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Australian Standard™

Industrial automation systems and integration—Open systems application integration framework

Part 3: Reference description for IEC 61158-based control systems

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PREFACE

This Standard was prepared by the Standards Australia Committee IT-006, Information Technology for Industrial Automation and Integration.

This Standard is identical with, and has been reproduced from, ISO 15745-3:2003, *Industrial automation systems and integration—Open systems application integration framework,* Part 3*: Reference description for IEC 61158-based control systems*.

The objective of this Standard is to provide the technology specific elements and rules for describing both communication network profiles and the communication related aspects of device profiles specific to IEC 61158-based control systems.

This Standard is Part 3 of AS ISO 15745—2004, *Industrial automation systems and integration—Open systems application integration framework*, which is published in parts as follows:

Part 1: Generic reference description
Part 2: Reference description for ISO 11898-based control systems
Part 3: Reference description for IEC 61158-based control systems (this Standard)
Part 4: Reference description for Ethernet-based control systems

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ISO		AS ISO	
15745	Industrial automation systems and integration—Open systems application integration framework	15745	Industrial automation systems and integration—Open systems application integration framework
15745-1	Part 1: Generic reference description	15745.1	Part 1: Generic reference description

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INTRODUCTION

The application integration framework (AIF) described in ISO 15745 defines elements and rules that facilitate:

— the systematic organization and representation of the application integration requirements using integration models;

— the development of interface specifications in the form of application interoperability profiles (AIPs) that enable both the selection of suitable resources and the documentation of the "as built" application.

ISO 15745-1 defines the generic elements and rules for describing integration models and AIPs, together with their component profiles - process profiles, information exchange profiles, and resource profiles. The context of ISO 15745 and a structural overview of the constituents of an AIP are given in Figure 1 of ISO 15745-1:2003.

This part of ISO 15745 extends the generic AIF described in ISO 15745-1 by defining the technology specific elements and rules for describing both communication network profiles and the communication related aspects of device profiles specific to control systems based on IEC 61158 (P-NET®[1], PROFIBUS[2], WorldFIP®[3], ControlNet™[4], and INTERBUS®[5]). These technologies use profiles of IEC 61158 which are specified in IEC 61784-1. Profiles for ISO/IEC 8802-3-based control systems are outside the scope of this part of ISO 15745 and are specified in ISO 15745-4.

In particular, this part of ISO 15745 describes technology specific profile templates for the device profile and the communication network profile. Within an AIP, a device profile instance or a communication network profile instance is part of the resource profile defined in ISO 15745-1. The device profile and the communication network profile XML instance files are included in a resource profile XML instance using the ProfileHandle_DataType as specified in ISO 15745-1:2003, 7.2.5.

AIFs specified using the elements and rules of ISO 15745-1 can be easily integrated with the component profiles defined using the elements and rules specified in this part.

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AUSTRALIAN STANDARD

Industrial automation systems and integration — Open systems application integration framework —

Part 3:
Reference description for IEC 61158-based control systems

1 Scope

This part of ISO 15745 defines the technology specific elements and rules for describing both communication network profiles and the communication related aspects of device profiles specific to IEC 61158-based control systems. Profiles for ISO/IEC 8802-3-based control systems are outside the scope of this part of ISO 15745.

NOTE Generic elements and rules for describing integration models and application interoperability profiles, together with their component profiles (process profiles, information exchange profiles, and resource profiles) are specified in ISO 15745-1.

This part of ISO 15745 is to be used in conjunction with ISO 15745-1 to describe an application integration framework.

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 639-1:2002, *Codes for the representation of names of languages – Part 1: Alpha-2 code*

ISO 639-2:1998, *Codes for the representation of names of languages – Part 2: Alpha-3 code*

ISO 3166-1:1997, *Codes for the representation of names of countries and their subdivisions – Part 1: Country codes*

ISO 9506-1:2000, *Industrial automation systems – Manufacturing Message Specification – Part 1: Service definition*

ISO 15745-1:2003, *Industrial automation and systems integration – Open systems application integration framework – Part 1: Generic reference description*

ISO/IEC 10646-1:2000, *Information technology – Universal Multiple-Octet Coded Character Set (UCS) – Part 1: Architecture and Basic Multilingual Plane*

IEC 61131-3:2003, *Programmable controllers – Part 3: Programming languages*

IEC 61158 (all parts), *Digital data communications for measurement and control – Fieldbus for use in industrial control systems*

IEC 61784-1:2003, *Digital data communications for measurement and control - Part 1: Profile sets for continuous and discrete manufacturing relative to fieldbus use in industrial control systems*

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