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| ITU logo | INTERNATIONAL TELECOMMUNICATION UNION**TELECOMMUNICATION STANDARDIZATION SECTOR**STUDY PERIOD 2017-2020 | TSAG-TD1260 |
| **TSAG** |
| **Original: English** |
| **Question(s):** | N/A | E-Meeting, 10-17 January 2022 |
| **TD(Ref.:** [SG5-LS230](http://handle.itu.int/11.1002/ls/sp16-sg5-oLS-00230.docx)) |
| **Source:** | ITU-T Study Group 5 |
| **Title:** | LS/r on requesting all ITU-T study groups to provide an update on Recommendations related to WTSA-16 Resolution 73 (Rev. Hammamet, 2016) (reply to TSAG-LS45) [from ITU-T SG5] |
| **Purpose:** | Action |
| **LIAISON STATEMENT** |
| **For action to:** | TSAG |
| **For comment to:** | - |
| **For information to:** | - |
| **Approval:** | ITU-T Study Group 5 meeting (Virtual, 10 December 2021) |
| **Deadline:** | N/A |
| **Contact:** | Qi ShuguangITU-T SG5 Acting Chairman | E-mail: qishuguang@caict.ac.cn  |
| **Contact:** | Fyrderyk LewickiITU-T SG5 WP1/5 Chairman | E-mail: fryderyk.lewicki@orange.com  |
| **Contact:** | Paolo GemmaITU-T SG5 WP2/5 Chairman | E-mail : paolo.gemma@huawei.com  |

This liaison statement answers [TSAG-LS45](https://www.itu.int/ifa/t/2017/ls/tsag/sp16-tsag-oLS-00045.docx).

A new liaison statement has been received from SG5.

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-sg5-oLS-00230.docx>.

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| ITU logo | INTERNATIONAL TELECOMMUNICATION UNION**TELECOMMUNICATIONSTANDARDIZATION SECTOR**STUDY PERIOD 2017-2020 | **SG5-LS230** |
| **STUDY GROUP 5** |
| **Original: English** |
| **Question(s):** | All/5 | Virtual, 30 November – 10 December 2021 |
| **Ref.: SG5-TD2119-R1** |
| **Source:** | ITU-T Study Group 5 |
| **Title:** | LS/r on requesting all ITU-T study groups to provide an update on Recommendations related to WTSA-16 Resolution 73 (Rev. Hammamet, 2016) (reply to TSAG-LS45)  |
| **LIAISON STATEMENT** |
| **For action to:** | TSAG |
| **For comment to:** | - |
| **For information to:** | - |
| **Approval:** | ITU-T Study Group 5 meeting (Virtual, 10 December 2021) |
| **Deadline:** | N/A |
| **Contact:** | Qi ShuguangITU-T SG5 Acting Chairman | E-mail: qishuguang@caict.ac.cn  |
| **Contact:** | Fyrderyk LewickiITU-T SG5 WP1/5 Chairman | E-mail: fryderyk.lewicki@orange.com  |
| **Contact:**  | Paolo GemmaITU-T SG5 WP2/5 Chairman | E-mail : paolo.gemma@huawei.com  |

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| **Keywords:** | ITU-T SG5, Resolution 73, ICT, environment, climate change |
| **Abstract:** | This liaison statement provides a response to TSAG on the work of ITU-T SG5 related to Resolution 73 (Rev. Hammamet, 2016) - Information and communication technologies, environment and climate change. |

This liaison answers LS [TSAG-LS45](http://handle.itu.int/11.1002/ls/sp16-tsag-oLS-00045.docx)

ITU-T Study Group 5 would like to thank TSAG for sending the liaison statement (ref: [TSAG-LS45](http://handle.itu.int/11.1002/ls/sp16-tsag-oLS-00045.docx)) on requesting all ITU-T study groups to provide an update on Recommendations related to WTSA-16 Resolution 73 (Rev. Hammamet, 2016).

ITU-T SG5, as the lead Study Group on ICTs related to the environment, climate change, energy efficiency and clean energy, and on circular economy, including e‑waste, develops Recommendations and Supplements for the protection of the environment and on climate change.

In this regard, ITU-T SG5 has developed Recommendations and Supplements on:

* Electrical protection, reliability, safety, and security of ICT systems
* Protecting equipment and devices against lightning and other electrical events
* Human exposure to electromagnetic fields (EMFs) due to digital technologies
* Electromagnetic compatibility (EMC) aspects in the ICT environment
* E-waste and the circular economy
* Power feeding and energy storage
* Energy efficiency, smart energy, and green data centres
* Assessment methodologies of ICTs and CO2 trajectories
* Adaptation to climate change
* Low-cost sustainable infrastructure

The complete list of ITU-T SG5 Recommendations developed under the K and L series is available [here](https://www.itu.int/ITU-T/recommendations/index_sg.aspx?sg=5).

ITU-T SG5 continues to work to support Resolution 73, and the list of ITU-T SG5 work items under development is available [here](https://www.itu.int/itu-t/workprog/wp_search.aspx?sg=05).

The list of the achievements of the ITU-T SG5 meetings held in May and December are available below, in Annex 1.

ITU-T Study Group 5 looks forward to further collaboration with TSAG.

**Annex 1**

**Achievements of ITU-T Study Group 5
(status from January to December 2021)**

* 1. **WP1/5 - EMC, lightning protection, EMF**

**1.1.1 Recommendations approved**

| **SG** | **No** | **Title** |
| --- | --- | --- |
| 5 | K.56 (rev.) | Protection of radio base stations against lightning discharges |
| 5 | K.112 (rev.) | Lightning protection, earthing and bonding: Practical procedures for radio base stations |
| 5 | Corrigendum to ITU-T K.147  | Corrigendum 1 to Recommendation ITU-T K.147: Ethernet port resistibility testing for overvoltages and overcurrents |
| 5 | K.20 (rev.) | Resistibility of telecommunication equipment installed in a telecommunication centre to overvoltages and overcurrents |
| 5 | Corrigendum toITU-T K.50 | Safe limits for operating voltages and currents in telecommunication systems powered over the network |
| 5 | K.52 (rev.) | Guidance on complying with limits for human exposure to electromagnetic fields |
| 5 | K.100 (rev.) | Measurement of radio frequency electromagnetic fields to determine compliance with human exposure limits when a base station is put into service |

**1.1.2 Informative texts agreed**

| **SG** | **No** | **Title** |
| --- | --- | --- |
| 5 | K.Suppl.13 | Radiofrequency electromagnetic field (RF-EMF) exposure levels from mobile and portable devices during different conditions of use |
| 5 | K.Suppl.20 | Supplement on radiofrequency exposure evaluation around underground base stations |
| 5 | K.Suppl.21 to ITU-T K.21 (rev.) | Rationale for setting resistibility requirements of telecommunication equipment installed in customer premises against lightning |
| 5 | K.Suppl.22 to ITU-T K.45 (rev.) | Rationale for setting resistibility requirements of telecommunication equipment installed in the access and trunk networks against lightning |
| 5 | K.Suppl.24 to ITU-T K.20 | Rationale for setting resistibility requirements of telecommunication equipment installed in a telecommunication centre against lightning |
| 5 | K.Suppl.25 to Recommendation ITU-T K.117 | Long reach single twisted-pair Ethernet resistibility testing |
| 5 | K.Suppl.1 to Recommendation ITU-T K.91 | Guide on electromagnetic fields and health |
| 5 | Appendix II to Recommendation ITU-T K.90 | Software “EMFACDC” |
| 5 | K.Suppl.26 | Analysis of electromagnetic compatibility requirements and test methods of 5G Active Antenna System base station |
| 5 | Appendix 1 of ITU-T K.70 | Software "EMF-estimator" v8.0.32 and v8.64 |

**1.1.3 Recommendation consented (in AAP Last Call)**

| **SG** | **No** | **Title** |
| --- | --- | --- |
| 5 | K.147 | Ethernet port resistibility testing for overvoltages and overcurrents |
| 5 | K.124 | Overview of particle radiation effects on telecommunication systems |
| 5 | K.130 | Neutron irradiation test methods for telecommunication equipment |
| 5 | K.131 | Design methodologies for telecommunication systems applying soft error measures |
| 5 | K.138 | Quality estimation methods and application guidelines for mitigation measures based on particle radiation tests |
| 5 | K.139 | Reliability requirements for telecommunication systems affected by particle radiation |
| 5 | K.151 | Electrical safety and lightning protection of medium voltage input and up to ±400VDC output power system in ICT data centre and telecommunication centre |

**1.2 WP2/5 - Environment, Energy Efficiency, and the Circular Economy**

**1.2.1 Recommendations approved**

| **SG** | **No** | **Title** |
| --- | --- | --- |
| 5 | L.1024 | Effect for global ICT of the potential of selling services instead of equipment on the waste creation and environmental impacts |
| 5 | L.1060 | General principles for the green supply chain management of information and communication technology manufacturing industry |
| 5 | L.1471 | Guidance and criteria for ICT organisations on setting Net Zero targets and strategies |
| 5 | L.1383 | Smart energy solutions for cities and home applications |
| 5 | L.1317 | Guidelines on energy-efficient blockchain systems |
| 5 | L.1033 | Guidance for institutions of higher learning to contribute in the effective life cycle management of e-equipment and e-waste |

**1.2.2 Informative texts agreed**

| **SG** | **No** | **Title** |
| --- | --- | --- |
| 5 | L.Suppl.41 | Requirements on energy efficiency measurement models and the role of AI and Big Data |
| 5 | L.Suppl.42 | Guidelines on the Environmental Efficiency of Machine Learning Processes in Supply Chain Management |
| 5 | L.Suppl.43 | Smart energy saving of 5G base station: Based on AI and other emerging technologies to forecast and optimize the management of 5G wireless network energy consumption |
| 5 | L.Suppl.44 | Guidelines on best practices and environment-friendly policies for effective ICT deployment methods |
| 5 | L.Suppl.45 | Radio base station site best practices |
| 5 | L.Suppl.46 | Definitions and Recent Trends in Circular Cities |

**1.2.3 Recommendations consented (in AAP Last Call)**

| **SG** | **No** | **Title** |
| --- | --- | --- |
| 5 | L.1050 | Methodology to identify the key equipment, in order to assess the environmental impact and e-waste generation of different network architectures |
| 5 | L.1035 | Sustainable Management of Batteries |
| 5 | L.1016 | Method for Evaluation of the Environmental, Health and Safety Performance of True Wireless Stereo Headphones |
| 5 | L.1036 | Scheduled waste management for base station (inclusive of e-waste) |

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