

hData Status Update

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hData

Progress So Far

- hData and μ -ITS are on an ITS-WG project scope statement
 - Approved by ITS and TSC
- TSC Data Template Pilot is progressing
 - Emdeon and MITRE are cooperating on pilot for broader adoption
- Various discussions with U.S. Federal organizations
 - IHS, ONC, FHA, NHIN Direct

Major Questions

- During a recent meeting with Paul Knapp (HL7 ITS Co-Chair) and Charlie McCay (HL7 TSC Chair), two questions arose:
 - What are the technical implications for creating hData and hData content profiles?
 - Does it make sense from a business perspective?

Technical Implications

- hData itself is focused on transport and data representation
 - Strong separation of content and technical framework as design principle
 - Emphasis on simplicity and rapid development cycle
- hData Content Profiles are used to determine data content
 - Can be used with any payload, including full CDA

Technical Implications – Empirical Evidence

- hData is easy to implement
 - MITRE produced 2 reference implementations (Java and JRuby) within 2 months with one developer
 - Emdeon was able to stand up their own stack within weeks
- hData Content Profile for TSC is complete – full XProc/XSLT transform between simple schemas and CDA provided
- Restful paradigm is well understood with significant developer talent available

MITRE Reference Implementations

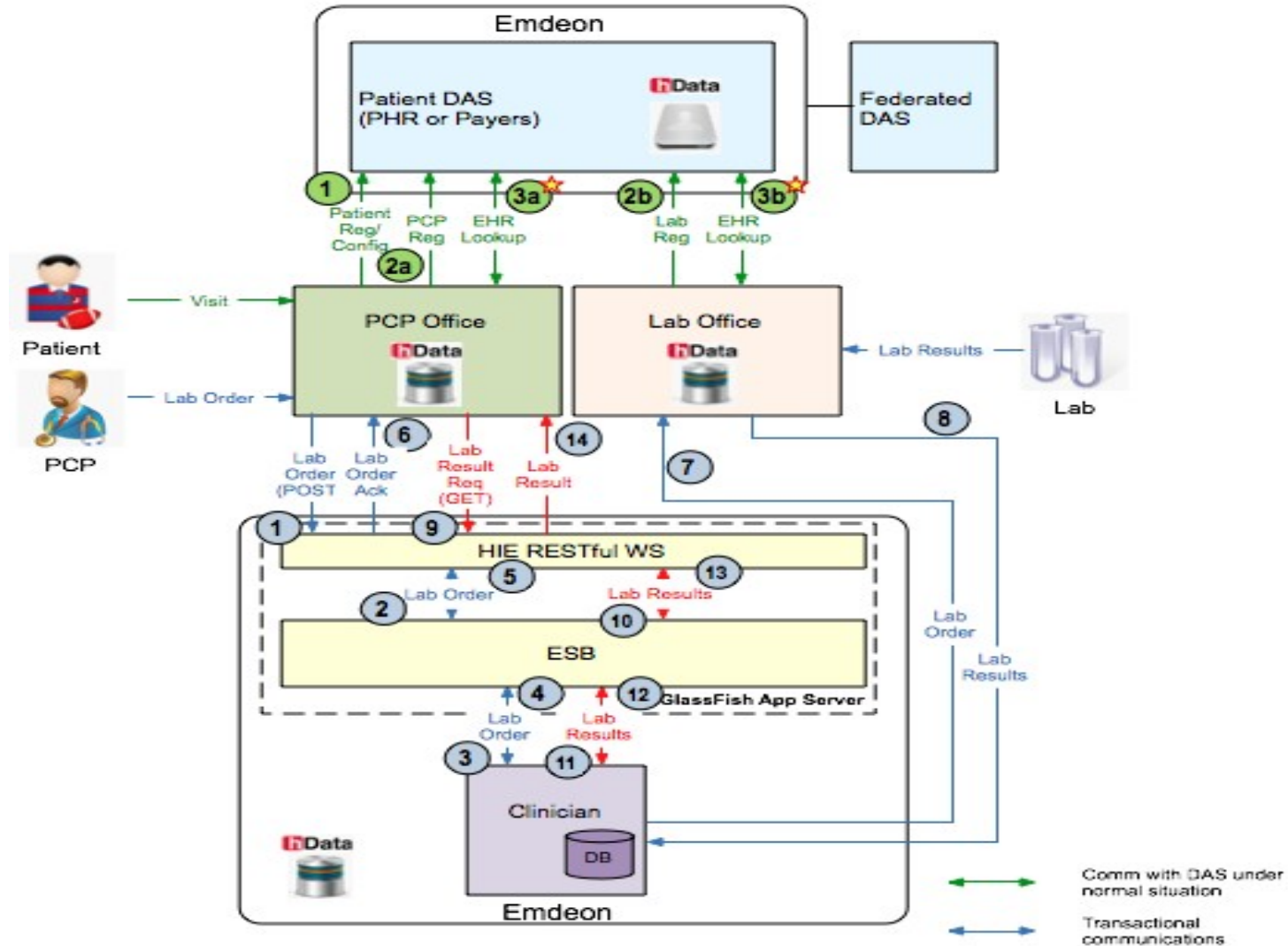
- MITRE created two reference implementations of a basic hData stack
- Java RI implemented as servlets on standard Tomcat container
 - JAX-RS/Jersey to implement RESTful service
 - JAXB for XML serialization
 - Intuitive object model based on hData schemas (HITSP.C32/CCD focus)
- Ruby implementation
 - Using Sinatra
- Reference implementations have been released under Apache 2.0 open source license
- Available from <http://projecthdata.org/>

Emdeon Lab Pilot

- Emdeon and MITRE created a pilot implementing hData
 - Private HIE connecting labs and physicians
 - Lab orders and results using HL7 v2 XML messages
- Goal: demonstrate hData in an operational environment

Architecture

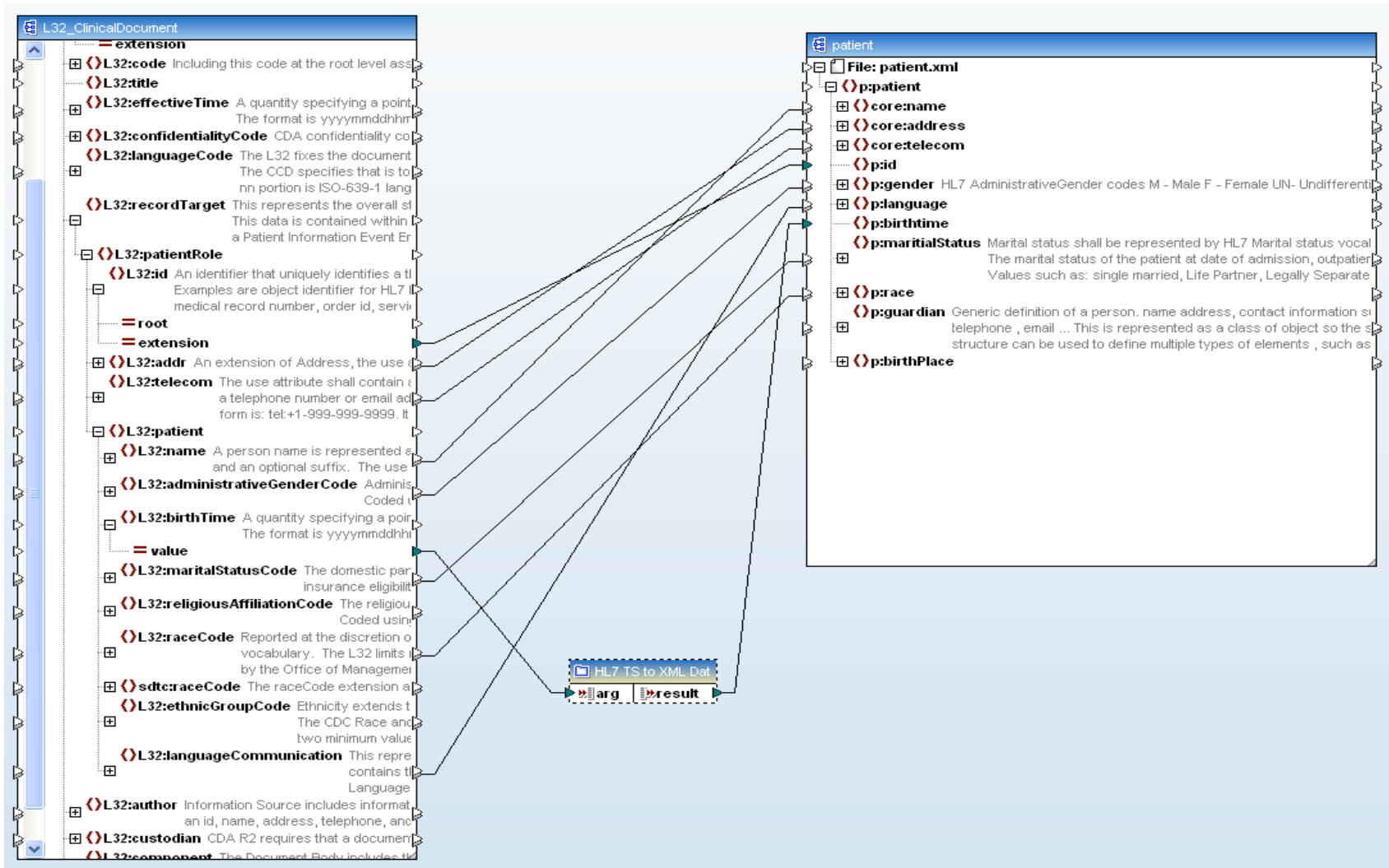
Systems Architecture View



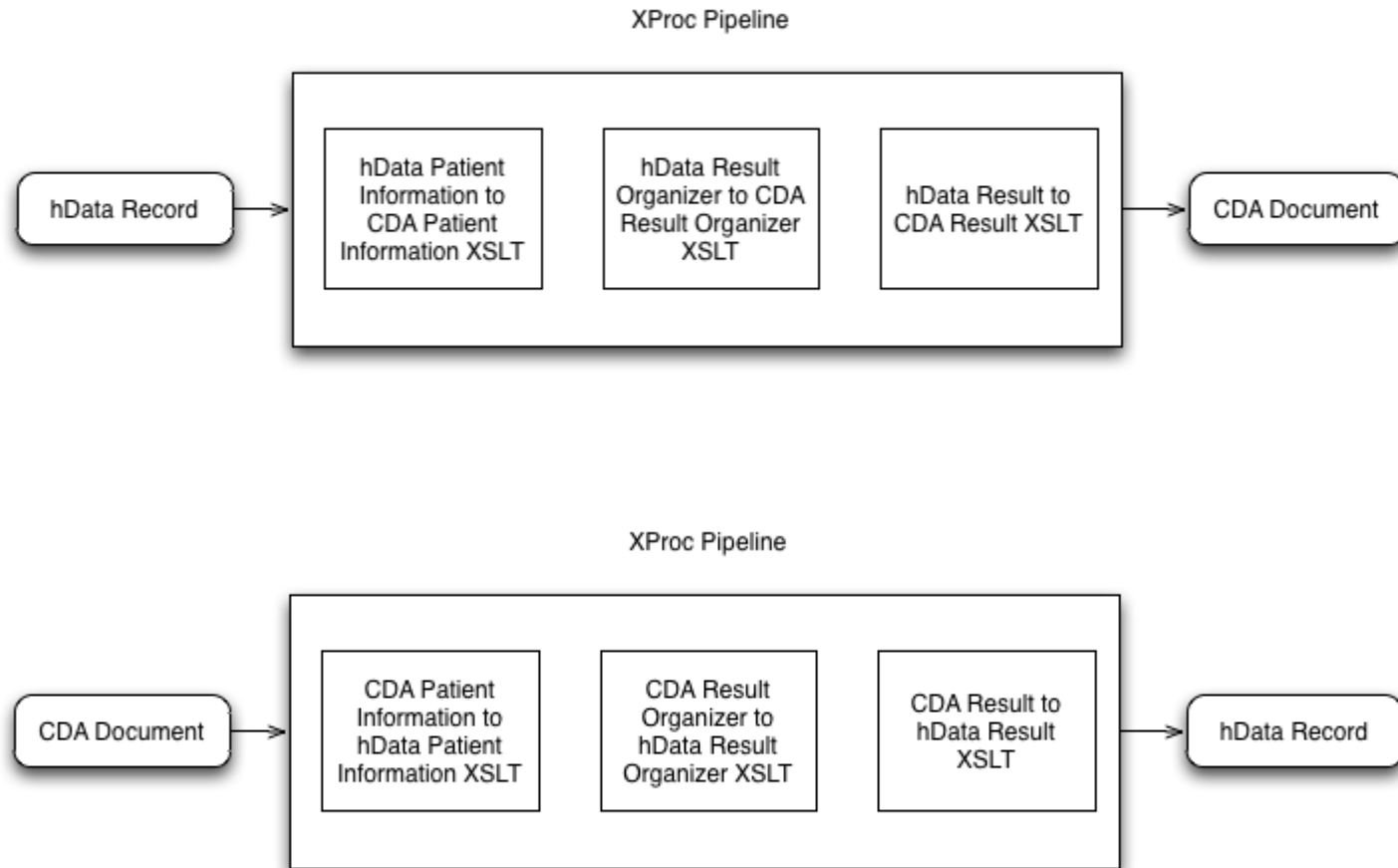
TSC Template Pilot

- **Goal: Demonstrate that hData simplified schemas can be transformed into CDA and back**
 - Started after WG meeting in Phoenix, AZ
- **Significant progress in the last three months**
 - CDA progress note mapped to simplified schema (manually)
 - XProc/XSLT base transformation pipeline
 - Implementation Guide
- **Next steps**
 - Integration with MDHT tooling to remove manual work

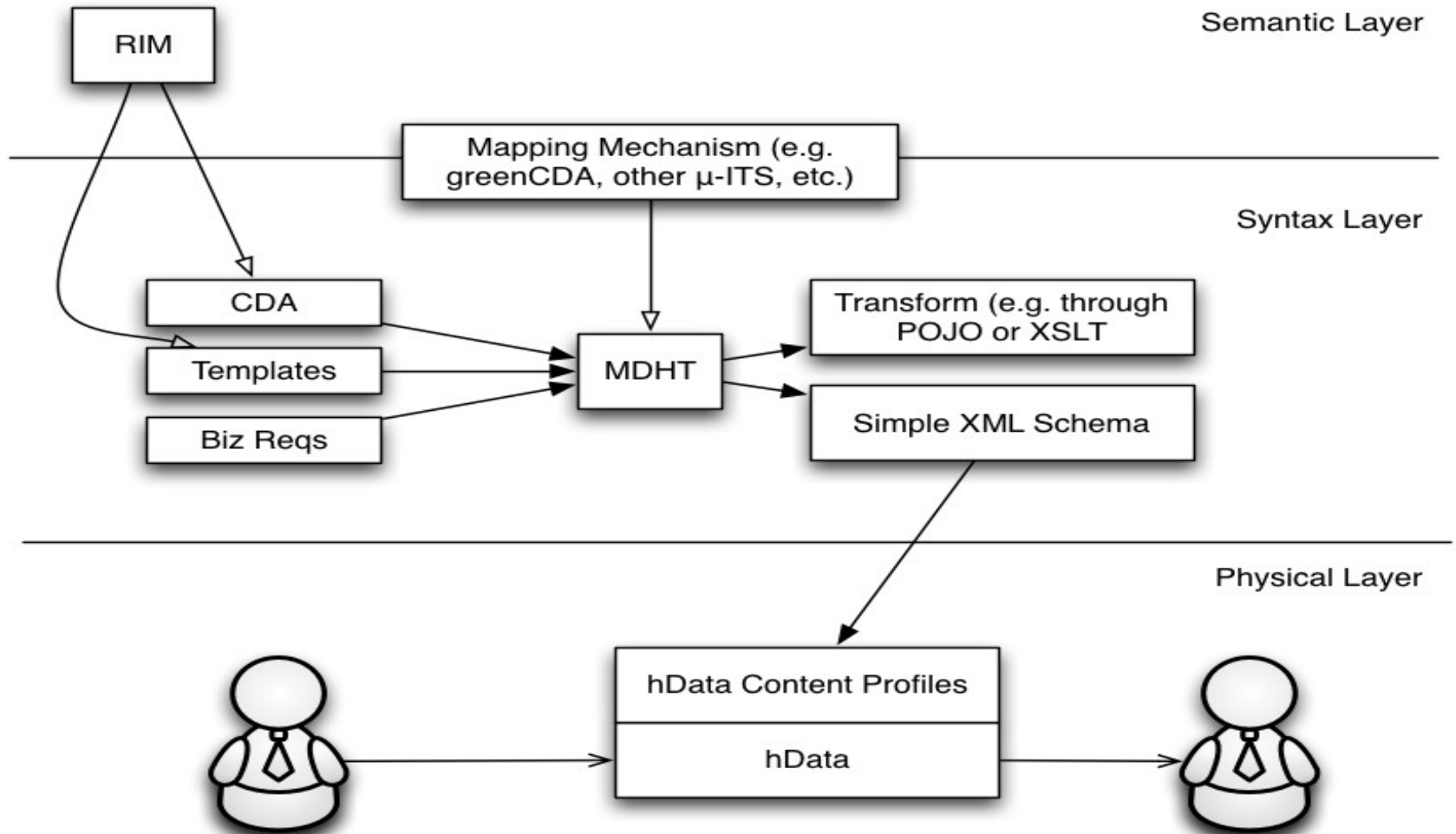
TSC Template Pilot



TSC Template Pilot



Highlevel View Of Components



Impact on Existing HL7 Standards

- Two principle interoperability modes:
 - “Native CDA”: hData transports CDA or other HL7 artifacts (including v2) using the RESTful transport
 - “Simplified Content”: hData transports any μ -ITS (including greenCDA fragments) content
- Systems can run both models at the same time
 - hData record can be compliant with multiple content profiles at the same time
 - Offer CDA in one section, simplified content in the other sections

Impact on Other HL7 Projects

- hData, greenCDA, and μ -ITS have been working on simplifying HL7 data exchange
 - Early hData schema have been derived from HITSP.C32 profile of CCD though “manual” simplification
 - greenCDA defines a method to derive simplified CDA schema from the CDA/RIM
 - μ -ITS defines a generalized approach for mapping from RIM to simplified constructs
greenCDA “is” an instantiation of a μ -ITS
- greenCDA and other μ -ITS’ can be used to create hData Content Profiles

Business Implications

- hData is complementary to existing architecture
- Benefits to vendors
 - Addresses the need for enabling agile HL7 development
 - Separation of content and technical framework enables additional developer resources
- Simple, RESTful approach enables better horizontal and vertical scaling

Business Problems – Experience

- Many projects do not have need for full RIM
 - Example: Labs
- hData/greenCDA/ μ -ITS approach allows focusing on usage patterns
 - Simplified standard for compliance
 - Semantically consistent “Application Specific Language”

Overall Impact on Implementers

- Limited new investment
 - Underlying technologies (REST, XProc, XSLT, etc.) are well understood
 - Existing CDA investment can be leveraged
- “Glidepath” to RESTful services
 - Start with existing HL7 artifact – both HL7v2 and v3
 - Add simplified content later

Next Steps

- Continue coordination with greenCDA, μ -ITS, and TSC Template Project participants (MDHT, NHS)
 - Goal: derive a viable model for creating and maintaining hData Content Profiles
- Extend existing pilots and go operational, where possible
 - Goal: demonstrate technical and business viability of hData as an alternative HL7 exchange fabric
- Continue on path for DSTU ballot in September/October 2010
 - Goal: establish hData as a viable RESTful and simple Health IT Standard