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TD

Source: Rapporteur

Title: Meeting report of Q16/13 (Victoria Falls, 4 – 14 March 2019)

Purpose: Admin

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Keywords: Meeting report; Q16/13; Victoria Falls; March 2019

Abstract: This document contains the meeting report for Q16/13 which is held in Victoria Falls, 4 – 14 March 2019.

CONTENTS

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

Question 16/13 was addressed in 21 sessions during the SG 13 meeting in Victoria Falls (4 – 14 March 2019) under the chairmanship of Gyu Myoung LEE (KAIST, Korea (Rep. of)). The group adopted the agenda in **TD217/WP3**.

The objectives for this meeting were:

– To review the progress of on-going draft Recommendations (Y.QKDN_FR, Y.trust-pdm, Y.SNS-trust);

– To review new work items (Trusted electricity brokerage, PII de-Identification, QKDN-Key Management, Trustful access to IoT Devices and Data);

– To discuss other items including liaisons.

Question 16/13 discussed 17 contributions and incoming Liaison Statements. Q16/13 has agreed to start the development of 4 new draft Recommendations and adopt 1 living list item after discussion on 4 new work items and QKDN architecture issues. At the meeting, Q16/13 produced 11 output documents including the meeting report.

The main results of the meeting are the following:

– The updated draft Recommendation ITU-T Y.QKDN_FR (**TD 229/WP3**), Framework for Networks to supporting Quantum Key Distribution;

– The updated draft Recommendation ITU-T Y.trust-pdm (**TD 230/WP3**), Framework for Trust based Personal Data Management Platform;

– The updated draft Recommendation ITU-T Y.SNS-trust (**TD 231/WP3**), Framework for Evaluation of Trust and Quality of Media in Social Networking Services;

– The initial draft Recommendation ITU-T Y.QKDN_KM (**TD 232/WP3**), Key management for Quantum Key Distribution network;

– The initial draft Recommendation ITU-T Y.QKDN_Arch (**TD 233/WP3**), Functional architecture of the Quantum Key Distribution network;

– The initial draft Recommendation ITU-T Y.energy-brokerage (**TD 234/WP3**), Framework of trusted electricity brokerage for distributed energy resources;

– The initial draft Recommendation ITU-T Y.PII-Did (**TD 235/WP3**), Prioritization based De-Identification methods for Personally Identifiable Information;

– Living list (**TD 236/WP3**), Open Bootstrap Framework enabling trustful devices, applications and services for distributed diverse ecosystems;

– Outgoing LS (**TD 237/WP3**), LS/o on Work progress on Quantum Key Distribution (QKD) network in SG13 [from ITU-T SG13];

– Outgoing LS (**TD 238/WP3**), LS reply on proposed ITU-T Focus Group on Quantum Information Technology for Networks (FG-QIT4N) (reply to TSAG-LS19) [from ITU-T SG13];

– Q16/13 meeting report (**TD 239/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.

No Recommendations were proposed by Q16/13 for Consent by WP3:

2.3 Other documents for Approval

No Supplement were proposed by Q16/13 for Approval by SG 13.

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 [from ITU-T SG13]	ITU-T SG2, ITU-T SG11, ITU-T SG17, ETSI ISG-QKD, ISO/IEC JTC1/SC27	Information	TD 237/WP3	Q16/13 Rapporteur
LS reply on proposed ITU-T Focus Group on Quantum Information Technology for Networks (FG-QIT4N) (reply to TSAG-LS19) [from ITU-T SG13]	TSAG	Information	TD 238/WP3	Q16/13 Rapporteur

4. Discussions

4.1 Energy storage system (Y.dv-ess)

Base document: TD 194/WP3

No contribution

4.2 Trust index (Y.trust-index)

Base document: TD 162/WP3

No contribution

4.3 Socio-technical recommendations (Y.STR)

Base document: TD 164/WP3

No contribution

4.4 Y.trust-arch (Trust functional architecture)

Base document: TD 195/WP3

No contribution

4.5 Y.QKDN_FR (Quantum Key Distribution Network)

Base document: TD 211/WP3

C-573	CAS Quantum Network Co., Ltd., QuantumCTek Co., Ltd.	Proposal on preliminary design of quantum key distribution network architecture	Q16/13

- This contribution proposes preliminary design of QKD network architecture for recommendation Y.QKD_FR.

C-588	CAS Quantum Network Co., Ltd.	Considerations on quantum key distribution network design requirements	Q16/13

- This contribution proposes high-level design considerations for QKD network architecture for recommendation Y.QKD_FR.

C-617R1	NICT, NEC, Toshiba	Proposed updated draft Recommendation ITU-T Y.QKDN_FR "Framework for Networks to support Quantum Key Distribution"	Q16/13

- This contribution proposes updated draft Recommendation ITU-T Y.QKDN_FR: “Framework for Networks to support Quantum Key Distribution” (TD196/WP3).

C-618R1	NICT, NEC, Toshiba	Proposed modifications to clause 9 & 10 of the draft Recommendation ITU-T Y.QKDN_FR "Framework for Networks to support Quantum Key Distribution"	Q16/13

- This contribution proposes modifications to clause 9 & 10 of the draft Recommendation ITU-T Y.QKDN_FR: “Framework for Networks to support Quantum Key Distribution” (TD196/WP3).

C-644R1	KT	Clarification of possible horizontal connectivity on QKD network in Y.QKDN_FR	Q16/13

- This contribution clarifies horizontal connectivity on QKD network and proposes revised texts and figures of draft recommendation Y.QKD_FR.

C-645R1	KT	Revised service procedure in section 10 of Y.QKDN_FR	Q16/13

- This contribution proposes revised overall service scenario in section 10 of draft recommendation Y.QKDN_FR.

Meeting Result

– The meeting started to review incoming LSs on QKD from SG17 and TSAG, and decided to prepare 2 outgoing LSs as follows:
  - Outgoing LS on Work progress on Quantum Key Distribution (QKD) network in SG13 to all related groups (TD 237/WP3)
  - LS reply on proposed ITU-T Focus Group on Quantum Information Technology for Networks to TSAG (TD 238/WP3)

– Based on all input contributions, the meeting carefully reviewed the whole text and made significant improvement. There were several off-line drafting sessions to improve the document as it's a candidate document for consent in the next June meeting.

– Through the off-line drafting, a new work item was suggested to split the architecture part from the Y.QKDN_FR. The meeting reviewed a new work item on the functional architecture based on part of Y.QKDN_FR and C-573. The meeting has agreed to start the development of a new Draft Recommendation on Functional architecture of the Quantum Key Distribution network. (See Annex B for A.1 Justification)

– From C-617R1, most of proposals were accepted. The meeting agreed to reflect considerations in C-588 and Further Clarification on Horizontal Connections in QKD Network in C-644R1

– The meeting also kept the main ideas from C-618R1 and C-645R1 on service procedures and invited relevant contributions in the next meeting.

– Lastly in order to improve the document before the June meeting, the meeting has agreed to hold an interim meeting hosted by NICT (Tokyo Japan) in mid of May.

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

Base document: TD 198/WP3

C-625	KAIST	Y.trust-pdm: proposal for requirements in clause 7	Q16/13

- This contribution proposes requirements based on use case analysis for clause 7 of Y.trust-pdm.

C-626	KAIST	Y.trust-pdm: proposal for a framework architecture in clause 8	Q16/13

- This contribution proposes a framework architecture of trust based personal data management for clause 8 of Y.trust-pdm.

C-657	KAIST	Proposal on associated processes involved in ensuring data protection in Y.trust-pdm	Q16/13

- This contribution presents detailed explanations for associated processes involved in ensuring data protection based on data protection requirements in order to identify prospective technologies in personal data management in Y.trust-pdm.

C-658	KAIST	Proposal on prospective technologies in personal data management in Appendix III of Y.trust-pdm	Q16/13

- This contribution presents an updated table for associated processes to ensure data protection requirements in order to identify prospective technologies in personal data management in Appendix III of Y.trust-pdm.

Meeting Result

– From C-625, the proposed text for functional requirements were added in Clause 7, and the proposed text and figure for a use case were added in a new Appendix.

– From C-626, the proposed text and figure for a framework architecture were added in Clause 8. The meeting discussed a role and position of the "trust based personal data management platform" in a personal data ecosystem. The meeting discussed several issues for identifying stakeholders (e.g., data providers, data consumers, etc.) and decided to invite relevant contributions regarding stakeholders in personal data ecosystem.

– From C657, the proposed text was added in Appendix III. The meeting discussed about how to utilize the proposed text for developing requirements for personal data management. Based on the discussion, the meeting decided to add new clause before the clause 7 "Requirements" for identifying key issues in data management process in personal data management perspectives and to invite relevant contributions.

– From C-658, the proposed text and tables were updated in Appendix III. The meeting discussed the title and contents of Appendix III since the proposed text based on the GDPR from European Union. The meeting decided to revise the title of Appendix III by explicitly mentioning "GDPR" to avoid any mis-understanding related to data protection requirements.

4.7 Y.SNS-trust (Trust in Social Networking Services)

Base document: TD 197/WP3

C-655R1	ETRI, KAIST	Proposal for architectural models for social media trust in Y.SNS-trust ("Framework for Evaluation of Trust and Quality of Media in Social Networking Services")	Q16/13

- This contribution presents architectural models for social media trust in order to support evaluation of trust and quality of media in social networking services environments. We propose to include the proposed text and figures in Clause 9 of draft Recommendation Y.SNS-trust ("Framework for Evaluation of Trust and Quality of Media in Social Networking Services").

Meeting Result

– The proposed text was added in Clauses 9 without any modifications.

4.8 New work items

Trusted electricity brokerage

C-614	ETRI	New: initiating a new work item on trusted electricity brokerage for distributed energy resources	Q16/13

- This contribution proposes to initiate a new work items on trusted electricity brokerage for distributed energy resources.

C-615	ETRI	New: An initial version of Y.energy-brokerage "Framework of trusted electricity brokerage for distributed energy resources"	Q16/13

- This contribution provides a baseline text of a new draft Recommendation Y.energy-brokerage, “Framework of trusted electricity brokerage for distributed energy resources”.

Meeting Result

– From C-614 and C-615, the meeting reviewed the proposal and agreed to adopt it as a new work item.

– The meeting has agreed to start the development of a new Draft Recommendation on framework of trusted electricity brokerage for distributed energy resources. (See Annex C for A.1 Justification)

Personally Identifiable Information (PII) de-Identification

C-642R1	KAIST	New: proposal for initiating new work item "Personally Identifiable Information Prioritization based De-Identification method"	Q16/13

- This contribution proposes to initiate new work item “Personally Identifiable Information Prioritization based De-Identification method”.

C-643R1	KAIST	Issues of Personally Identifiable Information De-Identification Technique	Q16/13

- Based on the living list item (TD199/WP3) item related to Personally Identifiable Information (PII) de-Identification method, this contribution analyses the scopes, issues and challenges of various frequently used de-identification techniques.

Meeting Result

– From C-642R1, based on the meeting discussion and several offline drafting sessions, the meeting decided to propose this initial draft Recommendation titled “Prioritization based De-Identification methods for Personally Identifiable Information” (Y.PII-Did) as a new work item to the plenary meeting. (See Annex D for A.1 Justification)

– From C-643R1, this meeting decided to add proposed texts as a new Appendix of this initial draft Recommendation.

QKDN-Key Management

C-628	NICT, NEC, Toshiba	Proposed new Recommendation ITU-T Y. QKDN_KM "Key management for Quantum Key Distribution network"	Q16/13

- This contribution proposes a new work item on key management for Quantum Key Distribution.

Meeting Result

– From C-628, the meeting reviewed the proposal and agreed to adopt it as a new work item.

– The meeting has agreed to start the development of a new Draft Recommendation on Key management for Quantum Key Distribution network. (See Annex A for A.1 Justification)

Trustful access to IoT Devices and Data

C-650	India, Ministry of Communications	Providing Trustful access to IoT Devices and Data with a ETSI GBA type Network Authentication Function and Secure Element Services	Q16/13

- This contribution relates to the enablement of Secure Authentication of IoT Devices and end to end Encryption of Data generated from the low power, low compute capability within the IoT Devices, by re-using the Generic Bootstrap Function as specified by ETSI for the Network Layer, together with the encryption services from the secure element of the SIM, to allow for a greater proliferation and adoption by the larger industry, especially the Machine to Machine Service Providers.

Meeting Result

– The meeting reviewed the proposal and gave many chances to improve the proposal for initiating a new work item. However, there was no enough time to significantly improve the whole text during the meeting.

– The meeting has agreed to accept the proposal as a living list for inviting relevant contributions in the next meeting in order to start a new work on this topic.

4.9 Incoming liaisons, and others

Other contributions

QALL/13

C-662	Russian Federation, Rostelecom	The proposal for establishing of the new SG13 Regional Group for Eastern Europe, Central Asia and Transcaucasia (SG13RG-EECAT)	QALL/13

– There was no discussion for the above document.

Incoming liaisons

Q16/13 and others

210-WP3	ITU-T SG17	LS/i on Work progress on quantum and QKD network in SG17 [from ITU-T SG17]	Q16/13
314-GEN	ISO/IEC JTC1/SC27/WG4	LS/i on Information Technology, Security Techniques, Security Controls and Services (topics 1-4-5 1090) [from ISO/IEC JTC1/SC27/WG4]	Q7/13, Q21/13, Q2/13, Q19/13, Q18/13, Q17/13, Q16/13
305-GEN	ITU-T SG12	LS/i on New Recommendation Y.cvms, "Considerations for Realizing Virtual Measurement Systems" [from ITU-T SG12]	Q6/13, Q21/13, Q2/13, Q19/13, Q17/13, Q16/13
291-GEN	JCA-IoT and SC&C	LS/i on "Request to update the IoT and SC&C Standards Roadmap and the list of contact points" [from JCA-IoT and SC&C]	Q6/13, Q5/13, Q23/13, Q21/13, Q2/13, Q16/13, Q1/13

Meeting Result

– The meeting has reviewed the above documents. It was a good chance to introduce several related activities of other groups.

– The meeting prepared an outgoing liaison statement for 210-WP3 from SG17 on quantum and QKD network. For other documents, there was no action. (See **TD 237/WP3**)

QALL/13

311-GEN	FG-DPM	LS/i on draft deliverables of ITU-T Focus Group on Data Processing and Management to support IoT and Smart Cities & Communities (from FG-DPM)	QALL/13
309-GEN	FG DLT	Ls/i on updated FG DLT terminology deliverable (from FG DLT)	QALL/13
308-GEN	FG-DPM	LS/r on updated FG DLT terms and definitions deliverable (from FG-DPM)	QALL/13

304-GEN	ITU-T SG15	LS/i on OTNT Standardization Work Plan [from ITU-T SG15]	QALL/13
303-GEN	TDAG	LS/i on Coordination with the other sectors [from TDAG]	QALL/13
302-GEN	ITU-T SG12	LS/i on Responsibility for the Y.1550-series (WTSA Resolution 2, Annex C) [from ITU-T SG12]	QALL/13
301-GEN	ITU-T SG 9	LS/r on matching of ITU-D SG1 and SG2 Questions of interest to ITU-T Study Groups (ITU-D SG 2-C102) [from ITU-T SG 9]	QALL/13
300-GEN	ITU-T SG9	LS/r on hot topics (reply to TSAG-LS10) [ITU-T SG9]	QALL/13
298-GEN	ITU-T SG9	LS/r on the new version of the Home Network Transport (HNT) Standards Overview and Work Plan (reply to SG15-LS141) [from ITU-T SG9]	QALL/13
297-GEN	ITU-T SG9	LS/r on ITU inter-Sector coordination (reply to TSAG-LS11) [from ITU-T SG9]	QALL/13
296-GEN	ITU-T SG9	LS/i/r on updated reference table of ITU-T Recommendations to be used for conformity and interoperability testing (reply to SG11-LS63) [from ITU-T SG9]	QALL/13
295-GEN	ITU-T SG9	LS/i on the amendment of Q9/9 ToR (from ITU-T SG9)	QALL/13
294-GEN	ITU-T SG9	LS/i on AAP consent of draft new Recommendation ITU-T J.1 (ex. J.tda) "Terms, definitions and acronyms for television and sound transmission and integrated broadband cable networks" [from ITU-T SG9]	QALL/13
293-GEN	ITU-D Study Group 1 and 2	LS/i/r on matching of ITU-D SG1 and SG2 Questions of interest to ITU-T Study Groups for inter-sectoral coordination purposes [from ITU-D Study Group 1 and 2]	QALL/13

159-PLEN	TSAG	LS/i on proposed ITU-T Focus Group on Quantum Information Technology for Networks (FG-QIT4N) [from TSAG]	QALL/13
154-PLEN	TSAG	LS/i on ITU inter-Sector coordination [from TSAG]	QALL/13
153-PLEN	TSAG	LS/i on streamlining Resolutions [from TSAG]	QALL/13
152-PLEN	TSAG	LS/i/r on hot topics (reply to SG13-LS69) [from TSAG]	QALL/13
151-PLEN	TSAG	LS/i/r on creation of new Questions 5/16 (Artificial intelligence-enabled multimedia applications) and 22/16 (Distributed ledger technologies and e-services) (reply to SG16-LS111) [from TSAG]	QALL/13
150-PLEN	TSAG	LS/i on creation, participation and termination of Regional Groups [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.

– The meeting prepared an outgoing liaison statement for 159-PLEN from TSAG on Focus Group on Quantum Information Technology for Networks (FG-QIT4N) (see **TD 238/WP3**). For other documents, there was no action.

Others

307-GEN	TSB	ITU Kaleidoscope 2018 - Papers of interest to ITU-T Study Group 13	QALL/13
290-GEN	Co-convenors of the SG13 ad hoc group	Report of the ninth meeting of the SG13 ad hoc group on "Guidelines for development of technical Recommendations" (Geneva, 24 October 2018)	QALL/13
289-GEN	Co-editors of the SG13 ad hoc group	Output of the ad-hoc group meeting on drafting guidelines and methodologies for developing technical Recommendations (Geneva, Wednesday 24 October 2018)	QALL/13
156-PLEN	FGML5G	FG ML5G progress report	QALL/13
155-PLEN	FG NET2030 Chairman	FG NET2030 progress report	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.

QALL/13

283-GEN	ITU-R WP 5D	LS/i/r on Establishment of new Focus Group on Network Technologies for 2030 and beyond (FG NET-2030) (reply to SG13-LS66) [from ITU-R WP 5D]	QALL/13
278-GEN	ITU-T SG5	LS/r on hot topics (reply to TSAG - LS10-E) [from ITU-T SG5]	QALL/13
277-GEN	ITU-T SG5	LS/r on ITU inter-Sector coordination: ITU-R Working Parties 5A, 5B, and 5C versus ITU-T Questions (reply to ITU-R SG5 - Document 5C/TEMP/146 (Rev.1)) [from ITU-SG5]	QALL/13
272-GEN	ITU-T SG5	LS/i/r on Definition of broadband access (reply to SCV - LS 15 -E) [from ITU-T SG5]	QALL/13
270-GEN	FG DPM	LS/i/r on invitation to review Big data Standardization Roadmap and provide missing or update information (reply to SG13-LS72) [from FG-DPM]	QALL/13
268-GEN	ITU-T SG16	LS/i on Establishment of new ITU-T Focus Group on vehicular multimedia (FG-VM) and its first meeting [from ITU-T SG16]	QALL/13
267-GEN	ITU-T SG16	LS/i on Establishment of new ITU-T Focus Group on artificial intelligence for health (FG AI4H) [from ITU-T SG16]	QALL/13
266-GEN	ITU-T SG16	LS/i on creation of new Questions 5/16 (Artificial intelligence-enabled multimedia applications) and 22/16 (Distributed ledger technologies and e-services) [from ITU-T SG16]	QALL/13
265-GEN	ITU-T SG11	LS/i on reference table to be used for Conformance and Interoperability testing [from ITU-T SG11]	QALL/13
264-GEN	ITU-T SG11	LS/r on appointment of ITU technical experts (reply to SG2 - LS36) [from ITU-T SG11]	QALL/13
263-GEN	OMA	LS/i on LwM2M v1.1 Release Approval [from OMA]	QALL/13
262-GEN	IEEE 802.3 Working Group1	LS/i on Ethernet Bandwidth Assessment [from IEEE 802.3 Working Group1]	QALL/13

Meeting Result

– There was no discussion for the above documents.

5. Work programme

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

– Y.QKDN_Arch "Functional architecture of the Quantum Key Distribution network"

– Y.QKDN_KM "Key management for Quantum Key Distribution network"

– Y.PII-Did "Prioritization based De-Identification Methods for Personally Identifiable Information"

– Y.energy-brokerage "Framework of trusted electricity brokerage for distributed energy resources"

NOTE - A.1 justifications for new recommendations related to these work items are attached in Annexes.

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)	Medium	Oct. 2019	TD 194/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	Oct. 2019	TD 162/WP3
ITU-T Y.STR	Socio-technical recommendations for contributing to socio-economic awareness (New)	Viliam Sarian (sarian@niir.ru)	Medium	Oct. 2019	TD 164/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	Oct. 2019	TD 195/WP3
ITU-T Y.QKDN_FR	Framework for Networks to supporting Quantum Key Distribution (New.)	Hyungsoo KIM, KT corp., hans9@kt.com	Medium	Jun. 2019	TD 229/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	Oct. 2019	TD 231/WP3

Acronym	Title	Editor	Priority	Consent / Approval	Reference
ITU-T Y.trust-pdm	Framework for Trust based Personal Data Management Platform (New.)	Hyeontaek Oh, KAIST, hyeontaek@kaist.ac.kr Nakyoung Kim, KAIST, nkim71@kaist.ac.kr Jinhong Yang, Inje University/KAIST, sunupnet@kaist.ac.kr	Low	Nov. 2020	TD 230/WP3
ITU-T Y.QKDN_Arch	Functional architecture of the Quantum Key Distribution network (New.)	Zhangchao Ma, CAS Quantum Network Co., Ltd., mazhangchao@casquantumnet.com Kaoru Kenyoshi, NICT, kaoru.kenyoshi@nict.go.jp Hyungsoo Kim, KT corp., hans9@kt.com Daejoon Cha, SKT, Republic of Korea	Medium	Sep. 2020	TD 233/WP3
ITU-T Y.QKDN_KM	Key management for Quantum Key Distribution network (New.)	Kaoru Kenyoshi, NICT, kaoru.kenyoshi@nict.go.jp Hyungsoo Kim, KT corp., hans9@kt.com Zhangchao Ma, CAS Quantum Network Co., Ltd., mazhangchao@casquantumnet.com Daejoon Cha, SKT, Republic of Korea	Medium	Sep. 2020	TD 232/WP3
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	Low	Dec. 2020	TD 235/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 234/WP3

In this meeting, the following living list item has been adopted.

– Open Bootstrap Framework enabling trustful devices, applications and services for distributed diverse ecosystems (**TD 236/WP3**)

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

– Trust framework of trustworthy device selection for data transmission (**TD 479 (WP3/13)**);

– Trust based ICT service and business models (**TD 480 (WP3/13)**).

However, there were no relevant contributions the above existing living lists in this meeting.

6. Future meetings

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

Dates	Place	Host	Q	Objectives
2 or 3 days in mid of May (TBD)	Tokyo	NICT	16/13	– Q16/13 will deal with Y.QKDN_FR, Y.QKDN_Arch and Y.QKDN_KM
17 – 28 June 2019	Geneva	ITU-T	16/13	– Q16/13 will deal with 11 draft recommendations (Y.dv-ess, Y.trust-index, Y.STR, Y.trust-arch, Y.SNS-trust, Y.trust-pdm, Y.QKDN_FR, Y.QKDN_Arch, Y.QKDN_KM, Y.PII-Did, Y.energy-brokerage), 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.1 justification for proposed draft new Recommendation: Y.QKDN_KM

Question:	16/13	**Proposed new ITU-T Recommendation**	Victoria falls, 4 - 15 March 2019	
Reference and title:	Recommendation ITU-T Y.QKDN_KM "Key management for Quantum Key Distribution network"			
Base text:	TD232/WP3 Annex II		**Timing:**	2020-09
Editor(s):	Kaoru Kenyoshi, NICT, Japan Hyungsoo Kim, KT corp., Republic of Korea Zhangchao Ma, CAS Quantum Network Co., Ltd., China Daejoon Cha, SKT, Republic of Korea		**Approval process:**	AAP

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

This Recommendation describes key management for Quantum Key Distribution (QKD) network which addresses technical specifications to help the implementation and operation.

In particular, the scope of this draft Recommendation includes:
- Requirements of key management
- Functional elements of key management
- Procedures of key management
- Key formats (key data and meta-data)

This document refers the overall structure and basic architecture of QKD network which are defined in the Y.QKDN_FR.

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

Since 2008, ETSI has been working in its Industry Specification Group on QKD (ISG-QKD), producing documents on components, internal interfaces, and implementation security of QKD systems as well as use cases and ontology of QKD technologies. In 2017, ISO/IEC JTC1 SC27 WG3 began a study period on security requirements, test and evaluation methods for QKD systems. However, both of them have not covered network aspects of QKD, leaving the issues of the interoperability for QKD systems, key management in a QKD network, and network security is still left open for consideration.

In July 2018, ITU-T SG13 agreed to study network framework for supporting QKD, starting to edit Draft Recommendation, specifically focusing on framework to implement QKD technologies on conventional networks in terms of opened and standardized technologies. In January 2019, ITU-T SG17 has started to work on Draft Recommendation X.sec_QKDN_km "Security Requirements for QKD Networks - Key Management". Currently liaison between SG13 and SG17 is under way.

One of most important issues on QKD network security is key management, namely, storing keys generated by QKD systems, relaying keys between the nodes of the QKD network, and supplying keys to cryptographic applications upon requests from users, all in secure manners. This issue of key management is at the core of realizing the interoperability for QKD systems, ensuring network security, and widening applications of QKD.

The objective of this Recommendation is to provide the help for design, deployment, and operation of key management of QKD network. In this Recommendation, overall structure and basic architecture of QKD network is first reviewed, and then requirements, functional elements and procedures of key management are described.

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

ITU-T SG13 Y.QKDN_FR "Framework for Networks to support Quantum Key Distribution"
ITU-T SG17 X.sec_QKDN_km "Security Requirements for QKD Networks - Key Management"
ISO/IEC JTC1 SC27 WG3, ETSI ISG QKD,

Liaisons with other study groups or with other standards bodies:

ITU-T SG11 SG15 SG17, ISO/IEC JTC1 SC27 WG3, ETSI ISG QKD

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

NICT, NEC, Toshiba, CAS Quantum Network, KT, SKT, QuantumCtek

Annex B:
A.1 justification for proposed draft new Recommendation: Y.QKDN_Arch

Question:	16/13	**Proposed new ITU-T Recommendation**	Victoria Falls, 4-14 March 2019	
Reference and title:	Recommendation ITU-T Y.QKDN_Arch "Functional architecture of the Quantum Key Distribution network"			
Base text:	TD233/WP3 Annex II		**Timing:**	2020-09
Editor(s):	Zhangchao Ma, CAS Quantum Network Co., Ltd., China Kaoru Kenyoshi, NICT, Japan Hyungsoo Kim, KT corp., Republic of Korea Daejoon Cha, SKT, Republic of Korea		**Approval process:**	AAP

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

This Recommendation provides functional architectures of the Quantum Key Distribution (QKD) network. Following the reference model, the associated functional elements, reference points, a deployment model, procedures of the QKD network are then specified.

In particular, the scope of this draft Recommendation includes:

- The reference model
- Functional elements and reference points
- Deployment model
- Overall operational procedures

NOTE – This Recommendation addresses the architecture of the QKD network based on the general structure defined in [ITU-T Y.QKDN_FR] as a foundation for further QKD network studies.

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

QKD network technologies have been matured for practical use in existing communications and security infrastructures. Standardization activities on QKD network related issues have started in ITU-T SG13 and SG17, focusing on network framework and security requirements, respectively.

In ITU-T Y.QKDN_FR, the key features of the QKD network, architectural design considerations and a general structure of the QKD network are provided..

This recommendation provides functional architectures of the QKD network. It specifies the reference model, detailed functional elements and interfaces, a deployment model and procedures of the QKD network.

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

ITU-T SG13 Y.QKDN_FR "Framework for Networks to support Quantum Key Distribution"
ITU-T SG17 X.sec_QKDN_ "Security Requirements for QKD Networks - overview"
ITU-T SG17 X.sec_QKDN_km "Security Requirements for QKD Networks - Key Management"
ISO/IEC JTC1 SC27 WG3, ETSI ISG QKD

Liaisons with other study groups or with other standards bodies:

ITU-T SG17, SG15, SG11, ISO/IEC JTC1 SC27 WG3, ETSI ISG QKD

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

CAS Quantum Network, QuantumCtek, NICT, KT, SKT, China Unicom

Annex C:
A.1 justification for proposed draft new Recommendation: Y.energy-brokerage

Question:	16/13	**Proposed new ITU-T Recommendation**	Geneva, 4 - 14 March 2019	
Reference and title:	Recommendation ITU-T Y.energy-brokerage "Framework of trusted electricity brokerage for distributed energy resources"			
Base text:	TD234/WP3		**Timing:**	2021-09
Editor(s):	Taein Hwang, ETRI, tihwang@etri.re.kr Il Woo Lee, ETRI, ilwoo@etri.re.kr		**Approval process:**	AAP

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

Due to the rapid spread of distributed energy resources, trusted intermediary trading (i.e., brokerage) of surplus electricity for energy prosumers in electricity markets is very essential to support transparency of brokerage transactions in the trading process. Thus, this Recommendation provides a framework of trusted electricity brokerage for distributed energy resources with the blockchain technology for trust provisioning in electricity markets.

Therefore, this draft Recommendation covers the followings:

- Key characteristics, core technologies and service scenarios for electricity brokerage;
- Necessity of the blockchain technology to ensure trust in the trading process;
- Requirements for trusted electricity brokerage in trustless environments;
- Architecture overview specifying related interfaces and functional blocks;
- Mechanisms and service operations for the blockchain enabled trusted electricity brokerage.

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

Due to the rapid spread of distributed energy resources, the demand for intermediary trading (i.e., brokerage) of surplus electricity for energy prosumers in electricity markets is significantly increasing. To support transparency of brokerage transactions in the trading process, various technologies such as blockchain can be applied to applications that require mutual trust between users in a trustless environment. Thus, this draft Recommendation provides a framework of trusted electricity brokerage for distributed energy resources taking into account the blockchain technology for trust provisioning in electricity markets. After introducing key characteristics, core technologies and service scenarios for trusted electricity brokerage as well as the necessity of the blockchain technology to ensure trust, this draft Recommendation mainly presents requirements, architecture overview specifying related interfaces and functional blocks, and detailed mechanisms and service operations for the blockchain enabled trusted electricity brokerage.

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

ITU-T SG13 Y.2070, Y.2071, Y.2072, Y.dv-ess (work in progress)

Liaisons with other study groups or with other standards bodies:

FG-DLT

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

ETRI, KAIST

Annex D:
A.1 justification for proposed draft new Recommendation: Y.PII-Did

Question:	16/13	**Proposed new ITU-T Recommendation**	Victoria Falls, Zimbabwe, 4-14 March 2019	
Reference and title:	ITU-T Y.PII-Did " Prioritization based De-Identification Methods for Personally Identifiable Information"			
Base text:	TD235/WP3		**Timing:**	2020-12
Editor(s):	Jinhong Yang, KAIST, sunupnet@kaist.ac.kr Md Mehedi Hassan Onik, KAIST, hassan@oasis.inje.ac.kr Chul-Soo Kim, ETRI, charles@inje.ac.kr		**Approval process:**	AAP

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

Many de-identification methods are already in practice. Both forms of PII and breaching rate are growing; therefore, the importance of de-identification methods is also increasing. To prevent any privacy violation by misusing of PII, many de-identification methods are applied for the specific PII at the same time, which costs many ICT resources due to its inefficiency. Therefore, this draft Recommendation provides mechanisms for selecting appropriate de-identification methods based on the properties/characteristics of PII by classification/categorization/prioritization. More specifically, this draft Recommendation covers the following:

– Issues of existing de-identification methods considering PII;
– The necessity and considerations of efficiently and effectively selecting de-identification methods;
– Classification/categorization/prioritization de-identification methods;
– Mechanisms for selecting appropriate de-identification methods based on the properties/characteristics of PII.

NOTE 1 – Any techniques (e.g., anonymization), which makes PII fully un-recoverable, are out of scope for this draft Recommendation. Developing a de-identification technique itself is also out of scope for this draft Recommendation.

NOTE 2 – In this draft Recommendation, some capabilities and applications may be related to regulation in some countries. In this case, non-functional aspects related to regulation are out of scope.

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

Personally identifiable information (PII) is highly sensitive information that is used to identify an individual's identity. To avoid any privacy infringement, de-identification methods remove, encode, and alter PII; so that, PII is no more predictable, assessable and identifiable. Therefore, de-identification of PII is an essential procedure to satisfy various privacy requirements. At the same time, it is very problematic to assess and apply existing de-identification methods to a specific PII. Therefore, it is needed to prioritize de-identification methods based on the characteristics of PII to enable efficient use of existing de-identification methods.

Therefore, this draft Recommendation provides mechanisms to prioritize de-identification methods based on the characteristics of PII, which can efficiently and effectively select de-identification methods for PII. First, it describes issues of existing de-identification methods and the necessity and considerations for prioritization based de-identification methods. After classifying categories of de-identification methods by analysing characteristics of PII including the risk factors of re-identifiability, mechanisms for prioritization based de-identification methods are described. In addition, use cases are provided as informative appendix.

NOTE 1 – Any techniques (e.g., anonymization), which makes PII fully un-recoverable, are out of scope for this draft Recommendation. Developing a de-identification technique itself is also out of scope for this draft Recommendation.

NOTE 2 – In this draft Recommendation, some capabilities and applications may be related to regulation in some countries. In this case, non-functional aspects related to regulation are out of scope.

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

ITU-T X.sup-gpim, ITU-T Y.trust-pdm, ITU-T X.iotsec-3, ITU-T X.fdip, ISO/IEC 20889

Liaisons with other study groups or with other standards bodies:

ITU-T SG17, ISO/IEC JTC 1/SC 27

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

KAIST, ETRI

Annex E:
Summary of Q16/13 meeting activities

Date	Morning		Afternoon	
4 Mar(Mon)	SG PLEN	SG PLEN	WP3 PLEN	Introduction, Y.QKDN_FR[R]
5 Mar(Tue)	Y.QKDN_FR[R] (09:00~)	Y.QKDN_FR[R]	Y.QKDN_FR[R]	Y.QKDN_FR[R]
6 Mar(Wed)	-	-	New work item (Trusted electricity brokerage)	-
7 Mar(Thu)	Y.trust-pdm	Y.trust-pdm	New work item (PII de-Identification)	Y.SNS-trust
8 Mar(Fri)	New work item[R] (QKDN-Key Management) (09:00~)	New work item[R] (QKDN-Key Management)	New work item (Trustful access to IoT Devices and Data) [R] QKDN [R] (14:00~)	QKDN [R]
11 Mar(Mon)	SG PLEN	New work item (PII de-Identification)	Drafting Review (Y.QKDN_FR) [R]	Drafting Review (New work items on QKD) [R] , oLSs on QKD [R]
12 Mar(Tue)	Drafting Review (Trustful access to IoT Devices and Data) [R] (09:00~)	Drafting Review	Liaisons	Meeting report review
13 Mar(Wed)	WP3 PLEN	WP2 PLEN	WP2 PLEN	WP1 PLEN
14 Mar(Thu)	SG PLEN	SG PLEN	SG PLEN	SG PLEN
NOTE - iftp site: http://ifa.itu.int/t/2017/sg13/exchange/wp3/q16/201903/ [R] - Remote participation – https://www.itu.int/myworkspace/home/index/remote_participation				

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