ISO 29002:2026-03 (E)

Industrial automation systems and integration - Exchange of characteristic data

Contents

Page

Foreword v

Introduction vii

1 Scope 1

2 Normative references 2

3 Terms and definitions 2

4 Fundamental principles — Exchange of characteristic data 10

5 Basic datatypes to support exchange of characteristic data 16
5.1 Overview of datatypes to support exchange of characteristic data 16
5.2 Basic datatypes terminology reference model 18
5.2.1 Overview of the format for basic datatypes 18
5.2.2 Specified datatypes for exchange of characteristic data 18

6 Identification scheme 20
6.1 Purpose of the scheme 20
6.2 Use of the scheme 21
6.2.1 General considerations 21
6.2.2 Using the scheme as a resource for other standards 21
6.3 Administered items 22
6.4 Key characteristics of identifiers for administered items 23
6.4.1 Identification of administered items 23
6.4.2 Overall structure of the IRDI 24
6.4.3 Character set for the IRDI 24
6.4.4 Length of the IRDI 25
6.4.5 Representation of the IRDI 25
6.5 Registration authority identifier 25
6.5.1 Elements of registration authority identifiers 25
6.5.2 Representation of registration authority identifiers 27
6.6 Data identifier 28
6.6.1 Elements of data identifiers 28
6.6.2 Representation of data identifiers 30
6.6.3 Use of escape characters in the item code 31
6.7 Version identifier 31

7 Concept dictionary access 31
7.1 Overview of concept dictionary access 31
7.2 Concept dictionary terminology reference model 34
7.2.1 Overview of the concept dictionary terminology reference model 34
7.2.2 Specified entities for the concept dictionary terminology reference model 35

8 Characteristic data exchange 42
8.1 Overview of characteristic data exchange 42
8.2 Characteristic data terminology reference model 44
8.2.1 Overview of the format for characteristic data 44
8.2.2 Specified entities for exchanging characteristic data 45
8.3 Values in characteristic data 48
8.3.1 Overview of the format for values in characteristic data 48
8.3.2 Specified types for representing values in characteristic data 49

9 Concept dictionary resolution services 60
9.1 Overview of concept dictionary resolution services 60

9.2 Principles for concept dictionary resolution services 61
9.2.1 Identification 61
9.2.2 Types of service 61
9.2.3 Getter methods 62
9.3 Service descriptions and requirements 62
9.3.1 Location service 62
9.3.2 Terminology service 63
9.3.3 Ontology service 64
9.4 Data models for concept dictionary resolution services 66
9.4.1 Overview of the data models for concept dictionary resolution services 66
9.4.2 Core data model for concept dictionary resolution services 67
9.4.3 Location service data model 69
9.4.4 Terminology service data model 69
9.4.5 Ontology service data model 73
9.5 Interface specifications 74
9.5.1 Overview of the interface specifications 74
9.5.2 Location service 74
9.5.3 Terminology service 75
9.5.4 Ontology service 83
9.6 Search patterns 87
9.6.1 Search patterns general 87
9.6.2 Search pattern for full text 87
9.6.3 Search pattern wildcards 88

10 Query for characteristic data 88
10.1 Overview of query for characteristic data 88
10.2 Query for terminology reference model 92
10.2.1 Overview of the format for query 92
10.2.2 Specified entities for query 93

11 Conformance requirements 100
11.1 General 100
11.2 CC1: conformance requirement for basic datatypes 100
11.3 CC2: conformance requirement for identification scheme 100
11.4 CC3: conformance requirement for concept dictionary access 101
11.5 CC4: conformance requirement for characteristic data exchange 101
11.6 CC5: conformance requirement for concept dictionary resolution services 101
11.7 CC6 and CC7: conformance requirements for query of characteristic data 101

Annex A (informative) **Information object registration 102**

Annex B (informative) **Computer interpretable listings 103**

Annex C (informative) **Generation of XML schema from UML model 105**

Annex D (informative) **Relation to the ISO 13584 series, the ISO 22745 series and the IEC 61360 series 107**

Annex E (informative) **Usage guidance for source_location (example) 108**

Annex F (informative) **Referencing metadata from the characteristic data model 110**

Annex G (informative) **Using the model of characteristic data 111**

Annex H (informative) **The role of property value pairs 116**

Annex I (informative) **Usage guide for get_concept_model 119**

Annex J (informative) **XSD and JSON parameter names 122**

Annex K (informative) **The role of data dictionary models in achieving semantic interoperability 123**

Annex L (informative) **Cross tables of clauses and figures from withdrawn documents 127**

Bibliography 135