

RDF for Semantic Interoperability

**A subgroup of the HL7 ITS work group, working jointly with the
W3C Healthcare and Life Sciences group**

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RDF for Semantic Interoperability

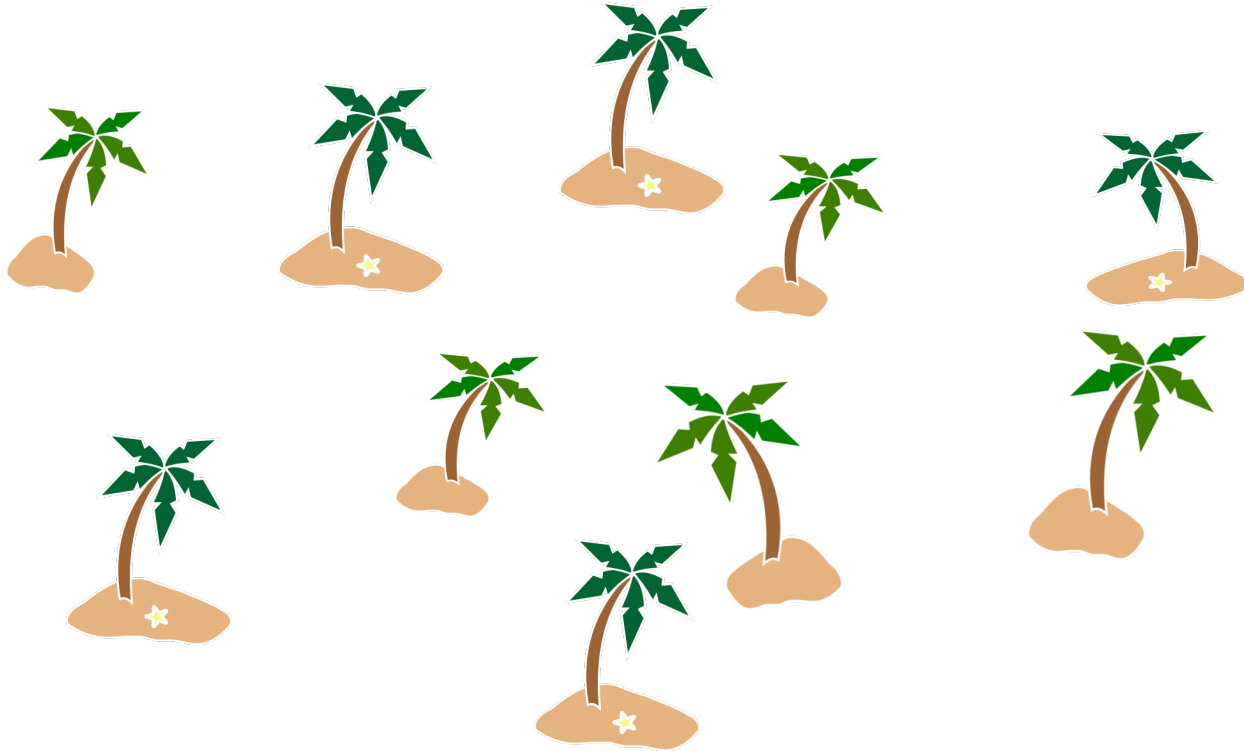
- Subgroup of HL7 ITS
- Working jointly with W3C Healthcare and Life Sciences group
- Formed in October 2014
- Weekly teleconference
- Agenda page:
http://wiki.hl7.org/index.php?title=ITS_RDF_ConCall_Agenda

Mission

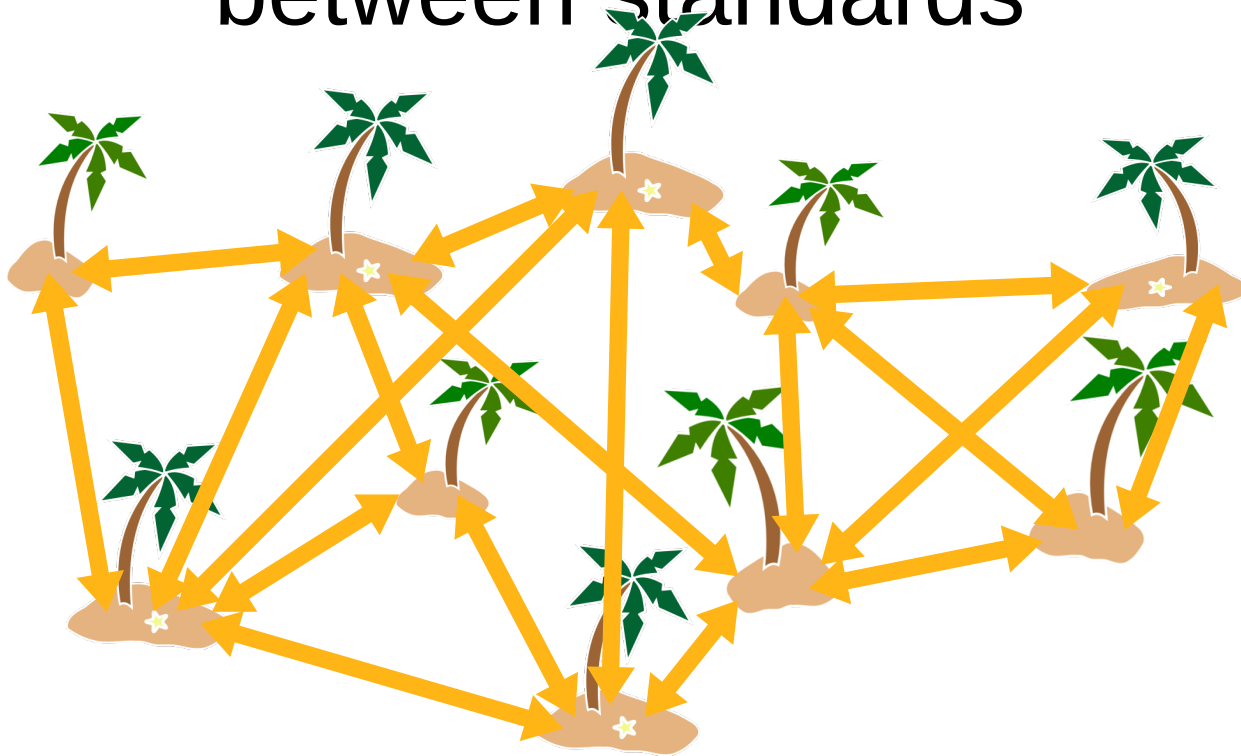
- Establish semantic interoperability of structured healthcare information
- Using RDF and related standards to express machine-processable meaning

=> Increase the effectiveness and efficiency of healthcare delivery

Each standard is an island



RDF and OWL are semantic bridges between standards



Major goals

- Create **RDF and OWL definitions** of healthcare information standards
 - Enable semantics to be uniformly interpreted in RDF
 - "Standardize the standards" – Yosemite Project
- Act as a **knowledge resource** for other work groups

Why RDF?

- See <http://dbooth.org/2014/why-rdf/>

"Captures information content, not syntax"

"Multi-schema friendly"

"Allows diverse data to be connected and harmonized"

"Allows data models and vocabularies to evolve"

"Good for model transformation"

"Supports inference"

Why RDF (in general?)

RDF graph

Why RDF as a Universal Healthcare Exchange Language?

David Booth, Ph.D.
Hawaii Resource Group
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Semantic Technology and Business Conference
21-Aug-2014

Latest version of these slides:
<http://dbooth.org/2014/why-rdf/>

Relational data model in RDF

ID	City	State
18	Concord	NH
19	Boston	MA

Hierarchical data model in RDF

Addresses

Observations

easy data translation

Formats, same RDF

Blue Model

Address

First Name

Last Name

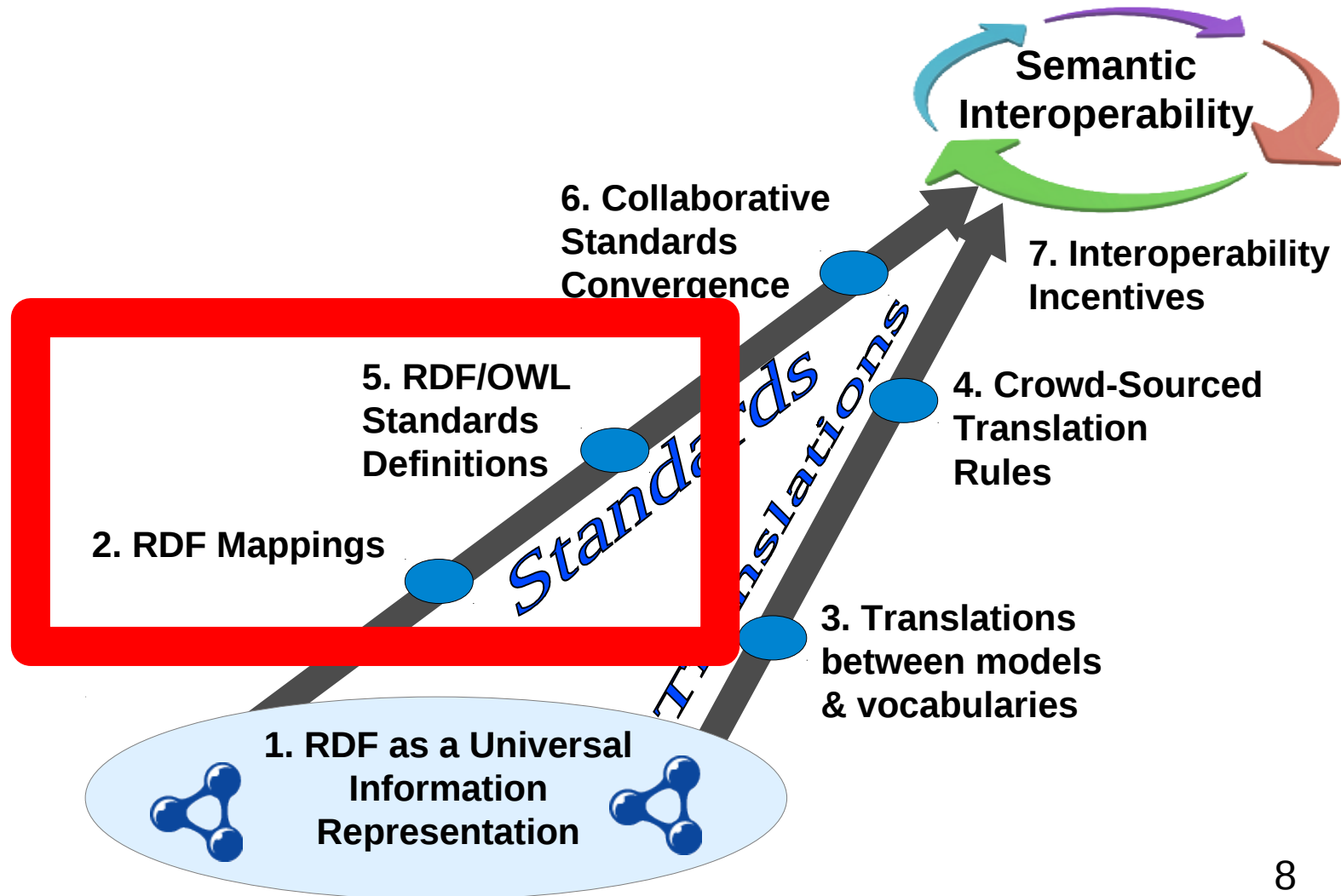
Email

City

Zip Code

Models peacefully co-exist

A Roadmap for Healthcare Information Interoperability



Work projects

- Current:
 - FHIR ontology
 - PhUSE-FDA project (formerly CDISC2RDF)
- Proposed:
 - Bridging VA, Intermountain and other models
 - Use Cases
 - ICD-11 and SNOMED
 - C-CDA RDF representations
 - High-level concept mapping to RDF (AR typeCodes, etc.)

FHIR RDF / Ontology Deliverables

- Mappings between FHIR XML/JSON and FHIR RDF, for lossless conversion of FHIR instance data
- Ontology describing FHIR RDF

FHIR RDF / Ontology Status

- Active development
- Defining FHIR RDF representation to complement XML and JSON
- Draft RDF page on FHIR github site
<http://hl7-fhir.github.io/rdf.html>
- Working through technical choices

QUESTIONS?

Planning the road ahead

- Priorities? FHIR first, then what?
- How can we be most effective?
 - How can we best support other groups wanting to use RDF?
 - Collect RDF guidelines? E.g.:
 - Using RDF and OWL instead of UML?
 - How to express ordering in RDF?