

- Panel -

RDF as a Universal Healthcare Exchange Language

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Audience

- Involved in healthcare?
- Have already used RDF?
- Plan to use RDF?

Imagine a world



Imagine a world

in which **all healthcare systems**

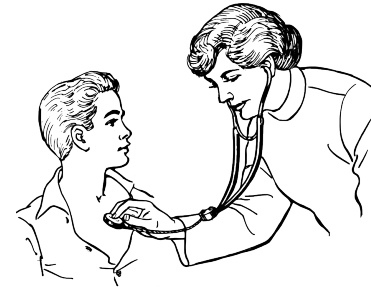
speak the **same language**

with the **same meanings**

covering **all healthcare.**

What would it be like?

- Better treatment
- Better research
- Lower cost



Healthcare Today



Tower of Babel, Abel Grimmer (1570-1619)



REPORT TO THE PRESIDENT
REALIZING THE FULL POTENTIAL OF
HEALTH INFORMATION TECHNOLOGY
TO IMPROVE HEALTHCARE
FOR AMERICANS:
THE PATH FORWARD

Executive Office of the President
President's Council of Advisors
on Science and Technology

December 2010



*"PCAST has also concluded that to achieve these objectives it is crucial that the Federal Government facilitate the nationwide adoption of a **universal exchange language** for healthcare information"*

Will RDF get us there?

- No. But it will get us closer.
- And along with the right policy incentives, RDF can get us *much* closer.

Why RDF?

1. Semantics, not syntax

Why RDF?

1. Semantics, not syntax

2. Self describing – deferenceable URIs

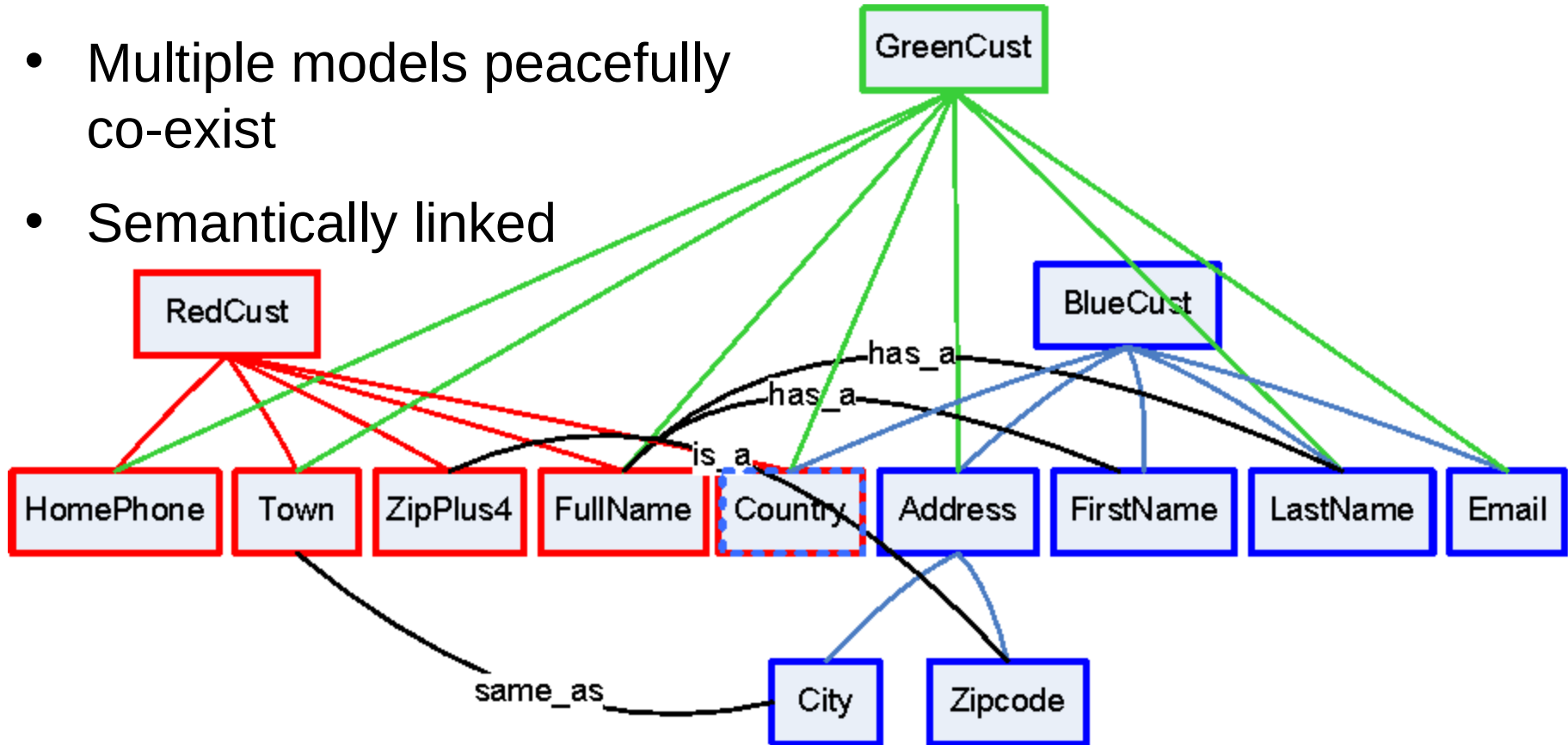
Why RDF?

1. Semantics, not syntax
2. Self describing
- 3. Schema promiscuous**

Why RDF?

Schema promiscuous

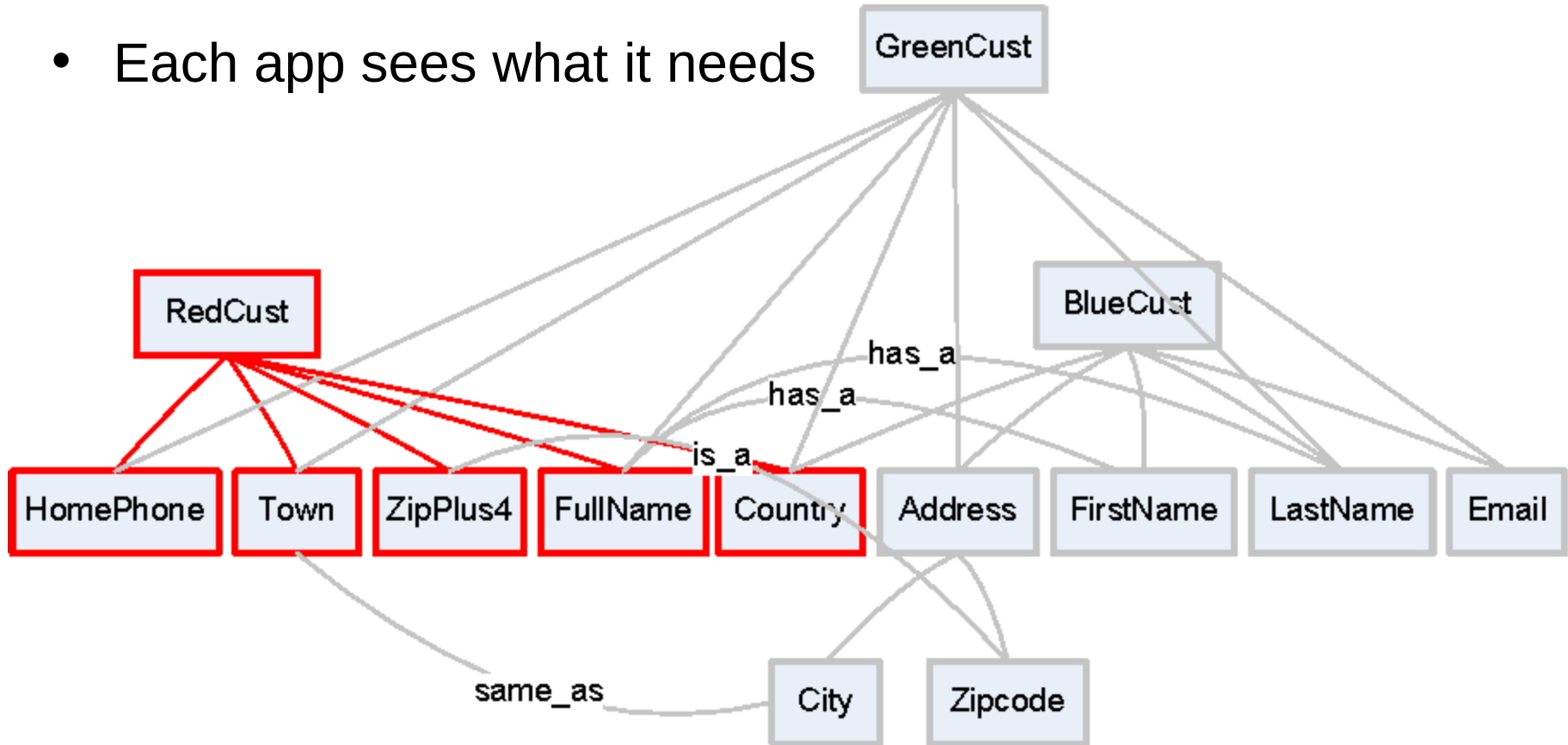
- Multiple models peacefully co-exist
- Semantically linked



Why RDF?

Schema promiscuous

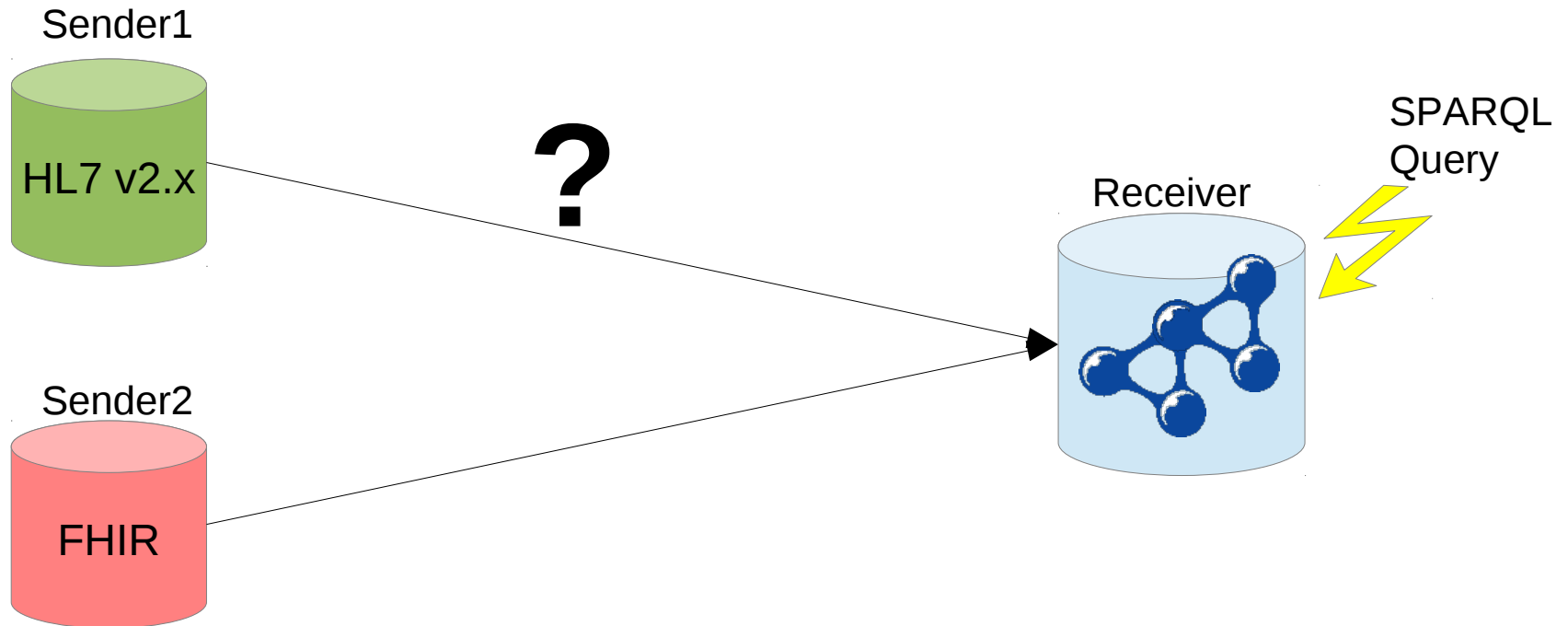
- Each app sees what it needs



Why RDF?

1. Semantics, not syntax
2. Self describing
3. Schema promiscuous
4. **Neutral, mature, international standard**

Goal: Semantic interoperability



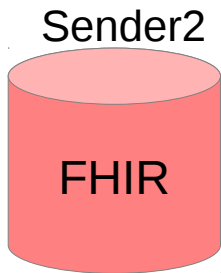
Goal: Semantic interoperability

Sender1



```
OBX|1|CE|3727-0^BPsystolic,  
sitting||120||mmHg|
```

Goal: Semantic interoperability

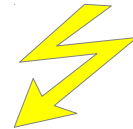


```
<Observation
  xmlns="http://hl7.org/fhir">
  <system value="http://loinc.org"/>
  <code value="8580-6"/>
  <display value="Systolic BP"/>
  <value value="107"/>
  <units value="mm[Hg]"/>
</Observation>
```

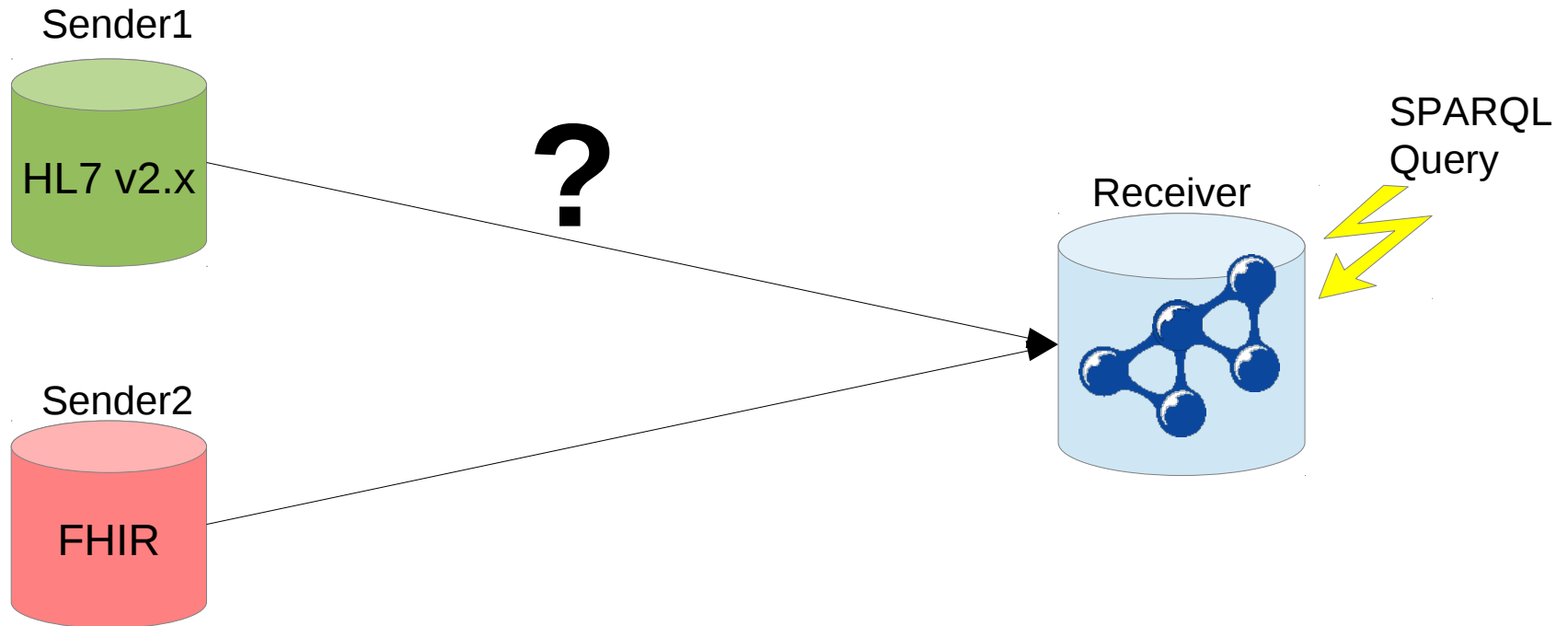
Goal: Semantic interoperability

```
SELECT ?systolic
WHERE {
  ?observation a mOut:Observation ;
    a mOut:BP_systolic ;
    mOut:value ?systolic ;
    mOut:units mOut:mmHg . }
```

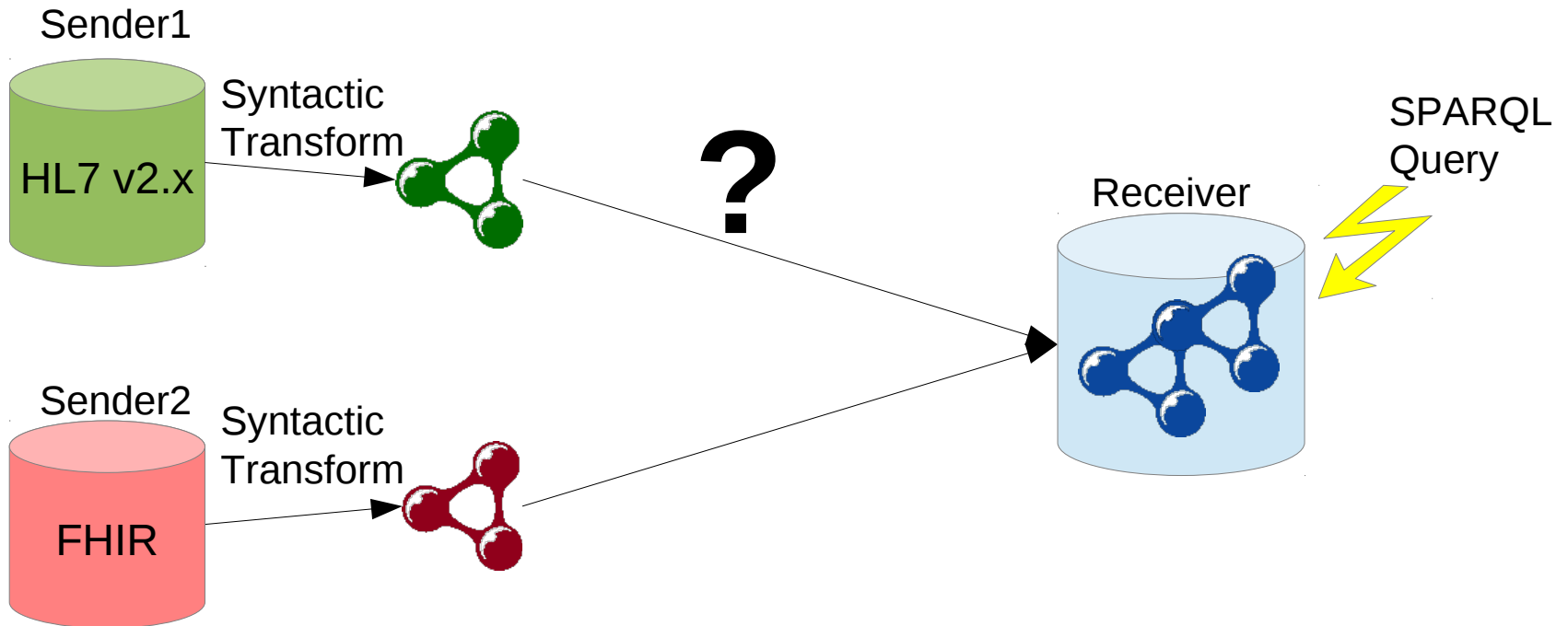
SPARQL
Query



Goal: Semantic interoperability

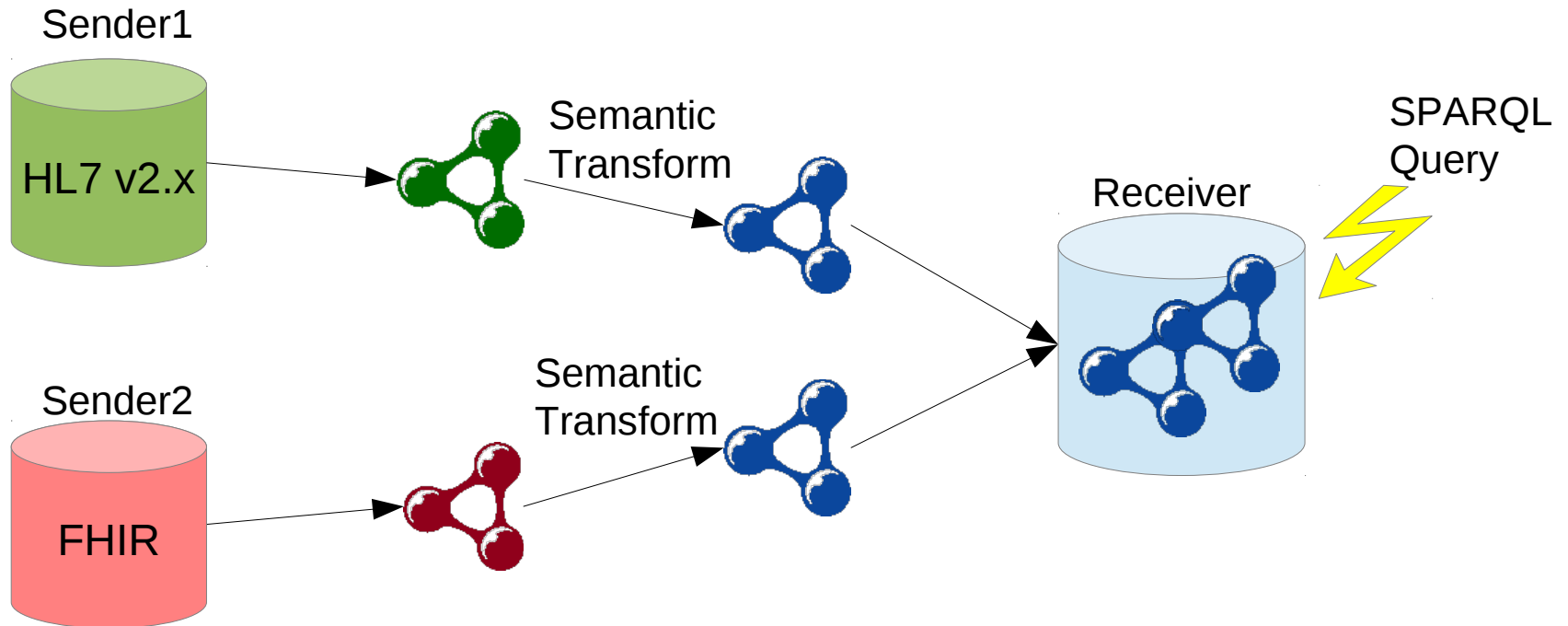


Step 1: Syntactic transformation



- RDF is the substrate language

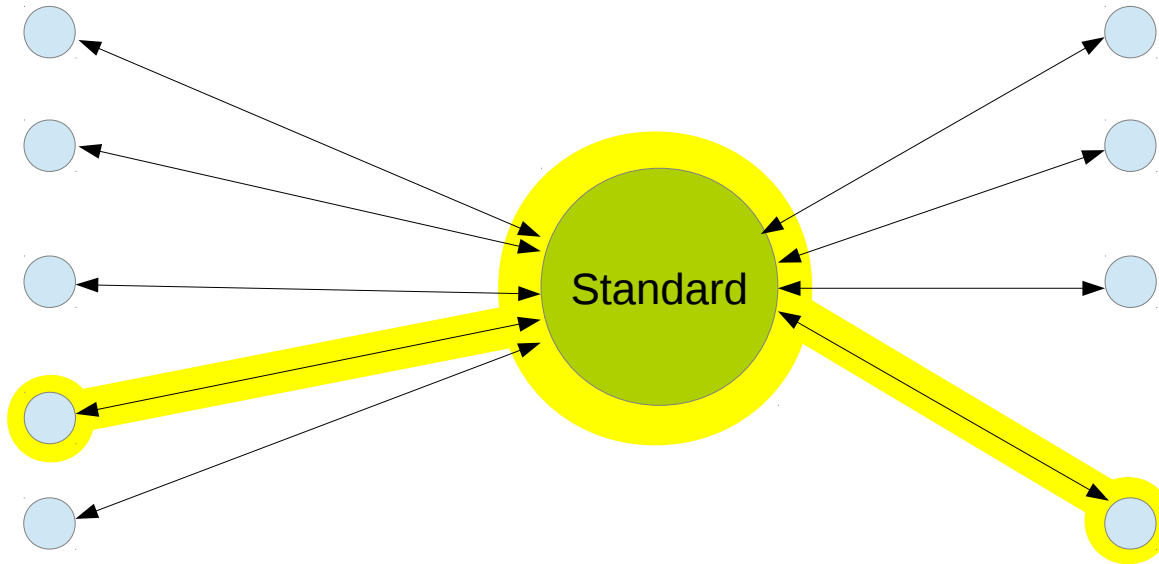
Step 2: Semantic transformation



- RDF to RDF
- Align vocabularies and models

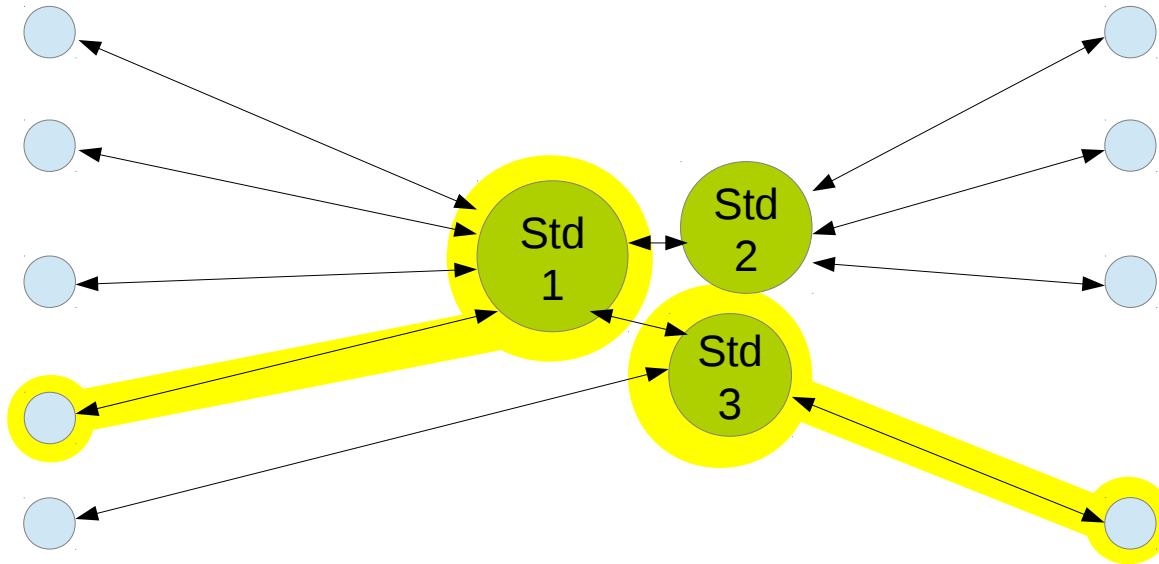
Which vocabularies and models?

Standardization



- PROS: Most efficient; desirable whenever possible
- CONS: Infeasible when committee/standard gets too big

Standards and diversity



- RDF accommodates both

**RDF as a
Universal Healthcare Exchange Language**

Q&A / DISCUSSION

Yosemite Manifesto on RDF as a Universal Healthcare Exchange Language

- 1. RDF is the best available candidate for a universal healthcare exchange language.*
- 2. Electronic healthcare information should be exchanged in a format that either: (a) is an RDF format directly; or (b) has a standard mapping to RDF.*
- 3. Existing standard healthcare vocabularies, data models and exchange languages should be leveraged by defining standard mappings to RDF, and any new standards should have RDF representations.*
- 4. Government agencies should mandate or incentivize the use of RDF as a universal healthcare exchange language.*
- 5. Exchanged healthcare information should be self-describing, using Linked Data principles, so that each concept URI is de-referenceable to its free and open definition.*

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Sign at <http://goo.gl/mBUrZ>



RDF as a Universal Healthcare Exchange Language

NEXT STEPS?

**Yosemite Manifesto
on RDF as a Universal Healthcare Exchange Language**

Sign at

<http://goo.gl/mBUrZ>

More details at

Thank you!

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Questions?

