

ISO/IEC JTC 1  
Information technology  
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**Email of secretary:** [lrajchel@ansi.org](mailto:lrajchel@ansi.org)

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## **G25 JTC 1 or SC Business Plan**

### **BUSINESS PLAN FOR JTC 1/SC 39, Sustainability for and by Information Technology**

#### **PERIOD COVERED:**

12 November 2011 – 6 November 2012

#### **SUBMITTED BY:**

JTC 1/SC 39 Chair, Mr. Jay Taylor (US)

JTC 1/SC 39 Secretary, Ms. Sally Seitz (US)

#### **1.0 MANAGEMENT SUMMARY**

Established by Resolution 27 from the November 2011 JTC 1 Plenary Meeting in San Diego, California, USA. JTC 1/SC 39 has met once, 12-14 June 2012 in Redwood Shores, California, USA. At that meeting, JTC 1/SC 39:

- Approved the JTC 1/SC 39 scope submitted to this Plenary for approval
- Established the Working Group and Study Group structure with the following:
  - WG 1, Resource Efficiency with Mr. Henry Wong, US, as Convener;
  - WG 2, Green ICT with Mr. Yong-Woon Kim, Korea, as Convener
  - Study Group on Gap Analysis with Mr. Yong-Woon Kim, Korea, and Mr. Linpeng Gao, China, as Conveners
- Approved the terms of reference of the Working Groups and Study Group
- Modified the titles and scopes of ISO/IEC 30131 and ISO/IEC 30132
- Modified the publication type of ISO/IEC 30133
- Nominated Project Editor's for those projects on the JTC 1/SC 39 Programme of Work
- Established internal and external liaisons
- Agreed to an annual meeting schedule with a Plenary in May or June that would include WG and SG meetings

The first Plenary was attended by 8 P-members, 2 O-members, and 1 liaison organization.

#### **1.1 CHAIRMAN'S REMARKS**

This Business Plan is currently a draft as JTC 1/SC 39 has not yet approved the document. The document is currently under approval balloting in JTC 1/SC 39.

The JTC 1/SC 39 Chairman commends the participating national committees in SC39. The number of participants, quality and energy of discussion has been noteworthy. Engagement and communications for the national committees and the working group meetings has been extensive. We have contacted all proposed liaisons and received communications from all we contacted.

## 1.2 JTC 1/SC 39 STATEMENT OF SCOPE

Standardization related to the intersection of resource efficiency and IT which supports environmentally and economically viable development, application, operation and management aspects.

To avoid any duplication of work and to support innovation, SC 39 will engage in active liaison and collaboration with:

- Other JTC 1 entities;
- ISO TC 207, ISO TC 242, ISO TC 257;
- IEC TC 100, IEC TC 108, IEC TC 111, SMB SG 4, IEC/PC 118, IEC TC 57/WG 21, IEC TC 9 and SMB SG 3;
- ITU-T SG 5; and
- Any other appropriate body including external organizations (e.g. consortia)

The JTC 1/SC 39 Chair requests the JTC 1 Plenary approve this scope.

## 1.3 PROJECT REPORT

**ISO/IEC NP 30131**, Information technology - Data Centres – Taxonomy and Maturity Model

**Project Editor:** Mr. Andrew Robinson ([andrewro@allstream.net](mailto:andrewro@allstream.net)), Canada

**SCOPE:** Develop a taxonomy and maturity model for assessing resource efficiency, environmental and economic viability for IT services within data centres and including external dependencies such as network/grid operations, manufacturing, enterprise, emergency operations or control centres.

Economic and environmental design/operations tradeoffs will be described in terms of location, grade of service, workload and lifecycle contexts.

The multi-level taxonomy includes key linkages to these elements:

- Service Level
- Vocabularies
- Definition of Terms
- Application of Taxonomy
- Use Cases for Representative Facility (Data Centre) Types
- Facility Lifecycle Scenarios
- Any other required references

to assess facility resource efficiency. These elements and linkages support continuous improvement for the facility management/owner and other stakeholders such as users or clients of those facilities.

### **LIMIT DATES:**

CD Registration: 2013-07-10

DIS Registration: 2014-01-10

FDIS Registration: 2015-01-10

IS Publication: 2015-07-10

**ISO/IEC NP TR 30132**, Information technology – IT Sustainability – Guidance for the Development of Energy Efficient ICT Products

**Project Editors:** Mr. Sangjin Jeon ([sjjeong@etri.re.kr](mailto:sjjeong@etri.re.kr)), Korea

Mr. Hongzhi Tao ([taohz@lenovo.com](mailto:taohz@lenovo.com)), China

**Scope:** Study and develop guidance for the development of energy efficient ICT products (goods, networks and services)

**LIMIT DATES:**

DTR Registered: 2014-01-10

TR Published: 2015-07-10

**ISO/IEC NP TR 30133**, Best Practices for Green Data Centres

**Project Editor:** Mr. Soochan Hwang ([sch183@gmail.com](mailto:sch183@gmail.com)), Korea

**Scope:** This work item specifies best practices aimed at developing green data centres. A green data centre can be defined as a repository for the storage, management and dissemination of data in which the mechanical, lighting, electrical and computer systems are designed for maximum energy efficiency and minimum environmental impact.; The construction and operation of a green data centre includes advanced technologies and strategies. The work item provides a set of rules and guidelines to be referred to when undertaking improvement of existing data centres or when planning, designing or constructing new ones. The best practices cover:

- Data centre utilization, management and planning
- ICT equipment and services
- Cooling
- Data centre power equipment
- Data centre building
- Monitoring

**LIMIT DATES:**

DTR Registered: 2014-01-10

TR Published: 2015-07-10

**The following division of ISO/IEC 30134 and revision of its scopes are currently under ballot by JTC 1/SC 39. Should these changes be approved, they will be forwarded to JTC 1 for approval.**

**ISO/IEC NP 30134-1**, Information technology – Data Centres – Key Performance Indicators – Part 1: Overview and general requirements

**Project Editor:** Mr. Henry Wong ([henry.l.wong@intel.com](mailto:henry.l.wong@intel.com)), United States

Mr. Taka Shiino ([t-shiino@nri.co.jp](mailto:t-shiino@nri.co.jp)), Japan

Mr. Yong-Woon Kim ([gkim@etri.re.kr](mailto:gkim@etri.re.kr)), Korea

**Scope:** This International Standard

- a) Provides definitions of terms used in data centre KPIs
- b) Defines the need and scope of KPIs for resource efficiency in data centres
- c) Defines the areas of KPIs and application

- d) Defines the guidelines and applicability in establishing a data centre KPI
- e) Provides a structure of document in the series of KPIs
- f) Describes a holistic view of resource efficiency

**LIMIT DATES:**

CD Registration: 2013-07-10

DIS Registration: 2014-01-10

FDIS Registration: 2015-01-10

IS Publication: 2015-07-10

**ISO/IEC 30134-2**, Information technology – Data Centres – Key Performance Indicators – Part 2: Power Usage Effectiveness (PUE)

**Project Editor:** Mr. Henry Wong ([henry.l.wong@intel.com](mailto:henry.l.wong@intel.com)), United States

Mr. Taka Shiino ([t-shiino@nri.co.jp](mailto:t-shiino@nri.co.jp)), Japan

Mr. Yong-Woon Kim ([gkim@etri.re.kr](mailto:gkim@etri.re.kr)), Korea

**Scope;** This International Standard

- a) Defines the Power Usage Effectiveness (PUE) of a data centre
- b) Introduces PUE measurement categories
- c) Describes the relationship of this KPI to a data centre's:
  - i. Infrastructure;
  - ii. IT equipment,
  - iii. IT operations
- d) Defines the measurement, the calculation and the reporting of the KPI,

Provides information on the correct interpretation of the KPI

1. The following topics are outside the scope of this International Standard:  
Other data centre resource focused KPIs such as water or carbon
2. IT KPIs
3. IT Operations KPIs

**LIMIT DATES:**

CD Registration: 2013-07-10

DIS Registration: 2014-01-10

FDIS Registration: 2015-01-10

IS Publication: 2015-07-10

## **1.4 CO-OPERATION AND COMPETITION**

JTC 1/SC 39 has established the following liaisons:

Internal: ISO/IEC JTC 1/SC 39 DAPS

ISO/TC 207, Environmental Management

IEC/TC 100, Audio, video and multimedia equipment and systems

External: ITUT-T Study Group 5

Ecma International

CENELEC TC 215, Electrotechnical aspects of telecommunications equipment

The JTC 1/SC 39 Secretary is working with the following committees and organizations to establish liaisons as per the scope of JTC 1/SC 39:

- ISO/TC 242, Energy management
- ISO/TC 257, General technical rules for determination of energy savings in renovation projects, industrial enterprises and regions
- IEC/TC 8, Systems aspects for electrical energy supply
- IEC/TC 57/WG 21, Interfaces and protocol profiles relevant to systems connected to the electrical grid
- IEC/TC 111, Environmental standardization for electrical and electronic products and systems
- IEC/PC 118, Smart grid user interface
- Storage Network Industry Association (SNIA)
- Distributed Management Task Force (DMTF)
- GIPC – Green IT Promotion Council
- Internet Engineering Task Force (IETF)
- The Green Grid

Other Liaisons that may become necessary are ASHRAE, Open Data Center Alliance, and GreenTouch.

Several fora and consortia organizations are or have developed metrics and measurements for data centre resource efficiency. Most are components of the whole, developing standards for the components of the data centre, such as power distribution, cooling, storage, and networking. In addition several standards organizations most identified as liaisons also have components or parts of this topic in development or released. This effort moves forward with cooperation and communication with all subject matter experts and will allow for all ideas to be considered and vetted by the respective and participating national bodies.

## **2.0 PERIOD REVIEW**

### **2.1 MARKET REQUIREMENTS**

IT equipment facilitated productivity in the workplace like no other tool. As businesses and governments adopted IT and Client-Server technology the data centre became a productivity tool, the first level of productivity gains occurred. Now as SmartGrid, eHealth Smart Transport, Cloud

Computing and other IT related government policy initiatives move forward for broader adoption; growth of data centres, in number and size, is inevitable. Recent articles and press indicate a need for optimizing efficiency of data centres and a general reduction of energy consumption of IT equipment. To set effective local, jurisdictional or national efficiency requirements governments will need standards to frame the topic, limits and requirements. Few standards exist today on this topic mainly form consortia and fora, few or none of which are international standards.

## **2.2 ACHIEVEMENTS**

JTC 1/SC 39 has established two Working Groups, one Study Group and two Task Forces under one of its working groups:

### **JTC 1/SC 39 Working Group 1 – Resource Efficient Data Centres**

**Convener: Mr. Henry Wong, US**

#### **Terms of Reference:**

- Development of a data centre resource efficiency taxonomy, vocabulary and maturity model;
- Development of a holistic suite of metrics and Key Performance Indicators (KPI) for data centres;
- Development of guidance for resource efficient data centres; and
- Development of an energy management system standard specifically tailored for data centres.

WG 1 is responsible for the development of:

- ISO/IEC 30131, Information technology – Data Centres – Taxonomy and Maturity Model
- ISO/IEC 30133, Best Practices for Green Data Centres
- ISO/IEC 30134-1, Information technology – Data Centres – Key Performance Indicators – Part 1: Overview and general requirements
- ISO/IEC 30134-2, Information technology – Data Centres – Key Performance Indicators – Part 2: Power Usage Effectiveness (PUE)

\*\*ISO/IEC 30134-1 and -2 subject to approval of project division and scope revision of both JTC 1/SC 39 and JTC 1

**Meetings:** First meeting held 28-30 August 2012 in Frankfurt, Germany.

### **JTC 1/SC 39/WG 1 Task Force 1 – Data Centre KPIs**

**Convener:** Mr. Tomoo Misaki, Japan

#### **Terms of Reference:**

To identify the initial group of KPIs associated with the Data Centre Resource Efficiency, including and not limited to 1) ITEE, 2) ITEU, 3) GEC, 4) CUE and 5) WUE.

For each KPI, Designation, Title and Scope shall be defined and agreed by the Task Force group prior to the submission to WG 1 for the subsequent preparation of the NWIPs to be added to the series ISO/IEC 30134.

The Task Force is not responsible for the development of the draft text and will terminate when the aforementioned KPI titles and scopes are completed.

## **JTC 1/SC 39/WG 1 Task Force 2 – Methodology of Inter-relationships of KPIs**

**Convener:** Mr. Tomoo Misaki, Japan

### **Terms of Reference:**

Investigate methods of integrating KPIs, determining its value and identify considerations in combining KPIs. Conduct initial SWOT Analysis.

## **JTC 1/SC 39 Working Group 2 – Green ICT**

**Convener:** Mr. Yong-Woon Kim, Korea

### **Terms of Reference:**

Prepare guidance for the development of energy efficient ICT excluding the scope of JTC 1/SC 39/WG 1, Resource Efficient Data Centres

WG 2 is responsible for the development of:

- ISO/IEC 30132, Information technology – IT Sustainability –Guidance for the Development of Energy Efficient ICT Products

**Meetings:** First meeting scheduled for 1-2 November 2012 in Jeju, Republic of Korea

## **JTC 1/SC 39 Study Group on Gap Analysis**

**Conveners:** Mr. Yong-Woon Kim, Korea and Mr. Linpeng Gao, China

### **Terms of Reference:**

- Gap analysis on:
  - Assessment methodology for how to quantify green effects of ICT functions for education, learning and training; and
  - Guidelines for making other industry sectors green by using IT (e.g. building, transportation/logistics, etc.)

**Meetings:** First meeting scheduled for 31 October 2012 in JeJu, Republic of Korea

## **2.3 RESOURCES**

JTC 1/SC 39 has the following membership:

### **13 P-Members**

Belgium

Canada

China

Finland

France

Germany

Italy

Japan

Republic of Korea

### **6 O-Members**

Australia

Denmark

Ireland

Spain

Switzerland

United Kingdom



Netherlands  
Norway  
Singapore  
United States

### **3.0 FOCUS NEXT WORK PERIOD**

#### **3.1 DELIVERABLES**

JTC 1/SC 39 will continue to work on the five projects on its Program of Work and focus on increasing its membership.

#### **3.2 STRATEGIES**

JTC 1/SC 39 plans to leverage the work product of The Green Grid, Global Harmonization of Metrics taskforce for the initial development effort for Power Usage Effectiveness/Data Centre Infrastructure Effectiveness (PUE/DCiE), Carbon Usage Effectiveness (CUE) and Water Usage Effectiveness (WUE). This is the best and largest body of work on this topic and has agreement from US, EU and Japan governments on definitions. Leverage liaisons and other consortia for additional definitions and taxonomy.

JTC 1/SC 39 also plans to leverage the work efforts initiated by The National Body of South Korea for developing standards for rack mounted workstations.

##### **3.2.1 RISKS**

The principle risk facing JTC 1/SC 39 at the moment are differing opinions from National Bodies on the standard approach to developing JTC 1/SC 39 standards. This disagreement could cause significant delay in the development of some JTC 1/SC 39 projects, but the Chair and Secretary are committed to facilitating open discussion to remedy these differing opinions. JTC 1/SC 39 has already experienced minor challenges during the development of the metric definitions and resolutions are currently in works.

JTC 1/SC 39 also faces competition from national standards.

##### **3.2.2 OPPORTUNITIES**

Peter Drucker is credited with saying what gets measured gets done. These metrics, taxonomy and definition provide the foundation for data centre measurement and ultimately define resource efficiency. This foundational work provides methods and metrics for a common practice globally, along with a vocabulary and terms defining the context of the industry and practice.

### **3.3 WORK PROGRAMME PRIORITIES**

JTC 1/SC 39 has placed a high priority on the development of all the projects currently listed on its Programme of Work.