|  |  |  |
| --- | --- | --- |
| ITU logo | INTERNATIONAL TELECOMMUNICATION UNION**TELECOMMUNICATIONSTANDARDIZATION SECTOR**STUDY PERIOD 2017-2020 | **TSAG-TD398** |
| **TSAG** |
| **Original: English** |
| **Question(s):** | N/A | Geneva, 10 -14 December 2018 |
| **TD** |
| **Source:** | Rapporteur, RG-StdsStrat |
| **Title:** | Proposed actions for RG-StdsStrat |
| **Purpose:** | Action |
| **Contact:** | Stephen HayesRapporteur RG-StdsStrat | Tel: +1 469 360 8500E-mail: stephen.hayes@ericsson.com |

|  |  |
| --- | --- |
| **Keywords:** | TSAG Rapporteur Group; Standardization Strategy; |
| **Abstract:** | This TD condenses the discussions of the RG-StdsStrat group since the February 2018 TSAG meeting and summarizes the proposed recommendations of the group. |

**Action**: TSAG to take into account the discussions that occurred in the RG-StdsStrat.

**1 RG-StdsStrat Organization**

RG-StdsStrat was created to give strategic advice to TSAG based on input such as the CTO meetings and member feedback. The terms of reference can be found in [Annex A](#_Annex_A_TSAG).1 of TD122/TSAG.

The appointed management team consists of a set of co-rapporteurs, one of whom is appointed as the chair for the duration of a TSAG cycle. The current set if co-rapporteurs are:

Co-Rapporteur:

Mr Yoichi Maeda, Japan

Ms Judy Zhu, Alibaba Group, China (P.R)

Mr Didier Berthoumieux, Nokia Corporation, Finland

Ms Rim Belhassine-Cherif, Tunisie Telecom, Tunisia

Mr Vasily Dolmatov, Russian Federation

Mr Stephen Hayes, Ericsson Canada

Mr David Ward, Cisco, USA

Latin America (TBD)

Stephen Hayes was appointed the chair at TSAG#2 and a new chair will be appointed at TSAG#3.

**2 Meetings of RG-StdsStrat**

RG-StdsStrat held 3 e-meetings between TSAG#2 and TSAG#3:

June 29, 2018

September 28, 2018

November 30, 2018

During those meetings, the RG-SS processed the output of the CTO meetings held on May 9th and September 9th. In addition, TSAG had sent a LS to the study groups from the last TSAG meeting requesting their views on coverage of a list of hot topics. RG-StdsStrat analysed the responses that were received.

**3 Recommended Handling of input from the CTO Meeting**

The communiqué from the May 9th CTO advisory meetings can be found [here](https://www.itu.int/en/ITU-T/tsbdir/cto/Documents/Communique_CTO_.pdf).

1. Interim Security, privacy and trust in the presence of AI and ML: AI and ML can be used to improve security, but also carries risks for privacy and novel attacks which exploit machine learning vulnerabilities.

***Recommendation from RG-StdsStrat: Ensure that SG17 accepts that this area is within their remit. The contributors may also want to bring up these topics within FG-ML5G.***

2. Shifting to end-to-end security with 5G: With networks becoming more complex, there may be a role for digital service providers to play a bigger role in providing end to end security services to users.

***Recommendation from RG-StdsStrat: It is unclear what standards impacts this has, but if it is to be standardized, it should be in SG17. Since 5G is mentioned, SG15 and JCA-IMT2020 should be informed, but the responsibility should be in SG17.* *It is also recommended that SG2 should also be tasked with addressing the need to define the role of digital service providers.***

3. Voice as a dominant human-machine interface: Voice (Conversational) UIs are emerging as a primary man machine interface. What are the standards implications?

***Recommendation from RG-StdsStrat*: *This is to a large extent more of an application issue than a network issue. Historically ITU has not dealt much with man-machine interfaces, but this has enough implications that some guidance may be needed. It was recognized that several study groups are tackling issues on human-machine interface. No recommendation to TSAG can be provided.***

4. ITU leadership in cloud-optimized and 5G transport: For the 5G vision to be recognized, slicing must be extended beyond just 3GPP accesses and the 3GPP packet domain.

***Recommendation from RG-StdsStrat*: *This should be addressed to SG15 (transport aspects) and JCA-IMT2020 (Coordination).***

The communiqué from the September 9th CTO advisory meeting can be found [here](https://www.itu.int/en/ITU-T/tsbdir/cto/Documents/CTO_Communique_SA_Final%282%29.doc).

5. Application Security and Quantum-Safe Cryptography: Several issues were raised including the need for a framework for application trust, the need for quantum safe communications, and end to end security.

***Recommendation from RG-StdsStrat*: *It was reported that ISO/IEC JTC 1 SC27/WG2 has expertise on cryptographic algorithms and quantum safe cryptography. Concerns were indicated that SG17 may not be the proper place for handling cryptographic algorithms and quantum safe communication due to lack of expertise. Quantum key distribution is under discussion in SG17, while ETSI TC Cyber is working on it too. However, SG17 recently established two new work items X.qrng-a “Quantum noise random number generator architecture”, and TR.sec-qkd “Technical report on security framework for quantum key distribution in telecom network”. It was also reported that SG13 has a work item on Y.QKDN\_FR “Framework for Networks to supporting Quantum Key Distribution”.***

***It was concluded that application security and quantum key distribution be studied further in SG17.***

6. Policy and Regulatory Support for IMT-2020: New ICT use cases are expected to emerge in the years following 2020 as 5G systems begin to see large-scale deployment. CTOs explored how policymakers and regulators could support the emergence of an enabling environment for sustainable investment in 5G infrastructure. Emphasis was placed on the need to remove impediments to small-cell deployment, an issue highly relevant to regulators in developing countries.

***Recommendation from RG-StdsStrat: This is primarily a policy issue and should be addressed by SG3.***

7. Network2030: The immersive and full sensory experience of future applications was highlighted as well as the extreme network requirements they would likely mandate.

***Recommendation from RG-StdsStrat: This is being addressed by the Network 2030 focus group. As work progresses if there are strategic issues where there is no clear industry coverage, then RG-StdsStrat can assess these areas.***

8. IoT and Smart Cities: To ensure sustainable smart cities, aspects of data access such as application interoperability and exchange, privacy, and edge computing must be considered.

***Recommendation from RG-StdsStrat: This should primarily be addressed by SG20 although it was noted that SG17 has a role to play on security.***

**4 Hot Topic Recommendations**

At TSAG#2 a LS was sent to the study groups asking for their feedback on a list of hot topics as well as any omissions or problem areas they saw. RG-StdsStrat has analysed the responses. In general the study groups seem to be coordinating well, however several new hot topics were raised.

RG-StdsStrat is maintaining a list of hot topics based upon the original LS of hot topics. That table can be found in TD393. The table also indicates which study groups are working on the topics. [NBT was the acronym used in the SG17 response for Next Big Thing.]

* NBT01 “Artificial Intelligence”:

***RG-StdsStrat felt that AI is broader the conversational voice AI application as flagged by the USA CTO group meeting in 2018. It was suggested that it is necessary to have a definition of AI and narrow-down the strategic area, as AI is much more than just communication. It was agreed that SG17 continues the discussions on AI for security solutions. It was agreed to add a bullet on the usage of AI in security management solutions in the hot topics table under (3) ‘Intelligence for network automation, augmentation and amplification’.***

* NBT02 “Interoperable Quantum safe communications/Quantum Resistance”:

***RG-StdsStrat recognized this as a new hot topic and agreed to add a new entry to the hot topics table.***

* NBT03 “Digital Humanities”:

***RG-StdsStrat recognized this as a new hot topic and agreed to add a new entry to the hot topics table. Privacy in digital humanities might be an issue.***

* NBT04 “Robotics”:

***RG-StdsStrat did not see this as a new hot topic, but felt that robotics need to be considered further. Robotics was considered to be part of the broader subject of IoT security.***

* NBT05 “Cyber Insurance”:

***RG-StdsStrat considered this as a very specific policy issue which SG17 can well study, but the meeting did not see cyber insurance as a hot topic.***

* NBT06 “Big Data”:

RG-StdsStrat recognized this as a new hot topic and agreed to add a new entry on big ***data security to the hot topics table.***

* NBT07 “Cybersecurity Services”:

***RG-StdsStrat considered cybersecurity services as a specialized topic for SG17, and agreed to add cybersecurity services as new hot topic to the hot topics table.***

* NBT08 “SDN/NFV”:

***RG-StdsStrat did not see SDN/NFV as a new hot topic; as SDN/NFV was deemed to be part of 5G.***

* NBT09 “EDRs”:

***RG-StdsStrat did not see EDRs as a new hot topic.***

* NBT10 “5G Security”

***RG-StdsStrat ageed to add this to the table of hot topics.***

* NBT11 “Platforms”

***RG-StdsStrat ageed to add this to the table of hot topics.***

* NBT12 “IoT”

***RG-StdsStrat ageed to add this to the table of hot topics.***

* NBT13 “Application security”:

***RG-StdsStrat ageed to add this to the table of hot topics.***

* Environmental efficiency of emerging technologies

***RG-StdsStrat ageed to add this to the table of hot topics and noted that SG5 has started a focus group on the topic***

Note that the response from SG15 has not yet been processed by RG-StdsStrat.

**5. Contributions**

No contributions to RG-StdsStrat were received prior to the TSAG#3 meeting.

**6. Conclusions**

TSAG is invited to take into account these recommendations.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_