INTERNATIONAL STANDARD

ISO 20242-3

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Industrial automation systems and integration — Service interface for testing applications —

Part 3: Virtual device service interface

Systèmes d'automatisation industrielle et intégration — Interface de service pour contrôler les applications —

Partie 3: Interface de service de dispositif virtuel

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 20242-3 was prepared by Technical Committee ISO/TC 184, *Automation systems and integration*, Subcommittee SC 5, *Interoperability, integration, and architectures for enterprise systems and automation applications*.

ISO 20242 consists of the following parts, under the general title *Industrial automation systems and integration — Service interface for testing applications*:

— *Part 1: Overview*

— *Part 2: Resource management service interface*

— *Part 3: Virtual device service interface*

— *Part 4: Device capability profile template*

The following parts are under preparation:

— *Part 5: Application program service interface*

— *Part 6: Conformance test methods, criteria and reports*

Introduction

The motivation for ISO 20242 stems from the desire of international automotive industries and their suppliers to facilitate the integration of automation and measurement devices, and other peripheral components for this purpose, into computer-based applications. ISO 20242 defines rules for the construction of device drivers and their behaviour in the context of an automation and/or measurement application.

The main goal of ISO 20242 is to provide users with:

— independence from the computer operating system;

— independence from the device connection technology (device interface/network);

— independence from device suppliers;

— the ability to ensure compatibility between device drivers and connected devices, and their behaviour in the context of a given computer platform;

— independence from the technological device development in the future.

ISO 20242 does not necessitate the development of new device families or the use of special interface technologies (networks). It encapsulates a device and its communication interface to make it compatible with other devices of that kind for a given application.

Industrial automation systems and integration — Service interface for testing applications —

Part 3:
Virtual device service interface

1 Scope

This part of ISO 20242 defines a service interface for the communication with virtual devices comprising capabilities of software modules and physical devices, accessed via resource management services as defined in ISO 20242-2.

2 Normative references

The following referenced documents are indispensable for the application 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 20242-1, *Industrial automation systems and integration — Service interface for testing applications — Part 1: Overview*

ISO 20242-2, *Industrial automation systems and integration — Service interface for testing applications — Part 2: Resource management service interface*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 20242-1, ISO 20242-2 and the following apply.

3.1
communication object
existing object which may be accessed with a communication function to read or write a value

[ISO 20242-1:2005, definition 2.3]

3.2
device capability description
text file containing information about the capabilities of virtual devices in a defined format (i.e. structure, syntax)

[ISO 20242-1:2005, definition 2.5]

3.3
device driver
software module providing an ISO 20242-specified interface with service functions to call a platform adapter to access physical devices

[ISO 20242-2:2010, definition 3.1]

3.4
function object
instance describing one capability of a virtual device