



**Question(s):** 16/13

Geneva, 13 March 2020

**TD**

**Source:** Rapporteur

**Title:** Meeting report of Q16/13 (Geneva, 2 – 13 March 2020)

**Purpose:** Admin

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**Keywords:** Meeting report; Q16/13; March 2020

**Abstract:** This document contains the report for Q16/13 which was held in Geneva, 2 – 13 March 2020.

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

Question 16/13 was addressed in 36 sessions during the SG 13 Rapporteurs group meeting in Geneva (2 – 13 March 2020) under the chairmanship of Gyu Myoung LEE (KAIST, Korea (Rep. of)). The group adopted the agenda in **17741-TD10 (200302)**.

The objectives for this meeting were:

- To discuss an updated Question description for NSP;
- To carefully review Y.QKDN-req and get a consensus to go for consent;
- To review the progress of on-going draft Recommendations (Y.QKDN\_Arch, Y.QKDN\_KM, Y.QKDN\_CM, Y.QKDN\_SNDC, Y.dv-ess, Y.energy-brokerage, Y.trust-pdm, Y.OBF\_trust);
- To have the 2<sup>nd</sup> CQ meeting with Q4/17 and a joint meeting with Q6/13 for QKD issues;
- To review new work item (Standardization roadmap on trust);
- To discuss other items including liaisons.

Question 16/13 discussed 23 contributions and incoming Liaison Statements. Q16/13 has made Corrigendum to Y.3800 and improvement of draft Y.QKDN-req for requesting consent to the SG13 meeting, and updated on going draft Recommendations. Q16/13 has decided to start the development of a new draft Supplement and produced 19 output documents including the meeting report.

The main results of the meeting are the following:

- Corrigendum to Y.3800 (**TD 385/WP3**), Overview on networks supporting quantum key distribution Corrigendum 1;
- The Recommendation ITU-T Y.QKDN\_req for consent (**TD 386/WP3**), Functional Requirements for Quantum Key Distribution Networks;
- The updated draft Recommendation ITU-T Y.QKDN\_Arch (**TD 387/WP3**), Functional architecture of Quantum Key Distribution networks;
- The updated draft Recommendation ITU-T Y.QKDN\_KM (**TD 388/WP3**), Key management for Quantum Key Distribution networks;
- The updated draft Recommendation ITU-T Y.QKDN\_CM (**TD 389/WP3**), Control and Management for Quantum Key Distribution Networks (QKDN-CM);
- The updated draft Recommendation ITU-T Y.QKDN\_SDNC (**TD 390/WP3**), Software Defined Network Control for Quantum Key Distribution Networks;
- The updated draft Recommendation ITU-T Y.dv-ess (**TD 391/WP3**), Framework of distributed virtualized energy storage systems;
- The updated draft Recommendation ITU-T Y.energy-brokerage (**TD 392/WP3**), Framework of trusted electricity brokerage for distributed energy resources;
- The updated draft Recommendation ITU-T Y.trust-pdm (**TD 393/WP3**), Framework for Trust based Personal Data Management Platform;
- The updated draft Recommendation ITU-T Y.OBF\_trust (**TD 394/WP3**), Open Bootstrap Framework enabling trustworthy networking and services for distributed diverse ecosystem;
- The updated draft Recommendation ITU-T Y.STR (**TD 395/WP3**), Socio-technical recommendations for contributing to socio-economic awareness;
- The initial draft Supplement ITU-T Y.supp.trust-roadmap (**TD 396/WP3**), Standardization roadmap on Trustworthy Networking and Services including Quantum Enhanced Networks;
- Living list (**TD 397/WP3**), Machine learning in quantum key distribution networks;
- Outgoing LS (**TD 398/WP3**), LS/o on work progress on Quantum Key Distribution (QKD) network in SG13 (as of March 2020) [from ITU-T SG13];
- Outgoing LS (**TD 399/WP3**), LS/o on the living list - Machine learning in quantum key distribution networks [from ITU-T SG13];
- Outgoing LS (**TD 400/WP3**), LS/o on the initial draft Supplement ITU-T Y.supp.trust-roadmap - Standardization roadmap on Trustworthy Networking and Services including Quantum Enhanced Networks [from ITU-T SG13];
- Outgoing LS (**TD 401/WP3**), LS/o on Corrigendum to Y.3800 [from ITU-T SG13];
- Outgoing LS (**TD 403/WP3**), LS/o on work progress on trust based personal data management in SG13 (as of March 2020) [from ITU-T SG13];

- Q16/13 meeting report (TD 402/WP3).

## 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.

The following Recommendation was proposed by Q16/13 for Consent by SG 13:

Description	Documents	Question
Corrigendum to Y.3800, “Overview on networks supporting quantum key distribution Corrigendum 1”	TD 385/WP3	Q16/13
Draft Recommendation ITU-T Y.3801 (Y.QKDN-req), “Functional requirements for quantum key distribution networks”	TD 386/WP3	Q16/13

### 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

The following is a summary of the outgoing Liaison Statements prepared by Q16/13.

Title	Destination	Purpose	Document	Source
LS/o on work progress on Quantum Key Distribution (QKD) network in SG13 (as of March 2020) [from ITU-T SG13]	ITU-T SG2, ITU-T SG11, ITU-T SG15, ITU-T SG17, ETSI ISG-QKD, ISO/IEC JTC1/SC27 and AG4	Information	TD 398/WP3	Q16/13 Rapporteur
LS/o on the living list - Machine learning in quantum key distribution networks [from ITU-T SG13]	ITU-T FG-QIT4N	Information	TD 399/WP3	Q16/13 Rapporteur
LS/o on the initial draft Supplement ITU-T Y.supp.trust-roadmap - Standardization roadmap on Trustworthy Networking and Services including Quantum Enhanced Networks [from ITU-T SG13]	ITU-T SG17, SG16, SG20, FG-QIT4N	Action	TD 400/WP3	Q16/13 Rapporteur
LS/o on Corrigendum to Y.3800 [from ITU-T SG13]	ITU-T SG17	Action	TD 401/WP3	Q16/13 Rapporteur
LS/o on work progress on trust based personal data management in SG13 (as of March 2020) [from ITU-T SG13]	ITU-T SG17, ISO/IEC JTC 1/SC 27	Information	TD 403/WP3	Q16/13 Rapporteur

## 4. Discussions

### 4.1. Y.QKDN\_req (QKDN – Functional Requirements)

Base document: TD360/WP3

C-86	KT, ETRI	Proposed addition of QKDN QoS high-level requirements	Q6/13, Q16/13
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- This contribution proposes to add high-level QoS requirements for QKDN.

C-87	KT, ETRI	Proposed addition of QKDN QoS functional requirements	Q6/13, Q16/13
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- This contribution proposes to add functional QoS requirements for QKDN.

C-121	SK Telecom	Proposed modification of the draft Recommendation Y.QKDN_Req	Q16/13
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- This contribution proposes the modification of KM requirement and QKDN controller requirement in the draft Recommendation Y.QKDN\_Req.

C-168	NICT; NEC Corporation; Toshiba Corporation	Proposed consent of the draft Y.QKDN-req “Functional requirements for the quantum key distribution network”	Q16/13
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- This document includes the proposed modifications to the draft Recommendations: Y.QKDN-req “Functional requirements for QKDN”.
- This contribution also proposes to consent this document at the WP3/13 meeting in March 2020 with these proposed modifications.

### Meeting Result

- Based on all input contributions, the meeting has carefully reviewed several times the drafting results for requesting consent of this document in SG13 plenary meeting.
- Q16/13 has decided that this document can be forwarded for consent at the SG13 plenary meeting.

The Draft Recommendation ITU-T Y.3801 (formerly Y.QKDN-req) < Functional Requirements for Quantum Key Distribution Networks>, which is proposed for consent:

- has been thoroughly reviewed for technical accuracy;
- is technically sound with as few options as feasible;
- has content that does not conflict with the content of an already approved Recommendation;
- does not contain case studies within the normative part;
- has only short illustrative examples, if necessary, included in the normative part;

- follows the author's guidelines (including the use of ITU-T templates, which can be found at: <http://www.itu.int/ITU-T/studygroups/templates/index.html>)
- has been spell-checked and is grammatically correct, to the extent practicable;
- contains definitions that have been developed after consulting the ITU-T Terms and Definitions database and following the guidance of the standardization committee for vocabulary (SCV);
- has all acronyms, including those in the figures and tables, correctly spelled out;
- has the normative part making use of all references in clause 2 (References);
- has all references in clause 2 (References) qualified in accordance with [ITU-T A.5].

NOTE – No IPR statement was received on this document.

#### 4.2. Y.QKDN\_Arch (QKDN – Functional Architecture)

Base document: TD361/WP3

C-122	SK Telecom	Proposed modification of the draft Recommendation Y.QKDN_Arch	Q16/13
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- This contribution proposes the modification of functional architecture of QKD module in the draft Recommendation Y.QKDN\_Arch.

C-175	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 “Functional architecture of the quantum key distribution network”.

#### Meeting Result

- The meeting accepted the proposals (C-122 and C-175).
- The meeting made an agreed architecture diagram and improved related text based on the new figure.

#### 4.3. Y.QKDN\_KM (QKDN – Key Management)

Base document: TD353/WP3

C-176	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 “Key management for quantum key distribution network”

#### Meeting Result

- The meeting accepted the proposal.

#### 4.4. Y.QKDN\_CM (QKDN control and management)

Base document: TD354/WP3

C-84	KT, ETRI	Editorial 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 minor editorial modifications to the draft Recommendation ITU-T Y.QKDN\_CM: “Control and Management for the Quantum Key Distribution Network” in the Annex 1.

C-85	KT, ETRI	Proposed revision of “procedure” in 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 to modify procedure clause in the draft Recommendation ITU-T Y.QKDN\_CM: “Control and Management for the Quantum Key Distribution Network”.

C-88	KT, ETRI	Proposed 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 the reference point descriptions to the draft Recommendation ITU-T Y.QKDN\_CM: “Control and Management for the Quantum Key Distribution Network” in Clause 10.

C-165	BUPT, CAS Quantum Network Co. Ltd, MIIT	Proposal of extended auxiliary management for QKDN on Draft Recommendation Y.QKDN-CM	Q16/13
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- This contribution proposes the extended auxiliary management for QKDN on Draft Recommendation Y.QKDN-CM. The proposed extended auxiliary management for QKDN intends to support user network management more effectively and conveniently.

C-166	BUPT, CAS Quantum Network Co. Ltd, MIIT	Proposal of usecases of machine learning on Draft Recommendation Y.QKDN-CM	Q16/13
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- This contribution proposes new usecases of machine learning for recommendation Y.QKDN\_CM. The proposed usecase intends to clearly show the advantages that machine learning can bring for QKDN.

### Meeting Result

- The meeting accepted the proposals (C-84, 85, 88 and 165)
- From C-166, the meeting agreed to adopt the proposal as a living list for future standardization. The meeting also decided to send an outgoing liaison statement to related groups.

### 4.5. Y.QKDN\_SDNC (QKDN – Software Defined Network Control)

Base document: TD355/WP3

C-167	BUPT, CAS Quantum Network Co. Ltd, MIIT	Proposed modification in the draft Recommendation ITU-T Y.QKDN_SDNC: “Software Defined Network Control for Quantum Key Distribution Networks”	Q16/13
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- This contribution proposes modifications to the draft Recommendation ITU-T Y. QKDN\_SDNC “Software Defined Network Control for Quantum Key Distribution Networks” (TD271/WP3).

### Meeting Result

- Based on C-167, the document has been significantly improved. Additional contributions were invited.

### 4.6. Y.QKDN\_BM (QKDN – Business Model)

Base document: TD349/WP3

No contribution.

### 4.7. CQ (Co-located Quantum) meeting

- Previous meeting report (SG13-TD367/WP3, SG17-TD2754)
- Related input contribution (C-174)
- QKDN related LSs from SG17 and other groups
- security requirements in Y.QKDN\_req, and any issues for other documents in SG13
- Any issues for documents in SG17
- AOB

C-174	NICT; NEC Corporation; Toshiba Corporation	Harmonization of draft Recommendations on QKDN in SG13 and SG17	Q16/13
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- This document discusses harmonization of draft Recommendations on QKDN in SG13 and SG17.



### Meeting Result

- One result of the CQ meeting between SG13 and SG17 was the concern from several SG17 members about using Y.3800 in References clause of their draft Recommendations.
- SG17 decided to include Y.3800 in the bibliography instead. SG13 agreed to prepare a corrigendum for Y.3800 to resolve SG17 concerns expressed during the CQ meeting.
- Q16/13 decided to inform SG17 about the approval for consent of the corrigendum that addresses the errors mentioned. Furthermore, Q16/13 asked SG17 to reconsider putting Y.3800 in the References clause of their draft Recommendations. (See the oLS – TD401/WP3)

### 4.8. Joint meeting with Q6/13 for QKDN

- To discuss Y.QKDN\_req for QoS aspects (C-86, C-87)

### Meeting Result

- The meeting jointly reviewed QoS related contributions and draft Recommendations in Q6/13. Discussion results were reflected in Y.QKDN-req.

### 4.9. Y.dv-ess (Energy storage system)

Base document: TD320/WP3

C-82	ETRI	Proposal for updating the architecture model of virtual energy storage systems in Y.dv-ess	Q16/13
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- This contribution provides the revised architecture model of virtual energy storage systems in Clause 8.1 based on TD320. In this contribution, It's intended to revise Clause 8.1 according to the proposed modifications.

### Meeting Result

- The meeting agreed to accept the updated architecture model of virtual energy storage systems.

### 4.10. Y.energy-brokerage (Trusted electricity brokerage)

Base document: TD321/WP3

C-83	ETRI	Proposal of the conceptual model for trusted electricity brokerage in Y.energy-brokerage	Q16/13
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- This contribution provides the conceptual model of trusted electricity brokerage in Clause 8 of Y.energy-brokerage based on TD321. It's intended to add the proposed conceptual model in Clause 8.

### Meeting Result

- The meeting agreed to accept the proposed conceptual model for trusted electricity brokerage.

#### 4.11. Y.trust-index (Trust index)

Base document: TD267/WP3

No contribution.

#### 4.12. Y.trust-arch (Trust functional architecture)

Base document: TD322/WP3

No contribution.

#### 4.13. Y.trust-pdm (Trust-based personal data management)

Base document: TD358/WP3

C-139	KAIST	Y.trust-pdm: terms and definitions about personal data	Q16/13
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- This contribution contains a proposal about definitions (clause 3) and conventions (clause 5) related to personal data based on the comparison of the existing definitions in other standards.

C-141	KAIST	Y.trust-pdm: A proposal to revise requirements and the architecture	Q16/13
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- This contribution proposes to update requirements (clause 7) for trust based personal data management and relevant functional blocks in the architecture (clause 8) for draft Recommendation Y.trust-pdm.

C-142	KAIST	Y.trust-pdm: A proposal to revise clause 8.2 and appendices	Q16/13
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- This contribution proposes to revise texts regarding clause 8.2 and appendices of draft Recommendation Y.trust-pdm.

C-143	KAIST	Y.trust-pdm: A proposal to add new clause for information flows	Q16/13
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- This contribution proposes a new clause (clause 9) for describing information flows of trust based personal data management platform for draft Recommendation Y.trust-pdm.

#### Meeting Result

- From C-139, the proposed texts are accepted in clause 3 and clause 5. The meeting decided to send an outgoing liaison statement to related groups for harmonizing terminologies issues.
- From C-141, the proposed revisions are accepted with minor editorial modifications. An editors' note is added to invite further contributions to identify stakeholders outside of the framework.

- From C-142, the proposal is accepted.
- From C-143, the proposed texts and figures are accepted with minor editorial modifications.

#### **4.14. Y.PII-Did (Personally Identifiable Information - De-Identification)**

Base document: TD270/WP3

No contribution.

#### **4.15. Y.OBF\_trust (Open Bootstrap Framework)**

Base document: TD344/WP3

C-91	MCIT, 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 addendum to the draft Recommendation ITU-T Y.OBF\_trust.

#### **Meeting Result**

- The contribution was agreed.

#### **4.16. Y.SNS-trust (Trust in Social Networking Services)**

Base document: TD231/WP3

No contribution.

#### **4.17. Y.STR (Socio-technical recommendations)**

Base document: TD164/WP3

No contribution.

#### **Meeting Result**

- The meeting was informed that Y.STR is a stale work item. The meeting decided to encourage and continue the work on socio-economic awareness.

#### **4.18. New work items**

##### **(1) Standardization roadmap on trust**

C-138	KAIST	New: A new work item proposal - initial supplement on “Standardization roadmap on trustworthy networking and services including quantum enhanced networks”	Q16/13
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- This contribution proposes to initiate a new work for the development of supplement - “Standardization roadmap on trustworthy networking and services including quantum enhanced networks”.

### Meeting Result

- The meeting agreed to initiate this new supplement “Standardization roadmap on trustworthy networking and services including quantum enhanced networks”. A.13 justification is included in Annex A.

### 4.19. NSP

- New Question 16 description for NSP
- SG13 chairman proposal to transfer mandate regarding environmental awareness and socio-economic awareness from Q16/13 to Q1/13 (**TD6 (200302)**)

### Meeting Result

- The meeting discussed the proposed ToR (**TD9 (200302)**) by the Rapporteur and made some changes. The Rapporteur presented the result in the NSP ad-hoc session. There were no particular concerns at the NSP ad-hoc session.
- For TD6 (200302), the meeting agreed to transfer the mandate work regarding environmental awareness and socio-economic awareness from Q16/13 to Q1/13.

### 4.20. Incoming liaisons, and others

#### Other contributions

##### (1) New Question: High Precision and Deterministic IP

C-120	China Mobile Communications Corporation, Huawei Technologies Co., Ltd.	Proposal for initiating a new question on High Precision and Deterministic IP Networking and Communication: Network requirements and functional architecture	Q1/13; Q16/13; Q17/13; Q18/13; Q19/13; Q2/13; Q20/13; Q21/13; Q22/13; Q23/13; Q5/13; Q6/13; Q7/13
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- This contribution proposes to initiate a new question on “High Precision and Deterministic IP Networking and Communication: Network requirements and functional architecture” in study period 2021-2024 of SG13, and focuses on the study of the requirements, capabilities, architecture and key technologies to realize the Large-scale Deterministic

Network. And the ecosystem from business models and use cases should be promoted to build and realize the better cooperation with operators and customers.

### Meeting Result

- No discussion.

### Incoming liaisons

Q16/13 and other Qs

369-WP3	ITU-T SG15	LS/i on the new version of the Home Network Transport (HNT) Standards Overview and Work Plan [from ITU-T SG15]	Q16/13
368-WP3	ITU-T SG20	LS/i on draft new Recommendation ITU-T Y.SUM on "Requirements and Capability Framework of Smart Utility Metering" [from ITU-T SG20]	Q16/13, Q1/13
402-GEN	ITU-T SG12	LS/i/r on QoS aspects of QKD networks (reply to SG13-LS119) [from ITU-T SG12]	Q6/13, Q16/13
384-GEN	ETSI ISG QKD	LS/i to ITU-T Working Party 3/13 on ETSI ISG QKD and its activities as of QKD#27 [from ETSI ISG QKD]	Q6/13, Q16/13
382-GEN	TSB	Outgoing correspondence from SG13 after October 2019 meeting	Q16/13

QALL/13

412-GEN	ITU-T SG15	LS/i on OTNT Standardization Work Plan Issue 27 [from ITU-T SG15]	QALL/13
410-GEN	TSAG	LS/r on creation of new Question 23/16 (Digital culture-related systems and services) (reply to SG16-LS166) [from TSAG]	QALL/13
409-GEN	ITU-T SG15	LS/i on the new version of the Access Network Transport (ANT) Standards Overview and Work Plan [from ITU0T SG15]	QALL/13
408-GEN	ITU-T SG2	LS/i on SCV activity in ITU-T SG2 [from ITU-T SG2]	QALL/13
404-GEN	TSB	ITU Kaleidoscope 2019 - Paper of interest to ITU-T Study Group 13 and ITU Kaleidoscope 2020	QALL/13

401-GEN	TSB	Communiqué of the TSB Director CxO consultation meeting, 11 December 2019, Dubai, United Arab Emirates	QALL/13
399-GEN	ITU-T SG11	LS/i on appointment of ITU-T technical experts [from ITU-T SG11]	QALL/13
398-GEN	ITU-T SG11	LS/r on reference table to be used for Conformance and Interoperability testing (SG9-LS74, SG15-LS192, SG16-LS125) [from ITU-T SG11]	QALL/13
397-GEN	ITU-T SG16	LS/i on new ITU-T Recommendation H.430.4 on MMT profile on immersive live experience (ILE) [to various groups] [from ITU-T SG16]	QALL/13
395-GEN	ITU-T SG11	LS/i on questionnaire on evaluation of market needs for joint ITU/IEC TL recognition procedure and certification schemes on ITU-T Recommendations [ from ITU-T SG11]	QALL/13
392-GEN	SG13RG-AFR, Chairman	7th SG13 Regional Workshop for Africa on "Standardization of Future Networks towards building a better connected Africa"( outcomes, Abuja, 3-4 February 2020)	QALL/13
389-GEN	Broadband Forum	LS/i on Broadband Forum adopts open structure [from Broadband Forum]	QALL/13
386-GEN	FG-AI4EE	LS/i on the first meeting of ITU-T Focus Group on Environmental Efficiency for Artificial Intelligence and Other Emerging Technologies [from FG-AI4EE]	QALL/13

#### Others

247-PLEN	TSAG	LS/i on streamlining Resolutions [from TSAG]	QALL/13
246-PLEN	TSAG	LS/i on WTSA-20 preparations concerning work programme and structure [to all ITU-T SGs] [from TSAG]	QALL/13
245-PLEN	TSAG	LS/i on hot topics [from TSAG]	QALL/13
244-PLEN	TSAG	LS/i about TSAG Information Session on Network 2030 [from TSAG]	QALL/13

## Meeting Result

- The meeting has reviewed the above documents. It was a good chance to introduce several related activities of other groups.
- There was no action for the above documents.

## 5. Work programme

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

- **Y.supptrust-roadmap**, “Standardization roadmap on Trustworthy Networking and Services including Quantum Enhanced Networks”

NOTE 1 - A.13 justifications for the new supplement related to the above work item is attached in Annex A.

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), wrhee@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, <a href="mailto:hyeontaek@kaist.ac.kr">hyeontaek@kaist.ac.kr</a> Nakyong Kim, KAIST, <a href="mailto:nkim71@kaist.ac.kr">nkim71@kaist.ac.kr</a> Jinhong Yang, Inje University/KAIST, <a href="mailto:sunupnet@kaist.ac.kr">sunupnet@kaist.ac.kr</a>	High	Jul. 2020	TD 393/WP3

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., <a href="mailto:mazhangchao@casquantumnet.com">mazhangchao@casquantumnet.com</a>	High	Jul. 2020	TD 387/WP3
ITU-T Y.QKDN_KM	Key management for Quantum Key Distribution networks (New.)	Kaoru Kenyoshi, NICT, <a href="mailto:kaoru.kenyoshi@nict.go.jp">kaoru.kenyoshi@nict.go.jp</a>	High	Jul. 2020	TD 388/WP3
ITU-T Y.PII-Did	Prioritization based De-Identification Methods for Personally Identifiable Information (New.)	Yang, Jinhong KAIST, <a href="mailto:jinhong@inje.ac.kr">jinhong@inje.ac.kr</a> Onik, Md Mehedi Hassan KAIST, <a href="mailto:hassan@oasis.inje.ac.kr">hassan@oasis.inje.ac.kr</a> Kim, Chul-Soo, ETRI <a href="mailto:charles@inje.ac.kr">charles@inje.ac.kr</a>	High	Jul. 2020	TD 270/WP3
ITU-T Y.energy-brokerage	Framework of trusted electricity brokerage for distributed energy resources (New.)	Taein Hwang ETRI, <a href="mailto:tihwang@etri.re.kr">tihwang@etri.re.kr</a> , Il Woo Lee ETRI <a href="mailto:ilwoo@etri.re.kr">ilwoo@etri.re.kr</a>	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, <a href="mailto:hans9@kt.com">hans9@kt.com</a> , Taesang Choi, ETRI, <a href="mailto:choits@etri.re.kr">choits@etri.re.kr</a> , Jaehwan Jin, LGU+	Low	Jul. 2020	TD 389/WP3
ITU-T Y.QKDN_BM	Business role-based models in Quantum Key Distribution Network (New.)	Hyungsoo (Hans) Kim, KT, <a href="mailto:hans9@kt.com">hans9@kt.com</a> Hyeontaek Oh, KAIST, <a href="mailto:hyeontaek@kaist.ac.kr">hyeontaek@kaist.ac.kr</a>	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, <a href="mailto:as.verma@gov.in">as.verma@gov.in</a> Ranjana Sivaram, <a href="mailto:ranjana.sivaram@gov.in">ranjana.sivaram@gov.in</a> Sharad Arora, <a href="mailto:sharad.arora@sensorise.net">sharad.arora@sensorise.net</a>	High	Jul. 2020	TD 394/WP3
ITU-T Y.QKDN-req	Functional Requirements for the Quantum Key Distribution Network (New.)	Hyungsoo Kim, KT corp., <a href="mailto:hans9@kt.com">hans9@kt.com</a> , Taesang Choi, ETRI., <a href="mailto:choits@etri.re.kr">choits@etri.re.kr</a> , Kaoru Kenyoshi, NICT, <a href="mailto:kaoru.kenyoshi@nict.go.jp">kaoru.kenyoshi@nict.go.jp</a> , Zhangchao Ma, CAS QN, <a href="mailto:mazhangchao@casquantumnet.com">mazhangchao@casquantumnet.com</a>	High	Mar. 2020	TD 386/WP3



Acronym	Title	Editor	Priority	Consent / Approval	Reference
ITU-T Y.supp.trust-roadmap	Standardization roadmap on Trustworthy Networking and Services including Quantum Enhanced Networks (New.)	Gyu Myoung Lee, KAIST, <a href="mailto:gmllee@kaist.ac.kr">gmllee@kaist.ac.kr</a>  Hyeontaek Oh, KAIST, <a href="mailto:hyeontaek@kaist.ac.kr">hyeontaek@kaist.ac.kr</a>	Medium	Oct. 2022	TD 396/WP3

NOTE 2 – 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 3 – 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
6 April 2020 (09:00-12:00)	e-meeting	ITU-T	16/13	Candidate documents for consent at the July SG13 meeting
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	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.
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 ad-hoc group activities to progress the work, and particularly the TSB SG 13 Secretariat and contributors for their support and active involvement during this meeting.

## Annex A:

### A.13 justification for proposed draft new Recommendation: Y.sup.trust-roadmap

<b>Question:</b>	Q16/13	<b>Proposed new ITU-T Supplement</b>	Geneva, 2-13 March 2020	
<b>Reference and title:</b>	Y.sup.trust-roadmap "Standardization roadmap on trustworthy networking and services including quantum enhanced networks"			
<b>Base text:</b>	17741-C138 (200302)		<b>Target date:</b>	2022-10
<b>Editor(s):</b>	Gyu Myoung Lee, KAIST, gmlee@kaist.ac.kr Hyeontaek Oh, KAIST, hyeontaek@kaist.ac.kr		<b>Approval process:</b>	Agreement
<p><b>Purpose and scope</b> (defines what issue this non-normative document will address, thus permitting readers to judge its usefulness for their work; also defines the intent or objective of the non-normative document and the aspects covered, thereby indicating the limits of its applicability):</p> <p>This Supplement provides the standardization roadmap on trustworthy networking and services including quantum enhanced networks. It addresses the following subjects:</p> <ul style="list-style-type: none"> <li>– landscape and related technical areas of trust technologies from an ITU-T perspective;</li> <li>– The collection of related standards and publications on trust technologies in standards development organizations (SDOs).</li> </ul>				
<p><b>Summary</b> (provides a brief overview of the proposal):</p> <p>Supplement XX to ITU-T Y-series Recommendations provides the standardization roadmap on trustworthy networking and services including quantum enhanced networks. It describes the landscape with related technical areas of trust technologies from an ITU-T perspective and list up related standards and publications developed in standards development organizations (SDOs).</p>				
<p><b>Relations to ITU-T Recommendations or other documents</b> (approved or under development):</p>				
<p><b>Liaisons with other study groups or with other standards bodies:</b></p> <p>ITU-T SG17, SG16, SG20, FG-QIT4N</p>				
<p><b>Supporting members that are committing to contributing actively to the work item:</b></p> <p>KAIST, CAS Quantum Network Co. KT, ETRI, Korea (Rep. of), QuantumCTek Co., SKT, NICT; NEC Corporation; Toshiba Corporation.</p>				

**Annex B:  
Summary of Q16/13 meeting activities**

<b>Date</b>	<b>Morning</b>		<b>Afternoon</b>	
<b>2 Mar(Mon)</b>	<b>Introduction (09:30~)</b>	<b>Q16 NSP, Y.QKDN_req</b>	<b>Y.QKDN_req</b>	<b>Y.QKDN_req</b>
<b>3 Mar(Tue)</b>	<b>Joint meeting with Q6/13 (Y.QKDNqos- req) (09:00~)</b>	<b>Joint meeting with Q6/13 (Y.QKDN_req) (10:00~)</b>	<b>Y.QKDN_req, Y.QKDN_Arch (14:30~)</b>	<b>Y.QKDN_Arch</b>
<b>4 Mar(Wed)</b>	<b>Y.QKDN_KM (09:00~)</b>	<b>Y.QKDN_Arch</b>	<b>Y.OBF_trust, Y.dv-ess, Y.energy- brokerage (14:00~)</b>	<b>Y.trust-pdm</b>
<b>5 Mar(Thu)</b>	<b>Y.QKDN_req (09:00~)</b>	<b>Y.QKDN_req</b>	<b>CQ meeting (14:00~)</b>	<b>CQ meeting, Y.QKDN_req</b>
<b>6 Mar(Fri)</b>	<b>Y.QKDN_CM (09:00~)</b>	<b>Y.QKDN_Arch</b>	<b>Y.QKDN_SDNC</b>	<b>Q16 NSP, New work item</b>
<b>9 Mar(Mon)</b>	<b>Drafting Review (Y.QKDN_req) (09:00~)</b>	<b>Drafting Review (Y.3800)</b>	<b>Drafting Review (Y.QKDN_req, Y.QKDN_CM)</b>	<b>Drafting Review (Y.QKDN_KM)</b>
<b>10 Mar(Tue)</b>	<b>Drafting Review (Y.QKDN_Arch) (09:00~)</b>	<b>Drafting Review (Y.QKDN_Arch)</b>	<b>Drafting Review (Y.QKDN_Arch) (14:30~)</b>	<b>Drafting Review (Y.QKDN_KM, Y.QKDN_req)</b>
<b>11 Mar(Wed)</b>	<b>Drafting Review (Y.QKDN_SDNC) (09:00~)</b>	<b>Drafting Review (Y.OBF_trust, Y.trust-pdm)</b>	<b>Drafting Review (Y.3800) (14:00~)</b>	<b>Drafting Review (Y.3800, Y.QKDN_req)</b>
<b>12 Mar(Thu)</b>	<b>Drafting Review (Y.QKDN_Arch) (09:00~)</b>	<b>Drafting Review (Y.QKDN_Arch)</b>	<b>Liaisons (14:30~)</b>	<b>Meeting report review</b>
<b>13 Mar(Fri)</b>	<b>SG13 PLEN</b>	<b>SG13 PLEN</b>	<b>SG13 PLEN</b>	<b>SG13 PLEN</b>

NOTE - iftp site: <http://ifa.itu.int/t/2017/sg13/exchange/wp3/q16/202003/>  
Remote participation: [https://www.itu.int/myworkspace/#/my-workspace/remote\\_participation](https://www.itu.int/myworkspace/#/my-workspace/remote_participation)