



HL7 EUROPE NEWS



HL7 European Office
Square de Meeûs 38/40
1000 Brussels
Belgium
E-mail: EUoffice@HL7.org
Website: www.HL7.eu

NEWSLETTER

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HL7 International Foundation
(European Office of HL7)
Square de Meeûs 38/40
1000 Brussels
Belgium
E-mail: EUoffice@HL7.org
Website: www.HL7.eu



Concept, design and realisation

Heitmann Consulting and Services | Max-Ernst-Str. 11 | 50354 Hürth, Germany
E-Mail: hl7@kheitmann.de

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Contents

Welcome to the first HL7 Europe newsletter	4
The European Office of HL7	5
News from France	6
SemanticHealthNet	8
Joint HL7-IHE Workshop at EFMI STC 2011	10
CEN	12
What is greenCDA?	13
eHealth Governance Initiative	15
Benefits with involvement of standard organizations in architecture development	17
Calendar of events	19
HL7 Training schedule	19
HL7 Affiliates in Europe	20

by Charles Jaffe

Welcome to the first HL7 Europe newsletter



As Health Level Seven International is about to celebrate twenty-five years of achievement, the European office is completing its very first anniversary. Around the world, the members of HL7 look upon this event with great pride. For nearly two decades, the Europeans community has contributed to the success of HL7 through its productivity, its innovation, and its global leadership. All of us take pride in the accomplishments and honor the thousands of volunteers who have made this moment possible.

Nearly two years ago, plans for the European office began to coalesce around the vision and dedication of many of its current leadership. Nonetheless, the pathway to the creation of HL7 Europe was paved by many individuals whose tireless efforts served as a foundation for the science and application of healthcare informatics and health information technology. Today, we acknowledge those who have gone before us and welcome the many eager and enthusiastic members who will become the leaders of tomorrow.

This Newsletter is certainly the very first of many to come. The editors have worked tirelessly to transform their aspirations into reality. The many authors who have contributed to this publications are to be congratulated as well, for their efforts to bring to the readership first-hand knowledge of the achievements of countless volunteers in Europe and around the world.

At the same time, the first Newsletter is not simply a compilation of the ideas and success of the HL7 community. In fact, it serves as a prelude to continuing efforts to achieve healthcare information interoperability within Europe, as well as to enable the global community of caregivers and patients in every aspect of the continuum of scientific research, preventive medicine, public health, care delivery, and wellness.

Many of the accomplishments of HL7 International, and in particular HL7 Europe, are summarized in these pages. More importantly, we look forward to the subsequent editions of the Newsletter to inform us, to challenge us, and perhaps even inspire us to make Europe and the increasingly interdependent neighborhoods around the world a healthier place to live.

Charles Jaffe, MD, PhD

CEO, Health Level 7 International

The European Office of HL7

HL7 International established its European Office as a private foundation in Brussels in June 2010 to support its mission in creating HL7 standards and frameworks that are widely and easily used enabling interoperability in healthcare, also serving the specific needs of the European community and its national HL7 affiliates.

Specifically, the HL7 Foundation will support the mission of HL7 international through activities focused in cross-border eHealth interoperability in the wider European region by:

- promoting the use of the HL7 framework and protocol specifications
- encouraging the use of the HL7 framework and protocol specifications by health systems and service providers
- Seeking formal accreditation for these HL7 protocol specifications where necessary
- generally, promoting high quality, cost-effective use of information systems in the widest variety of health and healthcare related environments.

Moreover, the HL7 Foundation may notably contribute directly or indirectly, in collaboration with HL7 affiliates and other stakeholders to the development and adoption of HL7 standards and frameworks:

- Work with International and European Organizations and establish partnerships
- Mobilize resources from the public, private, and philanthropic sectors
- Participate in EU funded programs
- Run campaigns, organize conferences, seminars and fora
- Contribute to and conduct research and studies
- Publish and promote all documentation relating to the use of the framework and protocol specifications developed by HL7 who shall exercise all applicable copyrights to said materials.
- Support and contribute to clinical trials.

HL7 International has entailed significant research and technological development components particularly in the area of modeling and methodology, as well as tools development:

- The first Domain Analysis Models (DAMs) balloted in HL7 were introduced by Duke as part of two US National Institute of Health (NIH) Roadmap grants. One related to Cardiology and the other to TB. This work was brought into HL7 and expanded with input from other members of HL7. The balloted products were shared with the clinical community.
- Work with the Clinical Data Interchange Standards Consortium (CDISC), including the development of the BRIDG model, a domain analysis model that produce a shared view of the dynamic and static semantics for the domain of protocol-driven research and its associated regulatory artifacts.
- The work with diabetes in defining the data elements and relations among the elements.



- The work with Service Oriented Architecture (SOA) and Service Aware Interoperability Framework (SAIF) an effort of HL7 and its Architecture Board [2] (ArB) to develop an interoperability framework that would support services, messages, and Clinical Document Architecture (CDA) ISO 10871.
- Detailed Clinical models developed in collaboration with the clinical community.
- Functional requirements and in particular those related to the Electronic Health Record (EHR) System Functional Model and the Personal Health Record (PHR) System Functional Model, an on-going work that influences certification of EHR/PHR systems worldwide.
- The HL7 Reference Information Model (RIM).
- The work with Infobutton, clinical guidelines, and decision support algorithms addressed by the relevant HL7 Working groups.
- The work on clinical genomics, that was the focus of the 2010 annual plenary in Cambridge Massachusetts, available at <http://bit.ly/aHqf4n>

The work of HL7 has been recognized by the academic community as notable development of the HL7 Clinical Document Architecture (CDA) has been published in accredited journals.

The HL7 Foundation aims to further mobilize the European community to contribute to these from a European perspective, enabling in collaboration with affiliates easy and consistent implementation.

Already the HL7 International foundation has been engaged in the eHealth Governance Initiative and the SemanticHealthNet projects (see relevant articles in this issue) and through those aims to engage the HL7 community in Europe in further advancing eHealth interoperability in Europe and Worldwide.

Catherine Chronak

Affiliate Director, HL7 Board of Directors, HL7 International Council co-Chair

by **François Macary**

News from France



Thanks to Chuck Meyer – chair of HL7 at that time – I was given the opportunity to present the DMP project at a plenary meeting in Boca Raton. I can't remember the exact year, maybe 2006, but I do have memories of barefoot walks on the beach with other HL7 members and of deserted fat white yachts napping along the waterfront. Anyway at that time, the mysterious meaning of these three letters D M P was delivered to 600 or so HL7 attendees, and since then, Nicolas – chair of HL7 France – has provided Sunday training courses on these three letters, three times a year, in remote settlements as far from Ann Arbor as Kyoto (fat yachts being replaced by elegant white waders), Rio, Sidney or even San Diego.

Today, the DMP has become a daily operational tool for an ever growing number of healthcare providers (both in healthcare institutions and private offices) and patients. An update may be useful: “DMP” translates into “personal health record”, which brings the question “Is DMP a PHR?” The answer is “Yes and no.”

The DMP is the national electronic health record service. It is dedicated to patient care coordination, quality improvement of care delivery and continuity of care along a person's life – “my health memory” is one of its nicknames.

Every person living in France and registered to the national health insurance *may* decide to have a DMP. It will be created during an encounter, with a healthcare professional or organization (family doctor, clinical lab, imaging center, clinic, hospital...). Having explained what it's for, how it works, and how the patient can keep the entire control on it and can share this control with their chosen preferred primary care physician, and having collected the patient consent to all that, the care provider creates the DMP. At creation time a few parameters are chosen by the patient, such as whether he authorizes or not any healthcare professional to access the record in an emergency situation (e.g. street accident). Once the DMP opened, the patient will access it through a dedicated web portal, with two levels of authentication (OTP delivered via email or SMS + account login). The patients can see all the contents of their record, except some documents (for instance a report diagnosing a cancer, which may have been temporarily hidden by the oncologist, in wait for a face to face explanation with the patient). The patient can see who has accessed their DMP, when, and what exact content was read or written. The patients can share information relevant to the continuity of their care, in a dedicated space of their record. The patient can deliver explicit authorizations to care professionals (white list) and can block others (black list). In conformance with patient rights in France, the patient can choose to hide some documents. In that case these documents stay visible only to their author, patient, and the preferred primary care physician. This operation is reversible. The patient can choose to delete some documents. And last, the patient can decide to close his or her DMP.

Who else can access the DMP? Only healthcare professionals involved in the patient case, having obtained the patient's authorization (written or spoken). In the case of a healthcare organization (hospital, lab, ...) the authorization is granted to the whole team involved on the patient case. Healthcare professionals working for insurance companies or occupational medicine never have access to any DMP.

The DMP is leveraging the electronic document paradigm, with only one standard format accepted for clinical documents: CDA Release 2. Healthcare professionals can feed a patient's DMP with new or updated CDA documents. They can also query and retrieve existing documents. The query and retrieval is only accessible to professionals identified and authenticated with their professional smart card, which also identifies the profession and specialty, and the practice setting of the professional. A matrix specifying what types of documents are accessible to each profession is operating as a filter on the queries. The documents feeding the DMP can be CDA with nonXMLBody conforming to the IHE XDS-SD profile, or structured documents conformant to CDA templates, such as IHE XD-LAB for clinical lab reports, APSR set of templates built jointly by IHE AP and HL7 AP usable for anatomic pathology structured reports and mandated for all cancer pathology reports, and other templates most of which coming from IHE PCC domain.

The DMP is implementing a single infrastructure consisting in one IHE XDS registry/repository. Healthcare professionals access the DMP either through a web portal or from their local HER system, using the XDS web services in conjunction with other IHE security infrastructure profiles.

The DMP service opened in December 2010 with pilot users, and the usage has extended regularly since then, as healthcare IT solutions homologated as DMP-compatible were deployed among healthcare professionals and institutions. The patient web portal was opened in April 2011.

The DMP was achieved and is now run by ASIP Santé – the Shared Healthcare Systems Agency, a public body created in 2009 under the healthcare ministry, who

has also delivered all the foundations for the building of e-health in France: The national patient identifier (INS-C), the healthcare professional smart cards, PKI and directories, the interoperability framework (the latter is the particular duty of me and my colleagues).

The DMP is a tool for professionals (like a big shared EMR) freely opened and controlled by the patient (in that sense a PHR). ASIP Santé is now building new e-health services on top of the DMP, but this will be for another story...

Francois Macary

HL7 France, Project Manager, Health IT interoperability and security, ASIP Sante

François was the first chair of HL7 France. He is now working for ASIP Santé as the project leader of the interoperability framework for shared healthcare information systems. This framework was first released in June 2009 on www.esante.gouv.fr and has been expanded regularly since then. See also: www.esante.gouv.fr; www.dmp.gouv.fr

by Dipak Kalra



SemanticHealthNet

SemanticHealthNet is a new European Commission funded project to tackle the challenge of semantic interoperability: to enable the meaningful exchange of clinical information between EHR systems.

This type of EC project is known as a Network of Excellence as it brings together best of breed partners and experts to forge a definitive and permanent relationship between them. SemanticHealthNet will develop a scalable and sustainable pan-European organisational and governance process for the semantic interoperability of clinical and biomedical knowledge, to help ensure that information within electronic health record systems can be meaningfully exchanged and interpreted when shared across healthcare systems and institutions.

Semantic interoperability of electronic health record systems is a vital but largely missing ingredient of EHR interoperability, and is necessary to support patient safety, quality of care, chronic disease management, extended home-care, patient empowerment. Rich and meaningful interoperability is needed in order to:

- enable the safe, meaningful sharing and combining of health record data between heterogeneous systems and actors / care providers;
- enable the integration and safe use of computerised protocols, alerts and care pathways by EHR systems;
- link EHR data to explanatory and educational materials to support patient and family engagement and professional development;
- ensure the necessary data quality and consistency to enable meaningful and reliable use of longitudinal and heterogeneous data for public health, research, health service management.

Semantic interoperability will enable the development of systems that interrogate multiple distributed EHRs to identify important missing information, to create alarms when data are out of range, to suggest appropriate investigations, diagnoses and treatments, and to track patients along care pathways. The doctor or nurse of the future is likely to depend on the assistance of an EHR for making decisions that ensure optimal clinical care.



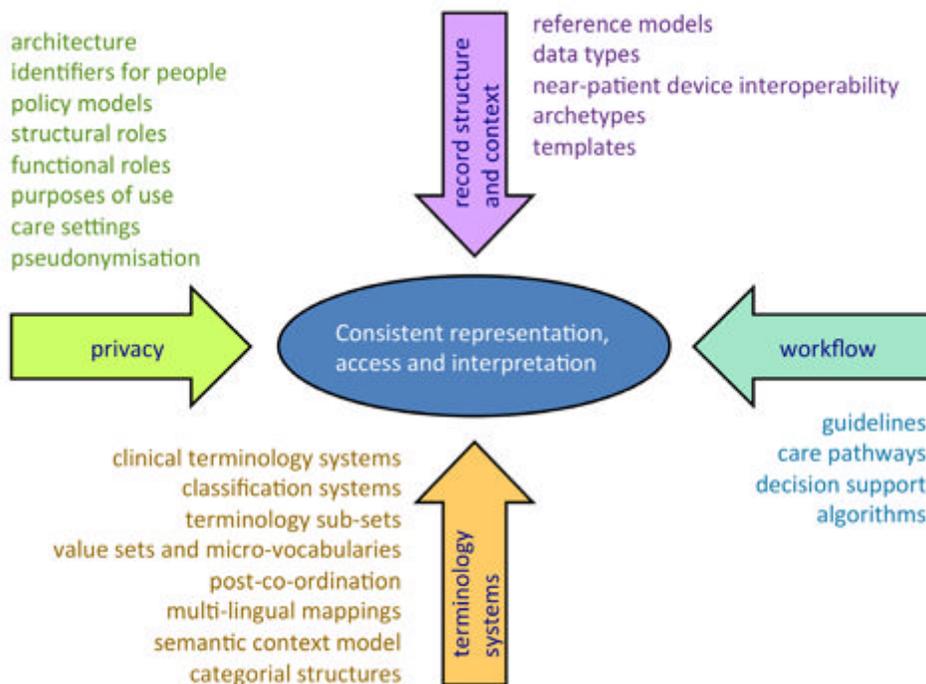


Figure 1: Resources needed to support rich semantic interoperability

The semantic resources that are in use at present, such as terminology systems, templates, archetypes, guidelines and decision support algorithms work poorly together, and do not effectively function well across heterogenous systems. Through a clinically-driven investigative work-plan SemanticHealthNet will capture the semantic interoperability needs underpinning evidence-based and patient-centred clinical shared (integrated) healthcare, exemplified in the management of nominated chronic conditions, starting with the example of chronic heart failure. Chronic diseases are the main reason for ill health in the community and the dominant cost of health care expenditure in Europe and elsewhere. Although preventive strategies may delay the onset or progression of disease and treatment may improve well-being and longevity, successful and efficient implementation of these strategies depends on an optimal integration of the efforts of different care providers (GPs, specialists, multi-professional teams, hospitals etc.). A parallel thread of empirical work, led by public health professionals and using the exemplar of cardiovascular prevention, will consider how these same semantic resources such as terminologies, ontologies and information model standards can best create interoperability addressing population health perspectives including quality management, the overall governance of health care services, and knowledge discovery such as new evidence for best practice and the support of clinical research.

SemanticHealthNet has a strong and experienced consortium. The partners are:

- European Institute for Health Records
- Imperial College London
- University of Hull
- University Hospitals of Geneva
- World Health Organization
- The University of Manchester
- Medical University of Graz
- IHTSDO
- Institut National de la Santé et la Recherche Médicale
- Ocean Informatics

- Health Level 7 (HL7) International Foundation
- EN13606 Association
- Empirica
- Standing Committee of European Doctors
- COCIR
- Whittington NHS Trust
- Research in Advanced Medical Informatics and Telematics

A wide range of contracted experts will support the core partners with many aspects of the workplace. These include: eHealth Governance experts, Ministries of Health, health professional organizations, providers, insurers, health informatics experts, competent authorities. Industry representatives include: Agfa Health-Care, Oracle Corporation, Microsoft EMEA, European MHealth Alliance, Open Health Tools, Continua and IHE.

By taking the best globally recognized approaches to representing clinical meaning within terminology systems, clinical data structures, care pathways and ontologies the project will establish the optimal and scalable ways of combining these resources interoperably to meet the identified clinical requirements. A key characteristic of the project will be its being driven by health professionals and their association(s)' and clinical needs, thereby responding to the EU requirements to make this research more responsive to healthcare and health system needs rather than focusing on purely theoretical topics. This real-world anchor is needed to ensure that semantic interoperability developments strive to be usable and useful rather than strive for perfection.

The project, which as an EC funding contribution of 3 million Euro, will start in the autumn of 2011, and run for 3 years.

Dipak Kalra

Clinical senior lecturer in the Centre for Health Informatics and Multiprofessional Education (CHIME) at UCL, leads CEN and ISO Task Forces producing international standards on Electronic Health Records communications, personal health records, and EHR architecture requirements.

by Bernd Blobel

Laško, Slovenia

Joint HL7-IHE Workshop at EFMI STC 2011



The European Federation for Medical Informatics (EFMI), which is the European regional member of the International Medical Informatics Association (IMIA), has established two major annual events:

- The Medical Informatics Europe (MIE) Conference
- The EFMI Special Topic Conference (EFMI STC)

While the MIEs address the entire spectrum of EFMI, EFMI STCs are dedicated to special aspects of medical informatics usually represented by certain EFMI Working Groups.

The EFMI STC 2011 has been organized by EFMI and the Slovenian Medical Informatics Association and has been held in the city of Laško. Recognizing the



EFMI Special Topic Conference STC 2011

E-salus trans confinia sine finibus 14 - 15 April 2011
e-Health Across Borders Without Boundaries Laško, Slovenia

special history of the region from the Roman time through the Holy Roman Empire, the Austrian-Hungarian Monarchy and the Yugoslavian multi-ethnic state up to the European Union, the conference has been dedicated to “E-salus trans confinia sine finibus – e-Health across Borders without Boundaries”. The event brought together around 140 participants from 25 countries in Europe, North and South America, and Asia. As organizational member of EFMI, HL7 International supported the EFMI STC 2011 with 2,000.00 €, furthermore organizing a Joint HL7-IHE Workshop covering the contributions of both organizations in enabling international e-Health interoperability solutions.

In detail, following contributions have been presented:

- HL7 developments in Europe and Worldwide (Catherine Chronaki, Affiliate Director, Board of HL7 International)
- HL7 test implementations in the Czech Republic (Libor Seidl, Chair, HL7 Czech Republic)
- CTS II for enabling multi-lingual communications (Frank Oemig, Board Member, HL7 Germany)
- Domain Analysis Models as reference for national profiles (Bernd Blobel, Chair, HL7 Germany)

The speech “IHE Infrastructure Specifications for Cross-Border Interoperability” by Lisa Spellman (IHE, Senior Director, Informatics, HIMSS) has been canceled because of urgent family problems Lisa was faced with.

With more than 55 participants, the Joint HL7-IHE Workshop was well attended, forming the strongest session of the conference beside the plenary. This reflects both the acknowledgment of the importance of standards by the international community and the recognition of both organizations as solution providers.

After the conference, the workshop attendees have been electronically approached and asked to fill in a questionnaire. 35 participants from 17 countries (excl. the speakers) returned that questionnaire. Thereby, 26% have been representing provider organizations, 14% came from vendors, one participant was a medical student and another one didn't declare her affiliation. 48% of the workshop attendees came from university and research institutions, which wasn't a surprise for a scientific conference. Four of the university representatives are members of HL7 Affiliates, while one vendor is member of HL7 International. Regarding the knowledge about HL7, 26% didn't respond, while 17% claimed not being familiar, 37% being somewhat familiar, and 20% being very familiar with HL7. Reflecting the situation in Europe, 34% claimed knowledge about HL7 Version 2 messaging, but also 40% reported experiences with HL7 Version 3 messaging, usually combined with awareness of the HL7 RIM. After all, 37% have been familiar with CDA, reflecting the wide-spread use of structured documents for interoperability projects towards national EHR solutions and a national or even pan-European eHealth infrastructure. Thereby, 23% reported to integrate the EHR-FMs in their efforts. 29% of the participants reported about the use of HL7 Version 2 and HL7 Version 3 messages, respectively, in 60 % happening in combination, while 26% have been reporting about the use of CDA specifications. Just 4 participants ever attended an HL7 Class.

Ranking the suitability/usefulness of different interoperability specifications for trans-border eHealth services by 1-6 (1=highest) resulted in a vague and probably not applicable assessment. Thereafter, ebXML has been ranked 1.92, openEHR 2.3, HL7 v3 messaging 2.38, CDA R2 2.77, EN ISO 13606 3.21, HL7 v2 3.2, and EDIFACT 3.79. This is inconsistent with the importance of the SDOs as seen by the participants. Here, HL7 has been assessed as very important by 80%, IHE by 77%, IHTSDO by 71%, ISO TC 215 by 60%, CEN TC 251 and openEHR by 46% each, DICOM by 43%, and ASTM by 10%.

The attendees have been mostly interested in projects tackling e-Prescription and Patient Summaries.

The HL7-IHE Workshop at EFMI STC 2011 in Slovenia was a great success. It clearly served the promotion of HL7 and its work products. Thereby, cultural differences between Europe and other global regions became obvious. The outcome of this workshop should encourage HL7 International to continue its engagement in the global Medical/Health Informatics scene.

Prof Bernd Blobel, PhD

Chair HL7 Germany, Organizer of the Joint HL7-IHE Workshop

by Robert Stegwee

CEN



In the CEN TC 251 plenary meeting in March, the members of the technical committee extended their thanks and appreciation to Mr. Molenaar for his excellent leadership over the last 5 years. During the same meeting Robert Stegwee was appointed chairman of CEN TC 251 for a period of three years. Robert Stegwee brings to the position a strong background in high-level e-health architectures to serve the evolving health information environment. In his daily life, he is a consultant with Capgemini Healthcare, based in the Netherlands, and active in Capgemini's Global Healthcare Network. In addition, Robert Stegwee is a professor of e-health architecture and standards at the University of Twente in the Netherlands and active in several roles in the local and global HL7 community. His appointment marks the success of the Joint Initiative Council with global SDO's (JIC, www.jointinitiativecouncil.org external link), which was co-founded by Kees Molenaar from a CEN perspective.

During his three-year appointment, Stegwee will work closely with the TC secretariat, management team and relevant stakeholders to help guide the development of global standards in health informatics based on the European Community's priorities. This includes establishing standards for cross-border healthcare enterprise architecture, health record information models, and workflow and data management. These standards may become mandatory for all European healthcare providers and will be embedded within the global health informatics standards community.

One of his key tasks for the immediate future will be to take the European Mandate work to the next stage, building upon the well regarded E-Health Interoperability report (www.ehealth-interop.eu external link). Discussions are taking place with the European Commission on the way to take this important work forward, to support the interoperability requirements that have been set forward by the European Commission. Both commissioners Neelie Kroes and John Dalli have highlighted the importance of E-Health Interoperability in their presentations to

the Ministerial Conference on E-Health in Budapest, last May (see <http://www.youtube.com/user/eHealthWeek>).

In response to the recently adopted European Directive on patients' rights in cross-border healthcare, CEN TC 251 has proposed a new joint work item with ISO TC 215 WG6 to renew and expand CEN's specification of a standardized Electronic Medication Prescription (ENV 13607) to be used in cross-border healthcare. This work will involve the experiences gained in the epSOS project (www.epsos.eu external link), the large scale pilot that aims to facilitate the cross-border exchange of healthcare information. Core focal areas of the epSOS project are the patient professional summary and medication prescription.

CEN TC 251 experts are participating in, and often leading, the work in a number of joint ISO/CEN work items, especially in the areas of privacy, security and in device interoperability. During the joint ISO/CEN working group meeting in Kuopio in May, the work on the Continuity of Care has been embraced by ISO as a starting point for a joint work item, which again emphasizes the influence of European experts in global standardization. Yet another example is the progress that has been made in the area of Detailed Clinical Models as well. The draft document was decided fit for formal comment and the workgroups in both ISO and CEN expect this work to be published in 2012. These are just a few highlights from the progress that has been made in Kuopio. Late September CEN TC 251 will meet to discuss future structure and activities.

Robert Stegwee

Chair, HL7 The Netherlands, Co-Chair, HL7 International Council, HL7 Affiliates Representative, Joint Initiative Council, Chairman, CEN TC 251

What is greenCDA?

CDA has been presented as being more straightforward to implement than standard HL7 V3 messages, but it still presents the implementer with a steep learning curve. For example, anyone seeking to create a document that conforms to a published CDA implementation guide (IG) needs a good understanding of the CDA R2 base standard and schema, the HL7 Version 3 data type specifications, each of the CDA templates defined in or referenced by the particular IG as well as the terminology code lists or value sets defined in or referenced by that IG.

greenCDA is a methodology, now adopted by HL7, which is intended to simplify this task by creating simplified XML schemas that can be transformed directly to or from standard CDA. These simplified schemas, or modules, can be implemented much more quickly than full CDA specifications. A greenCDA implementation is a combination of modules.

Although greenCDA simplifies implementation, the development of the greenCDA modules will remain a skilled task. Each module performs a specific job and requires a one-to-one mapping with its standard CDA equivalent. It contains a greenCDA schema, an XSLT transform to standard CDA and narrative documentation of the business process. Each greenCDA module may correspond to a standard CDA template.

The methodology begins with an existing implementation guide, which is a well-defined profile of CDA for a particular purpose, such as a discharge summary or operation note.

by **Tim Benson**



greenCDA documents (instances) are much shorter than the equivalent standard CDA, but the standard CDA is universal, while the greenCDA is specific to a particular use case and designer. If two greenCDA designers address the same problem they will each produce a different greenCDA schemas but both greenCDA schemas should map to the same standard CDA. A developer may use greenCDA within their private environment, but standard CDA should be used outside.

To create a conformant instance of a greenCDA implementation, implementers first create an XML instance that conforms to the greenCDA schema and then they run the transform to generate standard CDA markup. The standard CDA should validate against the CDA schema file, as well as any additional schemas that may be required for a particular implementation guide.

This may become clearer by considering a fragment which includes details of patient name, identifier, sex and date of birth. A greenCDA representation is:

```
<PatientInformation>
  <Patient birthDate="19410506" gender="M">
    <id authority="12.34.56.78" idValue="110094"/>
    <name>
      <given given="John"/>
      <family family="Smith"/>
    </name>
  </Patient>
</PatientInformation>
```

The standard CDA representation of the same information is shown below:

```
<recordTarget>
  <patientRole>
    <id extension="110094" root="12.34.56.78"/>
    <patient>
      <name>
        <given>John</given>
        <family>Smith</family>
      </name>
      <administrativeGenderCode code="M"
        codeSystem="2.16.840.1.113883.5.1"/>
      <birthTime value="19410506"/>
    </patient>
  </patientRole>
</recordTarget>
```

The greenCDA design process has two main stages: specifying the greenCDA schema and developing XSLT transforms to and from standard CDA.

The process of designing a greenCDA module starts with the target CDA implementation guide and a set of requirements for the document content. Meaningful business names are assigned to each of the fields that are to be used to gather data. Hierarchies in the XML schema are flattened to a level that is meaningful to the business application. For example, the CDA hierarchy recordTarget/patientRole/patient can be flattened to just patient and variable data elements can be recorded as attributes of that element. Fields that are constant in all instances of a specific CDA document, such as templateId, moodCode and typeCode are not included in the greenCDA but must be documented for the development of the transform.

The appropriate HL7 data types and multiplicities are identified for each field. The requirements are specified in a simple greenCDA XML schema, compliant with XML Schema 1.0.

The second key stage is to generate an XSLT transform from the greenCDA schema to standard CDA. Static values, such as templateId, moodCode and typeCode are defined in the transform that generates standard CDA. Ideally, a reverse transform from standard CDA to a green schema should also be created, but this is optional. The transform needs to be tested to ensure that each data-point in greenCDA instance is mapped to a valid data-point in standard CDA. If a reverse transform has been developed, perform a round-trip test of greenCDA instance to standard CDA and back to greenCDA again. When done, the new greenCDA instance should be the same as the original greenCDA instance.

The requirements should be used to develop documentation indicating precisely how the green data translates to standard CDA after the transformation. Include precise details of the value-sets associated with each green element and any conditional logic.

Reference

greenCDA Release 1. Informative Document, September 2010, CDAR2_IG_GREENMOD4CCD_R1_|1-2010SEP, HL7.

Tim Benson is founder of Abies Ltd and is author of Principles of Health Interoperability HL7 and SNOMED, Springer 2010. E-mail: tim.benson@abies.co.uk, www.abies.co.uk

eHealth Governance Initiative

HL7 International through its Foundation based in Brussels has joined 38 other European organizations including Ministries, Industry and Professional Organizations, user groups, competence centers, and other eHealth stakeholders under the leadership of the Austrian Ministry of Health in the eHealth Governance Initiative (eHGI) to address the strong need for common political leadership and integration of eHealth into health policy so as to develop eHealth Services responding to the needs of the patients and health systems.

This is the framework for the *eHealth Governance Initiative* which is co-financed by the European Commission through two different instruments: Joint Action (eHealth Governance Initiative) and the Thematic Network SEHGovIA (Supporting the European eHealth Governance Initiative and Action). The two instruments have a similar membership and a common governing and administration structure to achieve maximal synergy and collaboration with the High Level eHealth Governance Group.

Building on experience and momentum gained in the Call for Interoperability (also known as the CALLIOPE network www.calliope-network.eu) experience, eHGI aims to establish an efficient, appro-



by Clemens Martin Auer



priate-governed and sustainable platform to enable support eHealth at the policy, strategy and the operational level.

Specific areas of work for eHGI are:

- 1) Legal, ethical and regulatory issues
- 2) Semantics and terminology
- 3) Identification and authentication
- 4) Standardization.

eHGI also concentrates on further development of the eHealth Interoperability Roadmap.

Activities requiring broad convergence across Europe will be supported using SEGHovIA as a communication and dissemination platform for the network members and beyond. Thus, eHGI will also benefit patients providing support and guidance for implementation, deployment and use of eHealth services throughout national health care systems, increasing patient safety and quality, better use of health care resources.

The expected impact of eHGI is:

- *Coordinated eHealth initiatives across Europe*
support knowledge sharing among its members. Activities, such as discussions on standardization, or on legal or technical aspects need to be coordinated and common views will be supported.
- *Provided support and guidance for implementation, deployment and use of eHealth services throughout national health care systems*
provide input and support to challenges faced by its members on the different levels. National health care systems will get the opportunity to benefit from a communication platform which consists of many national/regional experts and will carry on the experience to a higher (strategic) level.
- *Increasing patient safety and continuity and quality of care through an integrated use of eHealth services*
maintain a strong focus on legal issues and will therefore lead qualitative discussions with experts in the according fields.
- *Better use of healthcare resources*
provide clear recommendations and support on the use of health care resources by addressing common challenges and come up with an approach that considers the broader cost-effectiveness and usability of eHealth solutions.

References

Further Information on eHGI see:

Presentation of eHGI in Budapest by the eHGI coordinator, Dr. Clemens Auer, see <http://bit.ly/mRzqgP>

eGHI information pages at the European Commission: <http://bit.ly/pdxsqP>

Dr. Clemens Martin Auer

Director General, Federal Ministry of Health, Vienna, Austria

Benefits with involvement of standard organizations in architecture development

“Only variety can destroy variety.”

The Law of Requisite Variety
W. Ross Ashby, Introduction to Cybernetics, 1956

The main “issue” today is not to develop “applications” (we have in fact tons of running applications) but systems with intrinsic and sustainable interoperability. Sound architectures and not accidental heaps of silos applications are required. Moreover, in this period of economic crisis, there is a big pressure on rationalizing investments and, at the same time, improving interoperability as never seen before.

We should assume that today, in our real world, IT is not informatics and it's not an organizational support: “The system IS the enterprise” as John Zachman says. So the point is that IT, today, is a first class citizen of organization in itself.

This is the high level scenario and a real story can be useful to understand how Standard organization plays a role in this game.

Our experience is centered on epSOS. epSOS is an ICT Policy Support Programme (ICT-PSP) EU project. The strategic objective is to pilot a service infrastructure demonstrating cross-border interoperability among electronic health record systems in Europe. Final strategic goal is to build an European eHealth space. Currently epSOS has been extended to 23 countries (3 not EU) and pilots a series of scenarios related to the Patient Summary and the ePrescription. The architecture, realized by the project, is based mainly on HL7 standards in terms of his Service Functional Model and, obviously, in terms of content (HL7 v3 and CDA Release 2).

The involvement of HL7 Italy, in epSOS, has been possible thanks to Lombardy Region that, by means of its LISP Agency, is member of HL7 Italy as well as Invitalia, the Government Agency that supports Lombardy Region in the project. Thanks to this membership some HL7 Italy professionals are directly involved in the project.

This is relevant if we understand that standards are not a cookbooks to be kept from a bookshelf and apply. Standardization (intended as means to realize architectures less brittle and more durable) is related to a community. The community concept is important because in the real world today we do not realize just “applications” but architectures: sound architectures cannot be realized in isolation. This is our elevator pitch!

When we work we do not have in mind only the use of a standard XML vocabulary/communication protocol, but we have in mind the entire stack of standardization methods and knowledge. Beyond HL7v3 and v2, as messaging standard, we have the Service Aware Interoperability Framework (SAIF), the Healthcare Service Specification Project (HSSP), the Functional Models (EHR-S), and so on.



So we have, silently, in our practice problems and solutions, and our experience is a guide to design and, at the same time, a boost in standard evolution and use.

To cut a long story short most of the results of the persons involved in epSOS in terms of quality is strictly related to knowledge and savoir faire that we have from participating in HL7 community. This reality implies, from a systemic viewpoint, that standards (and more exactly standardization) are part of design.

We must be stressed that today there is a shift in our design routine, a big project is not a big “application”, it is a system of systems architecture. To construct this kind of systems the trivial use of standard is certainly a basic step, but it’s not the whole story.

A project with a decent level of complexity requires:

- 1. standards to be selected, refined, adapted and profiled (and HL7 has obviously this intrinsic capability)
- 2. deep knowledge in standards to discriminate where a standard can be applied as-is and where an extension is required,
- 3. methods to apply what above mentioned,
- 4. the capability to evolve the standards in accordance to real scenarios.

This is not simple and we should avoid classic “pragmatic” approach, “don’t worry, it works”: it’s brittle and produce only failed projects. The shortcuts of use whatever thing for whatever thing claiming that “it is standard” – without considering how actually “that” standard is used (profiles used outside the scope they has been conceived, incoherent extensions) produce isolation and rigidity (the system cannot really interoperate outside itself).

We need therefore to stress the benefits of having a structural involvement of standardization communities in health projects, like epSOS, helping in improving the interoperability capability of the solution provided.

As little example of this the choice some years ago, thanks to the HL7 Italy action, of realizing the Italian Patient Summary basing on well-known CDA R2 module templates: this allow today of having a seamless implementation of the Patient Summary European epSOS specifications.

We hope to be able to moving on this track. Currently other HL7 Italy example in development are:

- Lombardy Region (LISPA) leads a standardization effort in HL7 Italy (with other Italian Regions) for the use of digital signature in CDA2 compliant with Italian laws.
- Recently a public/private consortium, funded by government for a HL7 based implementation, has requested our involvement and support. Because, again, standardization is not individual and isolated and it’s a necessary component of a successful project.

As for epSOS an improvement of structural liaison with HL7 Europe is expected in the near future. So our praise, beyond epSOS, is to understand the relevance of inclusion of standardization community, process and methods in projects. At least if you want sound and sustainable projects and organization.

HL7 Italy has planned the second Open Days Conference in November and this will be certainly a topic of discussion.

Stefano Lotti, HL7 Italy Chair, Giorgio Cangioni, HL7 Italy CTO

Calendar of events



25th Annual Plenary & Working Group Meeting San Diego, CA, USA

Annual Meeting and National Interoperability Conference HL7 Germany and IHE Germany Göttingen, Germany

RIMBAA (v3 software developers) meeting, see <http://bit.ly/qPMzUp> Amsterdam, the Netherlands

HL7 UK Technical Committee Working Meeting UK

National Standardization Conference HL7 the Netherlands Utrecht, the Netherlands

HL7 Training schedule

August 2011 eLearning, see hl7.org or register online at <http://bit.ly/iIvpkz> Worldwide

Training course run by HL7 UK: HL7 Version 2, see <http://bit.ly/qOAYHv> London, UK

Training course run by HL7 UK: HL7 Version 3, see <http://bit.ly/qOAYHv> London, UK

Educational Summit / Meaningful Use Hands-On Workshop Washington, DC, USA

11 to 16 September

26 to 28 October

15 November

7 December

8 December

**18 August to
1 December**

8 and 9 November

10 and 11 November

15 to 17 November

HL7 Affiliates in Europe

HL7 Austria http://www.hl7.at Chair: Stefan Sabutsch	HL7 Greece Chair: Alexander Berler	HL7 Sweden Chair: Gustav Alvfeldt
HL7 Croatia Chair: Stanko Tonkovic PhD	HL7 Italy Chair: Stefano Lotti	HL7 Switzerland http://www.hl7.ch Chair: Beat Heggli
HL7 Czech Republic http://www.hl7.cz Chair: Libor Seidl	HL7 Luxembourg Chair: Stefan Benzschawel	HL7 The Netherlands http://www.hl7.nl Chair: Robert Stegwee MSc, PhD
HL7 Finland http://www.hl7.fi Chair: Juha Mykkanen PhD	HL7 Norway Chair: Espen Møller	HL7 UK http://hl7.org.uk Chair: Philip Scott
HL7 France Chair: Nicolas Canu	HL7 Romania Chair: Florica Moldoveanu	
HL7 Germany http://www.hl7.de Chair: Bernd Blobel PhD	HL7 Spain Chair: Carlos Gallego Perez	



About HL7 International

Founded in 1987, Health Level Seven International (www.HL7.org) is the global authority for healthcare Information interoperability and standards with affiliates established in more than 30 countries. HL7 is a non-profit, ANSI accredited standards development organization dedicated to providing a comprehensive framework and related standards for the exchange, integration, sharing, and retrieval of electronic health information that supports clinical practice and the management, delivery and evaluation of health services. HL7's more than 2,300 members represent approximately 500 corporate members, which include more than 90 percent of the information systems vendors serving healthcare. HL7 collaborates with other standards developers and provider, payer, philanthropic and government agencies at the highest levels to ensure the development of comprehensive and reliable standards and successful interoperability efforts.

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HL7 European Office
Square de Meeûs 38/40
1000 Brussels
Belgium
E-mail: EUoffice@HL7.org
Website: www.HL7.eu

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