The *open*EHR Architecture

Support Terminology

Editors:{T Beale, S Heard}[1], {D Kalra, D Lloyd}[2]

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1. Ocean Informatics Australia
2. Centre for Health Informatics and Multi-professional Education, University College London

The *open*EHR foundation

is an independent, non-profit community, facilitating the creation and sharing of health records by consumers and clinicians via open-source, standards-based implementations.

Founding Chairman	David Ingram, Professor of Health Informatics, CHIME, University College London
Founding Members	Dr P Schloeffel, Dr S Heard, Dr D Kalra, D Lloyd, T Beale

email: info@openEHR.org **web**: http://www.openEHR.org

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Amendment Record

Issue	Details	Raiser	Completed
RELEASE 1.0.1			
1.0	**CR-000219**: Use constants instead of literals to refer to terminology in RM. **CR-000221**. Add *normal_status* to DV_ORDERED. Add new "normal status" terminology group. **CR-000217**: Additional math function.	R Chen H Frankel S Heard	10 Jan 2007
RELEASE 1.0			
0.9	**CR-000184**. Separate out terminology from Support IM. **CR-000182**: Rationalise VERSION.*lifecycle_state* and ATTESTATION.*status*. Add new term set for attestation reason, deprecate attestation state term set. **CR-000162**. Allow party identifiers when no demographic data. Deprecate some terms from version lifecycle status group, add some new terms. **CR-000140**. Redevelop Instruction, based on workflow principles. Add term sets for Instruction State machine. **CR-000192**: Add display-as-absolute facility to delta Events in History	T Beale T Beale, D Kalra S Heard H Frankel S Heard T Beale S Heard	22 Oct 2005
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Contents

1 Introduction

1.1 Purpose

This document describes the *open*EHR Terminology, which defines the vocabularies needed for the *open*EHR Reference, Archetype and Service models. This terminology is not considered to be in the same space as externally defined terminologies such as SNOMED-CT, ICDx etc, but rather a part of the infrastructure of the *open*EHR architecture. The audience includes:

- Standards bodies producing health informatics standards;
- Software development organisations developing EHR systems;
- Academic groups studying the EHR;
- The open source healthcare community.

1.2 Related Documents

Prerequisite documents for reading this document include:

- The *open*EHR Architecture Overview
- The *open*EHR Reference Model documents.

1.3 Status

This document is under development, and is published as a proposal for input to standards processes and implementation works.

This document is available at http://svn.openehr.org/specification/TAGS/Release-1.0/publishing/architecture/terminology.pdf.

The latest version of this document can be found at http://svn.openehr.org/specification/TRUNK/publishing/architecture/terminology.pdf.

Blue text indicates sections under active development.

1.4 Peer review

Areas where more analysis or explanation is required are indicated with “to be continued” paragraphs like the following:

To Be Continued: more work required

Reviewers are encouraged to comment on and/or advise on these paragraphs as well as the main content. Please send requests for information to info@openEHR.org. Feedback should preferably be provided on the mailing list openehr-technical@openehr.org, or by private email.

1.5 Conformance

Conformance of a data or software artifact to an *open*EHR Reference Model specification is determined by a formal test of that artifact against the relevant *open*EHR Implementation Technology Specification(s) (ITSs), such as an IDL interface or an XML-schema. Since ITSs are formal, automated derivations from the Reference Model, ITS conformance indicates RM conformance.

2 Terminology

2.1 Overview

This document provides a documentary expression of the *open*EHR terminology, consisting of code sets and term lists that provide values for the dozen or so "structural" attributes in the *open*EHR Reference Model. The computable form of this terminology is available in the computable part of the *open*EHR specification repository, and should always be considered the definitive expression, rather than this document. Access to the terminology in the *open*EHR reference model is via the classes defined in the package `rm.support.terminology`.

There are two types of coded terms used. The first are 'proper' coded terms, where each code is a concept identifier, for which there can be a rubric and description in multiple languages. In other words, they way of 'saying' the concept is dependent on the language one is working in. Most clinical terminologies are in this category, e.g. ICD10, ICPC. Terminologies in this category are modelled in *open*EHR by the `TERMINOLOGY` class, and by terms expressed as instances the `DV_CODED_TEXT` class, each of which has as an attribute a defining `CODE_PHRASE` - the actual code.

The second category is codes which are self-defining, and which do not have separate rubrics. The ISO country and language codes are examples of this, as are code groups for such concepts as 'integrity check algorithm names'. This category is modelled in *open*EHR by the `CODE_SET` which is made up of `CODE_PHRASE`s. Value sets which cannot meaningfully be translated into other languages and which do not have definitions beyond their code value are usually candidates for being a code set rather than a terminology group.

Both code set definitions and terminology groups provide mappings to other recognised terminologies or vocabularies. Given that the attributes defined here are mostly structural attributes (i.e. predefined in the *open*EHR Reference Model), mappings tend to be to terms in vocabularies defined by standards organisations such as CEN and HL7, rather than large clinical vocabularies such as ICD10 (WHO). *open*EHR does not specify the use of these vocabularies.

2.2 Code Set and Terminology Identifiers

In *open*EHR, the identifier of a terminology or code set is found in the *terminology_id* attribute of the class `CODE_PHRASE` in the Data Types Information Model. Valid identifiers that can be used for this attribute include, but are not limited to the following:

- "openehr"
- "centc251"
- an identifier value from the first column of the UMLS terminology identifiers table below, in either of two forms:
  - as is, e.g. "ICD10AM_2000", "ICPC93";
  - with any trailing section starting with an underscore removed, e.g. "ICD10AM".

Other identification schemes are used in some standards, such as ISO Oids. These are not specified for direct use in *open*EHR for various reasons:

- they are not currently used by NLM, and no definitive published list of terminology identifiers is available;
- ISO Oids are long identifiers and may significantly increase the size of persisted information due to the ubiquity of coded terms;

- determing the identity of the terminology in data always requires a request to a service containing the Oid / name mapping;
- there is a safety factor in having human readable terminology identifiers in the data.

The use of Oid-based or other terminology identification schemes is not however incompatible with *open*EHR; all that is required is a terminology identifier / name mapping service or table.

The following table is a snapshot of the US National Library of Medicine UMLS terminology identifiers list. A definitive up-to-date list may be found on the NLM website at http://www.nlm.nih.gov/research/umls/metaa1.html.

UMLS 2003 Terminology Identifiers	
Identifier	**Description**
AIR93	AI/RHEUM,1993
ALT2000	Alternative Billing Concepts, 2000
AOD2000	Alcohol and Other Drug Thesaurus, 2000
BI98	Beth Israel Vocabulary, 1.0
BRMP2002	Portuguese translation of the Medical Subject Headings, 2002
BRMS2002	Spanish translation of the Medical Subject Headings, 2002
CCPSS99	Canonical Clinical Problem Statement System, 1999
CCS99	Clinical Classifications Software, 1999
CDT4	Current Dental Terminology(CDT), 4
COSTAR_89-95	COSTAR, 1989-1995
CPM93	Medical Entities Dictionary, 1993
CPT01SP	Physicians' Current Procedural Terminology, Spanish Translation, 2001
CPT2003	Physicians' Current Procedural Terminology, 2003
CSP2002	CRISP Thesaurus, 2002
CST95	COSTART, 1995
DDB00	Diseases Database, 2000
DMD2003	German translation of the Medical Subject Headings, 2003
DMDICD10_1995	German translation of ICD10, 1995
DMDUMD_1996	German translation of UMDNS, 1996
DSM3R_1987	DSM-III-R, 1987
DSM4_1994	DSM-IV, 1994
DUT2001	Dutch Translation of the Medical Subject Headings, 2001
DXP94	DXplain, 1994
FIN2003	Finnish translations of the Medical Subject Headings, 2003
HCDT4	HCPCS Version of Current Dental Terminology(CDT), 4
HCPCS03	Healthcare Common Procedure Coding System, 2003
HCPT03	HCPCS Version of Current Procedural Terminology(CPT), 2003
HHC96	Home Health Care Classification, 1996
HL7_1998-2002	Health Level Seven Vocabulary, 1998-2002
HLREL_1998	ICPC2E-ICD10 relationships from Dr. Henk Lamberts, 1998
HPC99	Health Product Comparison System, 1999
ICD10AE_1998	ICD10, American English Equivalents, 1998

UMLS 2003 Terminology Identifiers	
Identifier	**Description**
ICD10AMAE_2000	International Statistical Classification of Diseases and Related Health Problems, Australian Modification, Americanized English Equivalents, 2000
ICD10AM_2000	International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification, January 2000 Release
ICD10_1998	ICD10, 1998
ICD9CM_2003	ICD-9-CM, 2003
ICPC2AE_1998	International Classification of Primary Care, Americanized English Equivalents, 2E, 1998
ICPC2E_1998	International Classification of Primary Care 2nd Edition, Electronic, 2E, 1998
ICPC2P_2000	International Classification of Primary Care, Version2-Plus, 2000
ICPC93	International Classification of Primary Care, 1993
ICPCBAQ_1993	ICPC, Basque Translation, 1993
ICPCDAN_1993	ICPC, Danish Translation, 1993
ICPCDUT_1993	ICPC, Dutch Translation, 1993
ICPCFIN_1993	ICPC, Finnish Translation, 1993
ICPCFRE_1993	ICPC, French Translation, 1993
ICPCGER_1993	ICPC, German Translation, 1993
ICPCHEB_1993	ICPC, Hebrew Translation, 1993
ICPCHUN_1993	ICPC, Hungarian Translation, 1993
ICPCITA_1993	ICPC, Italian Translation, 1993
ICPCNOR_1993	ICPC, Norwegian Translation, 1993
ICPCPAE_2000	International Classification of Primary Care ,Version2-Plus, Americanized English Equivalents, 2000
ICPCPOR_1993	ICPC, Portuguese Translation, 1993
ICPCSPA_1993	ICPC, Spanish Translation, 1993
ICPCSWE_1993	ICPC, Swedish Translation, 1993
INS2002	French translation of the Medical Subject Headings, 2002
ITA2003	Italian translation of Medical Subject Headings, 2003
JABL99	Online Congenital Multiple Anomaly/ Mental Retardation Syndromes, 1999
LCH90	Library of Congress Subject Headings, 1990
LNC205	LOINC, 2.05
LOINC	LOINC
MCM92	McMaster University Epidemiology Terms, 1992
MDDB99	MasterDrug DataBase, 1999
MDR51	Medical Dictionary for Regulatory Activities Terminology (MedDRA), 5.1
MDRAE51	Medical Dictionary for Regulatory Activities Terminology (MedDRA), American English Equivalents, 5.1
MDREA51	Medical Dictionary for Regulatory Activities Terminology (MedDRA), American English, with expanded abbreviations, 5.1

UMLS 2003 Terminology Identifiers	
Identifier	**Description**
MDREX51	Medical Dictionary for Regulatory Activities Terminology (MedDRA), with expanded abbreviations, 5.1
MDRPOR51	Medical Dictionary for Regulatory Activities Terminology (MedDRA), 5.1, Portuguese Edition
MDRSPA51	Medical Dictionary for Regulatory Activities Terminology (MedDRA), 5.1, Spanish Edition
MIM93	Online Mendelian Inheritance in Man, 1993
MMSL01	Multum MediSource Lexicon, 2001
MMX01	Micromedex DRUGDEX, 2001-08
MSH2003_2002_10_24	Medical Subject Headings, 2002_10_24
MTH	UMLS Metathesaurus
MTHCH03	Metathesaurus CPT Hierarchical Terms, 2003
MTHHH03	Metathesaurus HCPCS Hierarchical Terms, 2003
MTHICD9_2003	Metathesaurus additional entry terms for ICD-9-CM, 2003
MTHMST2001	Metathesaurus Version of Minimal Standard Terminology Digestive Endoscopy, 2001
MTHMSTFRE_2001	Metathesaurus Version of Minimal Standard Terminology Digestive Endoscopy, French Translation, 2001
MTHMSTITA_2001	Metathesaurus Version of Minimal Standard Terminology Digestive Endoscopy, Italian Translation, 2001
NAN99	Classification of Nursing Diagnoses, 1999
NCBI2001	NCBI Taxonomy, 2001
NCI2001a	NCI Thesaurus, 2001a
NCISEER_1999	NCISEER ICD Neoplasm Code Mappings, 1999
NDDF01	FirstDataBank National Drug DataFile, 2001-07
NEU99	Neuronames Brain Hierarchy, 1999
NIC99	Nursing Interventions Classification, 1999
NOC97	Nursing Outcomes Classification, 1997
OMIM97	OMIM, Online Mendelian Inheritance in Man, 1997
OMS94	Omaha System, 1994
PCDS97	Patient Care Data Set, 1997
PDQ2002	Physician Data Query, 2002
PPAC98	Pharmacy Practice Activity Classification , 1998
PSY2001	Thesaurus of Psychological Index Terms, 2001
QMR96	Quick Medical Reference (QMR), 1996
RAM99	QMR clinically related terms from Randolph A. Miller, 1999
RCD99	Clinical Terms Version 3 (CTV3) (Read Codes), 1999
RCDAE_1999	Read thesaurus, American English Equivalents, 1999
RCDSA_1999	Read thesaurus Americanized Synthesized Terms, 1999
RCDSY_1999	Read thesaurus, Synthesized Terms, 1999
RUS2003	Russian Translation of MeSH, 2003

UMLS 2003 Terminology Identifiers	
Identifier	**Description**
RXNORM_03AA	RXNORM Project, META2003AA
SNM2	SNOMED-2, 2
SNMI98	SNOMED International, 1998
SNOMED-CT	SNOMED International Clinical Terms, 2002
SPN02	Standard Product Nomenclature, 2002
SRC	Metathesaurus Source Terminology Names
ULT93	UltraSTAR, 1993
UMD2003	UMDNS: product category thesaurus, 2003
UMLS	UMLS: National Library of Medicine, USA
UWDA155	University of Washington Digital Anatomist, 1.5.5
VANDF01	Veterans Health Administration National Drug File, 2001
WHO97	WHO Adverse Reaction Terminology, 1997
WHOFRE_1997	WHOART, French Translation, 1997
WHOGER_1997	WHOART, German Translation, 1997
WHOPOR_1997	WHOART, Portuguese Translation, 1997
WHOSPA_1997	WHOART, Spanish Translation, 1997

2.3 Code Sets

Code sets are not shown in full here, since their codes are derived from resources published by external authorities; however, the *open*EHR code-set databases contain the full set of codes in each case.

2.3.1 Countries

This ISO code set defined by the ISO 3166 standard consists of 2-character names of countries and country subdivisions. For a definitive online rendition see http://www.unicode.org/unicode/onlinedat/countries.html.

Issuer: *ISO* Code set name: *"countries"*		
Code	**Description**	**Mappings**
"af"	"Afghanistan"	
"al"	"Albania"	
...	...	

2.3.2 Character Sets

This IANA (Internet Naming Authority) code set consists of the names of recognised character sets. See http://www.iana.org/assignments/character-sets for authoritative source.

Issuer: *IANA* Code set name: *"character sets"*		
Code	**Description**	**Mappings**
ISO-10646-UTF-1		
...		
ISO_8859-3:1988		
...		

2.3.3 Compression algorithms

This code set consists of the names of algorithms used to compress data, and is drawn from HL7's CompressionAlgorithms domain.

Issuer: *openehr* Code set name: *"compression algorithms"*		
Code	**Description**	**Mappings**
"compress"	Original UNIX *compress* algorithm and file format using the LZC algorithm (a variant of LZW).	HL7_CompressionAlgorithm::10624
"deflate"	The *deflate* compressed data format as specified in RFC 1951. See ftp://ftp.isi.edu/in-notes/rfc1951.txt.	HL7_CompressionAlgorithm::10621
"gzip"	A compressed data format that is compatible with the widely used GZIP utility as specified in RFC 1952. See ftp://ftp.isi.edu/in-notes/rfc1952.txt.	HL7_CompressionAlgorithm::10622
"zlib"	A compressed data format that also uses the deflate algorithm. Specified as RFC 1950 See ftp://ftp.isi.edu/in-notes/rfc1950.txt	HL7_CompressionAlgorithm::10623
"other"	Some other type of compression; might be retrievable upon direct inspection of data.	

2.3.4 Integrity check algorithms

This code set consists of the names of algorithms used to generate hashes for the purpose of integrity checks on data; its initial values are drawn from the HL7 IntegrityCheckAlgorithm domain.

Issuer: *openehr* Code set name: *"integrity check algorithms"*		
Code	**Description (en)**	**Mappings**
"SHA-1"	Secure hash algorithm - 1. Defined in FIPS PUB 180-1: Secure Hash Standard. As of April 17, 1995.	HL7_IntegrityCheckAlgorithm::17386
"SHA-256"	secure hash algorithm - 256. Defined in FIPS PUB 180-2: Secure Hash Standard	HL7_IntegrityCheckAlgorithm::17387
...	...	

2.3.5 Languages

This ISO code set defined by the ISO 639 standard consists of the "alpha-2" form of names of languages. This does not cover all languages, whereas ISO 639 "alpha-3" covers many more languages of cultural or indigenous interest, but which nevertheless are unlikely to be supported by current software or operating systems. See http://www.loc.gov/standards/iso639-2/langhome.html.

Issuer: *ISO* Code set name: *"languages"*		
Code	**Description**	**Mappings**
"ab"	"Abkhazian"	
...	...	
"bg"	"Bulgarian"	
...	...	
"zh"	"Chinese"	
...	...	

2.3.6 Media Types

This IANA (Internet Naming Authority) code set consists of the names of MIME media types. See http://www.iana.org/assignments/media-types/text/ for authoritative source.

Issuer: *IANA* Code set name: *"media types"*		
Code	**Description**	**Mappings**
"text/plain"	Plain text encoded according to RFC3676	HL7_MediaType::14826
"text/html"	HTML text encoded according to RFC2854	HL7_MediaType::14828
"text/richtext"	Rich text encoded according to RFC2046	
"text/rtf"	Rich text encoded according to ftp://indri.primate.wisc.edu/pub/RTF/RTF-Spec.rtf.	HL7_MediaType::14831
"text/sgml"		HL7_MediaType::14829
"text/ rfc822-headers"		
"text/xml"		HL7_MediaType::14830
"audio/basic"		HL7_MediaType::14836
"audio/mpeg"		HL7_MediaType::14837
"application/pdf"		HL7_MediaType::14833
"application/msword"		HL7_MediaType::14834
...	...	...

2.3.7 Normal Status

This code set codifies statuses of quantitative values with respect to a normal range for the measured analyte or phenomenon. Use generally restricted to laboratory results. Maps to some codes in HL7v2 User-defined table 0078 - Abnormal flags and to the HL7v3 ObservationInterpretation vocabulary. The HL7v3 mappings are shown below.

Issuer: *openehr* Code set name: "*normal statuses*"		
Code	**Description (en)**	**Mappings**
"HHH"	Value is critically high; requires urgent intervention.	HL7_ObservationInterpretation::C10227 (>)
"HH"	Value is abnormally high.	HL7_ObservationInterpretation::C10213
"H"	Value is borderline high.	HL7_ObservationInterpretation::S10210
"N"	Value is normal (in the normal range).	HL7_ObservationInterpretation::C10207
"L"	Value is borderline low.	HL7_ObservationInterpretation::S10209
"LL"	Value is abnormally low.	HL7_ObservationInterpretation::C10212
"LLL"	Value is critically low; requires urgent intervention.	HL7_ObservationInterpretation::C10226 (<)

2.4 Vocabularies and Terminologies

2.4.1 Attestation Reason

This vocabulary codifies attestation statuses of Compositions or other elements of the health record,

and is drawn from the HL7 ParticipationSignature domain, as used in CDA.

Terminology: *openehr* Group_name("en"): *"attestation reason"*			
Concept id	**Rubric (en)**	**Description (en)**	**Mappings**
240	"signed"	The attested information has been signed by its signatory.	HL7_ParticipationSignature::10284
648	"witnessed"	This attested information has been witnessed by the signatory.	

2.4.2 Audit Change Type

This vocabulary codifies the kinds of changes to data which are recorded in audit trails.

Terminology: *openehr* Group_name("en"): *"audit change type"*			
Concept id	**Rubric (en)**	**Description (en)**	**Mappings**
249	"creation"	Change type was creation.	HL7_CDA: CEN:
250	"amendment"	Change type was amendment, i.e. correction of the previous version.	HL7_CDA: CEN:
251	"modification"	Change type was update of the previous version.	HL7_CDA: CEN:
252	"synthesis"	Change type was creation synthesis of data due to conversion process, typically a data importer.	HL7_CDA: CEN:
523	"deleted"	Change type was logical deletion.	HL7_CDA: CEN:
253	"unknown"	Type of change unknown.	HL7_CDA: CEN:

2.4.3 Composition Category

This vocabulary codifies the values of the *category* attribute of the `COMPOSITION` class in the `rm.composition` package.

Terminology: *openehr* Group_name("en"): *"composition category"*			
Concept id	**Rubric (en)**	**Description (en)**	**Mappings**
431	"persistent"	This Composition contains information which remains valid for (more or less) the life of the EHR. Typical persistent Compositions include "family history", "problem list", "current medications", and "vaccination history". The usual change type when creating a new version of a persistent composition is "modification".	
433	"event"	This composition pertains to a point in time or brief episode. Change types may usually be "modification" or "	

2.4.4 Event Math Function

This vocabulary codifies mathematical functions of non-instantaneous events.

Terminology: *openehr* Group_name("en"): *"event math function"*			
Concept id	**Rubric (en)**	**Description (en)**	**Mappings**
145	"minimum"	Value of the interval-event is the minimum value of the discrete events which the interval-event summarises.	
144	"maximum"	Value of the interval-event is the maximum value of the discrete events which the interval-event summarises.	
267	"mode"	Value of the interval-event is the modal (most common) value of the discrete events which the interval-event summarises.	
268	"median"	Value of the interval-event is the median (centre value in sorted series) value of the discrete events which the interval-event summarises.	
146	"mean"	Value of the interval-event is the average value of the discrete events which the interval-event summarises.	
147	"change"	Value of the interval-event is the net change over the period which the interval-event summarises.	
148	"total"	Value of the interval-event is the sum of the values of the discrete events which the interval-event summarises (typically differential flow measurements, e.g. blood loss).	
149	"variation"	Value of the interval-event is difference between the point maximum and point minimum over the period, in other words the value band into which all sample during a period fit. Useful for specifying a maximal allowed variation in a datum to still be considered the same (approximate) value.	
521	"decrease"	This is a change - as in 147 - except indicates that the value, while a positive number, is actually a negative change. Typically used for negative changes like "weight loss: 5kg" or "blood pressure postural drop of 10 mm[Hg]".	
522	"increase"	This is also a change, but is only a positive change and cannot be expressed as a negative. This can be used for positive changes like "Weight gain: 2.5kg".	
640	"actual"	Value of the datum was the value indicated during the entire time of the event, i.e. it is not an averaged or other computed value.	

2.4.5 Instruction State Machine (ISM) States

This vocabulary codifies the names of the states in the standard Instruction state machine, docu-

mented in the *open*EHR EHR Information model (Entry section).

Terminology: *openehr* Group_name("en"): *"ISM states"*			
Concept id	**Rubric (en)**	**Description (en)**	**Mappings**
524	"initial"	The instruction is recorded but no state is determined	
526	"planned"	The instruction is planned	
527	"postponed"	The instruction has been posponed - it had not be commenced	
528	"cancelled"	The instruction has been cancelled - it had not been commenced and will not commence in the future	
529	"scheduled"	The instruction has been scheduled to be carried out at a particular time	
245	"active"	The instruction is currently being carried out	
530	"suspended"	The instruction is suspended, it has been activated but is not active at present. It could be active again in the future.	
531	"aborted"	The instruction is aborted, it has been activated but ceased before it has been completed and will not be restarted in the future.	
532	"completed"	The instruction has been completed	
533	"expired"	The instruction has expired, timed out - and assumed to have either been cancelled, aborted or completed	

2.4.6 Instruction State Machine (ISM) Transitions

This vocabulary codifies the names of the transitions in the standard Instruction state machine, documented in the *open*EHR EHR Information model (Entry section).

Terminology: *openehr* Group_name("en"): *"ISM transitions"*			
Concept id	**Rubric (en)**	**Description (en)**	**Mappings**
535	"initiate"	Initiate the planning of the Instruction.	
536	"plan step"	Any step in the planned state of the Instruction, e.g. signing, approving.	
537	"postpone"	Put a planned Instruction on hold, while still in the planning stage, i.e. before it has been booked or started.	
538	"restore"	Restore a previously postponed Instruction back to the planned state.	
166	"cancel"	Cancel a planned Instruction, before it is booked or started.	
542	"postponed step"	Any step in the postponed state of the Instruction.	
539	"schedule"	Where booking is required, book the activities in the Instruction in a scheduling system.	

Terminology: *openehr* Group_name("en"): *"ISM transitions"*			
Concept id	**Rubric (en)**	**Description (en)**	**Mappings**
540	"start"	Start executing the activities in the Instruction, e.g. commence drug administration course.	
541	"do"	Do the activities in the Instruction in one go, taking the state machine directly from the planned to the completed state. Used for Instructions whose activities are instantaneous in the practical sense, e.g. a single vaccination, single tablet.	
543	"active step"	Any step taken during the active phase of the Instruction, e.g. nurse's observation, adjustment of dose.	
544	"suspend"	Suspend the activities from the active phase, with the possibility of later resumption.	
545	"suspended step"	Any step taken in the suspended state, e.g. nurse's observation, pathology test to determine if the Instruction should be resumed, remain suspended or aborted.	
546	"resume"	Resume the Instruction from the suspended state.	
547	"abort"	Abort the Instruction, i.e. stop its execution permanently after it has started.	
548	"finish"	Finish performing the Instruction, taking it to the completed state.	
549	"time out"	Time out has occurred, taking the Instruction from some pervious state into the expired state.	
540	"notify aborted"	Occurs when notification of Instruction having been aborted is received after expiry.	
551	"notify completed"	Occurs when notification of Instruction having been completed is received after expiry.	
552	"notify cancelled"	Occurs when notification of Instruction having been cancelled is received after expiry.	

2.4.7 Measurable Properties

This vocabulary codifies purposes for physical properties corresponding to formal unit specifications, and allows comparison of Quantities with different units but which measure the same property. The vocabulary values are taken from:

- CEN ENV 12435 - "Medical Informatics - Expression of results of measurements in health sciences"
- HL7 "Unified Codes for Units of Measure"

Terminology: *openehr* Group_name("en"): *"measurable properties"*			
Concept id	**Rubric (en)**	**Description (en)**	**Mappings**
339	Acceleration		

Terminology*: openehr* Group_name("en"): *"measurable properties"*			
Concept id	**Rubric (en)**	**Description (en)**	**Mappings**
342	Acceleration, angular		
381	Amount (Eq)		
384	Amount (mole)		
497	Angle, plane		
500	Angle, solid		
335	Area		
350	Density		
362	Diffusion coefficient		
501	Electrical capacitance		
498	Electrical charge		
502	Electrical conductance		
334	Electrical current		
377	Electrical field strength		
121	Energy		
366	Energy density		
508	Energy dose		
365	Energy per area		
347	Flow rate, mass		
352	Flow rate, mass/force		
351	Flow rate, mass/volume		
126	Flow rate, volume		
348	Flux, mass		
355	Force		
357	Force, body		
382	Frequency		
373	Heat transfer coefficient		
505	Illuminance		
379	Inductance		
122	Length		
499	Light intensity		
123	Loudness		
504	Luminous flux		
378	Magnetic flux		
503	Magnetic flux density		

Terminology: *openehr* Group_name("en"): *"measurable properties"*			
Concept id	**Rubric (en)**	**Description (en)**	**Mappings**
124	Mass		
385	Mass (IU)		
349	Mass per area		
344	Moment inertia, area		
345	Moment inertia, mass		
340	Momentum		
346	Momentum, flow rate		
343	Momentum, angular		
369	Power density		
368	Power flux		
367	Power, linear		
125	Pressure		
507	Proportion		
380	Qualified real	This is a number with an arithmetic qualification (which may be no units, 10^3 etc) allowing integers to be expressed as reals raised to a nominated power, or for real numbers alone.	
506	Radioactivity		
375	Resistance		
370	Specific energy		
371	Specific heat, gas content		
337	Specific surface		
336	Specific volume		
356	Surface tension		
127	Temperature		
128	Time		
338	Velocity		
341	Velocity, angular		
360	Velocity, dynamic		
361	Velocity, kinematic		
374	Voltage, electrical		
129	Volume		
130	Work		

2.4.8 Null Flavours

This vocabulary codifies “flavours of null” for missing data items.

Terminology: *openehr* Group_name(“en”): *“null flavours”*			
Concept id	**Rubric (en)**	**Description (en)**	**Mappings**
271	“no information”	No information provided; nothing can be inferred as to the reason why, including whether there might be a possible applicable value or not.	HL7_NullFlavor::V10610
253	“unknown”	A possible value exists but is not provided.	HL7_NullFlavor::V10612
272	“masked”	The value has not been provided due to privacy settings.	HL7_NullFlavor::17932
273	“not applicable”	No valid value exists for this data item.	HL7_NullFlavor::10611

2.4.9 Participation Function

This vocabulary codifies functions of participation of parties in an interaction (used in `PARTICIPATION` class).

Terminology: *openehr* Group_name(“en”): *“participation function”*			
Concept id	**Rubric (en)**	**Description (en)**	**Mappings**

2.4.10 Participation Mode

This vocabulary codifies modes of participation of parties in an interaction (used in `PARTICIPATION` class). The initial set has been defined to be the same as HL7’s ParticipationMode vocabulary domain.

Terminology: *openehr* Group_name(“en”): *“participation mode”*			
Concept id	**Rubric (en)**	**Description (en)**	**Mappings**
193	“not specified”	Mode of participation is not specified; use only for legacy data.	
216	“face-to-face communication”	Face to face communications between parties in the same room.	HL7_ParticipationMode::16545
223	“interpreted face-to-face communication”	Face to face communications between parties in the same room with an interpreter	HL7_ParticipationMode::16545
217	“signing (face-to-face)”	Live face-to-face communication using a recognised sign language.	

Terminology: *openehr* Group_name("en"): *"participation mode"*			
Concept id	**Rubric (en)**	**Description (en)**	**Mappings**
195	"live audiovisual; videoconference; videophone"	Any audio-visual communication in real time	
198	"videoconferencing"	Live audio-visual communication over video-conferencing or other similar equipment.	HL7_ParticipationMode::16548
197	"videophone"	Live audio-visual communication	
218	"signing over video"	Live video communication using sign language.	
224	"interpreted video communication"	Live audio-visual communication involving an interpreter	
194	"asynchronous audiovisual; recorded video"	Audio-visual communication that is not live	
196	"recorded video"	Recorded video or video mail	
202	"live audio-only; telephone; internet phone; teleconference"	Any live audio-only communication.	HL7_ParticipationMode::V16544 (includes live)
204	"telephone"	Live verbal communication over a telephone.	HL7_ParticipationMode::16546
203	"teleconference"	Live verbal communication over teleconference	HL7_ParticipationMode::16546
204	"internet telephone"	Live verbal communication over a the internet.	HL7_ParticipationMode::16546
222	"interpreted audio-only"	Any live audio-only communication using an interpreter.	HL7_ParticipationMode::V16544 (includes live)
199	"asynchronous audio-only; dictated; voice mail"	Audio-only communication that is not live.	
200	"dictated"	Non-interactive audio-only information recorded on some medium, such as cassette tape.	HL7_ParticipationMode::16547
201	"voice-mail"	Audio messaging system	
212	"live text-only; internet chat; SMS chat; interactive written note"	Any live text-only communication	
213	"internet chat"	Live text-only communication over the internet	
214	"SMS chat"	Live text-only chat over mobile/cell phone	
215	"interactive written note"	Live text-only communication using written notes	HL7_ParticipationMode::16550
206	"asynchronous text; email; fax; letter; handwritten note; SMS message"	Any text-only communication including email, written text, SMS message etc.	HL7_ParticipationMode::V16549
211	"handwritten note"	Written communication by handwritten document.	HL7_ParticipationMode::16550

Terminology: *openehr* Group_name("en"): *"participation mode"*			
Concept id	**Rubric (en)**	**Description (en)**	**Mappings**
210	"printed/typed letter"	Written communication by typewritten document.	HL7_ParticipationMode::16551
207	"email"	Written communication by email.	HL7_ParticipationMode::16553 [inlcude HL7_ParticipationMode::16554 (electronic data)]
208	"facsimile/telefax"	Non-interactive written communication using a fax machine.	HL7_ParticipationMode::16552
221	"translated text"	Non-interactive written communication requiring translation	HL7_ParticipationMode::V16549
209	"SMS message"	Messages sent via mobile/cell phone	
219	"physically present"	Participation by actions, where the participant is physically present.	HL7_ParticipationMode::16556
220	"physically remote"	Participation by actions, where the participant is not physically present, and the actions are transmitted by electronic means.	HL7_ParticipationMode::16557

2.4.11 Related Party relationship

This vocabulary codifies the relationship between the subject of care and some other party mentioned in the health record.

Terminology: *openehr* Group_name("en"): *"related party relationship"*			
Concept id	**Rubric (en-uk)**	**Description (en)**	**Mappings**
0	"self"	The party is the subject of EHR	HL7_RoleCode:: CEN:
3	"foetus"	The party is a foetus	HL7: CEN:
10	"mother"	The party is the mother of the subject of EHR	HL7: CEN:
9	"father"	The party is the father of the subject of the EHR	HL7: CEN:
6	"donor"	The party is a donor of organs or other body products to the EHR subject.	HL7: CEN:
253	"unknown"	Relationship to party is unknown.	HL7: CEN:
261	"adopted daughter"	Relationship of adopted daughter to subject of EHR	HL7: CEN:
260	"adopted son"	Relationship of adopted son to subject of EHR	HL7: CEN:
259	"adoptive father"	Relationship of adoptive father to subject of EHR	HL7: CEN:
258	"adoptive mother"	Relationship of adoptive mother to subject of EHR	HL7: CEN:
256	"biological father"	Relationship of biological father to subject of EHR	HL7: CEN:
255	"biological mother"	Relationship of biological mother to subject of EHR	HL7: CEN:

Terminology*: openehr* Group_name("en"): *"related party relationship"*			
Concept id	**Rubric (en-uk)**	**Description (en)**	**Mappings**
23	"brother"	Relationship of brother to subject of EHR	HL7: CEN:
28	"child"	Relationship of child to subject of EHR	HL7: CEN:
265	"cohabitee"	Lives with the subject of EHR	HL7: CEN:
257	"cousin"	Relationship of cousin to subject of EHR	HL7: CEN:
29	"daughter"	Relationship of daughter to subject of EHR	HL7: CEN:
264	"guardian"	Relationship of guardianto subject of EHR	HL7: CEN:
39	"maternal aunt"	Relationship of maternal aunt to subject of EHR	HL7: CEN:
8	"maternal grandfather"	Relationship of maternal grandfather to subject of EHR	HL7: CEN:
7	"maternal grandmother"	Relationship of maternal grandmother to subject of EHR	HL7: CEN:
38	"maternal uncle"	Relationship of maternal uncle to subject of EHR	HL7: CEN:
189	"neonate"	Relationship of neonate to subject of EHR	HL7: CEN:
254	"parent"	Relationship of parent to subject of EHR	HL7: CEN:
22	"partner/spouse"	The husband or wife or life partner of the subject of EHR	HL7: CEN:
41	"paternal aunt"	Relationship of paternal aunt to subject of EHR	HL7: CEN:
36	"paternal grandfather"	Relationship of aternal grandfather to subject of EHR	HL7: CEN:
37	"paternal grandmother"	Relationship of paternal grandmother to subject of EHR	HL7: CEN:
40	"paternal uncle"	Relationship of paternal uncle to subject of EHR	HL7: CEN:
27	"sibling"	Relationship of sibling to subject of EHR	HL7: CEN:
24	"sister"	Relationship of sister to subject of EHR	HL7: CEN:
31	"son"	Relationship of son to subject of EHR	HL7: CEN:
263	"step father"	Relationship of step father to subject of EHR	HL7: CEN:
262	"step mother"	Relationship of step mother to subject of EHR	HL7: CEN:
25	"step or half brother"	Relationship of step or half brother to subject of EHR	HL7: CEN:
26	"step or half sister"	Relationship of step or half sister to subject of EHR	HL7: CEN:

2.4.12 Setting

This vocabulary codifies broad types of settings in which clinical care is delivered. It is not intended to be a perfect classification of the real world, but instead a practical coarse-grained categorisation to aid querying.

Terminology: *openehr* Group_name("en"): *"setting"*			
Concept id	**Rubric (en)**	**Description (en)**	**Mappings**
225	"home"	Care delivered in the patient's home by patient or health professional.	
227	"emergency care"	Care delivered in emergency situation, e.g. by ambulance workers.	
228	"primary medical care"	Care delivered by a doctor within a primary care framework (generalist, non-referred).	
229	"primary nursing care"	Care delivered by nurses within a primary care framework (community based, generalist clinic).	
230	"primary allied health care"	Care delivered by allied health practitioners such as physiotherapists, osteopaths, chiropracters, optometrists, chiropodist/pediatrist etc. within a primary care framework (community based, generalist clinic)	
231	"midwifery care"	Midwifery care in any framework	
232	"secondary medical care"	Care delivered in an institutional or specialist setting - usually as a result of a referral.	
233	"secondary nursing care"	Care delivered by nurses within a secondary care framework (inpatient, specialist clinic).	
234	"secondary allied health care"	Care delivered by allied health care professionals within a secondary care framework (inpatient, specialist clinic).	
235	"complementary health care"	Care delivered by chinese, ayurvedic, naturopath, homeopath etc practitioner.	
236	"dental care"	Care delivered in a dental practitioner setting.	
237	"nursing home care"	Care to the needs of patients in nursing homes, delivered in an institutional setting.	
238	"other care"	Care delivered in setting not described by other terms in this vocabulary.	

2.4.13 Term Mapping Purpose

This vocabulary codifies purposes for term mappings as used in the class `TERM_MAPPING`. The use-case for this vocabulary is yet to be determined.

Terminology: *openehr* Group_name("en"): *"term mapping purpose"*			
Concept id	**Rubric (en)**	**Description (en)**	**Mappings**
...	to be determined	...	

2.4.14 Version Lifecycle State

This vocabulary codifies lifecycle states of Compositions or other elements of the health record.

Terminology*: openehr* Group_name("en"): *"version lifecycle state"*			
Concept id	**Rubric (en)**	**Description (en)**	**Mappings**
532	"complete"	Item is complete at time of committal.	
553	"incomplete"	Item is incomplete at time of committal, in the view of the author. Further editing or review needed before its status will be set to "finished".	
523	"deleted"	Item has been logically deleted.	
244	"draft"	Item is in draft state: not ready for viewing by other users. DEPRECATED.	
245	"active"	Item is active and available for shared use. DEPRECATED.	
246	"inactive"	Item is marked inactive due to logical deletion or other similar operation. DEPRECATED.	
247	"awaiting approval"	Item is awaiting to approval to go into active state. DEPRECATED	HL7_ParticipationSignature::10283

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