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**Information technology —  
Sustainability for and by information  
technology — Smart data centre  
resource monitoring and control**

*Technologies de l'information — Durabilité pour et par les  
technologies de l'information — Surveillance des ressources et  
contrôle des centres de données intelligents*



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## Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

ISO/IEC 19395 was prepared by Ecma International (as ECMA-400) and was adopted, under a special "fast-track procedure", by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC.

## Introduction

Operation of data centres requires management of storage, computation, communication, electrical energy and temperature to achieve the required quality of service and efficiency parameters. Often, however, the separate management of Information Technology (IT), electrical energy (or power) and cooling Resource islands yields a sub-optimal result.

This International Standard provides Messages that facilitate integrated or “smart” monitoring and control of Resources in those islands. The Messages are exchanged between the Management Function and Resources. The International Standard acknowledges that those Resources may be composed of other Resources (e.g. a rack may contain servers, ventilators, etc.). In addition, e.g. those servers may be viewed from their computing, energy consumption or dissipation aspects which this International Standard models as Resource Components and groups into IT, power and fluid Domains, respectively.



# Information technology — Sustainability for and by information technology — Smart data centre resource monitoring and control

## 1 Scope

In the Smart Data Centre, Management Functions monitor and control Resources. Resources model IT and facility equipment, systems and components in a data centre. To monitor and control the Resources' Properties, Management Functions exchange command, response or event Messages with Resources, see [Figure 1](#).



Figure 1 — Scope

Resources are made up out of Resource Components which this second edition shares Properties with classes in Common Information Models (CIM). Messages refer to Resources and their Properties. Messages are encoded in XML and exchanged in HTTP primitives.

[Figure 1](#) illustrates the functionality that this second edition adds as described above.

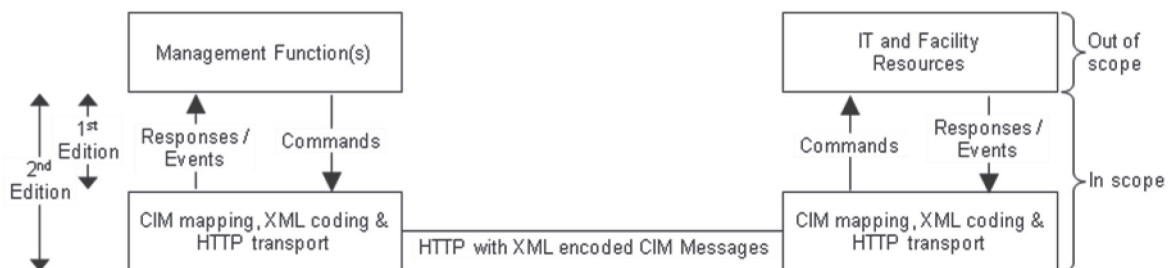


Figure 2 — Functionality that second edition adds

Management Function(s), Resources, IT & facility equipment, systems and components themselves are out of scope as illustrated in [Figure 1](#), [Figure 2](#) and [Figure 3](#). Static information such as location, addressing of Resources and CPU models are out of scope as well.