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**ISO/IEC JTC 1 "Information technology"**
Secretariat: **ANSI**
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# JTC 1/SC 39 Business Plan - 2024

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**Description**

This document is circulated for review and consideration at the November 2024 JTC 1 Plenary.

**ISO/IEC JTC 1/SC 39 "Sustainability, IT and data centres"**
Secretariat: **ANSI**
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# SC39 Business Plan 2024

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**BUSINESS PLAN FOR JTC 1/SC 39**

**Sustainability, IT and Data Centres**

**PERIOD COVERED: September 2023 – September 2024**

## 1.0 Executive Summary

SC 39 continues to develop standards for Sustainability, IT and data centres. The committee meets annually, and working groups meet twice a year and hold teleconferences to progress the work. JTC 1/SC 39 will continue to develop key performance indicators and best practices for data centres.

## 2.0 CHAIRMAN'S REMARKS

### 2.1 Market Requirements, Innovation

Sustainability remains a key and critical aspect of our approach to meeting the needs of our data centre customers. Gaining increased sustainability and carbon performance through data centre metrics and measurements. Our standards development efforts are focused on the delivery of efficient data centre services and operations; designed to measure the best-in-class energy efficiency of data centre facilities. Cloud computing, artificial intelligence, smart cities (smart grid), electronic medical records, smart transport, big data, and IoT (Internet of things) are driving IT in general and data centres specifically in directions that are unanticipated. At the same time governments, businesses and users of IT equipment demand ongoing incremental productivity improvement in the workplace year over year, coupled with either flat or reduced energy and resource consumption. Sustainability defines business cases for data centre operations, upgrades, and improvements. The UN Intergovernmental Panel on Climate Change (IPCC) has targeted limiting global warming to 2°C rise and mitigating the worst projected impacts of climate change. Data centres measure their energy efficiency in electricity usage, the embodied impact of production, transportation, and disposal of materials, components, and systems used in the data centre are currently not considered. A liaison of SC 39 The Green Grid data centre maturity model for the highest level (level 5) requires procurement “cradle to grave” lifecycle CO2 emissions, learned and control for all electrical and mechanical systems.

Environmental issues and IT’s role are receiving more attention than ever. Utilizing technology, and specifically, IT technology as a more sustainable methodology has different meanings whether you are a manufacturer, integrator, manager, government or user. The topics involved are complex and multi-faceted, including the environmental impacts of building new equipment, facility cooling and power transmission, telecom, server power consumption, server cooling and manageability, all while not forgetting the important factor of cost. The questions are complicated and not easily resolved in a globally satisfactory manner to all.

Data centre sustainability may be reduced to a few short questions:

1) Do you take all opportunities to reduce data centre waste?
2) Do you track key data centre operating system metrics?
3) If you have, do you manage multisite data centre footprints?
4) Do you practice Continuous and Never-Ending Improvement (CANI)?

5) How do you operate your data centres with these questions in mind?

Up to this point we have avoided the over-used word “green” in descriptions of our work and focused on scientific and quantifiable methods to measure sustainability. Keeping pace with the digital world requires data centre providers operate with the view that renewably powered and zero electrical waste data centres are achievable. Sustainable data centre strategy requires data centre providers ensure resources are utilized efficiently to deliver applications, colocation and cloud services. If you review all tasks we perform online individually, and all tasks performed for us such as; finances, health care, purchasing, and home management, we have globally embraced an always available digital lifestyle. This digital lifestyle provides the feature of our digital experience through data centres. It takes many factors to produce and operate data centres. IT equipment, cooling, power distribution and cabling are required to be managed and refreshed from time to time. Data centres should not only refuse to waste energy, but also deliver on the promise to reduce, reuse, or recycle. Data Centres should view that increasing performance and decreasing energy consumption to be a requirement.

Smart Cities, Smart Manufacturing (a.k.a Industry 4.0), eHealth, Smart Transport, Cloud Computing, Edge, and IoT and IT-related global government policy initiatives continue to move forward and gain broader adoption. The growth of data centres, in number and size, is inevitable based on ever growing demand. Small and medium business is migrating to the cloud and has caused data centre consolidation to move beyond concept into accelerating reality. The transition to a cloud architecture has transformed into a restructuring and optimization of data services across data centres and other IT sites. Although core services and data centres continue to consolidate into a hybrid-cloud (private, public and multiple cloud configurations), regional and localized edge technology is emerging to meet the specific localized data access, latency and security needs. These localized computing sites are expected to be key components in the evolution of smart cities, smart buildings, smart healthcare, and other IT optimized industrial, commercial, and consumer activities. The proliferation of IT facilities moving closer to consumers will rely more heavily on IT standards to ensure effective and efficient use of IT and natural resources. Integration and interoperability between distributed facilities and owners will rely on common standards and protocols to become effective and efficient. Consolidation allows reduction of consumed energy, infrastructure, and local equipment installation. To set effective local, jurisdictional or national efficiency requirements governments will need resource efficiency standards to frame the topic, limits and requirements. Future considerations include the integration of rapidly emerging edge and communications technologies. Though hybrid-cloud and edge-computing have been considered in the development of current SC39 standards, there are upcoming IT technologies that may offer significant improvements in the efficacy and efficiency of the overall computing architecture for including in future SC39 standards or updates.

We continue to receive interest and input from national bodies and liaisons, gaining traction on the topic and driving forward with ballots for data centre and IT facility standards. Industry and governments develop and acquire information on efficiency and energy consumption through voluntary programs and mandatory efforts of some national and local programs. However, that is still evolving as previously learned lessons impact upcoming regulations. Global KPI’s, Taxonomy, and best-known practices are necessary for these efforts to not only improve efficiency but also provide standardized methods of continuous improvement in conjunction with a rapidly advancing technology landscape.

## 2.2 Resources

The Plenary of JTC 1/SC 39 and the meetings of its working groups continue to be well attended. The last plenary was hosted hybrid in April 2024.

## 2 .3 Competition and Cooperation

SC42 JAG – Joint Advisory Group on AI and sustainability with ISO/IEC JTC1/SC 39 and JTC1/SC 42

> JTC 1/SC 42 and SC39 JAG on AI and sustainability kicked off their first meeting on June 12, 2024. SC 42 continues to hold monthly video conferences. We are still in the exploratory phase of identifying potential work items that fall within SC 42 or SC 39 expertise, or build off of existing reports, specifications or standards that have been published.

The full JTC 1/SC 39 National Body membership list can be found here.

JTC 1/SC 39 also works other ISO, IEC and JTC 1 committees as liaisons as well as other external organizations. A full list of liaisons is available here.

## 3.0 Working Groups

## 3 .1 WG 1 – Resource Efficient Data Centres

JTC 1/SC 39/WG 1 manages the development of key performance indicators for resource-efficient data centres. JTC 1/SC 39/WG1 program of work can be found at (*SC Program of Work.*).

### 3.1.1 WG 1 Accomplishments

WG 1 has completed the following work items:

- ISO/IEC 30134-4, IT Equipment Energy Efficiency for servers (ITEEsv), review confirmed
- ISO/IEC 30134-5, IT Equipment Utilization for servers (ITEUsv), review confirmed
- ISO/IEC TR 30133, Practices for resources-efficient data centres, published

WG 1 is pursuing the following work items:

- ISO/IEC TS 8236-1, Data Centre IT Equipment Provisioning – Forecasting & Management
- ISO/IEC 30134-2, Power Usage Effectiveness (PUE)
- ISO/IEC 30134-9, Water usage effectiveness (WUE)

### 3.1.2 WG 1 Risks, Opportunities and Issues

No major risks or issues are known.

### 3.2 WG 3 – Sustainable facilities and infrastructure

JTC 1/SC 39/WG 3 was established at the May 2017 JTC 1/SC 39 Plenary and manages the development of Sustainable facilities and infrastructure. JTC 1/SC 39/WG3 program of work can be found at (*SC Program of Work.*).

#### 3.2.1 WG 3 Accomplishments

WG 3 completed work on the following projects:

- ISO/IEC 22237-2, Information technology — Data centre facilities and infrastructures — Part 2: Building construction
- ISO/IEC 22237-6, Information technology — Data centre facilities and infrastructures — Part 6: Security systems
- ISO/IEC TS 22237-31, Information technology — Data centre facilities and infrastructures — Part 31: Key performance indicators for resilience

WG 3 is pursuing the following work items:

- ISO/IEC CD 22237-5, Information technology — Data centre facilities and infrastructures — Part 5: Telecommunications cabling infrastructure
- ISO/IEC CD TS 22237-31, Information technology — Data centre facilities and infrastructures — Part 31: Key performance indicators for resilience, Edition 2
- ISO/IEC WD 22237-7, Information technology — Data centre facilities and infrastructures — Part 7: Operations and management
- ISO/IEC TS 8236-2, Information technology -- Provisioning, forecasting & management -- Part 2: Data centre facility infrastructure

#### 3.2.2 WG 3 Risks, Opportunities and Issues

At its 1st meeting, WG 3 agreed a project plan for the development of series IS 22237 with experienced project leaders. Work on three IS plus one TR has been started since, with active experts from currently six National Bodies.

As the IS projects are based on the sound basis of published TS, there is an opportunity to deliver DIS texts within 18 to 30 months. This pace will attract additional experts, in particular from Asian P-members, to contribute to the development of IS, which satisfy the needs of data centre stakeholders on a global scale.

There is also the opportunity to technically align ISO/IEC 22237 documents with pertinent regional or national standards (such as EN 50600 series in Europe).

### 3.3 WG 4 – Eco-design of digital services

JTC 1/SC 39/WG 4 was established at the May 2023 JTC 1/SC 39 Plenary and works on the initial creation of a technical standard to design digital services in an ecofriendly way. JTC 1/SC 39/WG4 program of work can be found at (*SC Program of Work.*).

#### 3.3.1 WG 4 Accomplishments

WG 4 didn't complete a project so far. The Eco-design of digital services standard (TS20125) is its first one.

WG 4 is pursuing the following work items for 2023-2024, which are in the committee stage:

- ISO/IEC CD TS 20125, Eco-design of digital services

### 3.3.2 WG 4 Risks, Opportunities and Issues

So far, no major risks or issues are known.

As for opportunities, once the TS is published and after feedback is received, a project could be open to move to International Standard, which would allow certification.