is not mentioned in the Q.3741.

Liaisons with other study groups or with other standards bodies:

SG13

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

China Telecom, China Unicom, Ministry of Industry and Information Technology(MIIT) China, CICT

Annex D

Plans of Q4/11 sessions during interim Rapporteur Group e-meetings followed by interim WP1/11 meeting virtual, 29 January – 7 February 2024, TBC

(First week)

	Monday 29 January 2024					Tue Janu	sday ary 2	024			esda ary 2		1 F		rsday ary 2		Friday 2 February 2024					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
Q4/11		E	E			E	E			E	E			E	E			E	E			

Sessions times (Geneva time)

Session 1: 1100-1215; Session 2: 1230-1345; Session 3: 1400-1515; Session 4: 1530-1645 Note: S2 & S3 are preferred

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Keys: E - e-meeting via ITU MyMeetings

(Second week)

	5 F	Moi ebru	ıday ary 2	024	6 F	Tue: ebru	sday ary 20	024	Wednesday 7 February 2024							
	1	2	3	4	1	2	3	4	1	2	3	4				
WPs																
Q4/11		E	E			E	E									

Sessions times (Geneva time)

Session 1: 1100-1215; Session 2: 1230-1345; Session 3: 1400-1515; Session 4: 1530-1645 Note: S2 & S3 are preferred

Keys: E – e-meeting via ITU MyMeetings

Annex E

Proposed Time Schedule for Q4/11 during SG11 meeting Geneva, 1-10 May 2024, TBC

(First week)

		Wed	lnesd	ay, 1	May	2024			Thu	ırsda	y, 2 N	1ay 2	2024	Friday, 3 May 2024										
	0 1 2 🐚 3 4 5 0 1 2									2	3		4	5	0 1		2		3	4	5			
SG11 PLEN		#	#																					
Q4/11					R	R			R	R		R	R			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															800-									
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(Second week)

	Monday, 6 May 2024								Tuesday, 7 May 2024								Wednesday, 8 May 2024								y, 9 I	May 2	024		Friday, 10 May 2024							
	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	
SG11 PLEN																															#		•	•		
WPs																							R	R		R	R									
Q4/11		R	R		R	R			R	R		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: **■** - webcast R – remote participation via ITU MyMeetings