ISO 13209-2:2022-07 (E)

Road vehicles - Open Test sequence eXchange format (OTX) - Part 2: Core data model specification and requirements

Contents

Page

Foreword vi

Introduction vii

1 Scope 1

2 Normative references 1

3 Terms, definitions and abbreviated terms 2
3.1 Terms and definitions 2
3.2 Abbreviated terms 3

4 Requirements and recommendations 4
4.1 General 4
4.2 Basic principles for requirements and recommendations definition 4
4.3 Clustering of requirements and recommendations 4
4.4 Entries priorities 4
4.5 General format and language aspects 5
4.6 Test sequence development process support 6
4.7 Language feature details 7
4.7.1 Declarations 7
4.7.2 Data types 8
4.7.3 Expressions 9
4.8 Boundaries 12

5 Introduction to modelling in UML and XSD 14
5.1 General aspects 14
5.2 Class diagrams 14
5.2.1 General 14
5.2.2 Class 14
5.2.3 Inheritance relationships 15
5.2.4 Aggregation relationships 16
5.3 Mapping to the XML Schema Definition language (XSD) 16
5.3.1 General 16
5.3.2 Mapping rules 17
5.3.3 Full mapping example 17

6 OTX principles 20
6.1 General 20
6.2 XML format 20
6.3 Imperative and structured programming paradigm 21
6.4 Graphical authoring of OTX sequences 21
6.5 Specification/realisation concept 21
6.6 Modular OTX extension concept and OTX-based runtime architecture 21
6.7 Context concept 23
6.8 Validities concept 24
6.9 Signature concept 27

7 OTX core data model specification 28
7.1 General 28
7.2 High-level overview of the OTX core data model 29

7.3 Document root 30
7.3.1 Description 30
7.3.2 Syntax 31
7.3.3 Semantics 31
7.3.4 Example 34
7.4 Imports 35
7.4.1 Description 35
7.4.2 Syntax 35
7.4.3 Semantics 35
7.4.4 Example 36
7.5 Global declarations 36
7.5.1 Description 36
7.5.2 Syntax 36
7.5.3 Semantics 37
7.5.4 Example 40
7.6 Validity terms 41
7.6.1 Description 41
7.6.2 Syntax 41
7.6.3 Semantics 42
7.6.4 Example 43
7.7 Signatures 43
7.7.1 Description 43
7.7.2 Syntax 43
7.7.3 Semantics 44
7.8 Procedure signatures 45
7.8.1 Description 45
7.8.2 Syntax 45
7.8.3 Semantics 45
7.8.4 Example 45
7.9 Procedures 47
7.9.1 Description 47
7.9.2 Syntax 47
7.9.3 Semantics 47
7.9.4 Example 50
7.10 Floating comments 50
7.10.1 Description 50
7.10.2 Syntax 50
7.10.3 Semantics 51
7.10.4 Example 51
7.11 Parameter declarations 52
7.11.1 Description 52
7.11.2 Syntax 52
7.11.3 Semantics 53
7.11.4 Example 54
7.12 Local declarations 54
7.12.1 Description 54
7.12.2 Syntax 54
7.12.3 Semantics 55
7.12.4 Example 55
7.13 Nodes 56
7.13.1 Overview 56
7.13.2 Node 57
7.13.3 Action node 58
7.13.4 Compound nodes 62
7.13.5 End nodes 84
7.14 Actions 91
7.14.1 Overview 91
7.14.2 Syntax 91
7.14.3 General considerations 92
7.14.4 Assignment 92
7.14.5 ProcedureCall 92

7.14.6 ByteFieldModifiers 98
7.14.7 ListModifiers 101
7.14.8 MapModifiers 104
7.15 Terms 106
7.15.1 Overview 106
7.15.2 Literal terms 107

7.15.3 Dereferencing terms 112
7.15.4 Creation terms 114
7.15.5 Conversion terms 117
7.15.6 Integer conversion terms 121
7.15.7 Logic operations 124
7.15.8 Relational operations 126
7.15.9 Mathematical operations 129
7.15.10 ByteField operations 133
7.15.11 List-related terms 136
7.15.12 Map-related terms 137
7.15.13 Exception-related terms 139
7.15.14 Validity concept related terms 140
7.16 Universal types 141
7.16.1 Overview 141
7.16.2 PackageName 141
7.16.3 OtxName and OtxLink 142
7.16.4 NamedAndSpecified 143
7.16.5 MetaData 145
7.16.6 Variable access 147
7.16.7 Declarations 149
7.16.8 Visibility 162
7.16.9 Flow 162

Annex A (normative) OTX data types 165

Annex B (normative) Scope and memory allocation 170

Annex C (normative) Comprehensive checker rule listing 172

Annex D (normative) Extension mechanism 185

Annex E (normative) Schema annotations 188

Annex F (informative) OTX home and URI recommendation 190

Bibliography 191