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| INTERNATIONAL TELECOMMUNICATION UNION | **Cloud Computing‘joint coordination activity’** |
| **TELECOMMUNICATIONSTANDARDIZATION SECTOR**STUDY PERIOD 2013-2016 | **Doc 174**  |
| **English only****Original: English** |
| **TD****(Ref:** [SG5 - LS 109](http://ifa.itu.int/t/2013/ls/sg5/sp15-sg5-oLS-00109.docx)**)** |
| **Source:** | ITU-T Study Group 5 |
| **Title:** | LS/i/r on Invitation to update the information in the cloud computing roadmap (reply to JCA-Cloud-LS23 and LS26) [from ITU-T Study Group 5] |
| **LIAISON STATEMENT** |
| **For action to:** | Joint Coordination Activity on Cloud Computing (JCA-Cloud) |
| **For comment to:** | - |
| **For information to:** | - |
| **Approval:** | ITU-T Study Group 5 meeting (Kochi, India, 19 December 2014) |
| **Deadline:** | - |
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ITU-T Study Group 5 would like to thank the Joint Coordination Activity on Cloud Computing (JCA-Cloud) for informing about the recent developments of the project called “Cloud Computing standards roadmap”. ITU-T SG5 has noted that JCA-Cloud performed the initial collection of all the available information from the ITU-T and other SDOs with regards to any relevant work on Cloud Computing and that the initial draft of this roadmap is available at the following address:

<https://extranet.itu.int/sites/itu-t/Roadmaps/SitePages/JCA-Cloud-Standard.aspx>

ITU-T SG5 would kindly ask JCA-Cloud to update the roadmap with the information contained in the following table, filled according to JCA-Cloud request.

ITU-T SG5 is looking forward to continuing a fruitful collaboration with JCA-Cloud in the field of greener power feeding for data centres that should also be used in Cloud technology.

| Activity domain | Entity | Title of deliverable | Scope of deliverable | Current status | Starting date | Target date |
| --- | --- | --- | --- | --- | --- | --- |
|  | ITU-T SG5 Q19 | **ITU-T L.1200**: Direct current power feeding interface up to 400V at the input to telecommunications and ICT equipment | This Recommendation specifies the direct current (DC) interface between the power feeding system and ICT equipment connected to it. It also describes normal and abnormal voltage ranges, and immunity test levels for ICT equipment to maintain the stability of telecommunication and data communication services. The specified interface is operated from a DC power source of up to 400 V to allow increased power consumption and equipment power density, in order to obtain higher energy efficiency and reliability with less material usage than using a lower voltage such as -48 VDC or AC UPS power feeding solutions.URI : <http://www.itu.int/ITU-T/recommendations/rec.aspx?rec=11638> | Recommendation |  |  |
|  | ITU-T SG5 Q17 | **ITU-T L.1300**, Best practices for green data centers  | Recommendation ITU-T L.1300 describes best practices aimed at reducing the negative impact of data centers on the climate. It is commonly recognized that data centers will have an ever-increasing impact on the environment in the future. The application of the best practices defined in this document can help owners and managers to build future data centers, or improve existing ones, to operate in an environmentally responsible manner. Such considerations will strongly contribute to a reduction in the impact of the Information and Communication Technology (ICT) sector on climate change. URI : <http://www.itu.int/ITU-T/recommendations/rec.aspx?rec=11429>  | Recommendation |  |  |

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| Activity domain | Entity | Title of deliverable | Scope of deliverable | Current status | Starting date | Target date |
|  | ITU-T SG5 Q17 | Technical Paper on best practices for network infrastructure (ex Technical Paper network best practices) | This Technical Paper has been developed to introduce high-efficiency network infrastructure solutions, including high-efficiency power solutions, renewable energy solutions, free and economized cooling solutions and energy-saving air conditioner cooling solutions. For every solution, a definition, principles, features and application conditions are introduced. | Published | 2012-10-08 | Approved in 2013-12-13 |
|  | ITU-T SG5 Q17 | Supplement on Experimental studies on plates and ducts installed at equipment inlets and outlets | Experimental studies on plates and ducts installed at equipment inlets and outlets | Approved | 2012-10-08 | Approved in 2014- |
|  | ITU-T SG5 Q17 | Supplement on minimum data set for energy efficiency  | Rationale for minimum data set for evaluating energy efficiency and for controlling data centre equipment in view of power saving | Approved | 2012-10-08 | Approved in 2014- |
|  | ITU-T SG5 Q17 | Supplement on energy savings through free cooling” | Potential for primary energy savings in TLC/ICT centres through free cooling | Approved | 2012-10-08 | Approved in 2014- |
|  | ITU-T SG5 Q17 | Supplement on efficient cooling systems” | Verification test and feasibility study of energy and space efficient cooling systems for data centres with high density ICT devices | Approved | 2012-10-08 | Approved in 2014- |
|  | ITU-T SG5 Q17 | Supplement on e cooling method using renewable energy  | Validation test of a data centre cooling method using renewable energy in a cold region | Approved | 2012-10-08 | Approved in 2014- |
|  | ITU-T SG5 Q17 | Supplement on increase of efficiency of air-conditioning  | Verification experiments related to increase of efficiency of air-conditioning and control technologies at a data centre | Approved | 2012-10-08 | Approved in 2014- |
|  | ITU-T SG5 Q17 | Supplement on reduction of air-conditioning energy by optical fiber based thermometry” | Case study of reduction of air-conditioning energy by optical fiber based thermometry | Approved | 2012-10-08 | Approved in 2014- |

| Activity domain | Entity | Title of deliverable | Scope of deliverable | Current status | Starting date | Target date |
| --- | --- | --- | --- | --- | --- | --- |
|  | ITU-T SG5 Q17 | **ITU-T L.green\_mgm\_DC,** Functionality requirements and framework of green data center energy-saving management system | This Recommendation describes Functionality requirements and framework of green data center energy-saving management system.The energy-saving will be realized through performance to increase the energy efficiency of data center.The scope of this Recommendation includes:* Characteristics and operation flow of green data center energy-saving management system
* Functionality requirements of green data center energy-saving management system (eg: Real-time energy consumption data acquisition; Energy consumption data analysis and chart show; Energy consumption data query; Energy consumption monitoring and early warning; Strategy Optimization, etc.)
* Capability needs of green data center energy-saving management system (eg: collect data from different communication interface; secure storage; control management, etc.)
* Framework of green data center energy-saving management system

Sensor definition, interface and protocol are not included in the scope of this Recommendation. | WI approved |  | 2017 |
|  | ITU-T SG5 Q18 | **ITU-T L.1410**, Methodology for environmental impact assessment of information and communication technologies (ICT) goods, networks and services | Recommendation ITU-T L.1410 deals with the assessment of the environmental impact of information and communication technology (ICT) goods, networks and services. It is organized in two parts:* Part I (clause 5) – ICT life cycle assessment: framework and guidance.
* Part II (clause 6) – Comparative analysis between ICT and a reference product system (baseline scenario); framework and guidance.

Part I deals with the life cycle assessment (LCA) methodology applied to ICT goods, networks and services (ICT GNS). Part II deals with comparative analysis based on LCA results of an ICT GNS product system and a referenced product system.This Recommendation provides specific guidance on energy and greenhouse gas (GHG) impacts.URI : <http://www.itu.int/ITU-T/recommendations/rec.aspx?id=11430>  | Recommendation |  |  |
|  | ITU-T SG5 Q17 | **ITU-T 1301**, Minimum data set for data center energy management | Minimum data set and communication interface requirements for DataCenter energy managementURI : <http://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=8620>  | Draft Recommendation | 2013-01-29 | Consented 2014 |
|  | ITU-T SG5 Q19 | **ITU-T L.1201,** Architecture of DC power feeding systems | System configuration, architecture and cable distribution including feeding, lightning protection, EMC, earthing and bonding of the power feeding systemURI : <http://www.itu.int/ITU-T/recommendations/rec.aspx?rec=12135>  | Recommendation |  |  |
|  | ITU-T SG5 Q19 | **ITU-T L.1202,** Methodologies for evaluating the performance of energy feeding and its environmental impact | Methodologies for evaluating the performance of energy feeding and its environmental impactURI : <http://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=8779>  | Draft Recommendation | 2012-10-08 | Consented 2014 |
|  | ITU-T SG5 Q18 | **ITU-T L.1420**, Methodology for energy consumption and greenhouse gas emissions impact assessment of information and communication technologies in organizations | This Recommendation can be used to assess energy consumption and GHG emissions generated over a defined period of time for the following purposes: for assessment of related impact from ICT organizations or for assessment of impact from ICT related activities within non-ICT organizations.URI : <http://www.itu.int/ITU-T/recommendations/rec.aspx?rec=11431>  | Recommendation | 2009 | 2012 |
|  | ITU-T SG5 Q18 | **ITU-T L.1430**, Methodology for environmental impact assessment of information and communication technology greenhouse gas and energy projects | Specific guidance for Information and Communication Technology (ICT) greenhouse gas (GHG) and energy projects for quantifying and reporting their GHG emission reductions and/or removal enhancements as well as their energy consumption reductions and enhancement of energy generation and energy storageURI : <http://www.itu.int/ITU-T/recommendations/rec.aspx?rec=11904>  | Recommendation  |  |  |
|  | ITU-T SG5 Q17 | **ITU-T L.assDC,** Assessment of DC and TLC room Infrastructure | Assessment methodology of data center and telecommunication room infrastructure energy efficiency considering environmental conditions and running conditions.URI : <http://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=9653>  | Draft Recommendation | 2013-01-29 | 2015 for consent |
|  | ITU-T SG5 Q17 | **ITU-T L.1320,** Energy efficiency metrics and measurement for power and cooling equipment for telecommunications and data centres | This Recommendation specifies principles and concepts of energy efficiency metrics and measurement methods for power feeding equipment and cooling equipment in telecommunications rooms and data centres. The methodologies defined in this Recommendation are applied at single equipment level. The efficiency of power conversion and cooling in the data centre or telecommunication facility is only partially attributed to the equipment. The architecture and organization of the space and equipment to deliver the power or cooling to the systems is as equal, if not a more significant factor to energy efficiency. Another general factor will be the interoperability, management, and response of these systems across the demand and operational range.URI : <http://www.itu.int/ITU-T/recommendations/rec.aspx?rec=12136>  | Recommendation |  |  |
|  | ITU-T SG5 Q19 | **ITU-T L.renewable** | Defining interface and architecture for injecting renewable energy and distributed power sources into an up to 400 V power system as defined in L.architecture.URI : <http://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=10018>  | Agreed to initiate the work | Dec. 2014 | 2015 |
|  | ITU-T SG5 Q18 | **ITU-T L.1440,**  Methodology to evaluate the GHG impact of ICT in cities Title: Methodology for environmental impact assessment of information and communication technologies on cities | This ITU-T Recommendation gives general guidance to cities and provides for the definition and use of methodologies for the assessment of the environmental impact of ICT in cities. In this first edition of this Recommendation, the environmental impact considered is limited to energy consumption and GHG emissions. This Recommendation provides specific guidance in setting the city boundaries, integrating and coordinating the assessment of all ICT related GHG emissions and energy consumption at city level, and on issues to consider at city scale when setting up ICT projects, including pre-studiesURL: <http://www.itu.int/ITU-T/workprog/wp_item.aspx?isn=8785>  | Consented | 2013 | Consented 2014 |

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