Smart Open Services for European Patients

Open eHealth initiative for a European large scale pilot of

Patient Summary and Electronic Prescription

Work Package 3.5
Semantic Services Definition
Appendix A - Glossary

D3.5.2

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30   o   Please refer to the main document: "*Semantic Services Definition D3.5.2*" - *D3.5.2_epSOS_WP3_5_v0.0.5_20100223*

For general terms, please refer to the general epSOS Glossary.

Appendix A - Glossary

35   **Application Context** - The context in which a certain technique or software is applied. This can be specific geopolitical entities (e.g. EU, Canada), practice settings (e.g. veterinary medicine, public health), etc.

Application Programming Interface (API) - API is a description of the way one instance of soft-
40   ware asks another program to perform a service. To accomplish this, the asking program uses a set of standardized requests that have been defined for the program being called upon.

ATC (Anatomical Therapeutic Chemical classification system) - The ATC classification system divides drugs into different groups according to the organ or system on which they act and/or their
45   therapeutic and chemical characteristics. Responsible organization: World Health Organization (http://www.whocc.no/atc_ddd_index/)

Archetype - Archetype is the formal definition of prescribed combinations of the building-block classes defined in the Reference Model for particular clinical domains or organizations. An arche-
50   type is a formal expression of a distinct, domain-level concept, expressed in the form of constraints on data whose instances conform to the reference model. For an EHR_Extract as defined in Part 1 of CEN/ISO EN13606 standard, an archetype instance specifies (and effectively constrains) a particular hierarchy of RECORD_COMPONENT sub-classes, defining or constraining their names and other relevant attribute values, optionality and multiplicity at any point in the hierarchy, the da-
55   ta types and value ranges that ELEMENT data values may take, and other constraints. An Archetype defines what gets documented about a topic in general, including all code bindings and translations.

ASTM (American Society for Testing and Materials) - ASTM is an international standards or-
60   ganization and equipment that develops and publishes voluntary consensus technical standards in different areas. (http://www.astm.org/)

Classification - Classification is an exhaustive set of mutually exclusive categories to aggregate data at a pre-prescribed level of specialization for a specific purpose' (ISO 17115) Classification
65   involves the categorization of relevant concepts for the purposes of systematic recording or analysis. The categorization is based on one or more logical rules.

Continuity of Care Document (CCD) - CCD is an XML-based markup standard within HL7 which harmonizes the data format between ASTM's Continuity of Care Record (CCR) and HL7's
70   Clinical Document Architecture (CDA) specifications. It is the result of a collaborative effort between the Health Level Seven and ASTM organizations.

CDA (Clinical Document Architecture) – CDA is an architecture that defines structure and semantics of medical documents for the purpose of exchange. CDA documents are encoded in Ex-
75   tensible Markup Language (XML). They derive their meaning from the HL7 Reference Information Model (RIM) and use the HL7 Version 3 Data Types, which are part of the HL7 RIM.

CMET (Common Message Element Type) – is a component of an HL7 V3 standard. The CMET structure is derived from the HL7 RIM, and the purpose of the CMET is to be a re-usable building
80   block of HL7 Messages or structured documents.

Code – A code is a unique identifier that uniquely identifies a class or concept within the context of a code system. It is independent of language and devoid of meaning.

85

Code System – A code system is a set of unique codes that represent corresponding set of classes in the "real world". At various times referred as "ontology", "classification", "terminology" or code set. Within the HL7 context, a code system is a collection of codes with associated designations and meanings. Concept codes within a code set must not change meaning. Codes may be added or

90   retired, definitions may be clarified, and new relationships may be established. Coded may not be reused. Code systems might vary in size and complexity from a simple code/value table such as Administrative Gender to a complex reference terminology containing thousands of terms and relationships. Examples are: LOINC, SNOMED-CT, ICD-10, ISO 639 Language Codes.

95   **Concept** - A Concept is a unit of knowledge created by a unique combination of characteristics (A.3.2.1 ISO 1087-1:2000).

Concept Descriptor – A concept descriptor is a textual representation of any kind of code defined in a code system. A concept descriptor can contain the original text or phrase that served as the ba-

100   sis of the coding and one or more translations into different coding systems. A concept descriptor can also contain qualifiers to describe, e.g., the concept of a "left foot" as a postcoordinated term built from the primary code "FOOT" and the qualifier "LEFT". In exceptional cases, the concept descriptor need not contain a code but only the original text describing that concept. In the WP3.5 a concept descriptor is referred to less formally as a "description".

105

Context – 1. The part of a text or statement that surrounds a particular term or passage and influences its meaning. 2. The circumstances in which an event occurs; a setting. In the case of the epSOS project, and the Semantic Services work package, each of the pivot documents can be considered the context within which the data elements are represented.

110

Controlled Medical Vocabulary (CMV) with identifiers (codes) - is a standard code system and an associated semantic network that represents the information within a major domain of medicine. Each concept in the code system should have a preferred (or canonical) code and may have any number of additional synonyms. The CMV should be as comprehensive as possible within its target

115   clinical domain. It must be controlled by an organization that oversees the content, integrity and evolution of the CMV, ensuring that the canonical terms are not assigned to different concepts over time (modified from Gartner Group).

Common Terminology Services (CTS) – CTS is a service developed within HL7 as an alternative

120   to a common data structure. Instead of specifying how an external terminology must look like, HL7 choose to identify the common functional characteristics that an external terminology must be able to provide. The HL7 Common Terminology Services (HL7 CTS) defines an Application Programming Interface (API).

125   **Data Element –** A data element is an atomic unit of data that has precise meaning or precise semantics. A data element definition is a human readable phrase or sentence associated with a data element within a data dictionary that describes the meaning or semantics of a data element. A data element can be seen as a single unit of data that corresponds to a field in a data base record. It is a real instantiation of a concept. Example: a textbook entry on a web form.

130

Data Structure - see Syntax

eDispensation - eDispensation is the electronic document produced as the result of fulfilling an
ePrescription.

135

EHR (Electronic Health Record) - An electronic health record is an evolving concept defined as a
longitudinal collection of electronic health information about individual patients.

Emergency Data Set - The emergency data set is a common set of medical information used in
140   some countries in Europe with the intention of providing basic information about the patient in case
of an emergency.

ePrescription - ePrescription is the electronic document produced by legally authorized healthcare
professionals in order to prescribe medication for dispensation at the pharmacy.

145

epSOS (European Patients – Smart Open Services) - Smart Open Services open eHealth initia-
tive for a large scale European pilot of patient summary and electronic prescription.

epSOS Master Value Sets Catalogue - The epSOS Value Sets Catalogue is a collection of terms
150   used within certain parts of the pivot documents (either parts describing the patient demographics or
the clinical problems for example) based on known code systems such as ICD-10, SNOMED CT,
ATC, EDQM, UCUM etc.

epSOS Master Translation/Transcoding Catalogue – the epSOS Master Translation/Transcoding
155   Catalogue is the epSOS Master Value Sets Catalogue which contains, in addition to the original
terms, their translation in different languages corresponding to the respective Member States and
the possible cross-referencing (transcoding) with other code system that are used at the national
level. The translation and the cross-referencing (transcoding) is a national responsibility. Providing
the content of each country's contribution to the epSOS Member States is under ep-
160   SOS'responsibility.

epSOS Ontology – the epSOS Ontology is a representation of the relationships that exist in the ep-
SOS MVC.   The epSOS Ontology will be quality assured using the epSOS MTC, with the terms
present in different languages.

165

EDQM (European Directorate of Quality in Medicine) - Standard Terms of European Directo-
rate of Quality in Medicine. This is a code system that covers dosage forms, routes of administra-
tion and containers used for medicines for human and veterinary use. Responsible organization:
European Directorate for the Quality of Medicines & HealthCare
170   (http://www.edqm.eu/en/Homepage-628.html).

(HCP) Health Care Professional – Health Care Professional is a doctor of medicine or a nurse re-
sponsible for general care or a dental practitioner or a midwife or a pharmacist within the meaning
of Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the
175   recognition of professional qualifications or another professional exercising activities in the health-
care sector which are restricted to a regulated profession as defined in Article 3(1)(a) of Directive
2005/36/EC . This means that a Health Care Professional is a person who delivers health care or
care products professionally to any individual in need of health care services, in order to prevent,
relieve or treat a medical problem. A Health Care Professional must be related to at least one HCPO
180   (Health Care Professional Organization).

ICD (International Statistical Classification of Diseases and Related Health Problems) – ICD
provides codes to classify diseases and a wide variety of signs, symptoms, abnormal findings, com-

plaints, social circumstances, and external causes of injury or disease. Responsible organization:
185   Word Health Organization (http://www.who.int/classifications/icd/en/).

IHE (Integrating the Healthcare Enterprise) - IHE is an initiative designed to stimulate the integration of the information systems that support modern healthcare institutions based on existing standards. (http://www.ihe.net/)
190

LOINC (Logical Observation Identifiers names and codes) - The scope of LOINC effort includes laboratory and other clinical observations. Responsible organization: Regenstrief Institute, Inc. (http://loinc.org/)

195   **MTC** - epSOS Master Translation/Transcoding Catalogue

MVC – see epSOS Master Value Sets Catalogue

Null Flavor - Every data element has either a proper value or it is considered NULL. If and only if
200   it is NULL, a "null flavor" provides more detail as to in what way or why no proper value is supplied.

Object Identifier (OID) – Object Identifier is an identifier for worldwide standardized entities by ISO/IEC 9834/1. An OID ensures standardized information exchange. Structurally, an OID con-
205   sists of a node in a hierarchically-assigned namespace. Successive numbers of the nodes, starting at the root of the tree, identify each node in the tree. Designers set up new nodes by registering them under the node's registration authority.

OMG (Object Management Group) - OMG is a consortium, focused on modeling programs, sys-
210   tems and business processes and model-based standards. (http://www.omg.org/)

Ontology - Ontology is a formal representation of the classes/types/universals within a domain and the relationships between those. It is used to reason about the properties of that domain, and may be used to define the domain.
215

OWL (Web Ontology Language) – Web Ontology Language (OWL) is a family of knowledge representation languages for authoring ontologies, and is endorsed by the World Wide Web Consortium.[1] This family of languages is based on two (largely, but not entirely, compatible) semantics: OWL DL and OWL Lite semantics are based on Description Logics,[2] which have attractive and
220   well-understood computational properties, while OWL Full uses a novel semantic model intended to provide compatibility with RDF Schema. OWL ontologies are most commonly serialized using RDF/XML syntax. OWL is considered one of the fundamental technologies underpinning the Semantic Web.

225   **Patient Care Coordination (PCC)** - PCC is the IHE Patient Care Coordination Domain which deals with integration issues concerning the healthcare providers, patients and healthcare system administrators encounter. It deals with general clinical care aspects such as document exchange, order processing, and coordination with other healthcare specialties (cardiology, oncology etc). (http://www.ihe.net/)
230

Patient Summary - The epSOS Patient Summary is an electronic document that provides health care professionals with a data-set of essential, understandable and relevant health information in order to be able to deliver safe patient care during unscheduled and planned care. It must be noted

that the documents referred to in WP3.5 are electronic documents and not classical paper docu-
235   ments.

Pivot Document - Pivot Document is a document whose structure will allow for semantic interope-
rability between the MS. Its structure is based on the data collected from the functional work pack-
ages ePrescription and Patient Summary and a commonly used syntax standard. If a MS document
240   is mapped onto this schema it will ensure that the meaning of the concept transferred is commonly
understood by the rest of the MS. The schema tags are in English. The document will structure
sections necessary for the data presented such as "Allergies", "Medical problems" etc. It is not
making references to the common terminology that will be used throughout the project.

245   **Realm** - Realm is a conceptual space where the vocabulary follows certain rules. It may be univer-
sal (i.e. all countries) or may be the US or French Public Health system, or an Example Realm for
HL7 use. To provide a more practical example, the whole project epSOS is a realm.

Reference Information Model (RIM) – RIM is a unique representation of the health care domain
250   set of information and data. Its design supports health informatics details of clinical events, their
results and their context. RIM represents the semantic and lexical connections between the informa-
tion carried in the fields of HL7 messages.

Reference Model – Reference Model is a model that represents the global characteristics of health
255   record components, how they are aggregated, and the context information required to meet ethical,
legal and provenance requirements. This model defines the set of classes that form the generic
building blocks of the EHR. It reflects the stable characteristics of an electronic health record, and
would be embedded in a distributed (federated) EHR environment as specific messages or interfac-
es (as specified in Part 5 of this standard).   Responsible organization: HL7 International
260   (http://www.hl7.org/)

This generic information model needs to be complemented by a formal method of communicating
and sharing the organizational structure of predefined classes of EHR fragment corresponding to
sets of record components made in particular clinical situations. These are effectively pre-
265   coordinated combinations of named RECORD_COMPONENT hierarchies that are agreed within a
community in order to ensure interoperability, data consistency and data quality. (Modified from
CEN/ISO En13606 part 1)

SNOMED CT (The Systematized Nomenclature of Medicine Clinical Terms) – The Systema-
270   tized Nomenclature of Medicine Clinical Terms is a Clinical Healthcare Terminology with compre-
hensive, scientifically-validated content, used for electronic health records, includes cross-maps to
other international standards.   Responsible organization: International Health Terminology Stan-
dards Development Organisation (IHTSDO) (http://www.ihtsdo.org/).

275   **Semantic Services** – the epSOS Semantic Services are a collection of services surrounding the ex-
change of the Patient Summary, ePrescription and eDispensation within the Member States. The
services address the syntax (structure), the terminology (or the value sets), and the translation and
transcoding services that might be needed so that the health care professionals can make informed
decisions concerning patient care.
280

Syntax – Syntax is the way in which linguistic elements (as words) are put together to form consti-
tuents (as phrases or clauses). The term is used to refer directly to the rules and principles that go-
vern the sentence structure of any individual language.

285   **Taxonomy –** Taxonomy is a hierarchical structure of types/universals in a specified domain, typically organised using the supertype-subtype relation (viz. the formal is_a relation applied to types/universals only). Example: A dog is a mammal; a mammal is an animal.

Template – Template is a data structure based on a model, which expresses the data content needed
290   in a specific context, e.g. a clinical or administrative one.

Term – Term a word or expression that has a precise meaning in some uses or is peculiar to a science, art, profession, or subject.

295   **Terminology** – Terminology – 1. is the study of terms and their use of words and compound words that are used in specific contexts. - 2. is the representational artifact which is the outcome of systematical studies of the labeling or designation of concepts particular to one or more subject fields or domains of human activity, through research and analysis of terms in context, for the purpose of documenting and promoting correct usage.
300

Terminology Access Services – the epSOS Terminology Access Services are the specifications of an interface describing the transactions needed to perform semantically accurate, "on-the-fly" language translation (in terms of the display name) of coded elements present in the pivot documents from one member state language to another, or from one code system to another is another code
305   system if indicated in the epSOS Master Translation/Transcoding Catalogue. The interface also details the transactions needed for the validation of the coded elements used in the pivot documents against the epSOS Ontology codes. Furthermore it describes the functionalities for creating and maintaining the ontology itself such as loading new value sets, adding new terms or codes to the epSOS Master Value Set Catalogue, versioning, and mapping (cross-referencing) semantically
310   equivalent terms or code descriptions in paired member state languages and across coding systems.

Thesaurus – Thesaurus is a collection of terms arranged for human navigation via broader-than/narrower-than and associative relations.

315   **UCUM (Unified Code for Units of Measure)** - UCUM is a system of codes for unambiguously representing measurements of several kinds. Responsible organization: Responsible organization: Regenstrief Institute, Inc.(http://unitsofmeasure.org/)

UC (Use case) - A use case in software engineering and systems engineering is a description of a
320   system's behavior as it is used from outside the system.

Value Set – Value Set is a uniquely identifiable set of valid concept representations where any concept representation can be tested to determine whether or not it is a member of the value set. A value set may be a simple flat list of concept codes drawn from a single code system, or it might be an
325   unbounded hierarchical set of possibly post-coordinated expressions drawn from multiple code systems. A Value Set may include a list of zero or more Coded Concepts drawn from a single Code System. A Value Set can represent: all of the Coded Concepts defined in exactly one Code System, a specified list of Coded Concepts that are defined in exactly one Code System, or a set of Coded Concepts represented by another Value Set.
330

Vocabulary – Vocabulary is the sum of words used by, understood by, or at the command of a particular person or group, e.g. the goup of all competent speakers of one language.

Vocabulary Domain – Vocabulary Domain is a "conceptual space" from which the values of an
335   attribute can be drawn. A vocabulary domain serves as the link between an HL7 coded attribute

and the set(s) of valid concept codes for that attribute, representing an abstract conceptual space such as "countries of the world", "the gender of a person used for administrative purposes", etc. Each Vocabulary Domain has a unique name along with a description of the conceptual space that it represents.

340

VocabularyDomainValueSet - VocabularyDomainValueSet is an association between exactly one VocabularyDomain and exactly one ValueSet. Each such association may apply in zero or one ApplicationContexts.

345   **Vocabulary Translators** – is the mixed set of tools and people that translate the abstract HL7 v3 specifications into the structure and terms of actual data processing applications.

XML schema – XML schema – is a description of a type of XML document, typically expressed in terms of constraints on the structure and content of documents of that type, above and beyond the 350   basic syntactical constraints imposed by XML itself. An XML schema provides a view of the document type at a relatively high level of abstraction..

WS (Web Services) – Web Service a software system designed to support interoperable Machine to Machine interaction over a network.

355

WSDL (**Web Services Description Language) -** WSDL is an XML-based language that provides a model for describing Web services. The WSDL defines services as collections of network endpoints, or ports. WSDL is often used in combination with SOAP and XML Schema to provide web services over the Internet.

360

XML (Extensible Markup Language) - is an extensible language allowing its users to define their own elements. XML is an extensible language which primary purpose is to facilitate the sharing of structured data across different information systems.

365