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SERIES L: ENVIRONMENT AND ICTS, CLIMATE
CHANGE, E-WASTE, ENERGY EFFICIENCY;
CONSTRUCTION, INSTALLATION AND PROTECTION
OF CABLES AND OTHER ELEMENTS OF OUTSIDE
PLANT

Criteria for evaluation of the environmental impact of mobile phones

Recommendation ITU-T L.1015

ITU-T L-SERIES RECOMMENDATIONS

ENVIRONMENT AND ICTS, CLIMATE CHANGE, E-WASTE, ENERGY EFFICIENCY; CONSTRUCTION, INSTALLATION AND PROTECTION OF CABLES AND OTHER ELEMENTS OF OUTSIDE PLANT

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Recommendation ITU-T L.1015

Criteria for evaluation of the environmental impact of mobile phones

Summary

Recommendation ITU-T L.1015 focuses on the criteria to be used for evaluation of the environmental impact of mobile phones. It considers all life cycle stages of mobile phones such as the design, production, use and end-of-life management. The Recommendation also defines a minimum level of environmental performance.

Within the constraints of technology and affordability, sustainability should be considered for: materials; energy use; durability, upgrade and repair operations; end of life management; packaging, corporate practice; manufacturing and operations.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
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* To access the Recommendation, type the URL <http://handle.itu.int/> in the address field of your web browser, followed by the Recommendation's unique ID. For example, <http://handle.itu.int/11.1002/1000/11830-en>.

FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

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Introduction

It has recently been estimated that around 2.3 billion mobile phones are sold every year [b-Andrae, 2015]. Mobile phones are products with high speed of innovation and high usage intensity and the adopted technologies are often changing very quickly. To promote a more sustainable society, the information and communication technology (ICT) industry has recognized that there is a need to provide relevant mobile phone information that will enable consumers to make more informed purchasing decisions, especially with regard to environmental performance.

Manufacturers and network operators have been reporting for several years the sustainability credentials of mobile phones based on consumer needs, corporate sustainability initiatives or environmental footprint assessments, amongst others. However, inconsistencies among approaches cause confusion and make comparisons difficult, wasting time and resources for both operators and manufacturers when collecting and providing similar data.

ITU-T developed a Supplement in 2016 containing eco-specifications and rating criteria for mobile phone eco-rating programmes [b-ITU-T L.Suppl.32]. The Supplement delivers useful information to end users on the environmental performance of mobile phones within the framework of existing eco-rating programmes, and complements previous published papers such as [b-UL 110, 2012]. UL later published, in 2017, a second edition [b-UL 110, 2017], which presents some differences and additional requirements. To provide criteria for the evaluation of the environmental impact of a mobile phone and to minimize its burden on the environment, ITU-T intends to develop a new Recommendation based on [b-ITU-T L.Suppl.32], which takes into account all the previous work carried out by its responsible study group (ITU-T SG5).

This Recommendation aims to help to reduce detrimental effects on the environment by delivering useful information to end users on the environmental performance of mobile phones. The Recommendation, complements the work represented in [b-UL 110, 2017] and [b-ITU-T L Suppl. 32], but is based mostly on life cycle assessment principles and eco design features.

This Recommendation provides a reference for manufactures to enhance environmental performance at a global level.

Recommendation ITU-T L.1015

Criteria for evaluation of the environmental impact of mobile phones

1 Scope

This Recommendation proposes criteria to be used when evaluating the environmental impact of mobile phones.

The Recommendation provides a reference for manufacturers to enhance environmental performance at a global level. It does not include eco-rating, scoring, eco-labelling or a life cycle assessment (LCA) methodology. Appendix I describes three scenarios using simplified LCA methodologies to support clause 6.4.2, but does not provide a LCA methodology in itself.

The Recommendation establishes the criteria to be used for the evaluation of the environmental impact of mobile phones considering all life cycle stages such as the design, production, use and end of user management of mobile phones.

Within the constraints of technology and affordability, sustainability should be considered for: materials; energy use; durability, upgrade, refurbish ("aesthetical" maintenance) and repair operations ("corrective" maintenance); end of life management; packaging; corporate practice; manufacturing and operations.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[ITU-T L.1000] Recommendation ITU-T L.1000 (2011), *Universal power adapter and charger solution for mobile terminals and other hand-held ICT devices*.

[ITU-T L.1410] Recommendation ITU-T L.1410 (2014), *Methodology for environmental life cycle assessments of information and communication technology goods, networks and services*.

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 mobile phone [b-UL 110, 2017]: A wireless handheld device that is designed to send and receive transmissions through a cellular radiotelephone service including only the device itself and packaging or accessories. Slates/tablets are excluded from this definition.

3.1.2 accessories [b-UL 110, 2017]: Components used external to the mobile phone, such as cables and external power supplies, shipped in box with the mobile phone, not including the mobile phone. Printed materials and packaging are excluded.

3.1.3 packaging [b-UL 110, 2017]: A container enclosing the product along with any required protective materials designed to contain and protect from the point of manufacture to the point of sale. The packaging includes any individual assembled parts of the packaging such as, but not limited

to, any interior or exterior blocking, bracing, cushioning, weatherproofing, exterior strapping, coatings, closures, inks, labels, bags, and films. The packaging does not include additional protective packaging used when transporting to a customer or reseller nor does it include printed information such as warranties and user guides.

3.1.4 homogeneous material [b-ITU-T L.Suppl.32]: A material of uniform composition throughout or a material, consisting of a combination of materials, that cannot be disjointed or separated into different materials by mechanical actions such as unscrewing, cutting, crushing, grinding and abrasive processes.

3.2 Terms defined in this Recommendation

This Recommendation defines the following terms:

3.2.1 durability: The ability to function as required, under defined conditions of use, maintenance and repair, until a final limiting state is reached.

NOTE 1 – The degree to which maintenance and repair are within scope of durability can vary.

NOTE 2 – The final limiting state has to be defined by the user of this Recommendation.

NOTE 3 – This is an adapted version of a draft definition developed by CEN-CENELEC TC10 WG2.

3.2.2 reliability: The probability that a product functions as required under given conditions, including maintenance, for a given duration without failure.

NOTE 1 – The intended function(s) and given conditions are described in the user instructions provided with the product.

NOTE 2 – Duration can be expressed in units appropriate to the part or product concerned, e.g., calendar time, operating cycles, distance run, etc., and the units should always be clearly stated.

NOTE 3 – This is an adapted version of a draft definition developed by CEN-CENELEC TC10 WG2.

3.2.3 upgradeability (based on [b-ISO 14021]): The design of a product that allows that relevant parts can be separately upgraded or replaced without having to replace the entire product.

3.2.4 upgrade (based on [b-IEC 62075]): The process to enhance the functionality or capacity of a product.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

BBP	Benzyl Butyl Phthalate
CDP	Carbon Disclosure Project
CERFLOR	Certificação Florestal
CS	Corporate Sustainability
DBP	DiButyl Phthalate
DEHP	bis (2-EthylHexyl) Phthalate
DIBP	Diisobutyl Phthalate
EAIEP	European Average Impact Electric Power
EoL	End of Life
EoLT	End of Life Treatment
FA	Final Assembly
FSC	Forest Stewardship Council

GB	Gigabyte
LCA	Life Cycle Assessment
LCD	Liquid Crystal Display
PCB	Printed Circuit Board
MCCP	Medium Chain Chlorinated Paraffin
MP	Mega Pixel
PCF	Product Carbon Footprint
PEF	Product Environmental Footprint
PEFC	Programme for the Endorsement of Forest Certification
PFOA	Perfluoro Octanic Acids
PFOS	Perfluoro Octane Sulfonates
PVC	Polyvinyl Chloride
RAM	Random Access Memory
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals
RoHS	Restriction of Hazardous Substances
SCCP	Short Chain Chlorinated Paraffin
SFI	Sustainable Forestry Initiative
SVHC	Substances of Very High Concern
WEEE	Waste Electrical and Electronic Equipment

5 Conventions

None.

6 Eco criteria

6.1 Materials

6.1.1 Material restrictions

Information on material restrictions should be publicly posted, listing mobile phones that meet the requirements of the current European Union (EU) Restriction of Hazardous Substances (RoHS) Directive provisions and its amendments (including applicable exclusions and exemptions). Technical documentation, as required in Article 7(b) of the European Union RoHS Directive, can be generated in accordance with [b-IEC 63000:2016] or through product testing. Testing should utilize [b-IEC 62321]. Other applicable chemical analysis methods may be employed, provided that adequate performance can be demonstrated for the analyses.

6.1.2 Compliance with the EU REACH Regulation

The manufacturer shall provide any evidence to show that the mobile phones are in accordance with Article 33 disclosure requirements for substances of very high concern (SVHC) under the European registration, evaluation, authorization and restriction of chemicals (REACH) regulation and the restrictions under Annex XVII.