



Canada Health Infoway

The IHE Methodology

Adapting a successful, proven, process to our Canadian context.

28 July 2021

Overview

- What is IHE and how does it work?
- How can we adapt the IHE process as a recipe for success in Canada?
- What will be the pathway for Canadian vendors to take their digital health solutions global?
- Charting our immediate next steps...

**What is IHE and how
does it work?**

The background features a white area on the left and a dark blue area on the right, separated by a curved white boundary. A red triangular shape points from the bottom right towards the center.

- Standards Centre
- CANADIAN STANDARDS**
- CANADIAN CLINICAL DRUG DATA SET
- DICOM
- HL7 FHIR
- HL7 V3, CDA
- IHE**
- ISO/TC 215 HEALTH INFORMATICS
- NURSING DATA STANDARDS
- PCLOCD / LOINC
- PHC EMR MDS
- SNOMED CT CA / SNOMED CT
- STANDARDS ACCESS
- STANDARDS IN CANADA
- STANDARDS RELEASE SCHEDULE
- STANDARDS RESOURCES FOR COVID-19

?
Want more information or wish to discuss your standards requirements? [Contact Us](#).

Standards Access

IHE



Integrating the Healthcare Enterprise (IHE) is an initiative by healthcare professionals and industry to improve the way computer systems in healthcare share information. IHE promotes the coordinated use of established standards such as DICOM and HL7 to address specific clinical needs in support of optimal patient care. Systems developed in accordance with IHE communicate with one another better, are easier to implement, and enable care providers to use information more effectively.

IHE is organized by clinical and operational domains. In each domain users with clinical and operational experience identify integration and information sharing priorities and vendors of relevant information systems develop consensus, standards-based solutions to address them.

Watch a video: [IHE Canada Intro in 200s or less from Derek Ritz on Vimeo](#).

The video player shows a 3D character pointing at a diagram of interconnected systems. The diagram includes logos for IHE, HL7, DICOM, ISO, LOINC, and others. The video title is "Introducing IHE in 200 seconds or less...".

infocentral.infoway-inforoute.ca





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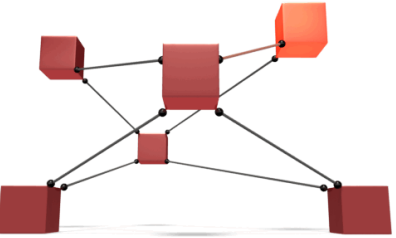
Making
Healthcare
Interoperable

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Making
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A network diagram consisting of several red, 3D-style rectangular nodes connected by thin black lines, representing a network of interconnected systems.

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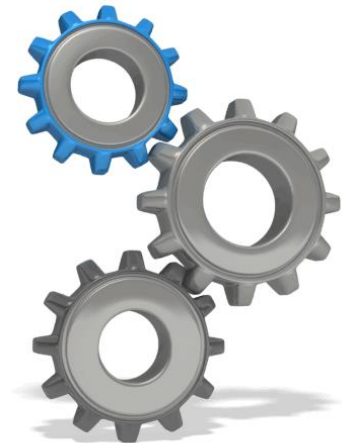




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- IHE is a collaborative non-profit organization that develops **global public goods**.
- IHE creates profiles on *collections* of existing standards and publishes **interoperability specifications** that address care workflows.
- IHE is focused on ***operationalizing interoperability at scale***.



Making
Healthcare
Interoperable

Domain Committees

Deployment Committees



Making
Healthcare
Interoperable

Domain Committees

- Radiology
- IT Infrastructure
- Pharmacy
- Quality, Research & Public Health
- Patient Care Coordination
- Cardiology
- Devices
- Eye Care
- Dental
- Pathology and Laboratory Medicine
- Radiation Oncology

Deployment Committees





Making
Healthcare
Interoperable

Domain Committees

Deployment Committees



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Deployment Committees

Create engineering artefacts.



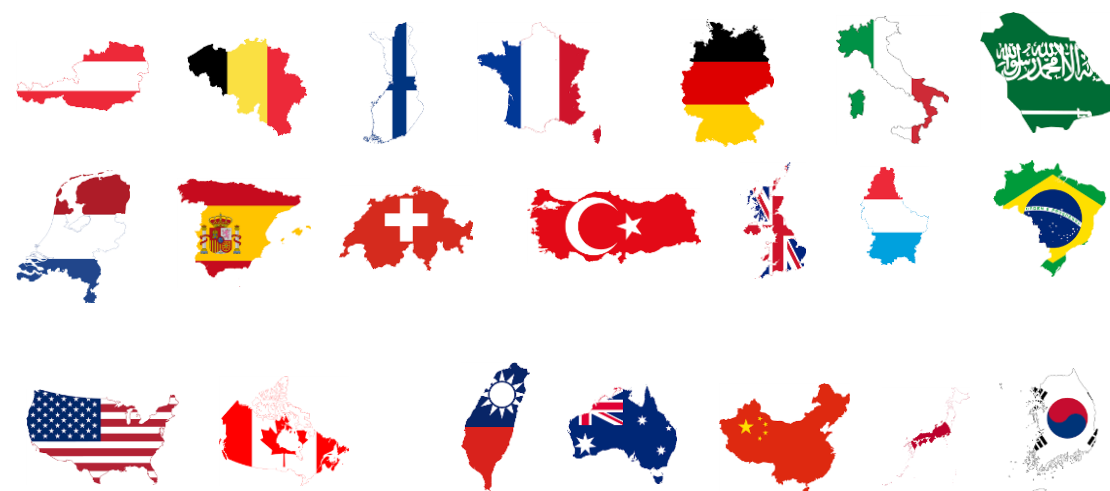


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Making
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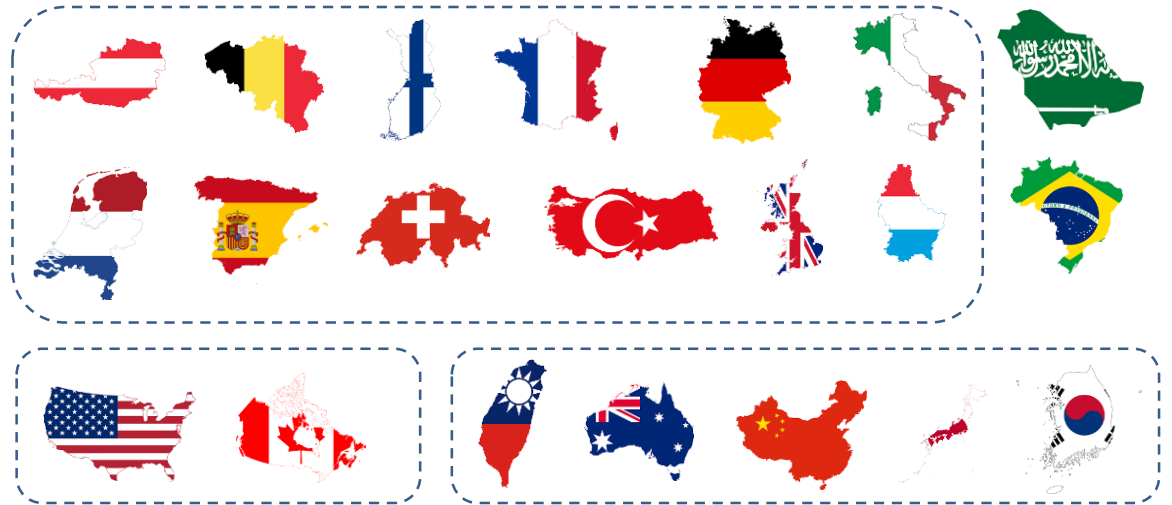
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Create engineering artefacts.

Deployment Committees



**Nationalize artefacts.
Conformance-test.
Exert governance.**



How do we make it “go”?



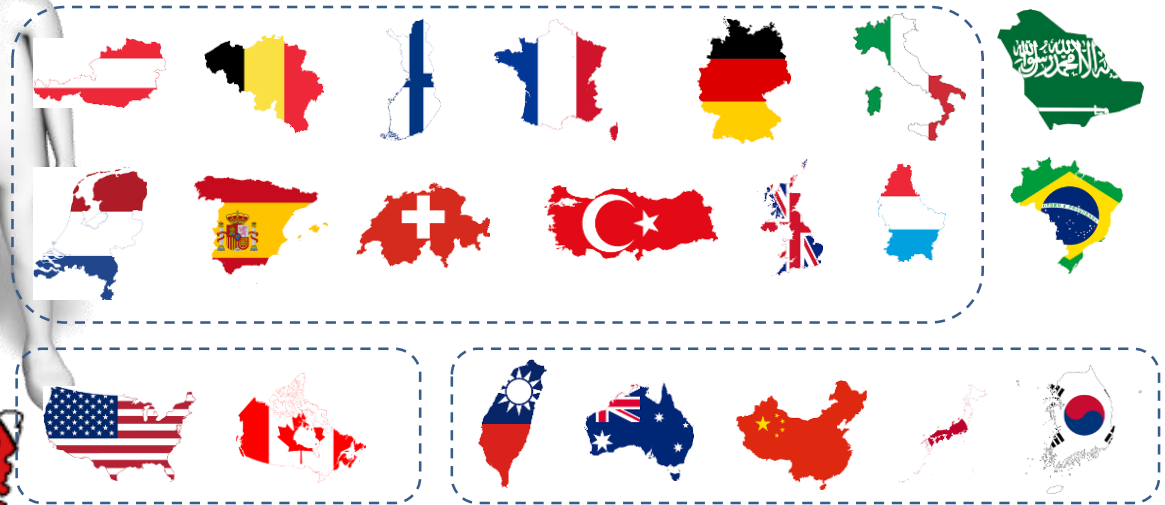
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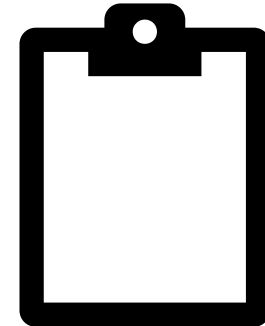
Nationalize artefacts.
Conformance-test.
Exert governance.

Create engineering artefacts



1

Phase 1 Clinical/Business Definition

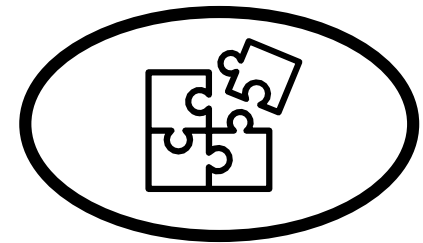


Phase 1
Clinical/Business
Definition



2

Phase 2 Workflow Components



Phase 1
Clinical/Business
Definition

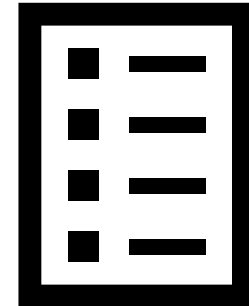


Phase 2
Workflow
Components



3

Phase 3 Interoperability Standards



Phase 1
Clinical/Business
Definition



Phase 2
Workflow
Components

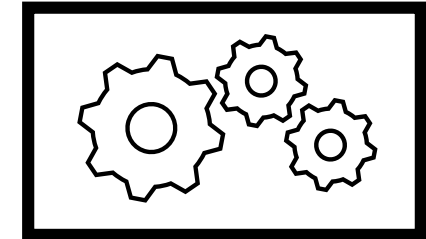


Phase 3
Interoperability
Standards



4

Phase 4 Implementable Architecture



Phase 1
Clinical/Business
Definition



Phase 2
Workflow
Components



Phase 3
Interoperability
Standards



Phase 4
Implementable
Architecture



**Let's illustrate this with
an example...**

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Phase 1
Clinical/Business
Definition



Phase 2
Workflow
Components



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Interoperability
Standards



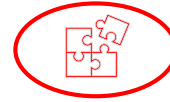
Phase 4
Implementable
Architecture



Phase 1
Clinical/Business
Definition



Phase 2
**Workflow
Components**



Phase 3
Interoperability
Standards



Phase 4
Implementable
Architecture



An on-demand **Patient Summary
Builder** would need to be able to...



Unambiguously identify the patient (get the enterprise ID)

Get permission to access data sources holding this patient's data

Use this permission to fetch data from all the pertinent sources

Assemble the retrieved data into a well-formed patient summary



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Deployment Committees

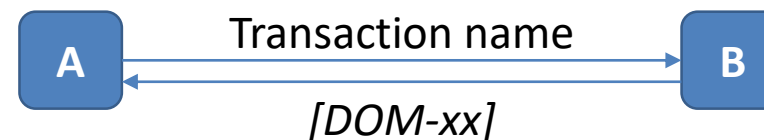
Create engineering artefacts.

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At the heart of IHE's engineering artefacts is the notion of re-usable building blocks: the **actor-transaction pair**.



Phase 1
Clinical/Business
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Phase 2
Workflow
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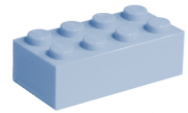
**Phase 3
Interoperability
Standards**



Phase 4
Implementable
Architecture



**Patient Demographics
Consumer**



**Patient Identity
Registry**



*Mobile patient demographics
query [ITI-78]*

Unambiguously identify the patient (get the enterprise ID)

Get permission to access data sources holding this patient's data

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Phase 1
Clinical/Business
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Phase 2
Workflow
Components



**Phase 3
Interoperability
Standards**



Phase 4
Implementable
Architecture



**Authorization
Client**



**Authorization
Server**



*Get access token
[ITI-71]*

Unambiguously identify the patient (get the enterprise ID)

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Phase 1
Clinical/Business
Definition



Phase 2
Workflow
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**Phase 3
Interoperability
Standards**



Phase 4
Implementable
Architecture

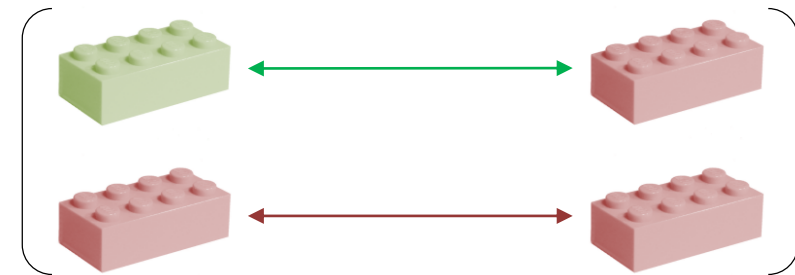


Incorporate access token

[ITI-72]

**Authorization
Client**

**Resource
Server**



**Document
Consumer**

**Document
Responder**

Find document references

[ITI-67]

Retrieve document

[ITI-68]

- Unambiguously identify the patient (get the enterprise ID)
- Get permission to access data sources holding this patient's data
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Assemble the retrieved data into a well-formed patient summary

Phase 1
Clinical/Business
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Phase 2
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**Phase 3
Interoperability
Standards**



Phase 4
Implementable
Architecture



Incorporate access token

[ITI-72]

**Authorization
Client**

**Resource
Server**



**Clinical Data
Consumer**

**Clinical Data
Responder**

Mobile query existing data

[PCC-44]



- Unambiguously identify the patient (get the enterprise ID)
- Get permission to access data sources holding this patient's data
- Use this permission to fetch data from all the pertinent sources

Assemble the retrieved data into a well-formed patient summary

Phase 1
Clinical/Business
Definition



Phase 2
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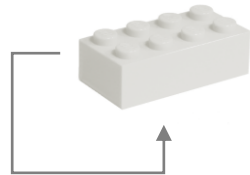
**Phase 3
Interoperability
Standards**



Phase 4
Implementable
Architecture



Patient Summary Builder



*Assemble patient summary
[CAN-01]*

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- Assemble the retrieved data into a well-formed patient summary**

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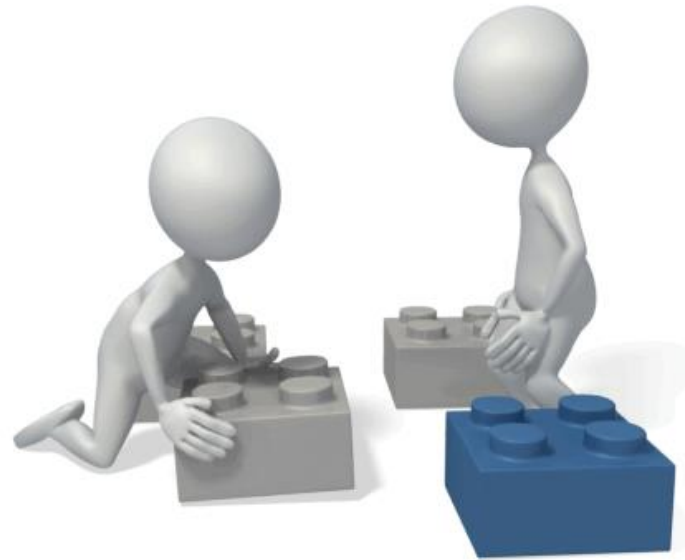
Phase 2
Workflow
Components



Phase 3
Interoperability
Standards



**Phase 4
Implementable
Architecture**



We need to “assemble” the characteristics of our new **Patient Summary Builder** actor from the already-existing building blocks, *plus* define the normative properties of a new “**Assemble patient summary**” transaction.

Phase 1
Clinical/Business
Definition



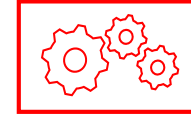
Phase 2
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Phase 3
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**Phase 4
Implementable
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Patient Summary Builder

We need to “assemble” the characteristics of our new Patient Summary Assembler actor from the available building blocks, plus define the normative properties of a new “Assemble patient summary” transaction.

Phase 1
Clinical/Business
Definition



Phase 2
Workflow
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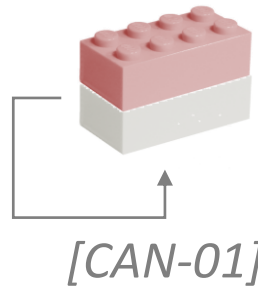
Phase 3
Interoperability
Standards



**Phase 4
Implementable
Architecture**



Clinical Data Consumer
Patient Summary Builder



[PCC-44]



Clinical Data Source

Phase 1
Clinical/Business
Definition



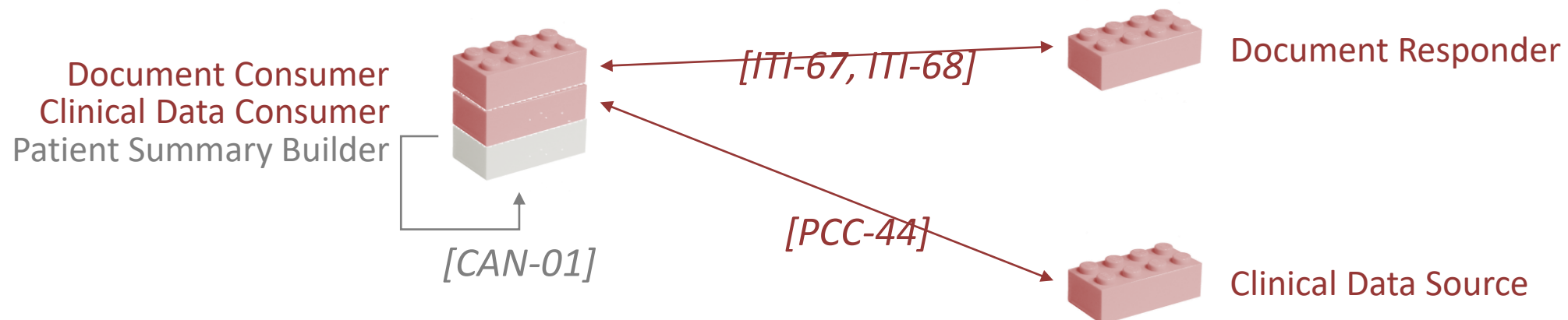
Phase 2
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Phase 3
Interoperability
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**Phase 4
Implementable
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Phase 1
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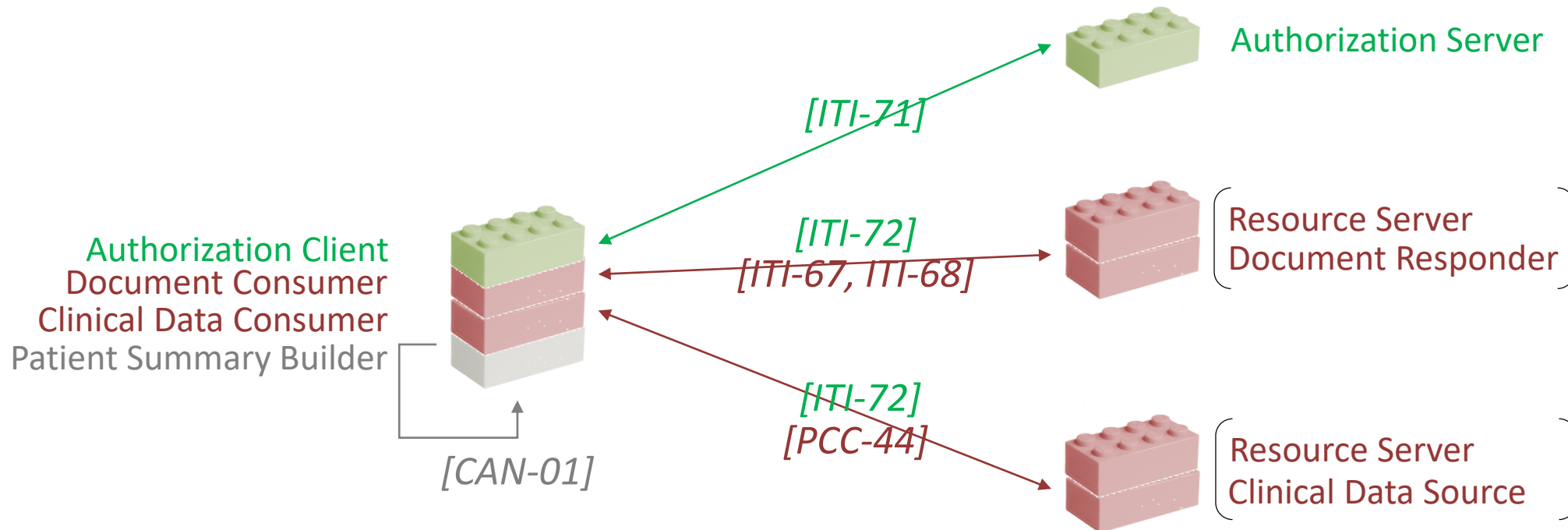
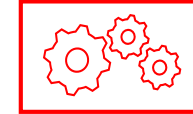
Phase 2
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Phase 3
Interoperability
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**Phase 4
Implementable
Architecture**



Phase 1
Clinical/Business
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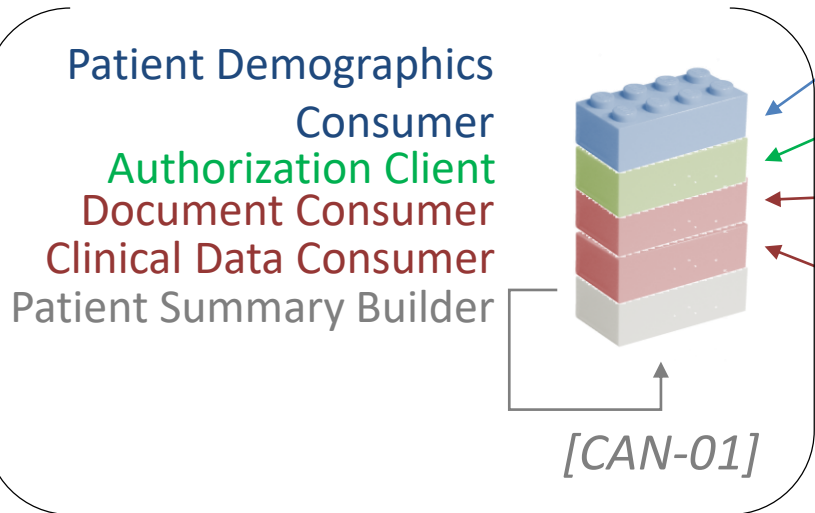
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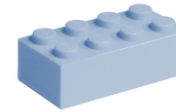
Phase 3
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Standards



**Phase 4
Implementable
Architecture**



[ITI-78]



Patient Identity Registry

[ITI-71]



Authorization Server

[ITI-72]

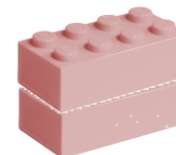
[ITI-67, ITI-68]



Resource Server
Document Responder

[ITI-72]

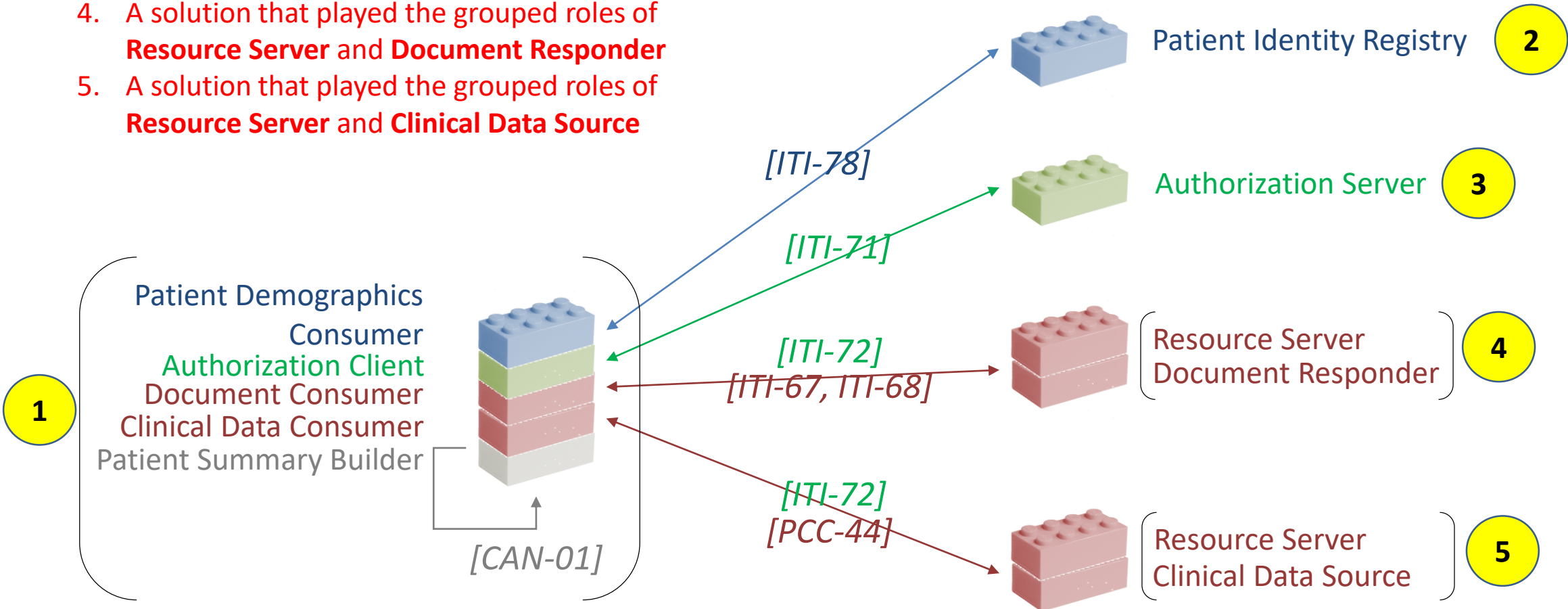
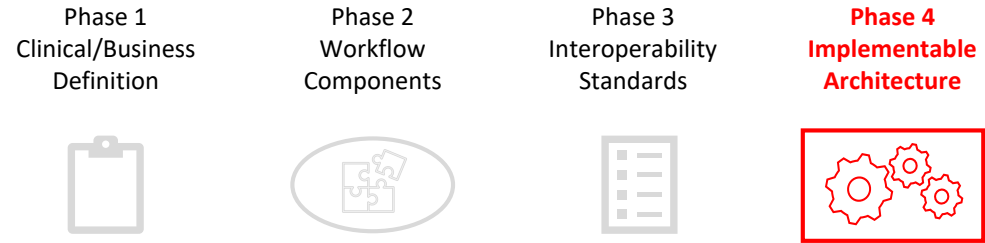
[PCC-44]



Resource Server
Clinical Data Source

For a **Connectathon** test, we'd need:

1. A solution that played the role of the five grouped actors of a **Patient Summary Builder**
2. A **Patient Identity Registry**
3. An **Authorization Server**
4. A solution that played the grouped roles of **Resource Server** and **Document Responder**
5. A solution that played the grouped roles of **Resource Server** and **Clinical Data Source**



What is the opportunity, here,



for Canadian vendors?

We will leverage IHE's documentation conventions for our domestic work and test using our own Gazelle instance.



IHE | **GAZELLE**
eHealth test framework
for interoperability



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We will bring our artefacts to the Domain **technical committees** of IHE International for balloting as global specs.



Canadian vendors can certify at **USA** and **EU** and **Asian** Connectathons.

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Where should we go from here?

