



Question(s): 16/13

Geneva, 20-31 July 2020

TD

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Title: Meeting report of Q16/13 (e-meeting, 6 April 2020)

Purpose: Admin

Contact: Gyu Myoung Lee
Korea (Republic of)

Tel: +82-42-350-6282

Fax: +82-42-350-6226

E-mail: gmllee@kaist.ac.kr

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Abstract: This document contains the interim meeting (e-meeting) report for Q16/13 which was held on 6 April 2020.

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1. Question 16/13 – Knowledge-centric trustworthy networking and services

Question 16/13 was addressed in 1 session on 6 April 2020 under the chairmanship of Gyu Myoung LEE (KAIST, Korea (Rep. of)). The group adopted the agenda in **Q16-13-Apr20-Agenda-12**.

The objective for this meeting was:

- To review the progress of candidate documents for consent in the July SG13 meeting (Y.QKDN_Arch, Y.QKDN_KM, Y.QKDN_CM, Y.OBF_trust, Y.trust-pdm)

Question 16/13 discussed 13 contributions. Q16/13 made progress on 5 draft Recommendations. At the meeting, Q16/13 produced 6 output documents including the meeting report.

The main results of the meeting are the following:

- The updated draft Recommendation ITU-T Y.QKDN_Arch (**Q16-13-Apr20-DOC-33**), Functional architecture of Quantum Key Distribution networks;
- The updated draft Recommendation ITU-T Y.QKDN_KM (**Q16-13-Apr20-DOC-34**), Key management for Quantum Key Distribution networks;
- The updated draft Recommendation ITU-T Y.QKDN_CM (**Q16-13-Apr20-DOC-35**), Control and Management for Quantum Key Distribution Networks (QKDN-CM);
- The updated draft Recommendation ITU-T Y.OBF_trust (**Q16-13-Apr20-DOC-36**), Open Bootstrap Framework enabling trustworthy networking and services for distributed diverse ecosystem;
- The updated draft Recommendation ITU-T Y.trust-pdm (**Q16-13-Apr20-DOC-37**), Framework for Trust based Personal Data Management Platform;
- Q16/13 meeting report (**Q16-13-Apr20-Report-12**).

2. Results

2.1 Recommendations for Approval under TAP

No Recommendations were considered under TAP approval at this meeting.

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

No Recommendations were considered for consent at this meeting.

2.3 Other documents for Approval

No Appendices, Supplements, Implementers' Guides or Technical Papers were proposed by Q16/13 for approval at this meeting.

3. Outgoing liaison statements

No outgoing liaison statements were proposed by Q16/13 for approval at this meeting.

4. Discussions

4.1 Y.QKDN_Arch

Base document: **TD387/WP3**

C-93	QuantumCTek Co., Ltd., CAS Quantum Network Co., Ltd.	Proposed modifications to the draft Recommendation ITU-T Y.QKDN_Arch “Functional architecture of quantum key distribution networks”	Q16/13
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- This contribution proposes the followings: 1) Modifications to the overall operational procedures in clause 9, where some modified figures and corresponding descriptions are to be aligned with ITU-T Y.3801, 2) Minor modifications are also given for some sentences.

C-95	University of Geneva	Proposed modifications to draft Recommendation ITU-T Y.QKDN_Arch: “Functional architecture of quantum key distribution networks”	Q16/13
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- This contribution proposes several modifications in the description of the quantum layer of draft Recommendation Y.QKDN_Arch.

C-97	ETRI, KT	Procedure revision to the draft new Recommendation ITU-T Y.QKDN_Arch: “Functional architecture of quantum key distribution networks”	Q16/13
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- This contribution proposes procedure revision to the draft Recommendation Y.QKDN_Arch.

C-101	NICT, NEC Corporation, Toshiba Corporation	Proposed modifications to the draft Recommendation ITU-T Y.QKDN_Arch “Functional architecture of the quantum key distribution network”	Q16/13
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- This document contains the proposed modifications to the draft Recommendation Y.QKDN_Arch.

Meeting result

- From C-101, the meeting agreed to revise overall parts including the newly added appendix.
- From C-93, descriptions on quantum layer and reference points were revised.
- From C-95 and C-97, several operational procedures were revised with minor changes.
- Further contributions to detailed functions, reference points and procedures were invited for the next e-meeting.

4.2 Y.QKDN_KM

Base document: **TD388/WP3**

C-94	QuantumCTek Co., Ltd., CAS Quantum Network Co., Ltd.	Proposed modifications to the draft Recommendation ITU-T Y.QKDN_KM “Key management for quantum key distribution networks”	Q16/13
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- This contribution proposes the followings: 1) Modifications to section 8.2.3, 8.2.4 and 8.2.5 in clause 8, where flexible key supply interface is proposed and rerouting of key relay is clarified, 2) One item in the metadata table of section 10.1 is proposed to be mandatory.

C-96	SK Telecom	Proposed modification of the draft Recommendation Y.QKDN_KM	Q16/13
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- This contribution proposes the editorial modification to some parts under the clause 8.2 mmanagement of KMA-key and KSA-key in the key management layer in the draft Recommendation Y.QKDN_KM.

C-102	NICT, NEC Corporation, Toshiba Corporation	Proposed modifications to the draft Recommendation ITU-T Y.QKDN_KM “Key management for quantum key distribution Network”	Q16/13
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- This document includes proposed modifications to the draft Recommendation ITU-T Y.QKDN_KM.

Meeting result

- From C-102, the meeting agreed to revise several parts.
- From C-94 and C-96, the meeting agreed to revise clauses 8 and 10.

4.3 Y.QKDN_CM

Base document: **TD389/WP3**

C-98	ETRI, KT	Overview clause revision of the draft Recommendation ITU-T Y.QKDN_CM: “Control and Management for Quantum Key Distribution Networks”	Q16/13
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- This contribution proposes editorial modifications to the draft Recommendation ITU-T Y.QKDN_CM: “Control and Management for the Quantum Key Distribution Network” in the clause, “6. Overview”.

C-99	ETRI, KT	Functional architecture figure revision of the draft Recommendation ITU-T Y.QKDN_CM: “Control and Management for Quantum Key Distribution Networks”	Q16/13
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- This contribution proposes modifications of figure 1 of the draft Recommendation ITU-T Y.QKDN_CM: “Control and Management for the Quantum Key Distribution Network” in the clause, “7. Functional architecture”.

C-100	ETRI, KT	Reference points revision of the draft Recommendation ITU-T Y.QKDN_CM: “Control and Management for Quantum Key Distribution Networks”	Q16/13
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- This contribution proposes modifications of reference points of the draft Recommendation ITU-T Y.QKDN_CM: “Control and Management for the Quantum Key Distribution Network” in the clause, “10. Reference points”.

C-103	NICT, NEC Corporation, Toshiba Corporation	Proposed modifications to the draft Recommendation ITU-T Y.QKDN_CM: “Control and Management for Quantum Key Distribution Networks”	Q16/13
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- This contribution includes proposed modifications to the draft Recommendation ITU-T Y.QKDN_CM.

Meeting result

- From C-98, C-99 and C-100, the meeting agreed to revise overview, the functional architecture diagram, descriptions on reference points.
- From C-103, the key management procedure was updated.

4.4 Y.OBF_trust

Base document: **TD394/WP3**

C-91R2	India	Proposed modifications to the draft Recommendation ITU-T Y.OBF_trust: “Open Bootstrap Framework enabling trustworthy networking and services for distributed diverse ecosystems”	Q16/13
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- This document proposes modifications to the draft Recommendation ITU-T Y.OBF_trust as per the changes indicated in track change mode in Annexure-I.

Meeting result

- Based on the revised contribution after reflecting raised comments before the meeting, the meeting discussed the contribution. It was agreed and related contributions for further improvement were invited.

4.5 Y.trust-pdm

Base document: **TD393/WP3**

C-92R1	KAIST	Y.trust-pdm: proposal to revise clause 6 (“overview”)	Q16/13
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- This contribution proposes revised text and figure for clause 6 (“overview”) of draft Recommendation Y.trust-pdm.

Meeting result

- The proposed texts and figures were accepted in clause 6.

5. Work programme

The currently on-going work items for Q16/13 are as follows:

Acronym	Title	Editor	Priority	Consent / Approval	Reference
ITU-T Y.dv-ess	Framework of distributed and virtualized energy storage systems (New.)	Taein Hwang (tihwang@etri.re.kr), Il Woo Lee (ilwoo@etri.re.kr)	High	Jul. 2020	TD 391/WP3
ITU-T Y.trust-index	Trust index for ICT infrastructures and services (New.)	Hyeontaek Oh (hyeontaek@kaist.ac.kr), Jun Kyun Choi (jkchoi59@kaist.edu)	Medium	Jul. 2021	TD 267/WP3
ITU-T Y.STR	Socio-technical recommendations for contributing to socio-economic awareness (New)	Viliam Sarian (sarian@niir.ru)	Medium	Jul. 2021	TD 395/WP3
ITU-T Y.trust-arch	Functional architecture for trust enabled service provisioning (New.)	Hoan Suk Choi, Korea (Republic of), hkrock7904@gmail.com Woo Seop Rhee, Korea (Republic of), wsrhee@hanbat.ac.kr	Medium	Jul. 2021	TD 322/WP3
ITU-T Y.SNS-trust	Framework for Evaluation of Trust and Quality of Media in Social Networking Services (New.)	Namkyung Lee, ETRI (nklee@etri.re.kr)	Medium	Jul. 2021	TD 231/WP3
ITU-T Y.trust-pdm	Framework for Trust based Personal Data Management (New.)	Hyeontaek Oh, KAIST, hyeontaek@kaist.ac.kr Nakyong Kim, KAIST, nkim71@kaist.ac.kr Jinhong Yang, Inje University/KAIST, sunupnet@kaist.ac.kr	High	Jul. 2020	TD 393/WP3 Q16-13- Apr20- DOC-37

Acronym	Title	Editor	Priority	Consent / Approval	Reference
ITU-T Y.QKDN_Arch	Functional architecture of Quantum Key Distribution networks (New.)	Zhangchao Ma, CAS Quantum Network Co., Ltd., mazhangchao@casquantumnet.com	High	Jul. 2020	TD 387/WP3 Q16-13- Apr20- DOC-33
ITU-T Y.QKDN_KM	Key management for Quantum Key Distribution networks (New.)	Kaoru Kenyoshi, NICT, kaoru.kenyoshi@nict.go.jp	High	Jul. 2020	TD 388/WP3 Q16-13- Apr20- DOC-34
ITU-T Y.PII-Did	Prioritization based De-Identification Methods for Personally Identifiable Information (New.)	Yang, Jinhong KAIST, jinhong@inje.ac.kr Onik, Md Mehedi Hassan KAIST, hassan@oasis.inje.ac.kr Kim, Chul-Soo, ETRI charles@inje.ac.kr	High	Jul. 2020	TD 270/WP3
ITU-T Y.energy-brokerage	Framework of trusted electricity brokerage for distributed energy resources (New.)	Taein Hwang ETRI, tihwang@etri.re.kr , Il Woo Lee ETRI ilwoo@etri.re.kr	Low	Sep. 2021	TD 392/WP3
ITU-T Y.QKDN_SDNC	Software Defined Network Control for Quantum Key Distribution Networks (New.)	Yongli Zhao, Zhangchao Ma and Junsen Lai	Low	Sep. 2021	TD 390/WP3
ITU-T Y.QKDN_CM	Control and Management for Quantum Key Distribution Networks (New.)	Hans Kim, hans9@kt.com , Taesang Choi, ETRI., choits@etri.re.kr , Jaehwan Jin, LGU+	Low	Jul. 2020	TD 389/WP3 Q16-13- Apr20- DOC-35
ITU-T Y.QKDN_BM	Business role-based models in Quantum Key Distribution Network (New.)	Hyungsoo (Hans) Kim, KT, hans9@kt.com Hyeontaek Oh, KAIST, hyeontaek@kaist.ac.kr	High	Jul. 2021	TD 349/WP3
ITU-T Y.OBF_trust	Open Bootstrap Framework enabling trustworthy networking and services for distributed diverse ecosystem (New.)	Abhay Shanker Verma, as.verma@gov.in Ranjana Sivaram, ranjana.sivaram@gov.in Sharad Arora, sharad.arora@sensorise.net	High	Jul. 2020	TD 394/WP3 Q16-13- Apr20- DOC-36
ITU-T Y.QKDN-req	Functional Requirements for the Quantum Key Distribution Network (New.)	Hyungsoo Kim, KT corp., hans9@kt.com , Taesang Choi, ETRI., choits@etri.re.kr , Kaoru Kenyoshi, NICT, kaoru.kenyoshi@nict.go.jp ,	High	Mar. 2020	TD 386/WP3

Acronym	Title	Editor	Priority	Consent / Approval	Reference
		Zhangchao Ma, CAS QN, mazhangchao@casquantumnet.com			
ITU-T Y.supp.trust- roadmap	Standardization roadmap on Trustworthy Networking and Services including Quantum Enhanced Networks (New.)	Gyu Myoung Lee, KAIST, gmllee@kaist.ac.kr Hyeontaek Oh, KAIST, hyeontaek@kaist.ac.kr	Medium	Oct. 2022	TD 396/WP3

NOTE 1 – Q16/13 has living list items on the following work items:

- Machine Learning in Quantum Key Distribution Networks (**TD 397/WP3**);
- Trust framework of trustworthy device selection for data transmission (**TD 479/WP3**);
- Trust based ICT service and business models (**TD 480/WP3**).

NOTE 2 – The following is the list of candidates for consent at the July SG13 meeting: **Y.dv-ess**, **Y.trust-pdm**, **Y.QKDN_Arch**, **Y.QKDN_KM**, **Y.PII-Did**, **Y.QKDN_CM**, **Y.OBF-trust**.

6. Future meetings

The following is a summary of the upcoming meeting proposed by Q16/13.

Dates	Place	Host	Q	Objectives
27 April 2020 (09:00-12:00)	e-meeting	ITU-T	16/13	Candidate documents for consent at the July SG13 meeting
18 – 27 May 2020 (TBD)	e-meeting	ITU-T	16/13	Q16/13 will deal with 14 draft recommendations (Y.dv-ess, Y.trust-index, Y.STR, Y.trust-arch, Y.SNS-trust, Y.trust-pdm, Y.QKDN_Arch, Y.QKDN_KM, Y.PII-Did, Y.energy-brokerage, Y.QKDN_SDNC, Y.QKDN_CM, Y.QKDN-BM, Y.OBF-trust), the current living list items of Q16/13, but are not limited to.
15 June 2020 (09:00-12:00)	e-meeting	ITU-T	16/13	Candidate documents for consent at the July SG13 meeting
29 June 2020 (09:00-12:00)	e-meeting	ITU-T	16/13	Candidate documents for consent at the July SG13 meeting
20 – 31 July 2020	Geneva	ITU-T	16/13	Q16/13 will deal with 14 draft recommendations (Y.dv-ess, Y.trust-index, Y.STR, Y.trust-arch, Y.SNS-trust, Y.trust-pdm, Y.QKDN_Arch, Y.QKDN_KM, Y.PII-Did, Y.energy-brokerage, Y.QKDN_SDNC, Y.QKDN_CM, Y.QKDN-BM, Y.OBF-trust), the current living list items of Q16/13, but are not limited to.

7. Closure

The Q16/13 Rapporteur thanked the delegates for their participation in the Q16/13 activities to progress the work, and particularly the TSB SG 13 Secretariat, editors and contributors for their support and active involvement during this meeting.

Annex A:
List of the participants

No	Name	Affiliation	Note
1	Gyu Myoung Lee	Rapporteur, KAIST	
2	Cha, Daejoon	SKT	
3	Hans Kim	KT	
4	Matthieu Legré	University of Geneva	
5	Taesang Choi	ETRI	
6	Zhangchao Ma	CAS Quantum Network	
7	Hongyu Wu	QuantumCTek	
8	Masahide Sasaki	NICT	
9	Kaoru KENYOSHI	NICT	
10	Masahiro TAKEOKA	NICT	
11	Martin Ward	Toshiba	
12	Hyeontaek Oh	KAIST	
13	Abhay Shanker Verma	India	
14	Vijay Kumar Roy	India	
15	Ranjana Sivaram	India	
16	Sharad Arora	India	
17	Jonas Haggard	India	

Annex B:
Summary of Q16/13 meeting activities

Date	Agenda Items
6 April (Mon) 09:00-12:00 (Geneva time)	<ul style="list-style-type: none">- Introduction- Y.QKDN_Arch (C-101, C-95, C-93 and C-97)- Y.QKDN_KM (C-102, C-96 and C-94)- Y.QKDN_CM (C-98, C-99, C-100 and C-103)- Y.OBF_trust (C-91R2)- Y.trust-pdm (C-92R1)
Remote participation – http://remote.itu.int	
