

FHIMS Lab Domain:

Order, Perform, Observe, Interpret, Store, Report, Receive

Meeting Minutes (April 11th)

Agenda for the next meeting (April 18th)



Date/time of call:

Monday, April 11th, 2011, 10-11:30 AM (EST)

Call: 1-800-767-1750, **Passcode:** 84287

Microsoft Office Live Meeting

Leadership team

Kosta Makrodimitris, Galen Mulrooney, Cindy Vinion, Neelima Chennamaraja

Website: <https://www.projects.openhealthtools.org/sf/projects/fhims/>

Attendees

Neelima Chennamaraja, VA

Robert Crawford, VA

Mike Fitch, DoD

Kosta Makrodimitris, FDA

Galen Mulrooney, VA

Anne Pollock, CDC

Vijay Varma, Atlanta VA Medical Center

Cindy Vinion, NG/CDC

Steve Wagner, ONC

Agenda

- ALL-FHIMS WG Cases, Style, Maps (HL7,HITSP,CLIA,EHR,LOINC), Metrics,5'
- ALL: Milestones-Plans-Risks for modeling & use cases(3rd-4th iteration), 5'
- ALL-Kosta-Cindy S&I LRI communication and subgroups, Terminology 5'
- ALL-HL7 ballots May-cycle (EHR, clinical, blood, gen testing etc) 5'
- ALL: Lab-OO interfaces, FHIMS domains, NHIN Direct, HIMSS, HL7 Lab-OO,2'
- ALL-Galen: Information Modeling (classes, patterns, granularity),40'

Guiding principal: FHIM Lab-OO will distinguish and categorize lab tests and results, and reports based upon the data needed to:

- (1) **Order** the test,
- (2) **Perform or process** the test,
- (3) **Obtain, interpret and store** data/results of the test,
- (4) **Report and/or release** the (full/partial) results,
- (5) **Receive, interpret and process** the report.

Actors: Hospital, Clinic, Lab types, Public Health Agency (fed-state-local), Patient, Physician, Nurse

Summary of Discussion

HL7 RIM & UML Discussion

HL7's version 3 RIM was built using UML 1.0 and includes some style enhancements as well as accommodations for the available tooling. The HL7 models created using the RIM - RMIMs, DMIMs, etc - are modeling using various tools, especially Visio.

The RIM makes use of 2 variables, class code and mood code, and defines additional, logical classes by changing the value of these variables. For example, a Procedure is an Act with a class code of "procedure". This method allows the RIM to be extremely flexible and stable - additional classes do not need to be added to the RIM to support new classes; instead, additional vocabulary values need to be defined.

- Kosta - Is the RIM open source?
 - Galen - The RIM belongs to HL7; it is their intellectual property. However, the United Kingdom has created an open source modeling tool, using Eclipse, (called Static Model Designer or SMD) for modeling the data exchanges (messages, documents (CDAs), and/or services) built using HL7's RIM.
- Cindy - The RIM is a very high-level, conceptual, model. It represents the information in healthcare that might be shared. It is used to create the information model for data exchanges and is not intended to be a database diagram or the only model needed.
- Galen - The VA found that HL7 version 3 is best understood as a platform. The RIM is a pattern for healthcare information - entity, role, act; and that pattern has value.
- Kosta - There are documents available on the Web about the RIM and challenges with using it. Several authors mentioned the overuse of the inheritance-generalization relationship and not the other UML class patterns and artifacts.
- Galen - The RIM and a lot of the other HL7 models or instantiations (e.g., XML schemas) do not include business names and/or mapping to the business is either missing or difficult to trace. This makes it difficult to use HL7 models to build artifacts that can be understood and used by both subject matter experts and computer programmers. We should be able to map the FHIM model to the needed HL7v3 messages.
- Kosta - Should we draft a paper about this topic?
 - Galen - FHIM was supposed to have 3 pillars: information, terminology, and coordination with SDOs, including ballots. We may want to start the 3rd pillar FHIM-wide informally by starting with a whitepaper.

FHIMS Style Guide

- Galen - The style guide for FHIM contains some useful information for utilizing the RIM for specific FHIM modeling. For example, HL7 and other, similar, high-level SDOs have typically handled identifiers generically by using a structure that includes an identifier types. Often, it is better to model more common identifiers explicitly in its appropriate class, and, then, use a generic identifier structure for other, less common, identifiers.
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Modeling

- Galen - Changed "chemistryResult" to "MeasurementwithReferenceRangeResult"
 - Mike - That is fine as long as reference range is optional; not all tests with measurement (numeric) results have a reference range.
 - Anne - True. From CLIA, labs are supposed to report reference range where one exists.

- Galen - We also need to be able to report when a specimen is inappropriate or inadequate for testing; where should that be in the model?
 - Robert would be more comfortable with a separate class for the exceptions.
- Galen - We need to understand date analyzed and date observed. Are they the same thing or different?
 - Cindy - They might be different; there could be one person who performs the test (observed) and another person who "reads" or interprets the test (analyzed).
- Mike - Think of a report not as separate, but as a tangible step in which results are certified and released.
 - Cindy - what is in the report often changes depending upon who is to receive the report and what their goal or focus is. For example, public health often wants and needs more detailed results than usually sent to a provider.

Other Discussion

- Cindy - Is FHIMS Lab interested in submitting an abstract to the Public Health Informatics (PHI) Conference? The abstract deadline is Monday, April 18th; so we need to move quickly.
 - Kosta - That sounds good.
 - Cindy will send an email to FHIMS Lab leadership.

Communication to FHIMS WG (Kosta-all to Steve Wagner)

- We discussed the HL7 ballots in the lab meeting today. Can we bring this topic to the general meeting on Friday? Can we create a startup-team to discuss ballots between agencies at FHIMS WG? Galen mentioned that FHA envisioned a 'ballot' team in the past.
- Another topic to bring is the creation of new domains. According to findings from EHR-FHIM mapping and cases that agencies brought a Public Health domain is a possible candidate. Can we discuss the process and interest in the general meeting and invite people to state their participation this week?
- Finally, we had a broad discussion on RIM and Galen, Cindy, myself discussed topics, experiences and literature ('real life' failures & databases, semantic-specs issues, constraint instead of objects, data-modeling instead of oop, generic approach, poor documentation and tooling, limited patterns and class relationships, data types issues, inconsistency from the higher level to lower level classes and terminology, messages only approach, HL7 IP-proprietary issues, usability and organization etc). We'd like to initiate a 'modeling team' to evaluate and write a white paper as part of the style modeling guide. We can invite UML, HL7 experts in this initiative.

RESOURCES

- *EHR-S functional profile* <http://www.hl7.org/ehr/>
- [HL7 common relevant ballots](#) for May cycle
- <http://wwwn.cdc.gov/clia/regs/toc.aspx> All of the laboratories (CLIA subcategories) we have listed must meet the requirements specified in: Sec. 493.1230 through 493.1256, Sec. 493.1261, and Sec. 493.1281 through 493.1299 (test request/report CLIA)

ANNOUNCEMENTS

- Public Health Informatics conference this summer in Atlanta: Engaging, Empowering, Evolving... Together <http://www.cdc.gov/phiconference/index.html>
- AMIA Public Health Informatics conference <http://phi2011.amia.org/program>

Agenda Next Call: April 18th 2011

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- ALL-Kosta-Cindy S&I LRI communication and subgroups, Terminology 5'
- ALL-Galen: Information Modeling (classes, patterns, granularity),45'
- ALL-HL7 ballots May-cycle (EHR, clinical, blood, gen testing etc) 5'
- ALL-FHIMS WG Cases, Style, Maps (HL7,HITSP,CLIA,EHR,LOINC), Metrics,5'

Action Items

| Start Date | Priority | Action Item | Status |
|------------|----------|---|------------------------|
| 11/22/10 | Low | 7) Wendy-Kosta-Galen-Cindy: Clarify Specimen-Sample filler and placer order nr, test identifier, placer group number and universalServiceIdentifier. The Pathology Lab uses specs from DICOM (Supplement 122, specimen, accession number, etc) in workflow. | In process |
| 11/22/10 | Low | 8) Kosta-Save Hufnagel: Services Aware Interoperability Framework and Lab-OO FHIMS relevance (Lab-OO HI7 domain has done some work, Cindy) | In process |
| 11/15/10 | High | 9) Mike, Cindy, Galen: Finalize definitions for and use of different identifiers & numbers in lab - filler order number, placer order number, group number, test identifier, etc. | In process |
| 11/8/10 | Med | 10) Need to discuss different scenarios involving different people (ward clerk, nurses, physicians, physician's assistants, interns, etc) and people in a data exchange. | Not started |
| 11/8/10 | Low | 11) Tim (ICLN) to determine if they would like to participate in FHIMS. | In process |
| 11/1/10 | Low | 12) Cindy will update sample accessioning scenarios. | In process |
| 11/1/10 | Med | 13) Anne will write up lab processes to include as additional scenarios. | In process |
| 11/1/10 | Low | 14) Cindy to identify and contact FBI person from LRN National Meeting for participation in the FHIMS Lab calls when we start doing Chain of Custody, phase 2. | Not started |
| 11/1/10 | Low | 15) Kosta/Cindy to transform flowchart of outpatient scenario to BPMN. The first BPMN 1.2 draft is done and need to review and add data objects. | In process |
| 10/25/10 | Low | 16) Keep in touch with Ted Klein and get material and links Update 11/1: Ted waiting for approval to release draft version of volume V | In process |
| 10/25/10 | Med | 17) Cindy- Contact laboratory experts, LIMS admins, HL7 OO WG Update 11/1: HL7 OO WG information shared with interested participants | In process |
| 11/09/10 | Med | 18) Kosta to present relevant material for Automated Laboratory Management, FERN, eLEXNET, Sentinel and Medical Countermeasures (FDA/contractors/partners) | In process |
| 11/08/10 | Med | 19) Galen to update weekly the FHIMS Lab-OO html model and collaborate with Kosta to update about changes from baseline(map .xls-overview) | In process (recurring) |
| 11/17/10 | Low | 21) Kosta to invite CFSAN statisticians, lab experts to present possible scenario for Lab collaboration with CDC (sample hygiene-diseases) | In process |
| 11/17/10 | Low | 22) Kosta to prepare sample business case for FDA/ORA ALM lab automation and model (draft). Organize library of BPMN cases, EHR functional mapping | In process |
| 03/4/11 | High | 28) ALL Business cases diagrams, EHR functional model mapping, robustness model and data exchange elements to standardize | In process |
| 03/18/2011 | High | 29) Dr. Varma introduced by W.Scharber communicated with Lab-FHIMS to join the domain and learn more about the modeling efforts at ONC/FHA | In process |
| 03/25/2011 | High | 30) Maps to our classes, domains, agencies(strategy, framework, spreadsheets) | In process |
| 03/25/2011 | High | 31) Galen will send email to Vijay-Mike to research isUrineScreenPositive" and "sputumScreenResult" attributes | In process |
| 04/04/2011 | High | 32) Galen-Neelima evaluate and report on HL7 2.X c36, c37 coverage so far | In process |
| 04/04/2011 | High | 33)Kosta reports on FHIM-EHR mapping and coverage | In process |
| 04/04/2011 | High | 34) Anne reports on CLIA conformance | In process |
| 04/04/2011 | High | 35) Cindy-Anne prepares definitions and document on ambiguous terms (ELR, EHR) | In process |
| 04-14-2011 | High | 37) Cindy-Kosta-Galen- prepare presentation for PHI-CDC conference in August | In process |

Completed/Not Tracked Action Items

| Start Date | Priority | Action Item | Status |
|------------|----------|---|-----------|
| 11/8/10 | Low | 6) Tim (ICLN) to discuss with DHS the sharing of the Actionable Data Elements spreadsheets with definition. | Completed |
| 11/1/10 | Low | 5) Cindy to share meeting information for the next meeting when it is sent by the co-chairs (ICLN). | Completed |
| 11/17/10 | Low | 20) Kosta-Galen-Cindy-Save-Neelima to prepare and design AND PRESENT a FHIMS-Lab-OO poster accepted for AAAS meeting in DC(Feb-20th 2011) | Completed |
| 2/28/11 | | 25) Kosta - Develop definitions for structured and unstructured data (S& LRI WG) | Completed |
| 2/28/11 | High | 27) Develop overview and plan for Lab domain using the Report of 2010 document. Deliver to Steve 3/18/11 | Completed |
| 03/4/11 | High | 24) Kosta-Galen Create space for 6 sub-WG under Lab domain(HITSP-EHR, FERN, Sentinel, cancer-pathology, genetics, lab report exchanges) | Completed |
| 11/17/10 | High | 23) Kosta-Cindy-Galen-Save: Plans and documentation of modeling and cases during the last 3 meetings the 2 nd iteration. Schedule the 3 rd iteration Jan-April 2011 | Completed |
| 04-14-2011 | High | 36) Cindy-Kosta-Galen-Nikolay prepare abstract for PHI-CDC conference in August | Completed |

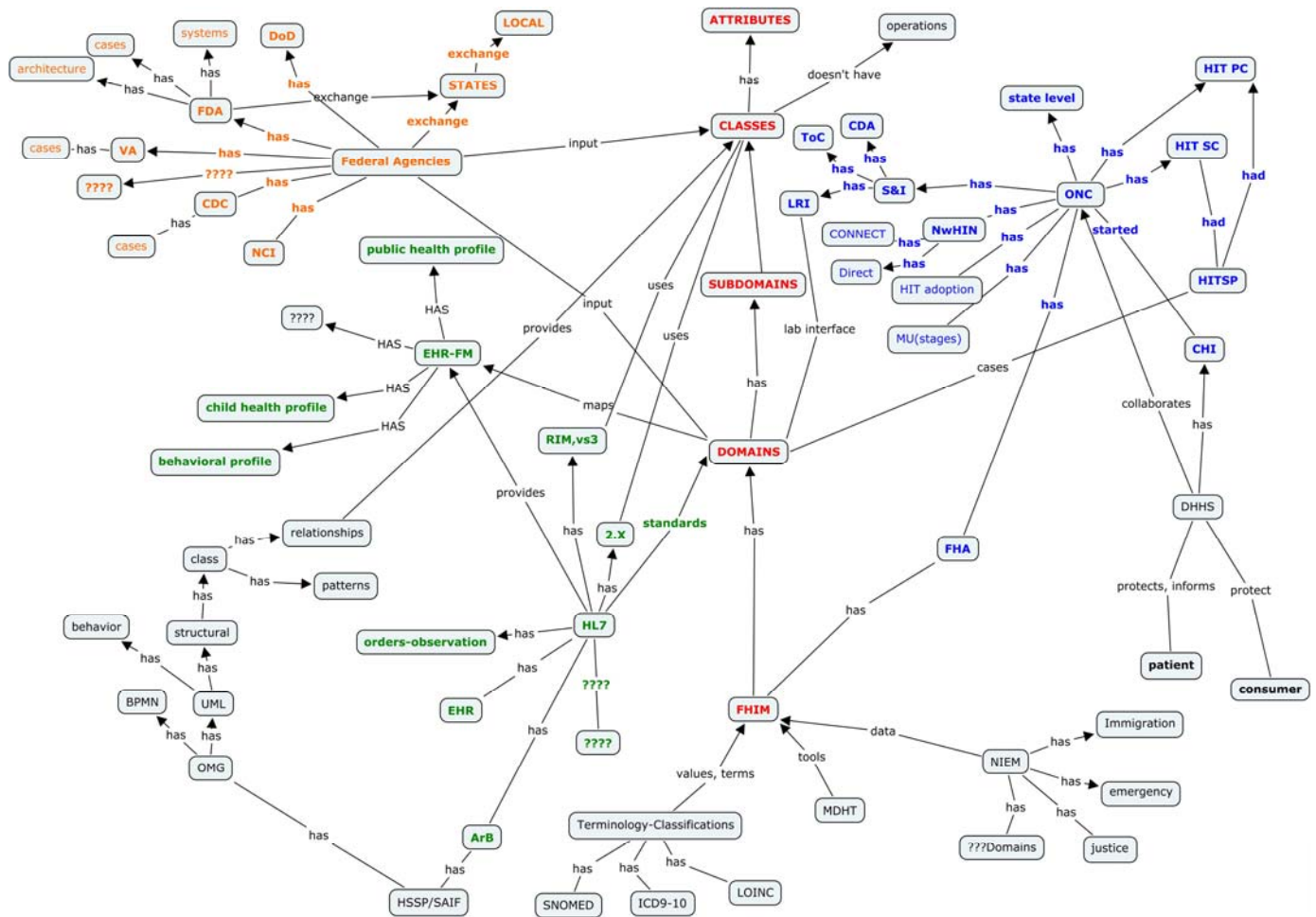
Appendix

By Kosta Makrodimitris (conceptual maps for FHIM, General FHIMS meeting 2011-04-15)

I created a [forum](#) in OHT on FHIMS high level concepts-map

The goal is to update/maintain this [graph](#) and have similar specific ones for domains and subdomains in the future.

Anyone can reply with comments to the forum in order to finalize a first version for the process-style guide this/next month.



Abstract submitted to Public Health Informatics conference this summer in Atlanta:
Engaging, Empowering, Evolving...Together
<http://www.cdc.gov/phiconference/index.html>

Reaching the Public Health Goals - The Office of the National Coordinator (ONC) Federal Health Information Modeling and Standard Working Group (FHIMS WG) Lab Domain

Federal partners have identified information modeling as one of the foundational elements of long term interoperability and have asked Federal Health Architecture (FHA), managed by the ONC for Health Information Technology to initiate the FHIMS WG to produce a logical, business-focused health information model along with a terminology model that supports interoperability by harmonizing information from the Federal partners and standards organizations. In order to accomplish this goal, FHIMS WG has established several domains each of which is focused on a specific area of health information exchange and modeling.

Utilizing existing reference models, FHIMS Lab domain seeks to identify the information and terminology requirements needed to exchange laboratory information between healthcare organizations, government agencies, and laboratories inclusive of laboratory testing for people, animals, environment, and inanimate objects. In performing this activity, FHIMS Lab will explore and document the business processes and scenarios that require the transmission of laboratory information.

FHIMS Lab domain has identified public health cases and sub-domains including, but not limited to, genetic testing, disease registries(cancer), public health lab data exchange (reference or not labs), testing for active (Sentinel, medical products), syndromic (diseases) and passive surveillance purposes, and laboratory interoperability needed for emergency response(ICLN, food safety) and inherent in the laboratory response networks.

In addition to providing a logical information model, the FHIMS Lab domain collaborates with other ONC efforts such as the Standards & Interoperability (S&I) Framework Lab Results Initiative (LRI) established to promote Meaningful Use. Working from a common set of use cases, the information models in the FHIM will be utilized by S&I LRI as the basis for selecting appropriate data exchange formats, i.e., HL7 messages, and terminology for use in those messages. Collaboration between these 2 ONC efforts ensures that these 2 efforts result in consistent, harmonized products.