

DIN EN ISO 11073-10101:2021-01 (E)

Health informatics - Device interoperability - Part 10101: Point-of-care medical device communication - Nomenclature (ISO/IEEE 11073-10101:2020); English version EN ISO 11073-10101:2020, only on CD-ROM

Contents

	Page
1. Scope	20
2. Normative references.....	20
3. Terms, definitions, symbols, and abbreviated terms.....	22
3.1 Terms and definitions	22
3.2 Symbols and abbreviated terms	22
4. Conformance	25
5. Introduction to the standard.....	25
6. Application	25
7. Semantics.....	26
7.1 Attribution	26
7.2 Coding	27
7.2.1 Context-sensitivity	27
7.2.2 Grouping	28
7.3 Synonyms	29
7.4 Deprecated terms	29
7.5 Withdrawn terms	29
8. Syntax.....	29
8.1 Transfer.....	29
8.1.1 Types.....	29
8.1.2 Notation	30
8.2 Programmatic form.....	32
8.2.1 Attribution.....	32
8.2.2 Notation	32
9. Extensibility.....	33
10. Version exporting	33
Annex A (normative) Nomenclature semantics.....	34
A.1 Overview of nomenclature for vital signs—Semantics	34
A.2 Code assignment to the MDIB elements.....	35
A.2.1 Overview.....	35
A.2.2 Relationship to other standards	35
A.2.3 Basic rules	35
A.2.4 Coding spaces	36
A.3 Data dictionary and codes for object-oriented modeling elements (Partition 1).....	45
A.3.1 Introduction.....	45
A.3.2 Object-oriented modeling elements: inventory tables	46
A.4 Data dictionary and codes for communication infrastructure (Partition 8).....	79
A.4.1 Introduction.....	79
A.4.2 Communication infrastructure: inventory tables	79
A.5 Nomenclature, data dictionary, and codes for vital signs devices (Partition 1)	84
A.5.1 Introduction.....	84
A.5.2 Base concepts.....	85

A.5.3 First set of differentiating criteria.....	85
A.5.4 Second set of differentiating criteria	86
A.5.5 Third set of differentiating criteria	86
A.5.6 Attributes.....	87
A.5.7 Device class discriminator	87
A.5.8 Code table	87
A.6 Terminology and codes for units of measurement (Partition 4).....	98
A.6.1 Introduction.....	98
A.6.2 Orders of magnitude discriminator	98
A.6.3 Units outside of SI.....	99
A.6.4 Units of measurement	100
A.6.5 Withdrawn terms for vital signs units of measurement.....	122
A.6.6 Deprecated terms for vital signs units of measurement.....	123
A.6.7 Deprecated Reflds for Vital Signs Units of Measurement	124
A.7 Nomenclature, data dictionary, and codes for metrics (measurements and enumerations) (Partition 2).....	125
A.7.1 Nomenclature for ECG measurements.....	125
A.7.2 Nomenclature for ECG enumerations	157
A.7.3 Nomenclature, data dictionary, and codes for haemodynamic monitoring measurements	173
A.7.4 Nomenclature and codes for respiratory, ventilator, and anesthesia measurements.....	192
A.7.5 Nomenclature, data dictionary, and codes for common blood-gas, blood, urine, and other fluid chemistry measurements	273
A.7.6 Nomenclature, data dictionary, and codes for fluid output measurements.....	288
A.7.7 Nomenclature, data dictionary, and codes for pumps	292
A.7.8 Nomenclature, data dictionary, and codes for neurological monitoring measurements	309
A.7.9 Nomenclature, data dictionary, and codes for neurophysiologic enumerations	322
A.7.10 Nomenclature, data dictionary, and codes for stimulation modes.....	346
A.7.11 Nomenclature, data dictionary, and codes for miscellaneous measurements.....	353
A.7.12 Nomenclature and code extensions for infant incubator and warmer microenvironments.....	360
A.7.13 Nomenclature, data dictionary, and codes for spirometry.....	362
A.7.14 Nomenclature and code extensions for personal health devices	372
A.8 Nomenclature, data dictionary, and codes for body sites (Partition 7)	377
A.8.1 Introduction.....	377
A.8.2 Sites for neurophysiological signal monitoring: locations near peripheral nerves.....	378
A.8.3 Sites for neurophysiological signal monitoring: locations near muscles.....	392
A.8.4 Sites for EEG-electrode placement on the head	430
A.8.5 Sites for EOG signal monitoring	438
A.8.6 Sites for general neurological monitoring measurements and drainage.....	443
A.8.7 Sites for cardiovascular measurements	445
A.8.8 Miscellaneous sites used in vital signs monitoring and measurement	451
A.8.9 Equipment sites used in vital signs monitoring and measurement	466
A.8.10 Qualifiers of body site locations.....	468
A.9 Nomenclature, data dictionary, and codes for events and alerts (Partition 3).....	472
A.9.1 Introduction.....	472
A.9.2 Diagnostic pattern events	472
A.9.3 Device-related and environment-related events	483
A.10 Systematic derivations of terms and codes for infrastructure (Partition 8).....	519
A.10.1 Introduction	519
A.10.2 Base concepts, device specialization.....	519
A.10.3 Base concepts, device sub-specialization	523
A.10.4 Base concepts, time synchronization profiles	526
A.11 Systematic derivations of terms and codes for personal health devices disease management (Partition 128).....	527
A.11.1 Introduction	527
A.11.2 Base concepts, general device properties	527
A.11.3 Base concepts, Basic ECG sensors and status.....	528

A.11.4 Base concepts, Basic ECG event context.....	528
A.11.5 Base concepts, SABTE sensors and settings.....	529
A.11.6 Base concepts, SABTE modes.....	540
A.11.7 Base concepts, Glucose Monitoring, carbohydrate source.....	542
A.11.8 Base concepts, Glucose Monitoring, carbohydrate source.....	543
A.11.9 Base concepts, Glucose Monitoring, carbohydrate sources.....	543
A.11.10 Base concepts, Glucose Monitoring, insulin type.....	545
A.11.11 Base concepts, Glucose Monitoring, insulin types.....	546
A.11.12 Base concepts, Glucose Monitoring, general health.....	547
A.11.13 Base concepts, Glucose Monitoring, general health.....	548
A.11.14 Base concepts, Glucose Monitoring, sample location.....	549
A.11.15 Base concepts, Glucose Monitoring, sample locations.....	549
A.11.16 Base concepts, Glucose Monitoring, meal.....	551
A.11.17 Base concepts, Glucose Monitoring, meal type.....	552
A.11.18 Base concepts, Glucose Monitoring, tester.....	553
A.11.19 Base concepts, Glucose Monitoring, tester type.....	554
A.11.20 INR Status and Context.....	554
A.11.21 Base concepts, Continuous Glucose Monitoring.....	556
A.11.22 Base concepts, Continuous Glucose Monitoring, status.....	558
A.11.23 Base concepts, Continuous Glucose Monitoring, device.....	559
A.11.24 Base concepts, Insulin Pump, sensors.....	560
A.11.25 Base concepts, Power StatusMonitor, sensors.....	563
A.11.26 Base concepts, Power Status Monitor, battery.....	564
A.11.27 Base concepts, Peak Expiratory Flow.....	565
A.12 Systematic derivations of terms and codes for health and fitness (Partition 129).....	566
A.12.1 Introduction.....	566
A.12.2 Base concepts.....	566
A.12.3 First set of differentiating criteria, sensors.....	566
A.12.4 Second set of differentiating criteria, activity.....	570
A.12.5 First set of differentiating criteria, exercise.....	572
A.12.6 Second set of differentiating criteria, exercise.....	572
A.13 Systematic derivations of terms and codes for independent living monitoring measurements (Partition 130).....	575
A.13.1 Introduction.....	575
A.13.2 Base concepts.....	575
A.13.3 First set of differentiating criteria, sensor.....	575
A.13.4 Second set of differentiating criteria, location, general.....	579
A.13.5 Second set of differentiating criteria, location, room.....	581
A.13.6 Second set of differentiating criteria, location, medical room.....	584
A.13.7 Second set of differentiating criteria, location, doors and windows.....	586
A.13.8 Second set of differentiating criteria, location, furniture.....	587
A.13.9 Second set of differentiating criteria, location, appliance.....	588
A.13.10 Third set of differentiating criteria, AI events.....	590
A.13.11 First set of differentiating criteria, sensors, medication dispenser.....	593
A.14 Nomenclature for error return codes (Partition 255).....	595
A.14.1 Base concepts.....	595
A.14.2 First set of differentiating criteria.....	595
A.14.3 Code table.....	595
A.14.4 Withdrawn terms for error return codes.....	596
A.15 Nomenclature, data dictionary, and codes for external nomenclatures and messaging standards (Partition 256).....	597
A.15.1 Introduction.....	597
A.15.2 Base concepts.....	597
A.15.3 First set of differentiating criteria.....	597
A.15.4 Second set of differentiating criteria.....	598
A.15.5 Third set of differentiating criteria.....	598

A.15.6 Discriminator	598
A.15.7 Code table	598
A.16 Information attributes to support IHE PCD DEC and PCHA/Continua Services Interface (Partition 1 and Partition 8)	602
A.16.1 Information attributes to support IHE PCD Alert Communication Management	602
A.16.2 Notification attributes to support IHE PCD Alert Communication Management	602
A.16.3 Infrastructure attributes to support PCHA/Continua Services Interface and IHE PCD DEC	602
A.16.4 Information attributes to support PCHA/Continua Services Interface	604
A.16.5 Information attributes to support IHE PCD DEC and PCHA/Continua Services Interface timekeeping	604
A.16.6 Information attributes to support semantics defined by this standard	607
A.16.7 Information attributes to support ECG semantics defined by this standard	607
Annex B (normative) Nomenclature syntax	608
B.1 General	608
B.1.1 Notation	608
B.1.2 Partition codes	608
B.2 Object infrastructure and device nomenclature – Partition 1	609
B.2.1 Object infrastructure	609
B.2.2 Device nomenclature	630
B.3 Medical supervisory control and data acquisition (SCADA) – Partition 2	650
B.3.1 Discriminator ranges	650
B.3.2 SCADA Term Codes	651
B.4 Events – Partition 3	722
B.5 Dimensions – Partition 4	741
B.6 Virtual attributes – Partition 5	761
B.7 Parameter groups – Partition 6	761
B.8 Body Sites – Partition 7	761
B.9 Communication infrastructure – Partition 8	802
B.10 File Exchange Format – Partition 9	810
B.11 ECG Extension – Partition 10	810
B.12 ICDO Extension – Partition 11	810
B.13 PHD Disease Management – Partition 128	810
B.14 PHD Health Fitness – Partition 129	820
B.15 PHD Aging Independently – Partition 130	824
B.16 Return Codes – Partition 255	835
B.17 External nomenclature – Partition 256	836
B.18 Device Settings – Partition 258	837
B.19 Device Predicted Values – Partition 514	840
Annex C (normative) Terms, discriminators, and numeric codes	843
C.1 Overview	843
C.2 Discriminators	843
C.3 Discriminator sets	844
C.3.1 Device Type [MVC] discriminator set	844
C.3.2 Statistical [MMM] discriminator set	844
C.3.3 Haemodynamic pressure measurements [SDM] discriminator set	844
C.3.4 Rates for countable events [RCE] discriminator set	845
C.3.5 Rates for countable neurological events [RCN] discriminator set	845
C.3.6 Body Site Orientation (laterally) [LAT] discriminator set	845
C.3.7 Unit of Measure [UoM] discriminator set	846
C.3.8 Unit of Measure (singular) [UoM1] discriminator	846
C.3.9 No [1] Discriminator	847
C.3.10 Event [2] discriminator set	847
C.3.11 Statistical profile [PN3] discriminator set	847

C.3.12 Location [LOC] discriminator set	848
C.3.13 Version of External Nomenclature [64] Discriminator	849
C.3.14 ECG lead designation from ISO/IEEE 11073-10101:2004 [LEAD1] discriminator set	849
C.3.15 ECG lead designation from ISO/IEEE 11073-10102:2012 [LEAD2] discriminator set	852
C.3.16 Equivalent ECG lead designations in ISO/IEEE 11073-10101:2004 and ISO/IEEE 11073-10102:2012 [LEAD] discriminator set	857
C.3.17 Comparison of ECG lead discriminators in ISO/IEEE 11073-10101:2004 and ISO/IEEE 11073-10102:2012	859
C.4 Alphabetical listing of terms, discriminators, and numeric codes.....	862
C.4.1 Object-Oriented – Partition 1	862
C.4.2 Supervisory Control and Data Acquisition (SCADA) – Partition 2	895
C.4.3 Events and Alerts – Partition 3	950
C.4.4 Dimensions – Partition 4	965
C.4.5 Parameter Groups – Partition 6	981
C.4.6 Body Sites – Partition 7.....	981
C.4.7 Communication Infrastructure—Partition 8.....	1014
C.4.8 PHD Disease Management—Partition 128	1019
C.4.9 PHD Health Fitness—Partition 129	1025
C.4.10 PHD Aging Independently—Partition 130.....	1028
C.4.11 Return Codes—Partition 255	1036
C.4.12 External Nomenclature—Partition 256	1036
C.4.13 Device Settings—Partition 258	1037
C.4.14 Predicted Values—Partition 514	1040
 Annex D (informative) Synonyms	 1042
D.1.1 Term code Synonyms.....	1042
D.1.2 RefId synonyms	1042
 Annex E (informative) Breaths and inflations.....	 1044
 Annex F (informative) Respiratory, ventilator, and anesthesia RefId naming conventions	 1046
 Annex G (informative) Anesthesia ventilation and breathing circuits	 1048
G.1 Bellows driven on expiratory side	1050
G.2 Piston driven on inspiratory side.....	1051
G.3 Mapleson circuits.....	1052
 Annex H (informative) Term approval and management process.....	 1053
H.1 Term approval and management process.....	1053
H.1.1 Proposed term	1054
H.1.2 Proposed term review.....	1054
H.1.3 Provisional term	1054
H.1.4 Provisional term review	1054
H.1.5 Rejected term	1054
H.1.6 Accepted term	1054
H.1.7 IEEE Ballot	1054
H.1.8 Published term.....	1055
H.1.9 Deprecated term	1055
H.1.10 Withdrawn term	1055
H.2 Rosetta Terminology Mapping Management System (RTMMS).....	1055
H.3 Right to use.....	1055
 Annex I (informative) Bibliography.....	 1057
 Annex J (informative) Revision history	 1059

Tables

Table 1—Nomenclature attributes.....	26
Table 2—Attribution example.....	26
Table 3—Systematic name derivation—medical device type example.....	27
Table A.2.4.1.1—Partition 1—Object-oriented elements, Device nomenclature.....	37
Table A.2.4.2.1—Partition 2—Metrics (multipage table).....	37
Table A.2.4.3.1—Partition 3—Alerts and events.....	39
Table A.2.4.4.1—Partition 4—Units of measurement (dimensions).....	39
Table A.2.4.6.1—Partition 6—Program group.....	40
Table A.2.4.7.1—Partition 7—Body sites.....	40
Table A.2.4.8.1—Partition 8—Communication infrastructure.....	41
Table A.2.4.9.1—Partition 9—Reserved for file exchange format (FEF).....	41
Table A.2.4.10.1—Partition 10—ECG additional nomenclature (annotated ECG).....	41
Table A.2.4.11.1—Partition 11—IDCO nomenclature.....	41
Table A.2.4.12.1—Partition 128—PHD disease management.....	42
Table A.2.4.13.1—Partition 129—PHD health and fitness.....	42
Table A.2.4.14.1—Partition 130—PHD aging independently.....	43
Table A.2.4.15.1—Partition 255—Return codes.....	43
Table A.2.4.16.1—Partition 256—External nomenclatures.....	43
Table A.2.4.17.1—Partition 258—Settings.....	44
Table A.2.4.18.1—Partition 514—Predicted values.....	44
Table A.2.4.19.1—Partition 1024—Private.....	44
Table A.3.2.1.1—Object-oriented modeling elements—General—object class items.....	46
Table A.3.2.1.2—Object-oriented modeling elements—General—attributes.....	47
Table A.3.2.1.3—Object-oriented modeling elements—General—attribute groups.....	47
Table A.3.2.1.4—Object-oriented modeling elements—General—behavior.....	47
Table A.3.2.1.5—Object-oriented modeling elements—General—notifications.....	47
Table A.3.2.2.1—Object-oriented modeling elements—Medical Package—object class items.....	47
Table A.3.2.2.2—Object-oriented modeling elements—Medical Package—attributes (<i>multipage table</i>)... ..	48
Table A.3.2.2.3—Object-oriented modeling elements—Medical Package—attribute groups.....	52
Table A.3.2.2.4—Object-oriented modeling elements—Medical Package—behavior.....	52
Table A.3.2.2.5—Object-oriented modeling elements—Medical Package—notifications.....	52
Table A.3.2.3.1—Object-oriented modeling elements—Alert Package—object class items.....	53
Table A.3.2.3.2—Object-oriented modeling elements—Alert Package—attributes.....	53
Table A.3.2.3.3—Object-oriented modeling elements—Alert Package—attribute groups.....	53
Table A.3.2.3.4—Object-oriented modeling elements—Alert Package—behavior.....	53
Table A.3.2.3.5—Object-oriented modeling elements—Alert Package—notifications.....	54
Table A.3.2.4.1—Object-oriented modeling elements—System Package—object class items.....	54
Table A.3.2.4.2—Object-oriented modeling elements—System Package—attributes (<i>multipage table</i>)... ..	54
Table A.3.2.4.3—Object-oriented modeling elements—System Package—attribute groups.....	56
Table A.3.2.4.4—Object-oriented modeling elements—System Package—behavior.....	57
Table A.3.2.4.5—Object-oriented modeling elements—System Package—notifications.....	57
Table A.3.2.5.1—Object-oriented modeling elements—Control Package—object class items.....	57
Table A.3.2.5.2—Object-oriented modeling elements—Control Package—attributes (<i>multipage table</i>)... ..	57
Table A.3.2.5.3—Object-oriented modeling elements—Control Package—attribute groups.....	59
Table A.3.2.5.4—Object-oriented modeling elements—Control Package—behavior.....	59
Table A.3.2.5.5—Object-oriented modeling elements—Control Package—notifications.....	59
Table A.3.2.6.1—Object-oriented modeling elements—Extended Services Package—object class items.....	59
Table A.3.2.6.2—Object-oriented modeling elements—Extended Services Package—attributes.....	60
Table A.3.2.6.3—Object-oriented modeling elements—Extended Services Package—attribute groups... ..	60
Table A.3.2.6.4—Object-oriented modeling elements—Extended Services Package—behavior.....	61
Table A.3.2.6.5—Object-oriented modeling elements—Extended Services Package—notifications.....	61
Table A.3.2.7.1—Object-oriented modeling elements—Communication Package—object class items.....	61

Table A.3.2.7.2—Object-oriented modeling elements—Communication Package—attributes (<i>multipage table</i>)	62
Table A.3.2.7.3—Object-oriented modeling elements—Communication Package—attribute groups	63
Table A.3.2.7.4—Object-oriented modeling elements—Communication Package—behavior	63
Table A.3.2.7.5—Object-oriented modeling elements—Communication Package—notifications	63
Table A.3.2.8.1—Object-oriented modeling elements—Archival Package—object class items	63
Table A.3.2.8.2—Object-oriented modeling elements—Archival Package—attributes (<i>multipage table</i>)	64
Table A.3.2.8.3—Object-oriented modeling elements—Archival Package—attribute groups	65
Table A.3.2.8.4—Object-oriented modeling elements—Archival Package—behavior	65
Table A.3.2.8.5—Object-oriented modeling elements—Archival Package—notifications	65
Table A.3.2.9.1—Object-oriented modeling elements—Patient Package—object class items	65
Table A.3.2.9.2—Object-oriented modeling elements—Patient Package—attributes (<i>multipage table</i>).....	66
Table A.3.2.9.3—Object-oriented modeling elements—Patient Package—attribute groups	67
Table A.3.2.9.4—Object-oriented modeling elements—Patient Package—behavior	67
Table A.3.2.9.5—Object-oriented modeling elements—Patient Package—notifications	67
Table A.3.2.10.1—Object-oriented modeling elements—PHD—object class items	68
Table A.3.2.10.2—Object-oriented modeling elements—PHD—attributes (<i>multipage table</i>)	68
Table A.3.2.10.3—Object-oriented modeling elements—PHD—attribute groups	70
Table A.3.2.10.4—Object-oriented modeling elements—PHD-behavior	71
Table A.3.2.10.5—Object-oriented modeling elements—PHD—notifications	71
Table A.3.2.11.1—Object-oriented modeling elements—WCM—object class items	72
Table A.3.2.11.2—Object-oriented modeling elements—WCM—attributes (<i>multipage table</i>)	72
Table A.3.2.11.3—Object-oriented modeling elements—WCM—attribute groups	74
Table A.3.2.11.4—Object-oriented modeling elements—WCM—behavior	74
Table A.3.2.11.5—Object-oriented modeling elements—WCM—notifications	74
Table A.3.2.12.1—Object-oriented modeling elements—MEM-LS—object class items.....	74
Table A.3.2.12.2—Object-oriented modeling elements—MEM-LS—attributes (<i>multipage table</i>)	75
Table A.3.2.12.3—Object-oriented modeling elements—MEM-LS—attribute groups	77
Table A.3.2.12.4—Object-oriented modeling elements—MEM-LS—behavior	77
Table A.3.2.12.5—Object-oriented modeling elements—MEM-LS—notifications	77
Table A.3.2.13.1—Object-oriented modeling elements—USI—object class items.....	77
Table A.3.2.13.2—Object-oriented modeling elements—USI—attributes	77
Table A.3.2.13.3—Object-oriented modeling elements—USI—attribute groups.....	77
Table A.3.2.13.4—Object-oriented modeling elements—USI—behavior	78
Table A.3.2.13.5—Object-oriented modeling elements—USI—notifications.....	78
Table A.3.2.14.1—Object-oriented modeling elements—Deprecated identifier terms.....	78
Table A.4.1—Communication infrastructure—object class items	79
Table A.4.2—Communication infrastructure—attributes (<i>multipage table</i>)	80
Table A.4.3—Communication infrastructure—attribute groups	82
Table A.4.4—Communication infrastructure—behavior	82
Table A.4.5—Communication infrastructure—notifications	83
Table A.4.6—Communication infrastructure—profile support attributes	83
Table A.4.7—Communication infrastructure—optional package identifiers	83
Table A.4.8—Communication infrastructure—system specification components.....	83
Table A.5.1—Nomenclature and codes for vital signs devices (<i>multipage table</i>).....	88
Table A.6.2.1—Table of decimal factors	99
Table A.6.3.1—Non-SI units (<i>multipage table</i>)	99
Table A.6.4.1—Vital signs units of measurement (<i>multipage table</i>)	101
Table A.6.5.1—Withdrawn terms for vital signs units of measurement	122
Table A.6.6.1—Deprecated terms for vital signs units of measurement	123
Table A.6.7.1—Deprecated RefIDs for vital signs units of measurement	124
Table A.7.1.3.1—List of standardized ECG <lead> descriptors from SCP-ECG (<i>multipage table</i>).....	130
Table A.7.1.3.2—Nomenclature and codes for ECG lead descriptors from IEEE Std 11073-10101-2004 with discriminator group [LEAD1] (<i>multipage table</i>).....	132

Table A.7.1.3.3—Nomenclature and codes for ECG lead descriptors from IEEE Std 11073-10102 with discriminator group [LEAD2] (<i>multipage table</i>).....	135
Table A.7.1.6.1—Nomenclature and codes for global lead ECG measurements (<i>multipage table</i>).....	144
Table A.7.1.6.2—Nomenclature and codes for ECG measurements with lead origin (<i>multipage table</i>)....	151
Table A.7.1.7.1—Deprecated terms for ECG measurements.....	156
Table A.7.1.8.1—Deprecated RefIds for ECG measurements defined in IEEE11073-10102.....	156
Table A.7.2.6.1—Nomenclature and codes for ECG enumerations (<i>multipage table</i>).....	160
Table A.7.2.7.1—Withdrawn terms for ECG enumerations.....	171
Table A.7.2.8.1—Deprecated terms for ECG enumerations.....	171
Table A.7.2.9.1—Deprecated RefIds for ECG enumerations.....	172
Table A.7.3.6.1—Nomenclature and codes for haemodynamic monitoring measurements (<i>multipage table</i>).....	176
Table A.7.3.7.1—Deprecated terms for haemodynamic monitoring measurements.....	191
Table A.7.4.11.1—Ventilator modes bit string (<i>multipage table</i>).....	200
Table A.7.4.11.2—Ventilator modes nomenclature and codes (<i>multipage table</i>).....	202
Table A.7.4.16.1—Correction of gas measurements.....	206
Table A.7.4.17.1—Gas measurement sites.....	207
Table A.7.4.17.2—Default gas measurement sites.....	207
Table A.7.4.18.1—Inspiratory breath type classifications.....	209
Table A.7.4.19.1—Deployment of gas partial pressure and concentration and consumption information (informative).....	210
Table A.7.4.19.2—Nomenclature and codes for respiratory, ventilator, and anesthesia measurements (<i>multipage table</i>).....	211
Table A.7.4.20.1—Deprecated terms for respiratory measurements.....	258
Table A.7.4.21.1—Deprecated RefIds for respiratory measurements.....	258
Table A.7.4.22.1—Recommended mapping of deprecated to ‘unified’ gas RefId prefixes (informative).....	259
Table A.7.4.23.1—Deprecated terms for respiratory measurements (<i>multipage table</i>).....	260
Table A.7.4.24.1—Deprecated RefIds for respiratory measurements (<i>multipage table</i>).....	265
Table A.7.4.25.1—Deprecated nomenclature for undefined respiratory measurements from Annex B.....	269
Table A.7.4.26.1—Nomenclature and codes for nebulizers (<i>multipage table</i>).....	270
Table A.7.5.6.1—Nomenclature and codes for common blood-gas, blood, urine, and other fluid chemistry measurements (<i>multipage table</i>).....	276
Table A.7.5.7.1—Withdrawn terms for blood-gas, blood, urine, and other fluid chemistry measurements.....	287
Table A.7.5.8.1—Deprecated RefIds for blood-gas, blood, urine, and other fluid chemistry measurements.....	287
Table A.7.6.6.1—Nomenclature and codes for fluid-output measurements (<i>multipage table</i>).....	290
Table A.7.7.6.1—Nomenclature and codes for pump data (<i>multipage table</i>).....	297
Table A.7.7.7.1—Deprecated RefIds for pump data.....	302
Table A.7.7.13.1—Pump modes bit string values (value to be communicated in enumeration observation element Mode Device Pump).....	305
Table A.7.7.19.1—Pump states bit string values (value to be communicated in EnumerationObservation with code: Status Operational Device Pump).....	308
Table A.7.8.6.1—Nomenclature and codes for neurological monitoring measurements (<i>multipage table</i>).....	313
Table A.7.9.6.1—Nomenclature and codes for neurophysiologic enumerations (<i>multipage table</i>).....	330
Table A.7.10.6.1—Nomenclature and codes for neurophysiologic stimulation modes (<i>multipage table</i>).....	349
Table A.7.11.6.1—Nomenclature and codes for miscellaneous measurements.....	355
Table A.7.11.6.2—Nomenclature and codes for temperature (<i>multipage table</i>).....	356
Table A.7.11.7.1—Deprecated nomenclature for temperature.....	357
Table A.7.11.8.1—Body weight and surface area for pre-coordinated RefIds.....	358
Table A.7.11.9.1—Nomenclature and codes for body mass (weight) and estimates.....	359
Table A.7.12.1.1—Nomenclature and code extensions for infant incubator and warmer microenvironments (<i>multipage table</i>).....	360
Table A.7.13.6.1—Nomenclature and codes for spirometry measurements (<i>multipage table</i>).....	364

Table A.7.14.1.1—Nomenclature and code extensions for personal health devices (<i>multipage table</i>).....	372
Table A.7.14.2.1—Deprecated RefIds for personal health devices.....	376
Table A.8.2.5.1—Nomenclature and codes for sites for neurophysiological signal monitoring: locations near peripheral nerves (<i>multipage table</i>).....	381
Table A.8.3.5.1—Nomenclature and codes for sites for neurophysiological signal monitoring: locations near or in muscles (<i>multipage table</i>).....	398
Table A.8.4.6.1—Nomenclature and codes for electrode sites for EEG according to the international 10–20 system (<i>multipage table</i>).....	433
Table A.8.5.6.1—Nomenclature and codes for sites for EOG signal monitoring (<i>multipage table</i>).....	441
Table A.8.6.5.1—Nomenclature and codes for general neurological sites for monitoring measurements and drainage.....	444
Table A.8.7.5.1—Nomenclature and codes for body sites for cardiovascular measurements (<i>multipage table</i>).....	447
Table A.8.8.5.1—Nomenclature and codes for miscellaneous body sites used in vital signs monitoring and measurement (<i>multipage table</i>).....	454
Table A.8.9.5.1—Nomenclature and codes for external sites used in vital signs monitoring and measurement.....	467
Table A.8.10.6.1—Nomenclature and codes for qualifiers of body site locations (<i>multipage table</i>).....	470
Table A.9.2.5.1—Nomenclature and codes for pattern events (<i>multipage table</i>).....	475
Table A.9.3.5.1—Nomenclature and codes for device-related and environment-related events (<i>multipage table</i>).....	491
Table A.9.3.6.1—Deprecated terms for device-related and environment-related events.....	518
Table A.9.3.7.1—Deprecated RefIds for device-related and environment-related events.....	518
Table A.10.2.3.1—Nomenclature and codes for infrastructure, device specialization (<i>multipage table</i>).....	520
Table A.10.2.4.1—Withdrawn terms for device specialization.....	522
Table A.10.3.3.1—Nomenclature and codes for Infrastructure, sub-specialization (<i>multipage table</i>).....	523
Table A.10.4.3.1—Time synchronization profiles.....	526
Table A.11.2.3.1—Nomenclature and codes for PHD Disease Management, general.....	527
Table A.11.3.3.1—Nomenclature and codes for PHD Disease Management, Basic ECG sensors.....	528
Table A.11.4.3.1—Nomenclature and codes for PHD Disease Management, Basic ECG event context.....	529
Table A.11.5.3.1—Nomenclature and codes for PHD Disease Management, SABTE sensors and settings (<i>multipage table</i>).....	530
Table A.11.5.4.1—Withdrawn terms for PHD Disease Management, SABTE sensors and settings (<i>multipage table</i>).....	536
Table A.11.6.3.1—Nomenclature and codes for PHD Disease Management, SABTE mode settings (<i>multipage table</i>).....	540
Table A.11.7.3.1—Nomenclature and codes for PHD Disease Management, Glucose carbohydrate source.....	542
Table A.11.8.3.1—Nomenclature and codes for PHD Disease Management, Glucose carbohydrate source.....	543
Table A.11.9.3.1—Nomenclature and codes for PHD Disease Management, Glucose moncarbohydrate sources.....	544
Table A.11.10.3.1—Nomenclature and codes for PHD Disease Management, Glucose Monitoring, insulin type.....	545
Table A.11.11.3.1—Nomenclature and codes for PHD Disease Management, insulin types.....	546
Table A.11.12.3.1—Nomenclature and codes for PHD Disease Management, general health.....	547
Table A.11.13.3.1—Nomenclature and codes for PHD Disease Management, general health.....	548
Table A.11.14.3.1—Nomenclature and codes for PHD Disease Management, Glucose Monitoring, sample location.....	549
Table A.11.15.3.1—Nomenclature and codes for PHD Disease Management, Glucose Monitoring, sample locations.....	550
Table A.11.16.3.1—Nomenclature and codes for PHD Disease Management, Glucose Monitoring, meal.....	551
Table A.11.17.3.1—Nomenclature and codes for PHD Disease Management, Glucose Monitoring, meal types.....	552

Table A.11.18.3.1—Nomenclature and codes for PHD Disease Management, Glucose Monitoring, tester	553
Table A.11.19.3.1—Nomenclature and codes for PHD Disease Management, Glucose Monitoring, tester types.....	554
Table A.11.20.3.1—Nomenclature and codes for PHD Disease Management, INR status and context.....	555
Table A.11.21.3.1—Nomenclature and codes for PHD Disease Management, CGM sensors (<i>multipage table</i>).....	556
Table A.11.22.3.1—Nomenclature and codes for PHD Disease Management, CGM sensors.....	558
Table A.11.23.3.1—Nomenclature and codes for PHD Disease Management, CGM device.....	559
Table A.11.24.3.1—Nomenclature and codes for PHD Disease Management, Insulin Pump (<i>multipage table</i>)	560
Table A.11.24.4.1—Deprecated term codes for PHD Disease Management, Insulin Pump.....	562
Table A.11.25.4.1—Nomenclature and codes for PHD Disease Management, PSM device.....	563
Table A.11.26.2.1—Nomenclature and codes for PHD Disease Management, PSM device.....	564
Table A.11.27.3.1—Nomenclature and codes for PHD Disease Management, PEF status	565
Table A.12.3.2.1—Nomenclature and codes for health and fitness sensors (<i>multipage table</i>)	567
Table A.12.3.3.1—Deprecated terms for PHD disease management, health and fitness (<i>multipage table</i>)	569
Table A.12.4.2.1—Nomenclature and codes for health and fitness activity (<i>multipage table</i>)	570
Table A.12.5.2.1—Nomenclature and codes for health and fitness exercise	572
Table A.12.6.2.1—Nomenclature and codes for health and fitness specific exercise	573
Table A.12.6.3.1—Deprecated terms for health and fitness exercise.....	574
Table A.13.3.2.1—Nomenclature and codes for assisted living sensors (<i>multipage table</i>).....	577
Table A.13.4.3.1—Nomenclature and codes AI locations, general.....	580
Table A.13.5.3.1—Nomenclature and codes AI locations, rooms (<i>multipage table</i>)	581
Table A.13.6.3.1—Nomenclature and codes AI locations, medical rooms (<i>multipage table</i>)	585
Table A.13.7.3.1—Nomenclature and codes AI locations, doors and windows	587
Table A.13.8.3.1—Nomenclature and codes for AI locations, furniture.....	588
Table A.13.9.3.1—Nomenclature and codes for AI locations, appliances (<i>multipage table</i>).....	589
Table A.13.10.2.1—Nomenclature and codes for AI events (<i>multipage table</i>)	591
Table A.13.11.3.1—Nomenclature and codes AI medication dispenser	594
Table A.14.3.1—Nomenclature for error return codes (<i>multipage table</i>)	595
Table A.14.4.1—Withdrawn nomenclature for error return codes.....	596
Table A.15.7.1—Nomenclature and codes for external nomenclatures and messaging standards (<i>multipage table</i>)	599
Table A.16.1.1—IHE PCD Alert Communication Management attributes.....	602
Table A.16.2.1—IHE PCD Alert Communication Management Notifications.....	602
Table A.16.3.1—Continua Services Interface infrastructure attributes.....	603
Table A.16.4.1—Continua Services Interface information attributes	604
Table A.16.5.1—IHE PCD and Continua Services Interface timekeeping information attributes (<i>multipage table</i>).....	605
Table A.16.6.1—Breathing circuit attributes	607
Table A.16.6.2—Calculation method attribute.....	607
Table A.16.7.1—ECG nomenclature attributes.....	607
Table C.3.1.1—Device Type [MVC] discriminator set.....	844
Table C.3.2.1—Statistical [MMM] discriminator set.....	844
Table C.3.3.1—Haemodynamic pressure measurements [SDM] discriminator set	844
Table C.3.4.1—Rates for countable events [RCE] discriminator set	845
Table C.3.5.1—Rates for countable neurological events [RCN] discriminator set	845
Table C.3.6.1—Body Site Orientation (laterally) [LAT] discriminator set.....	845
Table C.3.7.1—Units of Measure [UoM] discriminator set	846
Table C.3.8.1—Unit of Measure (singular) [UoM1] discriminator set	846
Table C.3.9.1—No Discriminator [1] discriminator set	847
Table C.3.10.1—Event Discriminator [EVT] discriminator set	847
Table C.3.11.1—Statistical profile [PN3] discriminator set.....	847
Table C.3.12.1—Location Discriminator [LOC] discriminator set.....	848

Table C.3.13.1—Version of External Nomenclature Discriminator [64].....	849
Table C.3.14.1—ECG lead discriminators [LEAD1] from ISO/IEEE 11073-10101:2004 (<i>multipage table</i>)	849
Table C.3.15.1—ECG lead discriminators [LEAD2] from ISO/IEEE 11073-10102:2012 (<i>multipage table</i>)	852
Table C.3.16.1—Equivalent ECG lead discriminators [LEAD] in ISO/IEEE 11073-10101:2004 and ISO/IEEE 11073-10102:2012 (<i>multipage table</i>)	857
Table C.3.17.1—Comparison of ECG lead discriminators in ISO/IEEE 11073-10101:2004 and ISO/IEEE 11073-10102:2012 (<i>multipage table</i>)	859
Table C.4.1.1—Object-Oriented—Partition 1 (<i>multipage table</i>)	862
Table C.4.2.1—SCADA—Partition 2 (<i>multipage table</i>).....	895
Table C.4.3.1—Events and Alerts—Partition 3 (<i>multipage table</i>).....	950
Table C.4.4.1—Dimensions—Partition 4 (<i>multipage table</i>)	965
Table C.4.5.1—Parameter Groups—Partition 6.....	981
Table C.4.6.1—Body Sites—Partition 7 (<i>multipage table</i>).....	981
Table C.4.7.1—Communication Infrastructure—Partition 8 (<i>multipage table</i>)	1014
Table C.4.8.1—PHD Disease Management—Partition 128 (<i>multipage table</i>)	1019
Table C.4.9.1—PHD Health Fitness—Partition 129 (<i>multipage table</i>)	1025
Table C.4.10.1—PHD Aging Independently—Partition 130 (<i>multipage table</i>).....	1028
Table C.4.11.1—Return Codes—Partition 255	1036
Table C.4.12.1—External Nomenclature—Partition 256 (<i>multipage table</i>)	1036
Table C.4.13.1—Device Settings—Partition 258 (<i>multipage table</i>)	1037
Table C.4.14.1—Predicted Values—Partition 514 (<i>multipage table</i>)	1040
Table D.1.1.1—Term code synonyms.....	1042
Table D.1.1.2—Term code synonyms.....	1042
Table D.1.2.1—Reflid synonyms.....	1043
Table E.1—Inspiratory breath and inflation types and rates	1045
Table G.1—Gas measurement sites and anesthesia breathing circuit components (normative).....	1049
Table J.1—Revision history	1059

Figures

Figure 1—Context-sensitive coding illustration.....	28
Figure 2—IEEE numbered series standards ISO ASN.1 OID assignments	30
Figure 3—IEEE 11073-10101-2004 ISO ASN.1 OID assignments.....	31
Figure 4—HL7 ISO ASN.1 OID assignments.....	31
Figure A.7.1.1—Basic form	126
Figure A.7.1.2—Multiform P Wave, 3 Extrema	126
Figure A.7.1.3—Multiform QRS	126
Figure A.7.1.4—ST-T morphologies.....	127
Figure A.7.1.5—Example for measurement of ventricular activation time at different QRS	128
Figure A.7.1.6—Ventricular activation time.....	129
Figure A.7.4.1—Gas concentration and partial pressure measurement locations	207
Figure A.7.4.2—Relationship between breaths and Inflations	208
Figure A.8.5.1—Schematic diagram of the EOG electrode positions	438
Figure E.1—Bi-Level pressure waveform with patient <P/> and <S/> breaths	1044
Figure G.1—Example of bellows-driven ventilator and circuit	1050
Figure G.2—Example of piston-driven ventilator and circuit	1051
Figure G.3—Mapleson circuits	1052
Figure H.1—Term approval and management process	1053