Proposed Status Report for Work in Progress

HL7 Investigative Study of a CIMI Compliant FHIM

**May 3, 2016 DRAFT-B**, Stephen.Hufnagel@Apprioing.com Facilitator

*CIMI’s mission is to "improve the interoperability of healthcare systems through shared implementable clinical information models”.*

In Jan 2016, an HL7 CIMI workgroup sponsored Investigative Study was initiated to demonstrate and document the feasibility of generating implementable CIMI compliant Detailed Clinical Model (DCM) Specifications based on HL7 clinical requirements integrated into a CIMI compliant Federal Health Information Model (FHIM); where, FHIM can be a reference model for Computer Aided Design (CAD) tool(s) to specify implementable CIMI DCMs.

In February and March the CIMI WG discussed, analyzed and documented[[1]](#footnote-1)

* + CIMI compliance criteria (aka CIMI Principles).
    - The main challenge that the CIMI community is addressing is that of supporting iso-semantic models, and translation of data into a canonical form that can be consistently processed by applications (whether this is for decision support, user interfaces or data querying)
    - The FHIR community would also like CIMI to address this challenge.
  + Standards-based semantic interoperability based on clinical content defined in an HL7 domain analysis model (DAM), representing Information Exchange Requirements (IERs) specified in a CIMI compliant Federal Health Information Model (FHIM) and resulting in implementable[[2]](#footnote-2) CIMI compliant DCMs.
  + FHIM defines healthcare domains and high-level information-exchange classes (aka entities) in those domains; where, FHIM classes are the context for CIMI Clinical Modeling Patterns constrained into Detailed Clinical Models (DCMs); that is, DCMs define the subtypes or leaves of the FHIM. The CIMI compliant FHIM and DCMs are collectively referred to and will be balloted as the CIMI curated “HL7 Common Logical Information Model (CLIM)[[3]](#footnote-3)”. Note that the CLIM is the configuration managed and versioned FHIM plus the set of approved CIMI DCMs and is not another model.
  + A Patient Care (PC) skin wound assessment pilot CIMI model (Jay Lyle is the POC)
  + <http://wiki.hl7.org/images/b/be/PressureUlcerPreventionDomainAnalysisModel_May2011.pdf>
  + A CDS and CQI assessment CIMI model pilot (Claude Nanjo is the POC).
  + <https://docs.google.com/presentation/d/1jt5OnqeWwQjDy3ow8igHIih8CyVjPG5N9l0ArbWEOTo/edit#slide=id.g1272b179b8_0_9>
  + <https://docs.google.com/spreadsheets/d/1bp2SXuuUxo6iYi3R_S15WQKlptjX-xCPdrYAnL4D1NQ/edit#gid=237906698>

In April 2016, the CIMI workgroup concurred with the value of the CLIM strategy

* + They took the action to establish a task force to draft the business case and proposed work breakdown structure and schedules, as required by an HL7 Project Scope Statement (PSS); where, the PSS would be targeted for approval at the September 2016 HL7 Workgroup Meeting in Baltimore.
  + The task force is composed of Steve Hufnagel, Jay Lyle, Claude Nanjo, Linda Bird, Rob Bishop, Stan Huff, Galen Mulrooney, Richard Esmond
  + Stan Huff will setup one or more task force meetings.

The CIMI sponsored task force will not be limited to, but, will address:

Generating implementable CIMI compliant Detailed Clinical Model (DCM) Specifications based on HL7 clinical requirements integrated into a CIMI compliant Federal Health Information Model (FHIM). FHIM classes will define CIMI Reference Architypes and patterns, which are the context for CIMI Clinical Modeling Patterns constrained into Detailed Clinical Models (DCMs); that is, DCMs define the subtypes or leaves of the FHIM. The FHIM profile and DCMs are collectively referred to and will be balloted as the CIMI curated “HL7 Common Logical Information Model (CLIM)”.

* + International participation / an International Realm.
  + Recommended tooling suite for developers and the support for MDA and MDD tools[[4]](#footnote-4) to transform requirements artifacts (DAM) into the FHIM logical model and implementable CIMI DCM specifications, which represent the clinical data accurately, reproducibly, and computably. Considering
    - FHIM’s data dictionary [aka CDEs - Common Data Elements], terminology binding data element harmonization across domains, and their data repositories.
    - Keith Campbell’s proposed SOLOR/LEGO representation
    - Gerard Freriks’ recommended changes to the core reference model
    - EHR-S FM, IHE, NIST Risk and Security Framework
    - Linkage to HL7 RIM
    - Harmonization of ADL, AML, UML and terminology-related technologies.
      * AML, ADL, terminology, Model Driven Architecture/Design, repositories and testing
  + Ensure this initiative can be understood by a variety of readers (clinicians, architects, developers, implementers, etc.), the task force will consider a set of viewpoints from The Open Group ‘Healthcare Value Chains and Reference Architecture’ to provide a full software development lifecycle perspective.

The CIMI sponsored Task Force DELIVERABLE will be a Draft HL7 Project Scope Statement (PSS) proposing the harmonization, validation, refinement, and transformation of CIMI compliant FHIM and HL7-CIMI Detailed Clinical Models into a Common Logical Information Model (CLIM) normative standard.

* + - Integration with HL7 processes, workgroups and artifacts.
    - HL7 Balloting schedule
    - FHIM and CIMI DCM development continuing concurrent with CLIM development and balloting.

1. The HL7 CIMI WG is developing this “*CIMI Practitioners Guide to HIE Interoperability*” or more simply known as the “*CIMI Practitioners Guide*” for analysts, architects and implementers; where, it is a source of knowledge about CIMI compliant healthcare logical information and terminology models and their effective-and-efficient use in specifying and implementing interoperable Health Information Exchange (**HIE**) solutions. The CIMI Practitioners Guide is available at: <http://1drv.ms/1TuV8PD> [↑](#footnote-ref-1)
2. CIMI DCM specified Implementable Artifacts might be HL7 messages, CDA documents, FHIR services and APIs, etc. [↑](#footnote-ref-2)
3. CLIM is a set of “computable logical models” with explicit terminology bindings, which can use the Model Driven Health Tool and Model Driven Message Interface (MDHT-MDMI) to generate clear, complete, concise, correct and consistent Implementation Guides (IGs) for implementation paradigms such as CDA/CCDA, NIEM, FHIR (profiles and extensions) and XML/JSON Message/ Service APIs. [↑](#footnote-ref-3)
4. Model-driven architecture (**MDA**) provides a set of guidelines for the structuring of specifications, which are expressed as models. MDA was launched by the Object Management Group (OMG) in 2001. Model-driven design (**MDD**) is the rapid implementation of complex systems and/or their interoperable interfaces from Models. [↑](#footnote-ref-4)