BSI Standards Publication

Internet of things (IoT) – Interoperability for iot systems

Part 1: Framework

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National foreword

This British Standard is the UK implementation of ISO/IEC 21823-1:2019.

The UK participation in its preparation was entrusted to Technical Committee IOT/1, Internet of Things.

A list of organizations represented on this committee can be obtained on request to its secretary.

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FOREWORD

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International Standard ISO/IEC 21823-1 was prepared by subcommittee 41: Internet of Things and related technologies, of ISO/IEC joint technical committee 1: Information technology.

The list of all currently available parts of the ISO/IEC 21823 series, under the general title *Information technology – Internet of Things (IoT) – Interoperability for IoT systems*, can be found on the IEC and ISO websites.

The text of this standard is based on the following documents:

FDIS	Report on voting
JTC1-SC41/75/FDIS	JTC1-SC41/87/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

Internet of Things (IoT) systems involve communications between different entities. This applies to connections between different IoT systems. It also applies to the many connections that exist within IoT systems. The various entities and their connections are described in ISO/IEC 30141.

The ISO/IEC 21823 series addresses issues that relate to interoperability of the communications between IoT systems entities. ISO/IEC 21823-1 describes a general framework for interoperability of IoT systems. This includes a facet model for interoperability which includes five facets of interoperability (i.e. transport, syntactic, semantic, behavioural and policy). This document addresses the framework to achieve interoperability for IoT; the specific facets are addressed in other parts of ISO/IEC 21823.

INTERNET OF THINGS (IoT) – INTEROPERABILITY FOR IoT SYSTEMS –

Part 1: Framework

1 Scope

This document provides an overview of interoperability as it applies to IoT systems and a framework for interoperability for IoT systems. This document enables IoT systems to be built in such a way that the entities of the IoT system are able to exchange information and mutually use the information in an efficient way. This document enables peer-to-peer interoperability between separate IoT systems.

This document ensures that all parties involved in building and using IoT systems have a common understanding of interoperability as it applies to IoT systems and the various entities within them.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 30141, *Internet of Things (IoT) – Reference architecture*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at http://www.iso.org/obp
- IEC Electropedia: available at http://www.electropedia.org/

3.1
interface
named set of operations that characterize the behaviour of an entity

[SOURCE: ISO 19142:2010, 4.10]

3.2
operation
specification of a transformation or query that an object may be called to execute

[SOURCE: ISO 19142:2010, 4.17]

3.3
framework
structure of processes and specifications designed to support the accomplishment of a specific task

[SOURCE: ISO/IEEE 11073-10201:2004, 3.22]