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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Intelligent device management –
Part 2: Requirements and recommendations

Gestion des appareils intelligents –
Partie 2: Exigences normatives et recommandations

IEC 63082-2:2024-08(en-fr)

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Intelligent device management – Part 2: Requirements and recommendations

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTELLIGENT DEVICE MANAGEMENT –

Part 2: Requirements and recommendations

FOREWORD

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IEC 63082-2 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC Technical Committee 65: Industrial-process measurement, control and automation. It is an International Standard.

The text of this International Standard is based on the following documents:

Draft	Report on voting
65E/1079/FDIS	65E/1112/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 63082 series, published under the general title *Intelligent device management*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

INTRODUCTION

The purpose of the IEC 63082 series is to define an environment that enables the effective use of intelligent devices. The IEC 63082 series defines common concepts, terminology, and management activities.

Intelligent device management (IDM) represents activities for managing intelligent devices through the facility life cycle and does not imply a particular asset management tool or set of those tools. Hardware and software tools are necessary to support work processes and procedures, but specification of the tools is not a part of the IEC 63082 series. IDM is one of many enterprise programs. IDM activities optimize the value from intelligent devices and supports integration of data from the production level with business systems. IDM is consistent with smart manufacturing initiatives.

Several stakeholders are responsible for delivering successful intelligent device management, including engineering, procurement, and construction (EPC) business providers, system integrators, suppliers and consultants.

The IEC 63082 series is not intended to replace or contradict other standards, for example IEC 61511 series for safety instrumented systems and IEC 62443 series for cybersecurity.

IEC TR 63082-1 defines intelligent device management concepts and terminology necessary for in-depth understanding and effective communication. It gives the basic concepts of how intelligent devices can be managed and an overview of how this device management works throughout the facility life cycle. IEC TR 63082-1 provides basic knowledge to understand the concepts of intelligent device management necessary to implement an IDM program.

This document provides provisions (requirements and recommendations). Additional information on why a requirement is given are provided in informative Annex A. The information provided in IEC TR 63082-1 is intended to be useful as background material for better understanding of provisions in this document.

INTELLIGENT DEVICE MANAGEMENT –

Part 2: Requirements and recommendations

1 Scope

This part of IEC 63082 specifies requirements and recommendations for establishing and maintaining intelligent device management (IDM) as outlined in IEC TR 63082-1 in an enterprise having one or more facilities.

The following topics are included in the scope of this document:

- optimizing functionality and performance of intelligent devices for their use;
- managing information related to IDM;
- integrating intelligent devices into industrial automation and control systems (IACS) in facilities;
- exchanging information between stakeholders that achieve and sustain IDM;
- coordinating multiple asynchronous IDM life cycles.

The following topics are outside the scope of this document:

- defining and determining the function and performance of intelligent devices;
- defining and specifying technologies and tools that provide, preserve and manage information related to IDM such as FDT, FDI, portable online and offline tools, configuration tools, historians, and maintenance planning tools;
- defining and specifying technologies and tools that are used to design intelligent devices;
- defining and specifying communication network architecture, communication technologies, cybersecurity requirements, and network management requirements.

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.

IEC 62381, *Automation systems in the process industry – Factory acceptance test (FAT), site acceptance test (SAT), and site integration test (SIT)*

IEC 62382, *Control systems in the process industry – Electrical and instrumentation loop check*

IEC 62443 (all parts), *Industrial communication networks – Network and system security*

IEC TR 63082-1:2020, *Intelligent device management – Part 1: Concepts and terminology*

3 Terms, definitions, abbreviated terms and conventions

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC TR 63082-1 and the following apply.

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

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

3.1.1
certification
procedure by which a third party gives documented assurance that a product, process, or service conforms to specified requirements

[SOURCE: IEC 61400-22:2010,3.4, modified – "written" was replaced with "documented" and "also known as conformity assessment" was deleted.]

3.1.2
decommissioning
act of taking an engineered system or component out of service, render it inoperative, dismantle and decontaminate it

[SOURCE: ISO 27914:2017, 3.13, modified – "decommission" was replaced with "decommissioning", and "take" was replaced with "act of taking".]

3.1.3
device monitoring
functions and activities to track behaviour of a device, and for all calls associated with the device

[SOURCE: ISO/IEC TR 18053:2000, 3.141, modified – "Device-Type Monitor" was replaced with "device monitoring", "A monitor that tracks" was replaced with "functions and activities to track", and "providing notification of events for the device" was removed.]

3.1.4
foundational requirement
requirement that serves as a basis for derivation of detailed requirements

EXAMPLE Management of risk, management of functionality and performance, management of change.

Note 1 to entry: It is possible that foundational requirements are not directly actionable, but their derived requirements should be a basis for action.

3.1.5
organization
body that is based on the membership of other bodies or individuals and has an established constitution and its own administration

[SOURCE: ISO/IEC Guide 2:2004, 4.2]

3.1.6
owner operator
enterprise or agency responsible for the day-to-day operation of a facility

Note 1 to entry: The owner operator can contractually delegate some or all these responsibilities.

3.1.7
quality management system
QMS
organization framework whose structure provides the policies, processes, procedures, and resources required to implement the quality management plan

Note 1 to entry: The typical project quality management plan should be compatible to the organization's quality management system.

[SOURCE: ISO/IEC 30105-4:2016, 3.41, modified – "the" was deleted.]

3.1.8
requirement
expression, in the content of a document, that conveys objectively verifiable criteria to be fulfilled and from which no deviation is permitted if conformance with the document is to be claimed

Note 1 to entry: Requirements can describe an essential service, capability, feature or activity.

[SOURCE: ISO/IEC Directives Part 2:2021, 3.3.3]

3.1.9
supplier
party that produces, provides, or furnishes an item, system, or service

[SOURCE: ISO 28219:2017, 3.11, modified – "system" was added.]

3.1.10
tool
executable software program which interacts with the user to perform some function

EXAMPLE Link scheduling software (LSS).

[SOURCE: IEC 61158-4-2:2023, 3.4.73]

3.2 Abbreviated terms

AVL	approved vendor list
CAE	computer aided engineering
CMMS	computerized maintenance management system
DIN	Deutsches Institut für Normung (German Institute for Standardization)
DTM	device type manager
EAM	enterprise asset maintenance
EDD	electronic device description file
EPC	engineering, procurement, and construction
ERP	enterprise resource planning
FAT	factory acceptance test
FDI	field device integration
FDT	field device tool
HAZOP	hazard and operability study
HMI	human machine interface
IACS	industrial automation control system
IDM	intelligent device management
IED	intelligent electronic device