



Question(s): 17/5

STUDY GROUP 5 – CONTRIBUTION 0809 Rev.1

Source: Huawei Technologies Co.,Ltd.

Title: Proposal on Future Energy efficiency metrics/KPI

Introduction

It is widely recognized that in the future, there will be unceasing growth of video and data traffic, fueled by the evolution of network architecture. Together with the growing complexity of network operations, administration and management, this will create new energy-efficiency challenges.

The ICT sector is revolutionizing its equipment and networks at a dramatic pace. In such a constantly changing scenario, it is important to create a simple tool that will give any stakeholder the opportunity to:

- (i) verify the energy efficiency of their network(s);
- (ii) evaluate the situation of their network(s); and
- (iii) evaluate the possible evolutionary trajectory of the equipment and networks.

It is therefore important to create a set of tools to evaluate the energy efficiency of networks and networking equipment, taking into consideration the functionality present in a complete network.

The need for standardization

Based on these considerations, majority of the participants of the ITU Forum on ICT Energy Efficiency, which was held in May 2016 in Madrid, requested that ITU develop an international standard detailing principles for ‘eco-design engineering’ of ICT infrastructure. The participants of this Forum also suggested that ITU launch studies on ICT energy efficiency in the 5G context.

Accordingly, it is proposed to initiate the development of a set of comprehensive KPIs covering all the phases of a complete network.

These KPIs need be intelligible, taking into consideration the following as probable indicators:

- (a) *Energy / Connection, Energy / Traffic, Energy / Revenues and Energy / Site for all type of network and IT equipment*
- (b) *Mobile, Fixe, Core, Servers, Storage, etc including the software Networks (SDN/NFV, OSS,..), IS (applications - billing, provisioning, ..), Service Platforms (voice, data, TV,...) the 3. network-service, customer-usage, and so on.*

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These KPI will be developed in a series of recommendation defining the KPI and the related measurement methodology.

All of these will create a set of tool to evaluate a network.

Additionally, the suggested tool also needs to be simple, practical and agreed upon by all the stakeholders. The tool should also build upon the existing indicators developed in ITU-T and other SDO/forum.

Future Consideration(s)

It is also important start the development of indicators for the future 5G equipment and network(s) to drive the development of this technology while taking into consideration the energy efficiency and the impact that the new technologies will have on the climate change.
