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| ITU logo | INTERNATIONAL TELECOMMUNICATION UNION**TELECOMMUNICATIONSTANDARDIZATION SECTOR**STUDY PERIOD 2017-2020 | TSAG-TD985 |
| **STUDY GROUP 20** |
| **Original: English** |
| **Question(s):** | N/A | E-Meeting, 11-18 January 2021 |
| **LIAISON STATEMENT** |
| **Source:** | ITU-T Study Group 20 |
| **Title:** | LS on the action plan for implementation of the WTSA Resolution 78 (Rev. Hammamet, 2016) and Resolution 98 (Hammamet, 2016) (ICTs for e-health services; IoT and smart cities and communities for global development) [from ITU-T SG20] |
| **Purpose:** | Information |
| **LIAISON STATEMENT** |
| **For action to:** | - |
| **For comment to:** | - |
| **For information to:** | TSAG |
| **Approval:** | ITU-T Study Group 20 management team (14 December 2020 by correspondence) |
| **Deadline:** | N/A |
| **Contact:** | Nasser Saleh Al MarzouqiITU-T SG20 Chairman | Tel: +97 6118 468Fax: +97 6118 484E-mail: nasser.almarzouqi@tra.gov.ae  |

A new liaison statement has been received from SG20.

This liaison statement follows and the original file can be downloaded from the ITU ftp server at <http://handle.itu.int/11.1002/ls/sp16-sg20-oLS-00194.docx>.

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| ITU logo | INTERNATIONAL TELECOMMUNICATION UNION**TELECOMMUNICATIONSTANDARDIZATION SECTOR**STUDY PERIOD 2017-2020 | SG20-LS194 |
| **STUDY GROUP 20** |
| **Original: English** |
| **Question(s):** | All/20 |  |
| **LIAISON STATEMENT** |
| **Source:** | ITU-T Study Group 20 |
| **Title:** | LS on the action plan for implementation of the WTSA Resolution 78 (Rev. Hammamet, 2016) and Resolution 98 (Hammamet, 2016) (ICTs for e-health services; IoT and smart cities and communities for global development) |
| **LIAISON STATEMENT** |
| **For action to:** | - |
| **For comment to:** | - |
| **For information to:** | TSAG |
| **Approval:** | ITU-T Study Group 20 management team (14 December 2020 by correspondence) |
| **Deadline:** | N/A |
| **Contact:** | Nasser Saleh Al MarzouqiChairman SG20 | Tel: +97 6118 468Fax: +97 6118 484E-mail: nasser.almarzouqi@tra.gov.ae  |

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| **Keywords:** | Action plan; ICTs, applications and standards, e-health, Internet of things (IoT), smart cities and communities (SC&C); |
| **Abstract:** | This liaison statement contains the action Plan for implementation of the WTSA Resolution 78 (Rev. Hammamet, 2016) and Resolution 98 (Hammamet, 2016) (ICTs for e-health services; IoT and smart cities and communities for global development). |

This document presents the latest version of the Action Plan for implementation of the WTSA Resolution 78 (Rev. Hammamet, 2016) and Resolution 98 (Hammamet, 2016), reflecting the actions in course and/or concluded by SG20 to implement the resolves and instructs of these Resolutions.

**ANNEX I**

**Action plan for implementation of WTSA Resolution 78 (Rev. Hammamet, 2016):
Information and communication technology applications and standards for improved access to e-health services**

| **ID** | **Directives** | **References (Res. 78)** | **Activities** | **Responsibilities(as identified in the Resolution)** | **Time plan** | **Status(November 2020)** |
| --- | --- | --- | --- | --- | --- | --- |
| **Level 1** | **Level 2** |
| **1** | **-** | **Identify and document best practice for e-health** | *instructs Study Groups 16 and 20...* (1) | Identify and document examples of best practice for e-health in the field of telecommunications/ICT, for dissemination among ITU Member States and Sector Members | ITU-T SG16 & SG20(in coordination with ITU-T study groups, particularly ITU-T SG11 and SG17) | Ongoing | Ongoing work include:* Work item Y.cnce-IoT-archs
* Work item Y.4908 (ex Y.IoT-EH-PFE)
* Work item Y.eHealth-Semantic
 |
| **2** | **2.1** | **Coordinate activities/studies relating to e-health, prioritizing security standards** | *instructs Study Groups 16 and 20...* (2) | Coordinate activities and studies relating to e-health among the relevant study groups, focus groups and other relevant groups, in order in particular to foster awareness of telecommunication/ICT standards pertaining to e-health | ITU-T SG16 & SG20(in collaboration with ITU-R, ITU-T and ITU-D study groups and focus groups) | Ongoing | * **SG20-LS28** - LS/r on “Performance evaluation frameworks of e-health systems in the IoT” (reply to SG16 - LS 237 and SG16 - LS 22)
* **SG16-LS112** - LS on Establishment of new ITU-T Focus Group on artificial intelligence for health (FG AI4H) [to TSAG, all ITU-T SGs; PCHA; JTC1/SC42]
* **SG16-LS22** - LS/r on ITU-T Y.IoT-EH-PFE "Performance evaluation frameworks of e-health systems in the IoT" (COM20-LS77) [to ITU-T SG20]
 |
| **2.2** | *instructs Study Groups 16 and 20...* (4) | Prioritize the study of security standards (e.g. for communications, services, network aspects and service scenarios for databases and record handling, identification, integrity and authentication) relating to e-health, taking into account *recognizing* d), | ITU-T SG16 & SG20(in coordination with ITU-T study groups, particularly ITU-T SG11 and SG17) | Ongoing | To be completed |
| **3** | **-** | **Ensure the broad deployment of e‑health services** | *instructs Study Groups 16 and 20...* (3) | Ensure the broad deployment of e‑health services in diverse operating conditions, to study communication protocols relating to e-health, especially among heterogeneous networks | ITU-T SG16 & SG20(in coordination with ITU-T study groups, particularly ITU-T SG11 and SG17) | Ongoing | To be completed |

**ANNEX II**

**Action plan for implementation of WTSA Resolution 98 (Hammamet, 2016):
Enhancing the standardization of Internet of things and smart cities and communities for global development**

| **ID** | **Directives** | **References (Res. 98)** | **Activities** | **Responsibilities(as identified in the Resolution)** | **Time plan** | **Status(November 2020)** |
| --- | --- | --- | --- | --- | --- | --- |
| **Level 1** | **Level 2** |
| **1** | **-** | **Develop ITU‑T Recommendations aimed at implementing IoT and SC&C** | *resolves to instruct Study Group 20...* (1) | Develop ITU‑T Recommendations aimed at implementing IoT and SC&C, including, but not limited to, on issues related to emerging technologies and vertical industries | ITU-T SG20 | 2017-2020 | Completed work includes the following Recommendations:* Y.4003
* Y.4051
* Y.4101/Y.2067
* Y.4114
* Y.4115
* Y.4116
* Y.4117
* Y.4118
* Y.4119
* Y.4120
* Y.4121
* Y.4200
* Y.4201
* Y.4202
* Y.4203
* Y.4204
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* Y.4208
* Y.4209
* Y.4210
* Y.4211
* Y.4415
* Y.4416
* Y.4417
* Y.4418
* Y.4455
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* Y.4464
* Y.4465
* Y.4466
* Y.4467
* Y.4468
* Y.4469
* Y.4470
* Y.4473
* Y.4474
* Y.4475
* Y.4500.1
* Y.4500.2
* Y.4500.4
* Y.4500.5
* Y.4500.6
* Y.4500.8
* Y.4500.9
* Y.4500.10
* Y.4500.11
* Y.4500.12
* Y.4500.13
* Y.4500.14
* Y.4500.15
* Y.4500.20
* Y.4500.22
* Y.4500.23
* Y.4500.32
* Y.4555
* Y.4556
* Y.4558
* Y.4560
* Y.4561
* Y.4805
* Y.4806
* Y.4807
* Y.4808
* Y.4904
* Y.4905
* Y.4906
* Y.4907

Supplements and technical reports:* Y.oneM2M.DG.AppDev
* Y.oneM2M.DG.CoAP
* Y.oneM2M.DG.DM
* Y.oneM2M.DG.SEM
* Y.oneM2M.Ind.DE
* Y.oneM2M.UCC
* Y.Sup.52 to ITU-T Y.4000-series
* Y.Sup.53 to Y.4000 series
* Y.Sup.54 to ITU-T Y.4000-series
* Y.Suppl.45 to ITU-T Y.4000 series
* Y.Suppl.56
* Y.Suppl.57 to ITU-T Y.4409
* Y.Suppl.58
* Y.Suppl.61
* Y.Suppl.62
* Y.Suppl.63
* Y.Suppl.32 to ITU-T Y.4000 series
* Y.Suppl.33 to ITU-T Y.4000 series
* Y.Suppl.34 to ITU-T Y.4000 series

All ongoing work items are available at: <https://www.itu.int/ITU-T/workprog/wp_search.aspx?sg=20>  |
| **2** | **-** | **Harmonize and coordinate international telecommunication standards for the development of IoT** | *resolves to instruct Study Group 20...* (2) | Work with a special focus on the design of a roadmap and harmonized and coordinated international telecommunication standards for the development of IoT, taking into account the needs of each region and fostering a competitive environment | ITU-T SG20[[for consideration by ITU-T SG20]] | Ongoing | Completed work includes:* Y.Suppl.58

Joint Coordination Activity on Internet of Things and Smart Cities and Communities (JCA-IoT and SC&C) meetings:* Virtual, 26 June 2020
* Geneva, 28 November 2019
* Geneva, 10 April 2019
* Wuxi, China, 6 December 2018
* Cairo, Egypt, 10 May 2018
* Geneva, 7 September 2017
* Dubai, 16 March 2017

More information on the JCA-IoT and SC&C available at: <https://www.itu.int/en/ITU-T/jca/iot/Pages/default.aspx>  |
| **3** | **-** | **Collaborate with IoT related standards organizations and other stakeholders** | *resolves to instruct Study Group 20...* (3) | Collaborate with IoT related standards organizations and other stakeholders such as industry forums and associations, consortia and SDOs, as well as other relevant ITU-T study groups, and to take into account relevant work | ITU-T SG20[[for consideration by ITU-T SG20]] | Ongoing | Collaboration with oneM2M completed work includes:* Y.4500.1
* Y.4500.2
* Y.4500.4
* Y.4500.5
* Y.4500.6
* Y.4500.8
* Y.4500.9
* Y.4500.10
* Y.4500.11
* Y.4500.12
* Y.4500.13
* Y.4500.14
* Y.4500.15
* Y.4500.20
* Y.4500.22
* Y.4500.23
* Y.4500.32
* Y.oneM2M.DG.AppDev
* Y.oneM2M.DG.CoAP
* Y.oneM2M.DG.DM
* Y.oneM2M.Ind.DE
* Y.oneM2M.DG.SEM
* Y.oneM2M.UCC

Joint IEC-ISO-ITU Smart Cities Task Force (J-SCTF)  |
| **4** | **-** | **Collate, evaluate, assess and share IoT use cases** | *resolves to instruct Study Group 20...* (3) | Collate, evaluate, assess and share IoT use cases from the interoperability and standardization standpoints for data and information exchange | ITU-T SG20 | Ongoing | Completed work includes:* Y.4200
* Y.4209
* Y.4805

Deliverables completed by the Focus Group on Data Processing and Management to support IoT and Smart Cities & Communities (FG-DPM) are available at: <https://www.itu.int/pub/T-FG-DPM> |
| **5** |  | **Provide assistance to promote quality standardization work in a timely manner, and promote participation in IoT and SC&C activities** | *Instructs the Director of the Telecommunication Standardization Bureau* (1) | Provide necessary assistance in order to take advantage of every opportunity, within the assigned budget, to promote quality standardization work in a timely manner, and to communicate with telecommunication and ICT industries in order to promote their participation in ITU T's standardization activities on iot and SC&C | Director TSB | Ongoing | The following events and actitivies have been organized:2020* Webinar on "Smart sustainable cities and frontier technologies in Latin America", Virtual session, 8 December 2020, 15h00 to 17h00, Geneva time
* Virtual forum on "Digital Transformation of Cities and Communities", Virtual session, 7 December 2020
* Webinar on "Accelerating cities' transformation through standards", 25 June 2020
* ITU Forum "Smart sustainable cities: from concept to implementation", 3-5 March 2020, Minsk, Belarus
* WUF10 Networking event on "Governing and managing smart sustainable cities", 10 February 2020, Abu Dhabi, UAE

2019* 5th ITU Workshop on Data Processing and Management for IoT and Smart Cities & Communities, 25 November 2019, Geneva
* World Cities Day - Session on "Smart and sustainable cities: Changing the world: innovations and better life for future generations", 31 October 2019 (15h00-16h30), New York, UNHQ
* 9th Green Standards Week: Training on Building Smarter and More Sustainable Cities, 4 October 2019, Valencia, Spain
* 9th Green Standards Week: Meeting of the Spanish Expert Committee on Smart Sustainable Cities (RECI), 3 October 2019, Valencia, Spain
* 9th Green Standards Week: València: Smart City, 2 October 2019, Valencia, Spain
* 9th Green Standards Week: Forum on "Smart Governance in Cities", 2 October 2019, Valencia, Spain
* 9th Green Standards Week: Leadership Panel on "Connecting Smart Sustainable Cities with the Sustainable Development Goals", 1 October 2019, Valencia, Spain
* Session on "Smart Sustainable Cities & Communities", 5 September 2019, Addis Ababa, Ethiopia
* 1st Digital African Week:
* ITU Forum on "Smart Sustainable Africa", 28 August 2019, Abuja, Nigeria
* 1st Digital African Week: Training on "Smart Sustainable Cities, Products and Services", 27 August 2019, Abuja, Nigeria
* Fourth ITU Workshop on Data Processing and Management for IoT and Smart Cities & Communities​, Geneva, 19 July 2019
* IoT Week, 11-21 June 2019, Aarhus, Denmark
* Thematic Workshop on En-gendering the smart city, 11 April 2019 (13h15 - 14h00), Room C2, ITU headquarters, Geneva, Switzerland
* Thematic Workshop on United for Smart Sustainable Cities: Blockchain for Cities, 11 April 2019 (09h00 - 10h45), Room K1, ITU headquarters, Geneva, Switzerland
* Vienna Cybersecurity Week - Session on Connecting Smart Sustainable Cities with the Sustainable Development Goals, 12 March 2019 (16h30 - 18h00), Vienna, Austria
* ITU Training on Key performance indicators for smart sustainable cities to achieve the SDGs, 27 February 2019 (11h30- 16h00), Minsk, Belarus
* ITU-UN-Habitat-UNDP Forum on Smart sustainable cities: technological trends, success stories and future prospects, 26-27 February 2019, Minsk, Belarus
* Third ITU Workshop on Data Processing and Management for IoT and Smart Cities & Communities, Bundang, Seoul Korea (Rep. of), 14 January 2019

2018* ITU Forum on Artificial Intelligence, Internet of Things and Smart Cities, 3 December 2018, Wuxi, China
* World Smart City Forum, 29 November 2018, Santa Fe, Argentina
* Second ITU Workshop on Data Processing and Management for IoT and Smart Cities & Communities, 17 September 2018, Tunis, Tunisia
* Shaping smarter and more sustainable cities: Striving for Sustainable Development Goals, 12 July 2018, New York, United States
* The 4th Asia-Pacific Regional Forum on Smart Sustainable Cities and e-Government 2018, 4-6 July 2018, Thanh Hoa city, Viet Nam
* IoT Week 2018, 4-7 June 2018, Bilbao, Spain
* ITU Regional Forum on “Internet of Things, Telecommunication Networks and Big Data as Basic Infrastructure for Digital Economy”, 4-6 June 2018 (AM only), St. Petersburg, Russian Federation
* Information Session on "Exploring the Role of Small Medium Enterprises (SMEs) in Linking AI and IoT in Smart Cities", 30 May 2018 (9:30 to 11:30 a.m.), Buenos Aires, Argentina
* 1st Forum on Artificial Intelligence and the Internet of Things in Smart Sustainable Cities in Latin America, 29-30 May 2018, Buenos Aires, Argentina
* Forum on Artificial Intelligence and Internet of Things in the development of Smart Sustainable Cities, 11 April 2018, Zanzibar, Tanzania
* Forum on Exploring the Potential of Artificial Intelligence and Internet of Things, 6 May 2018, Cairo, Egypt
* Bridging the Standardization Gap Session on Internet of Things (IoT), 6 May 2018, Cairo, Egypt
* 1st ITU Workshop on Data Processing and Management for IoT and Smart Cities & Communities, 19 February 2018, Brussels, Belgium

2017* World Smart City Forum, 15 November 2017, Barcelona, Spain
* IoT Week 2017, 6-9 June 2017, Geneva, Switzerland
* Workshop on Smart Sustainable Cities, 1-2 June 2017, Samarkand, Uzbekistan
* XVIII Ibero-American Meeting of Digital Cities, 3 April 2017, Manizales, Colombia
* Special session on Smart Sustainable Manizales, 4 April 2017 (14:00 - 15:00), Manizales, Colombia
* First Forum on "Data Management: Transforming Data Into Value", 12 March 2017, Dubai, UAE

Other events can be found at: <https://www.itu.int/en/ITU-T/climatechange/Pages/events.aspx> |
| **6** |  | **Carry out pilot projects facilitating the deployment and implementation of IoT and SC&C standards worldwide** | *instructs the Director of the Telecommunication Standardization Bureau* (2) | Carry out, in collaboration with Member States and cities, pilot projects in cities related to SC&C key performance indicator (KPI) assessment activities, aimed at facilitating the deployment and implementation of IoT and SC&C standards worldwide | Director TSB | Ongoing | United for Smart Sustainable Cities Key Performance Indicators based on Recommendation ITU-T Y.4903/L.1603 “Key performance indicators for smart sustainable cities to assess the achievement of sustainable development goals" are being implemented in over 100 cities worldwide.Case studies developed on U4SSC KPIs includes:* ​Implementing ITU-T International Standards to Shape Smart Sustainable Cities: The Case of Moscow​
* ​Implementing ITU-T International Standards to Shape Smart Sustainable Cities: The Case of Singapore
* ​Implementing ITU-T International Standards to Shape Smart Sustainable Cities: The Case of Dubai

City Snapshots developed on U4SSC KPIs includes:* Ålesund, Norway – Snapshot
* Bizerte, Tunisia – Snapshot
* Moscow, Russia – Snapshot
* Riyadh, Saudi Arabia – Snapshot
* Pully, Switzerland – Snapshot
* Valencia, Spain – Snapshot
* Trondheim, Norway – Snapshot
* Rana, Norway– Snapshot
* Molde, Norway – Snapshot
* Kristiansund, Norway – Snapshot
* Karmoy, Norway – Snapshot
* Haugesund, Norway – Snapshot
* Bodo, Norway – Snapshot
* Baerum, Norway – Snapshot
* Asker, Norway – Snapshot
* Esperanza, Argentina – Snapshot
* Santa Fe, Argentina – Snapshot
* Gjøvik, Norway – Snapshot
* Wels, Austria – Snapshot

City Verification Reports developed on U4SSC KPIs includes:* Ålesund, Norway – Verification report
* Bizerte, Tunisia – Verification report
* Krimpen aan den Ijssel – Verification report
* Riyadh, Saudi Arabia – Verification report
* Pully, Switzerland – Verification report
* Valencia, Spain – Verification report
* Trondheim, Norway – Verification report
* Rana, Norway – Verification report
* Molde, Norway – Verification report
* Kristiansund, Norway – Verification report
* Karmoy, Norway– Verification report
* Haugesund, Norway – Verification report
* Bodo, Norway – Verification report
* Baerum, Norway – Verification report
* Asker, Norway – Verification report
* Esperanza, Argentina – Verification report
* Santa Fe, Argentina – Verification report
* Gjøvik, Norway – Verification report

City Factsheets developed on U4SSC KPIs includes:* Ålesund, Norway – Factsheet
* Bizerte, Tunisia – Factsheet
* ​Riyadh, Saudi Arabia – Factsheet
* Pully, Switzerland – Factsheet
* Valencia, Spain – Factsheet

Ongoing work (Verification reports) includes:* Kristiansand, Norway

Ongoing work (Snapshots) includes:* Kristiansand, Norway
* Vanylven, Norway
* Sande, Norway
* Herøy, Norway
* Ulstein, Norway
* Hareid, Norway
* Ørsta, Norway
* Stranda, Norway
* Sykkylven, Norway
* Vestnes, Norway
* Rauma, Norway
* Aukra, Norway
* Averøy, Norway
* Gjemnes, Norway
* Tingvoll, Norway
* Sunndal, Norway
* Surnadal, Norway
* Smøla, Norway
* Aure, Norway
* Volda, Norway
* Fjord, Norway
* Hustadvika, Norway

Please find all U4SSC deliverables available at: <https://www.itu.int/en/ITU-T/ssc/united/Pages/publications-U4SSC.aspx>  |
| **7** |  | **Continue to support U4SSC and share its deliverables with concerned ITU‑T study groups**  | *instructs the Director of the Telecommunication Standardization Bureau* (3) | Continue to support the United for Smart Sustainable Cities Initiative (U4SSC), launched by ITU together with the United Nations Economic Commission for Europe (UNECE) in May 2016, and share its deliverables with ITU‑T Study Group 20 and other study groups concerned | Director TSB | Ongoing | The following U4SSC deliverables have been shared as a TD during SG20 meetings:* Collection Methodology for Key Performance Indicators for Smart Sustainable Cities
* ​Implementing SDG11 by connecting sustainability policies and urban-planning practices through ICTs
* Enhancing innovation and participation in smart sustainable cities
* ​Connecting cities and communities with the Sustainable Development Goals
* City Sc​ience Application Framework and its 8 Case Studies
* Air quality management in Southern California, USA
* Smart Dubai Happiness Meter in Dubai, United Arab Emirates
* Crime prediction for more agile policing in cities - Rio de Janeiro, Brazil
* Data driven energy savings in the Hyperdome shopping centre in Queensland, Australia
* Fine dust filtration in Stuttgart, Germany
* Smart Dubai - Rashid - City Concierge
* Identifying the cascading effects on vital objects during flooding
* Unlocking the potential of trust-based AI for city science and smart cities
* ​A Guide to Circular Cities and its 8 Case studies
* Energy Efficiency in Buildings
* City Solid Waste Management
* Affordable Housing and Social Inclusion
* Urban Mobility
* Re-use of Consumer Goods and Tools Loaning​
* Reducing Food Waste
* Participatory Urban Planning
* Circularity to Promote Local Businesses and Digitization​
* Accelerating city transformation using frontier technologies
* Blockchain for smart sustainable cities

Please find all U4SSC deliverables available at: <https://www.itu.int/en/ITU-T/ssc/united/Pages/publications-U4SSC.aspx>The ​​​U4SSC initiative is working on the following Thematic Groups:* City Platforms
* Economic recovery in cities and urban resilience building in the time of COVID-19 ​
* Guidelines on ​tools and mechanisms to finance SSC projects
* Guiding principles for artificial intelligence in cities
* Simple ways to be smart
* Procurement Guidelines for Smart Sustainable Cities​
* U4SSC Index​​
 |
| **8** |  | **Continue encouraging cooperation with other international standardization-related organizations, in order to facilitate the interoperability of IoT services** | *instructs the Director of the Telecommunication Standardization Bureau* (4) | Continue encouraging cooperation with other international standardization organizations and other related organizations, in order to increase the development of international telecommunication standards and reports that facilitate the interoperability of IoT services | Director TSB | Ongoing | Ongoing collaboration with ISO and IEC on the organization of World Smart City Forums and working team on Smart City Terminology.Ongoing collaboration with TM Forum.Ongoing collaboration with oneM2M. |

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