

HL7 Version 3: Developed Globally, Implemented Locally

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1

Acknowledgements

With major help from

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And major contributions from the HL7 International Affiliates

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2

Agenda

- Introduction to HL7.org
- Why Version 3
- Brief overview of v 3, including support for patient data: physical measurements
 - HL7 RIM – model of clinical information content
 - Creating model based message standards with RIM – Refinement with Constraints
 - Producing a simple example
 - Lab result example
- How HL7 supports the EHR: Recent trends towards interoperability.
- Examples of Contributions to version 3 from International affiliates

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3

Interoperability & Innovation

- Main Entry: **interoperability**

Function: *noun*

Date: 1977

: ability of a system (as a weapons system) to use the parts or equipment of another system

Source: Merriam-Webster web site

- **interoperability**

: ability of two or more systems or components to exchange information and to use the information that has been exchanged.

Source: IEEE Standard Computer Dictionary: A Compilation of IEEE Standard Computer Glossaries, IEEE, 1990

Functional interoperability

Semantic interoperability

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Interoperability & Innovation

HL7's **mission** is clinical interoperability

“To provide 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. Specifically, to create flexible, cost effective standards, guidelines, and methodologies to enable healthcare information system interoperability **and sharing of electronic health records.**” (Source: HL7 Mission statement, revised 2001)

HL7's **strategy** is innovation – both by ourselves and by our users

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Who is HL7?

- Over **500** organizational members, about **1500** total members
- Up to **500** attend Working Group Meetings - including about 100 international attendees at the January 2004 WG)
- 26 International affiliates in (in addition to “HL7/US”)
 - Argentina - Australia - Brazil
 - Canada - China - Croatia
 - Czech Republic- Denmark - Finland
 - Germany - Greece - India
 - Ireland - Italy - Japan
 - Korea - Lithuania - Mexico
 - New Zealand - Poland - Spain
 - South Africa - Switzerland - Taiwan
 - The Netherlands - The United Kingdom

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What has HL7 produced?

- Founded in 1987
- Produced Version 1.0 and 2.0 in '87 and '88
- Approved HL7 message standards -
 - 2.1, 2.2, 2.3, 2.3.1, 2.4 and 2.5 in '90, '94, '97, '99 and '00, and '03.
- Approved CCOW standards
 - 1.0, 1.1, 1.2, 1.3 in '99, '00 and '01
- Approved Arden Syntax standard in '99
- Approved XML-based Clinical Document Architecture standard in '00
- Accredited as an SDO by ANSI in 1994
 - All HL7 approvals since '94 are "American National Standards"
- Published implementation recommendations for:
 - Object broker interfacing '98
 - Secure messaging via e-mail '99
 - HIPAA Claims attachments '99
 - XML encoding of Version 2 '00

2003-V3 Methodology: RIM + Vocabulary + Tooling
2004-V3 Early Adopters, DSTUs, v3 Core to ANSI status

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In Ballot, December 2003

Version 3 Normative:

- Clinical Document Architecture, Rel 2
- Version 3: Data Types Rel 1 - Abstract Specification, XML ITS, UML ITS
- XML Implementation Technology Specification - Structures, Rel 1
- Medical Records, Rel 1
- Regulated Studies, Rel 1,
 - Periodic Reporting of Clinical Trial Laboratory Data
 - Annotated ECG
- Public Health Reporting, Rd 1
- Scheduling, Rd 1
- Claims and Reimbursement, Rd 1
- Accounting and Billing, Rd 1

- Common Message Elements, Rel 1
- Infrastructure Management, Rel 1
- Shared Messages, Rel 1
- HL7 Message Transport Spec

Version 3 DSTU

- Patient Administration, Rel 1
- Pharmacy, Rel 1
- Version 3 Informative or Draft for comment

- Laboratory, Rel 1
- Patient Care, Rel 1
- Clinical Genomics
- Personnel Management
- Regulated Studies: Product Stability Content

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In Ballot, December 2003, cont.

Version 3 Informative or Draft for comment, continued

- Version 3 Guide
- Version 3 Backbone
- Attachments for CDA Release 1
- Structured Product Labeling (Drug/clinical products "inserts")

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V3 Normative Status

Note: some changes underway as negatives are still being resolved...

- RIM (March 03)
- Refinement and Localization (March 03)
- Datatypes: UML ITS, XML ITS, Abstract (ITS Independent)
- XML ITS (Message) Structures
- Message Transport Specifications (EBXML, WSDL/SOAP)
- CMETS (Common Message Element Types)
- Shared Messages (Application Acknowledgments)
- Infrastructure Management
- CDA Release 2
- Patient Administration
- Medical Records Management
- Scheduling

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Key: Normative, membership, committee, DSTU

V3 Normative Status

Note: some changes underway as negatives are still being resolved...

- Patient Administration
 - Personnel Management
 - Public Health Reporting (notifiable condition, patient safety)
 - Regulated Studies (annotated ECG, clinical trial lab observation)
 - Accounting and Billing
 - Claims and Reimbursements -REL 1
 - Lab observations
 - Pharmacy
 - CTS: Common Terminology Services
- Key: Normative, membership, committee, DSTU**

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In ballot opening 24 March

- Common Terminology Services
- Infrastructure Management, Rel 1
- CMETS (Common Message Element Types), Rel 1
- Shared Messages, Release 1 Transport Specification - MLLP, Rel 1
- Datatypes: UML ITS, XML ITS, Abstract (ITS Independent)
- XML ITS (Message) Structures XML Implementation Technology Specification - Data Types, Rel 1
- XML ITS - Structures, Rel 1

Key: Normative, membership, committee, DSTU, as planned - final ballot may vary from this list

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In ballot opening 24 March

- *Claims and Reimbursement, Rel 2*
- *Accounting and Billing, Release 1*
- *Laboratory, Rel 1*
- *Pharmacy, Rel 1*
- *Patient Administration, Rel 1*
- *Personnel Management Rel 1*
- *Drug Stability Reporting, Rel 1*
- *Individual Case Safety Report, Rel 1*
- *Notifiable Condition Report, Rel 1*

Key: *Normative, membership, committee, DSTU, as planned- final ballot may vary from this list*

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Related ballots opening March 24

- EHR Functional Requirements DSTU
- Archetype and Template Architecture (1st committee)
- CCOW v 1.5 (1st membership)
- GELLO (*Common expression language standard*) (1st committee)
- Structured Product Labeling (1st membership) **
- Structured Clinical Trial Protocol (1st committee) **

For comment only:

- HL7 Version 3 Standard: Blood Bank, Release 1
- XML Implementation Technology Specification - Guide, Release 1
- Study Data Tabulation Model

- ** Based on CDA rel 2 (still at committee level, and not itself in ballot this cycle)

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HL7 - Collaboration with other organizations utilizing/building standards

X12N (US: Edifact)	CEN TC 251
US FDA and US CDISC/ Pharma	ISO TC 215
DICOM	NIST (US: Nat'l Institute for Standards and Technology)
US Veterans Hospitals	HIMSS/IHE
UK: NHS National "spine" and GP-to-GP projects	

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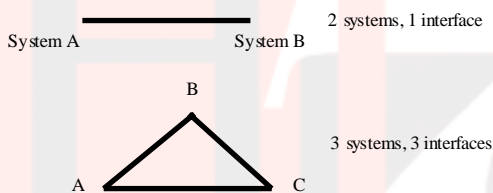
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Background: why standard interfaces?

- Some history:
 - Back in the early 80's, people developing distributed healthcare application systems noted that the number of interfaces increases as one half of the square of the number of systems being interfaced. For example:



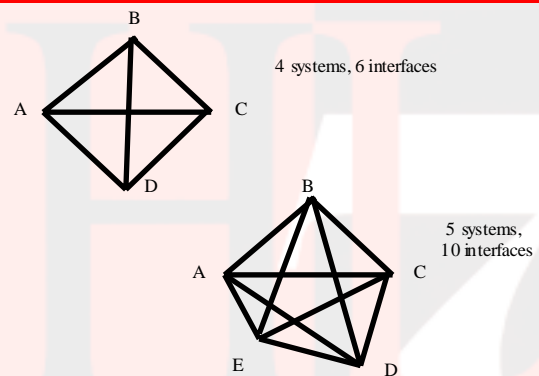
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**standard induction proof available on request...or draw your own pictures!

Background: why standard interfaces?



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**standard induction proof available on request...or draw your own pictures!

Background: why standard interfaces?

- Notice that the number of interfaces needed increases much faster than the number of systems
- Those of you who liked algebra in high school may remember the formula for the "number of combinations of n things taken r at a time: $n!/(n-r)!r!$
- For $r=2$, and arbitrary n , this is $n(n-1)/2$, which gives**:

Systems:	Interfaces:
3	3
4	6
5	10

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**standard induction proof available on request...

Background: why standard interfaces?

Systems:	Interfaces:
6	15
8	28
10	45
20	190
30	435
40	780
50	1225
100	4950

But $n(n-1)/2 = \binom{n}{2}$ is not maintainable !

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Background: why standard interfaces?

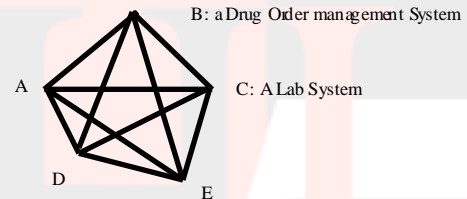
- Note that large organizations in the U.S., such as Mayo Fdn or Duke typically have between 50-100 such interfaces. The situation is similar for regional or national systems in Europe
- At a cost of 50-100k per custom interface, it's clearly much cheaper to have an interface standard. This reduces the number of interfaces for n systems to the cost of $(n-1)$ interfaces, a huge savings.
- This also allows, in most cases, a single interface to be changed without impacting the others.
- This last feature enables a practical maintenance approach, as well as a practical systems evolution approach.

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Remember our 5 systems with 10 interfaces:



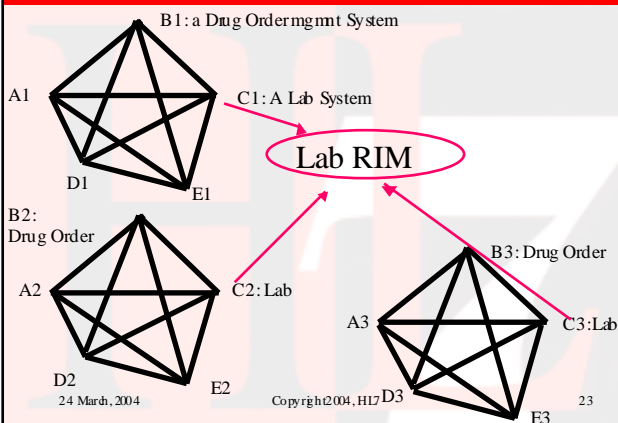
- This actually means that whatever vendor makes "C", their internal lab data structures and vocabulary are mapped into a common (standard) semantic structure. And systems A, B, D and E all map the standard-defined semantic lab structures into their internal lab data structures.
- Interfacing means MAPPING to/from Standard semantic structures.

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Use case for a Reference Information Model



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Use case for a Reference Information Model

- In other words, at a particular site, Systems A1...E1, a local lab standard or reference information model will be developed.
- But if that site needs to interoperate with other sites (site 2: A2...E2, and site 3: A3...E3), there needs to be an overall lab reference model that each site can map its information into and out of.

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Use case for a Reference Information Model

- The same is true for other patient related data: administrative/encounter management, financial, other types of clinical information. The overall reference model needs to accommodate each of these domains, with several additional constraints:
 - Non-clinical healthcare-related domains need to be able to use clinical domain data without it being stored and maintained in multiple models/structures.
 - Thus the non-clinical domain application may need to map its lab data needs into and out of the common lab reference model.
 - But this is the same concept as our original 5 systems, just on a much broader scale.
 - Vocabulary and identifiers must be coordinated across local domains.

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The RIM is important “*beyond just messaging*”

- The HL7 RIM is a mature version of a common (reference) healthcare *applications* information model
 - It supports both interfaces and system design
 - See not just MDF (message development framework), but the HDF (health development framework)
 - Not just messages, but CDR/E.H.R. applications, Structured Documents, templates, rules, etc.
 - Not just clinical but patient administrative, financial, public health, genomics

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Additional reasons for Version 3

- Version 2 has no formal information model; the model is implicit, not explicit.
- Version 2 models are similar to programming language “structures”, but without formal operations and without important OO concepts, such as generalization-specialization hierarchies.
- Version 2 has no formal binding of standard vocabularies to structures. The bindings are ad hoc and always site specific.
- Version 2 identifier datatypes are insufficient for large-scale integration.

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Additional reasons for version 3

- Diminishing returns from increased work on 2.X
- Compatibility with previous versions is getting very heavy
- The tower of Babel, or a New Dark Age
 - “Won’t HL7 go away now that we have XML?”
 - Niche groups proposing their own style of XML, and not understanding the difference between the ability to create an interface between any two systems, versus creating a standard on which to base interfaces between “n” systems.

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New capabilities offered in Version 3....

- New capabilities offered in Version 3....
 - Top-down message development emphasizing reuse across multiple contexts and semantic interoperability
 - Representation of complex temporal and non-temporal relationships
 - Formalisms for vocabulary support
 - Support for large scale integration
 - Solving the identifiers problem
 - Solving re-use and interoperability across multiple domain contexts
 - Creating a uniform set of models
 - Expanded scope to include community medicine, epidemiology, veterinary medicine, clinical genomics, security, etc.

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Semantic interoperability

To understand the data being received you must know **both**:

1. The definition of each element of data, and its relationship with each of the other elements – you must have a semantic model of the data
and
2. The terminology to be used to represent coded elements, including the definitions, and relationships within the terminology
3. The HL7 V3 RIM and associated methodologies promote and facilitate semantic interoperability

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In sum, how is V3 “better” than v2?

- A conceptual foundation in a single, common Reference Information Model to be used across HL7
 - RIM is in the process of becoming an ANSI and ISO standard
- A strong semantic foundation in explicitly defined concept domains drawn from the best terminologies
 - Vocabulary-level interoperability
- An abstract design methodology that technology-neutral – able to be used with whatever is the *technology de jour*
 - Separation of content and syntax

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Why do we need a RIM?

- The creation of a ‘reference information model’ for healthcare *supports*
 - The creation of a **standard set of structures** (models) to use for the sharing of healthcare information
- And the ability to bind a set of standard terminologies to these models *supports*
 - The sharing of these standard structures with standard (coded) names **and also**
 - The extension of the model via **structural (coded) terminology**

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Why do we need a RIM?

- Thus (a formal word!), we can create standard structures (models) with standard names (codes)
 - An ‘**ontology of structures**’ can be created
- And if we can create sufficiently generic and granular models in our ontology of structures, we can **map** any healthcare application’s “**domain**” model into (and out of) the “**reference**” model

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Why do we need a RIM?

- Once we have done this for a given application, (and we only need to do this one time for a given application), we can **re-use** the information from that application in (any) other healthcare application. This guarantees both **interoperability** and **re-use** of all healthcare data.
- But how do we do this...?

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Core concepts of HL7 v3 RIM

- The “Act” class and its specializations represent every action of interest in health care.
- Specifically –
“an action of interest that has happened, can happen, is happening, is intended to happen, or is requested/demanded to happen. An act is an **intentional** action in the business domain of HL7. Healthcare (and any profession or business) is constituted of intentional actions. An Act instance is a record of such an intentional action.”

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Core concepts of RIM

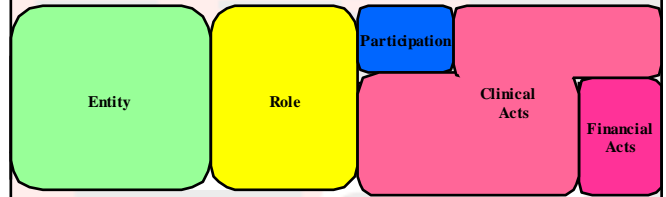
- Every happening is an **Act**
 - Procedures, observations, medications, supply, registration, etc.
- Acts are related through an **Act_relationship**
 - composition, preconditions, revisions, support, etc.
- **Participation** defines the context for an Act
 - author, performer, subject, location, etc.
- The participants are **Roles**
 - patient, provider, practitioner, specimen, healthcare facility etc.
- Roles are played by **Entities**
 - persons, organizations, material, places, devices, etc.

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RIM Class Diagram V1.16 – July 2002



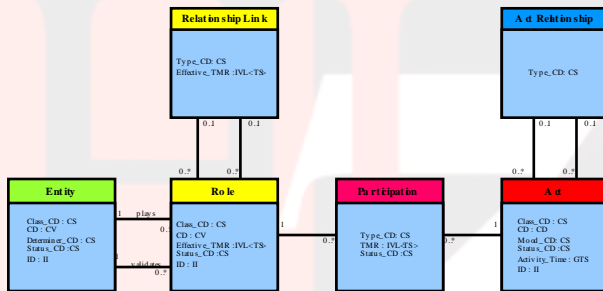
- 5 Primary Subject Areas
- 44 Classes
- 192 Attributes
- 7 Associations
- 39 Generalizations

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RIM Core Classes & Attributes



Six kinds of attributes:

type_cd(class_cd), cd,time, mood(determiner), status, id

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How does HL7 manage this abstraction?

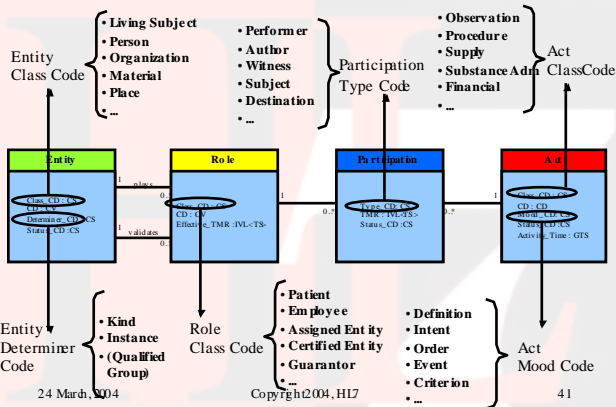
- In older HL7 models, each concept had a visible (physical) class or association to represent it
- In current RIM:
 - only include a class when it adds new attributes and associations
 - for the rest, use coded “structural” attributes – ‘class’ or ‘type’ codes
- Why are these named structural attributes?
 - because they use codes to represent concepts that would previously have been part of the model structure.

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RIM Core Attribute Value Sets



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Vocabulary Domains and Codes

- Coded attributes in the RIM must be associated with one and only one Vocabulary Domain prior to being used in a message specification.
- A vocabulary domain is “The set of all concepts that can be taken as valid values in an instance of a coded field or attribute.”
- Each concept in the vocabulary domain is represented using a code from a specific vocabulary.
- A vocabulary is a defined set of coded concepts.
- A vocabulary may be specified as an enumerated list of coded concepts (HL7 defined) or as a reference to an externally maintained list of coded concepts (e.g., SNOMED, LOINC, CPT, . . .).

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42

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From abstraction to 'concrete' concepts

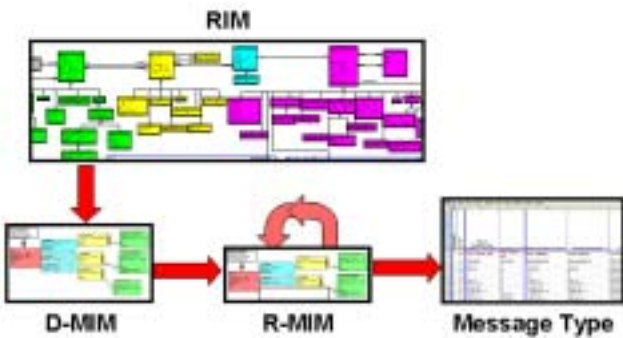
- How can this “skinny” RIM and its codes represent the large, sophisticated sets of concepts that must be communicated to support modern health care?
- Answer: The RIM is the starting point, the source or pattern, from which specific models are constructed to define a particular set of messages.
- The messages are based on RIM-derivatives known in HL7-ese as Message Information Models

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Refinement from RIM to Message



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45

Agenda

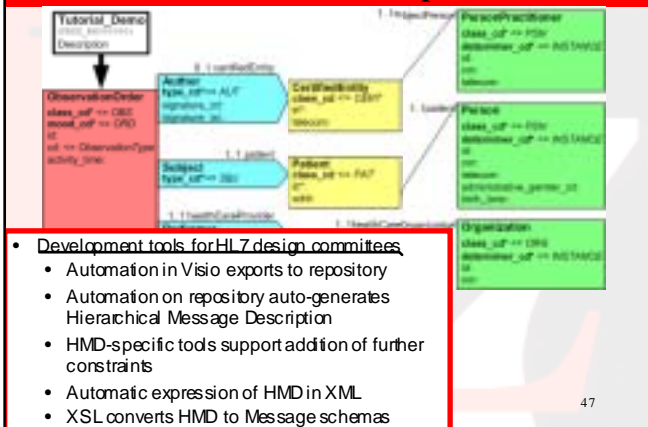
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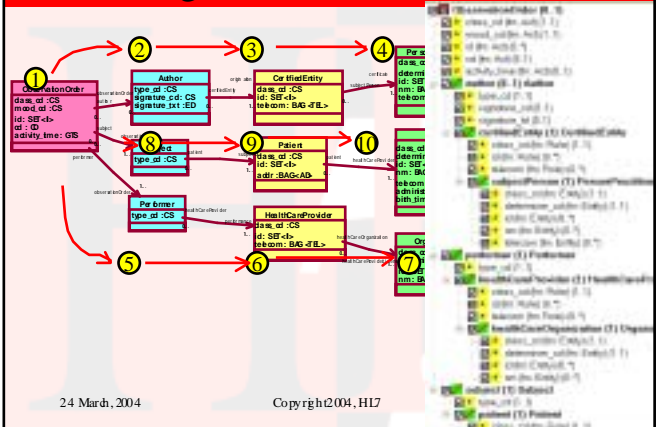
Refined Model of Example in Visio



- Development tools for HL7 design committees
 - Automation in Visio exports to repository
 - Automation on repository auto-generates Hierarchical Message Description
 - HMD-specific tools support addition of further constraints
 - Automatic expression of HMD in XML
 - XSL converts HMD to Message schemas

47

Message structure from RMIM



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HL7 supports the EHR: Recent trends towards interoperability

- See: www.hl7.org/ehr/
- Electronic Health Record System Functional Model and Standard.
 - The Electronic Health Record SIG has recognized the need for a common industry standard for EHR functionality that will serve to set common benchmarks for the industry, to inform industry stakeholders (patients, providers, practitioners, payers, etc.) of vital EHR functions and to qualify EHR systems in terms of completeness and readiness for adoption.
 - 2nd DSTU ballot just announced
 - Significant participation from HL7 International Affiliates

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HL7 supports the EHR: Recent trends towards interoperability

- HL7 Clinical Document Architecture -- Release 2
 - Working towards
 - complete interoperability with CEN 13606 extracts and openEHR documents
 - CDA Release 2 RMIM supports EHR document concepts
 - See CDA Release 2 Committee Level Ballot 1 (available at www.hl7.org) (TC's and SIG's -> structured documents -> documents)
- Recent related developments
 - HL7 UK GP to GP project
 - RIM Harmonization proposals add Act.classCode values needed for formally mapping CEN 13606 and openEHR into v3 RMIMs
 - This allowed the creation of an RMIM for CEN 13606/EHR Com (in process) as a step in this process

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HL7 supports the EHR: Recent trends towards interoperability

- HL7 templates harmonization project:
 - Testing interoperability between HL7 templates, CEN Entries, and openEHR archetypes by mapping each into v3 RMIM-based models
 - Demonstrating formal interoperability between the 3 approaches.
 - Go to “www.hl7.org” and select ‘online balloting’ to download current ballot document

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64

Some related references

A Shared Archetype and Template Language *Part II* (A Position Paper for HL7, CEN TC251, ISO/TC 215, openEHR and other organisations)

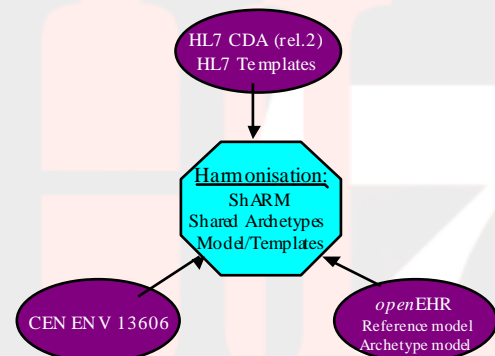
- Available at:
www.deepthought.com.au/health/archetypes/archetype_language_2v0.6.2.doc
- Also, the Archetype Definition Language (ADL) will be available at this site, and will have the ability to represent Archetypes as HL7 v3 RMIMs.

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65

Interoperability between EHR standards



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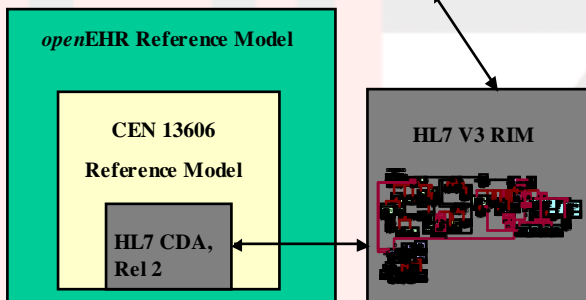
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66

Diagram courtesy Dipak Kalia

Interoperability between EHR standards

Or...have the v3 RIM at the "center"



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Diagram courtesy Peter Schaeffel

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The v3 Tools Taskforce

- Chaired by Laura Sato
 - HL7 UK, formerly HL7 Canada
- Some major contributors from the HL7 Affiliates include:
 - Charlie McKay, HL7 UK (VISIO and documentation extensions)
 - Lloyd McKenzie, HL7 Canada
 - HL7 VISIO tools (current)
 - MIF (HL7 v3 XML Model Interchange Format)

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V3 tools taskforce

- In process to become a Board-appointed HL7 Tools Committee with a formal Mission and Charter statement
- Current projects include papers on:
 - An overview of the HL7 tools Model Interchange Format (MIF)
 - A proposal/plan for HL7 Requirements, Configuration and Deployment Management
 - A proposal/plan for HL7 Product Evaluation and Recommendation
 - HL7 Tools Architecture and Policy Framework

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V3 tools taskforce

- A major revision (from HL7 UK) to the design tools will be made available to HL7 in the next several months, including some (tbd) of:
- Design Repository (with check-in-out functions, designs in Model Interchange Format)
 - Automated model comparison tool (MIF Diff)
 - Message Schema Validation
 - One-click round trip from VISIO to/from Schema
 - Automated Visio validation to test specifications for completeness

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71

V3 tools taskforce

- Other affiliate projects include:
 - MIF design and implementation (current) (Lloyd McKenzie and others)
 - Allows interoperability with Off The Shelf UML xml-based tools, plus interoperability between various HL7 v3 tools (encourages the development of new v3 tools)
 - CMET-related features/functionality enhancements Project
 - Lloyd McKenzie and Ben van de Walle, also of HL7 Canada

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72

Localization & Refinement principles

Once an HL7 specification has been balloted and formally published, it may be further constrained for a variety of purposes, including:

- **definition of a region-specific profile by an HL7 International Affiliate**
- documentation of a profile for use in communities of interest (for example, a set of collaborating health care institutions, a community of vendors or an external standards organization)
- definition of a profile for a specific project
- creation of profiles to define a vendor's capability or a consumer's requirements
- definition of content templates to be used when communicating HL7 messages

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"realm" specific "localizations"

- The HL7 Affiliate Organizations, working through the International Committee, studied localization and produced a report entitled "*Localizing the HL7 Version 3 Standard.*"
- This report, which has been reviewed and adopted by the HL7 Board of Directors for use by the affiliate organizations, is the basis for this part of the v3 ballot (and is now **normative**).

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realm-specific profiles

- These can be created via an Affiliate process that includes both the constraint process listed above, and an extension process that adds new concepts to the base, balloted message type
 - extensions must be produced by the same constraint processes that generates messages, CMETS, vocabulary restrictions from the RIM (and its vocabulary), and datatype constraints (*under development*)
 - affiliate-level ballot and registration requirements are defined
 - consistent with affiliate agreement and HL7 v3 methodology
 - Useful, global concepts are encouraged to be brought back into 'global' HL7 v3

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realm-specific profiles

- informal extensions are allowed at the ITS (implementation technology specification) only.
 - They cannot alter the intent of the standard message
 - There must exist a site-specific agreement
 - The ITS must support their "isolation" within the message

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Localization & Refinement principles

Summary: For "International" affiliates.

- Vocabulary Realm concepts for
 - Vocabulary domains for specific attributes (e.g. Act.code)
- In addition to localizations for
 - 'abstract information artifacts' such as
 - RMIMS
 - HMDS (Hierarchical Message Definitions)
 - MTs (Message Types)
- A web-based EB-XML registry is being created for both HL7 "global" and "affiliate" profiles, as well as "early adopter" profiles

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Early Adopters Forum

- Administered by the Implementation Committee (see below)
- Encourages v3 early adopters to share experiences
 - Lessons learned in specific domains
 - Problem-solving for common areas and specific areas
 - Suggestions for additions to the v3 global 'core'
- Includes
 - Email list
 - Presentations to various TCs and SIGs at the HL7 WG meetings
 - Use of EBXML Registry for conformance artifacts
- Also includes many international affiliate projects (see below)

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V3 Implementation committee

- A focus is “v3 for implementors”
- Projects being discussed include:
 - Creating v3 implementation documents
 - Current v3 materials are ‘v3 for message designers’
 - focus on how to understand and use the v3 XML-ITS for message implementors, with examples from Early Adopters Forum
 - creating v3 conformance methodology guide (like the corresponding v 2.x guide)
- Will include many affiliate projects (see below)

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Contributions from International affiliates

V3 ballot major contributions include

- Infrastructure areas
 - Datatypes (Australia), Queries (The Netherlands), EBXML transport specification (Canada), XML-ITS (UK)
- Claims and reimbursements (e-claims) (Canada)
- Pharmacy messaging and vocabulary (United Kingdom)
- Vocabulary (“realm” specifications and balloting procedures) (all affiliates)
- XML ITS (Australia, Canada, Germany, United Kingdom)

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Contributions from International affiliates

V3 ballot major contributions include

- EHR Functional Requirements
 - Affiliates include: UK, Canada, Australia, and “USA”
- CDA release 1 and 2 (under development)
 - Germany, Finland, Greece, “USA”

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Affiliate V3 implementation projects

A partial list:

- Australia:
 - patient care and referrals, V3 technical infrastructure
- Canada: e-claims, V3 tools
 - BCE Emergis: v3 e-claims live implementation for Chiro/Physio Claims for WSIB (Ontario Workers Comp), patient (client) and provider registries, Clinical Pharmacy, BC Lab Orders/Results (under development),
- UK:
 - NPfit: National “Spine” ECR supporting E-booking, E-prescribing, lab requests and reports, images, allergies, problems, current medications, etc.
- Germany, Finland, the Netherlands, Greece:
 - Clinical Document Architecture

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Affiliate V3 standards projects

A partial list:

- Argentina, Mexico, Spain:
 - Spanish translation begun, web-based education
- Mexico
 - Blood Bank
- The Netherlands:
 - Perinatal Project, National Patient Registry, National Electronic Patient Record, Query and scheduling infrastructure (under development)
- USA
 - Public Health Reporting, Adverse events, Annotated EKG

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Notes on the Transition to v3

- Current ‘lessons learned include
 - Existing v 2.x implementations: “if it ain’t broke, don’t fix it”
 - But for new domains, start with v3
 - For implementations requiring large scale integration (city, region, province, nationwide, international), v3 has ‘built-in’ support
 - Structural ontology guaranteeing interoperability and re-use: RIM and datatypes, integrated vocabulary support
 - Identifier strategy supporting wide integration
 - Model and Tools based design and implementation
 - If you need decision support, you’ll need v3
 - The same information is represented the same way everywhere using the RIM with the binding to structural and standard vocabularies

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Notes on the Transition to v3

- Translation from v 2.x: lessons learned
 - It is possible, and often desirable when existing v 2.x data is needed for a v3-based project
 - But it requires resolving the ambiguities inherent in v 2.x implementations;
 - If the MWB conformance profile exists already, that is a significant advantage, though it will not completely resolve the v 2.x model and vocabulary ambiguities
 - You'll need to resolve the same wide-scale implementation issues as needed for v3:
 - Vocabulary bindings (structural and standard)
 - Datatypes and identifiers
 - A quote from the field:
"I never fully understood v2.x until I understood v3"
(in the context of a project mapping a 2.x conformance specification into a v3 conformance specification)

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Of related international interest:

HL7 and IHE

For HIMSS 2004, HL7 and IHE cooperated on a very successful joint interoperability demo. There are plans to internationalize this demo after HIMSS 2004.

URLs:

- On www.hl7.org page under resources, select "HL7 IHE Joint Demo 2004"
- Or go directly to <http://129.41.58.87/html/index.htm>

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HL7/IHE Joint Demo HIMSS 04

The joint demonstration planned to feature healthcare scenarios such as:

- identifying an adverse drug event and preventing medication errors
- notifying the Food & Drug Administration and sponsors of clinical trials
- viewing clinical reports with links to related images,
- integrating electronic records with public health reports
- driving the capture of patient charges, billing and claims attachments from clinical observations

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...finis...

- Questions?
- Thank you!

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Part II: Using v3

- A practical overview of the RIM and the version 3 methodology and Design tools.
- Browsing the RIM: Rosetree example, including Structural Vocabulary
- Alternate representations of the RIM in the v3 ballots:
 - Graphical
 - Textual
 - Vocabulary

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A walk through a version 3 ballot

- Overall organization
 - Informative documents on v3
 - Where to find things
 - Standard Table of contents
 - DMIMS and RMIMS, HMDS and Message Types, Schemas
 - Interactions
 - A very quick tour of the datatypes
 - Common (message) element types -- reusable model patterns (and their relationships to message and API models, and to archetypes and templates)

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Visio Designer

- A walk through the Visio tools, featuring:
 - A look at an RMIM or two, such as:
 - Observation DMIM/CMETS/Event
- CDA-Release 2/Clinical statements

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Questions/Discussion topics

- If time permits:
 - When is v3 “done”?
 - How do I represent a new domain in v3? (MDF/HDF process)?
 - What changes can an affiliate make to the global standard?
 - What about Vocabulary in different countries/jurisdictions?
 - What are the implementation/development considerations
 - How can I learn from the early adopters program?

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Where can I get these tools?

- See companion notes in:
`v3materials.instructions.march.2004.doc`

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THANK YOU!

- Are there any last questions?
 - send them to:
`mark.shafarman@oracle.com`

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94