DIN EN ISO/IEEE 11073-20601:2023-04 (E)

Health informatics - Device interoperability - Part 20601: Personal health device communication - Application profile - Optimized exchange protocol (ISO/IEEE 11073-20601:2022); English version EN ISO 11073-20601:2022

Contents

Page

1. Overview 13
1.1 Scope 13
1.2 Purpose 13
1.3 Context 13
1.4 Word usage 17

2. Normative references 17

3. Definitions, acronyms, and abbreviations 18
3.1 Definitions 18
3.2 Acronyms and abbreviations 19

4. Guiding principles 20

5. Introduction to IEEE 11073 personal health devices 21
5.1 General 21
5.2 Domain information model (DIM) 21
5.3 Service model 21
5.4 Communication model 22
5.5 Compliance with other standards 22
5.6 Security 22

6. Personal health device DIM 22
6.1 General 22
6.2 Nomenclature usage 23
6.3 Personal health object class definitions 24
6.4 Information model extensibility rules 83

7. Personal health device service model 83
7.1 General 83
7.2 Association service 84
7.3 Object access services 84
7.4 Specific application of object access EVENT REPORT services for personal health devices 85

8. Communication model 93
8.1 General 93
8.2 System context 93
8.3 Communications characteristics 94
8.4 State machines 97
8.5 Connected procedure 103
8.6 Unassociated procedure 103
8.7 Associating procedure 104
8.8 Configuring procedure 111
8.9 Operating procedure 115
8.10 Disassociating procedure 130
8.11 Message encoding 131
8.12 Time coordination 131

9. Conformance model 135
9.1 Applicability 135
9.2 Conformance specification 135
9.3 Implementation conformance statements (ICSs) 136
9.4 General conformance 136
9.5 Device additions/extensions ICS 140

Annex A (normative) ASN.1 definitions 144
A.1 General 144
A.2 Common data types 144
A.3 Attribute data types 150
A.4 ACTION-method-related data types 158
A.5 Message-related data types 160
A.6 Other 160
A.7 Personal health device protocol frame 160
A.8 Association protocol definitions 161
A.9 Presentation protocol definitions 164
A.10 Data protocol definitions 164
A.11 Data types for new object attributes and object services 169

Annex B (informative) Scale and range specification example 185
B.1 General 185
B.2 Thermometer example 185

Annex C (informative) The PM-store concept 187
C.1 General 187
C.2 Persistent metric (PM) store object hierarchy 188

Annex D (informative) Transport profile types 192
D.1 General 192
D.2 Type 1 192
D.3 Type 2 193
D.4 Type 3 193
D.5 Summary 194

Annex E (normative) State tables 195
E.1 General 195
E.2 Events 195
E.3 Agent state table 197
E.4 Manager state table 206

Annex F (normative) Medical device encoding rules (MDER) 215
F.1 General 215
F.2 Supported ASN.1 syntax 215
F.3 Byte order 216
F.4 Encodings 218
F.5 Floating point numbers 224
F.6 Floating point data structure—FLOAT-Type 224
F.7 Short floating point data structure—SFLOAT-Type 225
F.8 Expression of precision of floating point numbers 226

Annex G (informative) Encoded data type definitions 227

Annex H (informative) Examples 249
H.1 General 249
H.2 Weighing scale 249
H.3 Pulse oximeter 255
H.4 PM-store and PM-segment transactions 256

Annex I (normative) Nomenclature codes 265

Annex J (informative) Derivation and modification history 272
J.1 General 272
J.2 ASN.1 structures 272
J.3 Medical device encoding rules (MDER) 272
J.4 Nomenclature codes 272

Annex K (informative) The schedule-store concept 275
K.1 General 275
K.2 Schedule-store object hierarchy 276

Annex L (informative) Revision history 279

Annex M (informative) Bibliography 280