



FAST Technical Learning Community Proposed Solutions: Testing & Certification



Presenters – *FAST* Tiger Team Leads & Members



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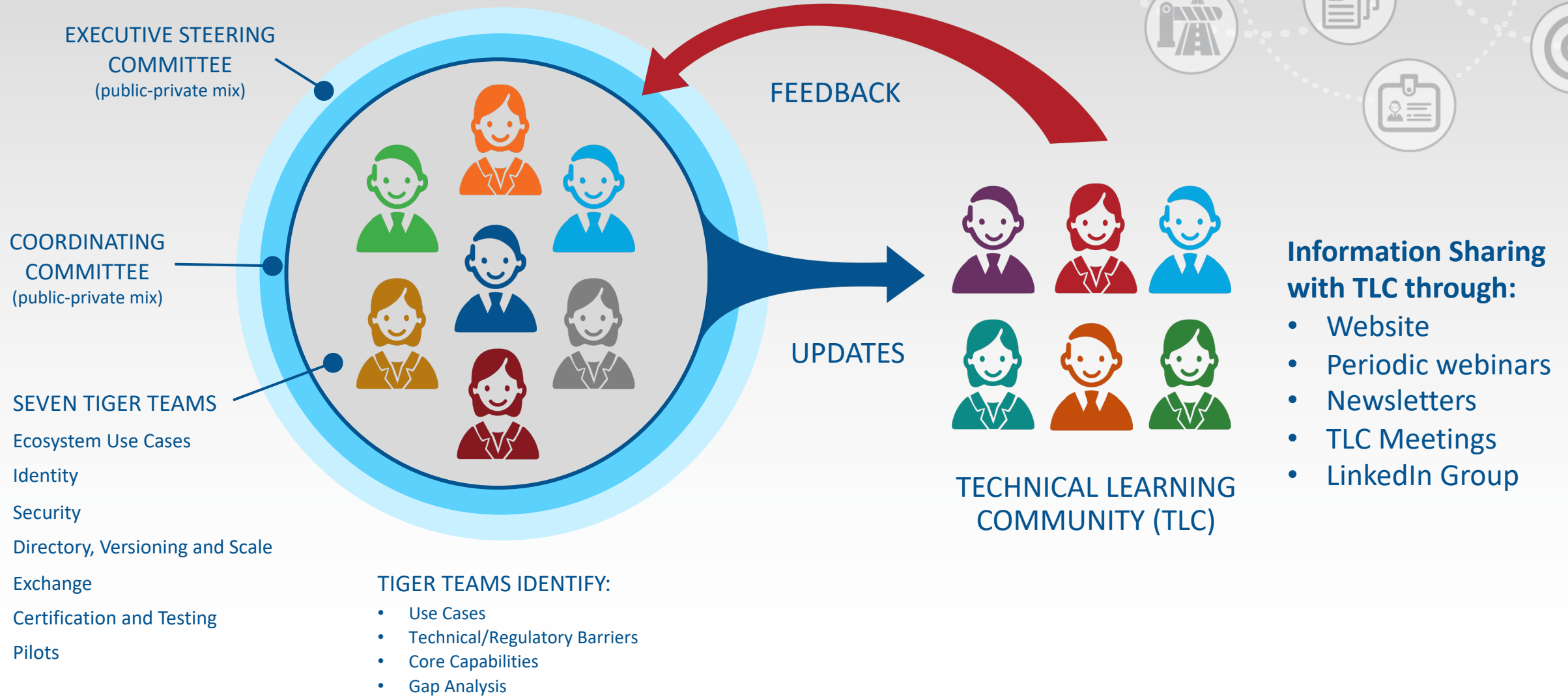
Agenda

- **FAST Technical Learning Community (TLC) Webinar Series**
- **What is *FAST*?**
- **Testing & Certification Barriers**
 - What problems are being addressed?
 - Why are they problems?
- **Proposed Testing & Certification Solutions**
 - Development of a FHIR Testing/Certification Platform
 - Proposed solution overview
 - Open solution questions & TLC feedback





FAST Organization & Community Engagement





Technical Learning Community (TLC) Webinar Series

Testing & Certification

[Today's Presentation](#)

Identity

Thursday, November 21st

[Presentation](#)

Directory, Versioning & Scale

Monday, November 25th

[Presentation](#)

Security

Monday, December 16th
12-2pm ET

[Register Now!](#)

Exchange

Thursday, December 19th
12-2pm ET

[Register Now!](#)



What is *FAST*?

The FHIR at Scale Taskforce (FAST), convened by the Office of the National Coordinator for Health IT (ONC), brings together a highly representative group of motivated healthcare industry stakeholders and health information technology experts.

The group is set to identify HL7[®] Fast Healthcare Interoperability Resources (FHIR[®]) scalability gaps and possible solutions, analysis that will address current barriers and will accelerate FHIR adoption at scale.



FAST Initiative Output & Communication Strategy

FAST CONTENT

[FAST Initiative Use Cases, Version 2](#)

[FAST Regulatory and Policy Barriers, Version 1](#)

[FAST Solutions \(In Development/Drafts\)](#)

[FAST Initiative Core Capabilities](#)

[FAST Technical Barriers, Version 1](#)

FAST COMMUNICATION STRATEGY

[FAST 101 - Public Webinar](#)

[FAST 101 and Keystone Presentations](#)

[Technical Learning Community](#)

All content is available on the [FAST Project Page](#)



FAST Focus and How to Get Involved

Patient & Provider Identity Management

Directory Services

Version Identification

Scale

Exchange Process/Metadata

Testing, Conformance & Certification

Security

Pilots

WANT TO GET INVOLVED??

Join the Technical Learning Community to get updates and provide input on the technical and regulatory barriers, use cases, and proposed solutions as they are developed.

SIGN UP!!

&

JOIN THE LINKEDIN GROUP

Polling Question 1

What type of organization do you represent?

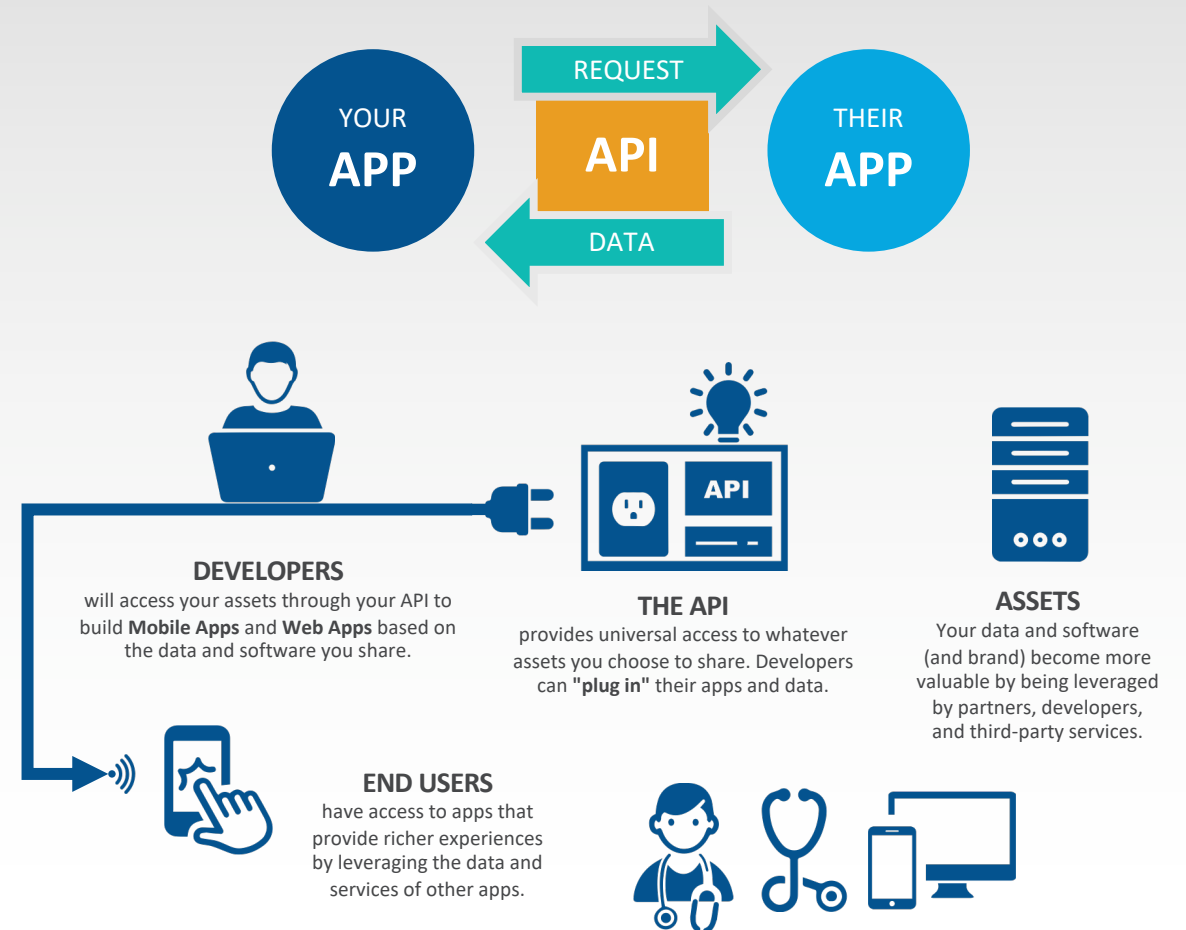
1. Provider
2. Payer
3. Health IT Vendor
4. Standards/Research/Academic
5. Other (Please add comments in the question box)



Application Programming Interface (API)

Dictionary Definition: A System of Tools and Resources in an Operating System, Enabling Developers to Create Software Applications

- Allow the capabilities or data of one computer program to be used by another
 - Lego blocks of data
 - Computer technology agnostic
- Many industries drive their economy by using APIs (Amazon, Netflix, Google, Facebook, eBay, YouTube, etc)
- Enable innovation by allowing programs to use and combine data





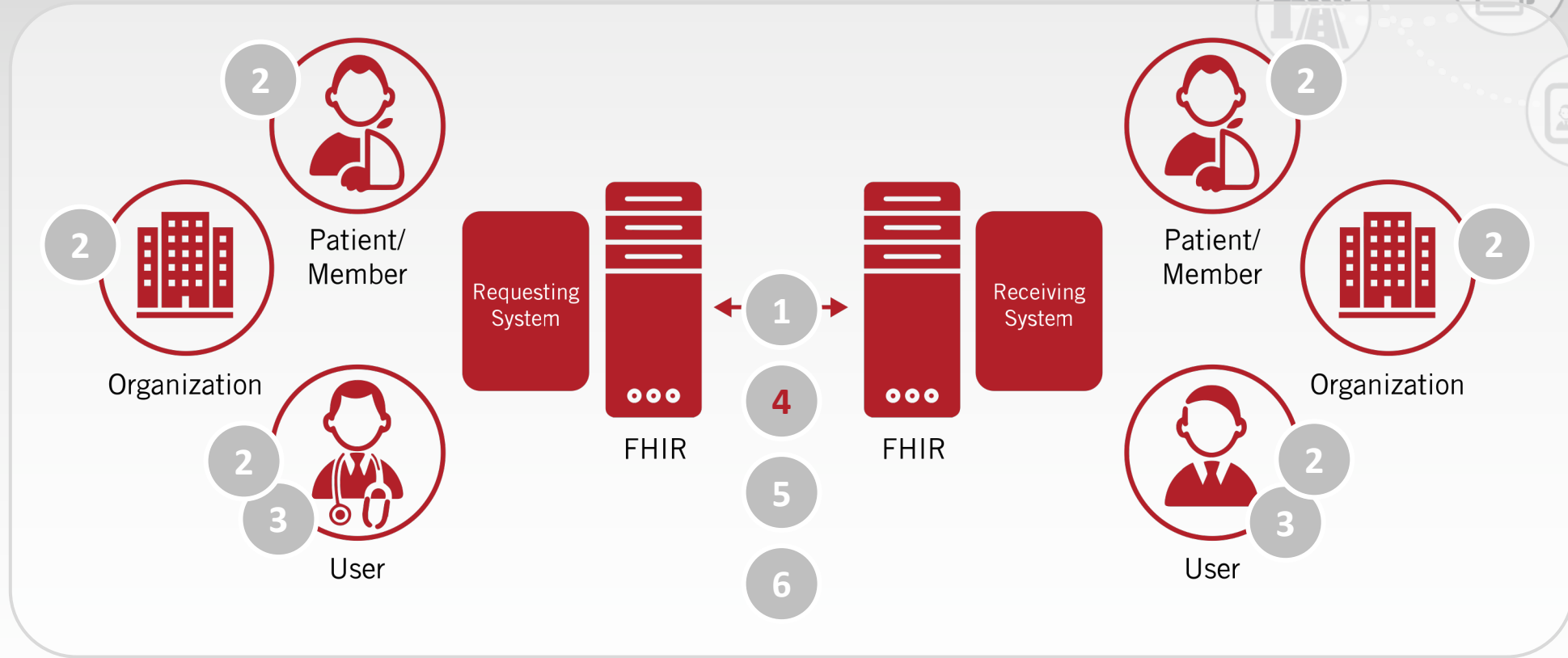
Fast Health Interoperability Resources (FHIR)

A Standard for Exchanging Healthcare Information Electronically

- HL7 - intellectual property is all licensed to use under the Creative Commons – free to use
- Accelerates data exchange by leveraging the HL7 standard to create allowing modular components (FHIR resources) to refer to each with URLs
- FHIR Resources, Profiles, and Implementation Guides go through a rigorous vetting process ensuring stakeholder input
- Implementation Guides leverage publicly available test servers, connectathons, and human readable instances that are easy to understand to support common healthcare use cases



Known Technical Barriers

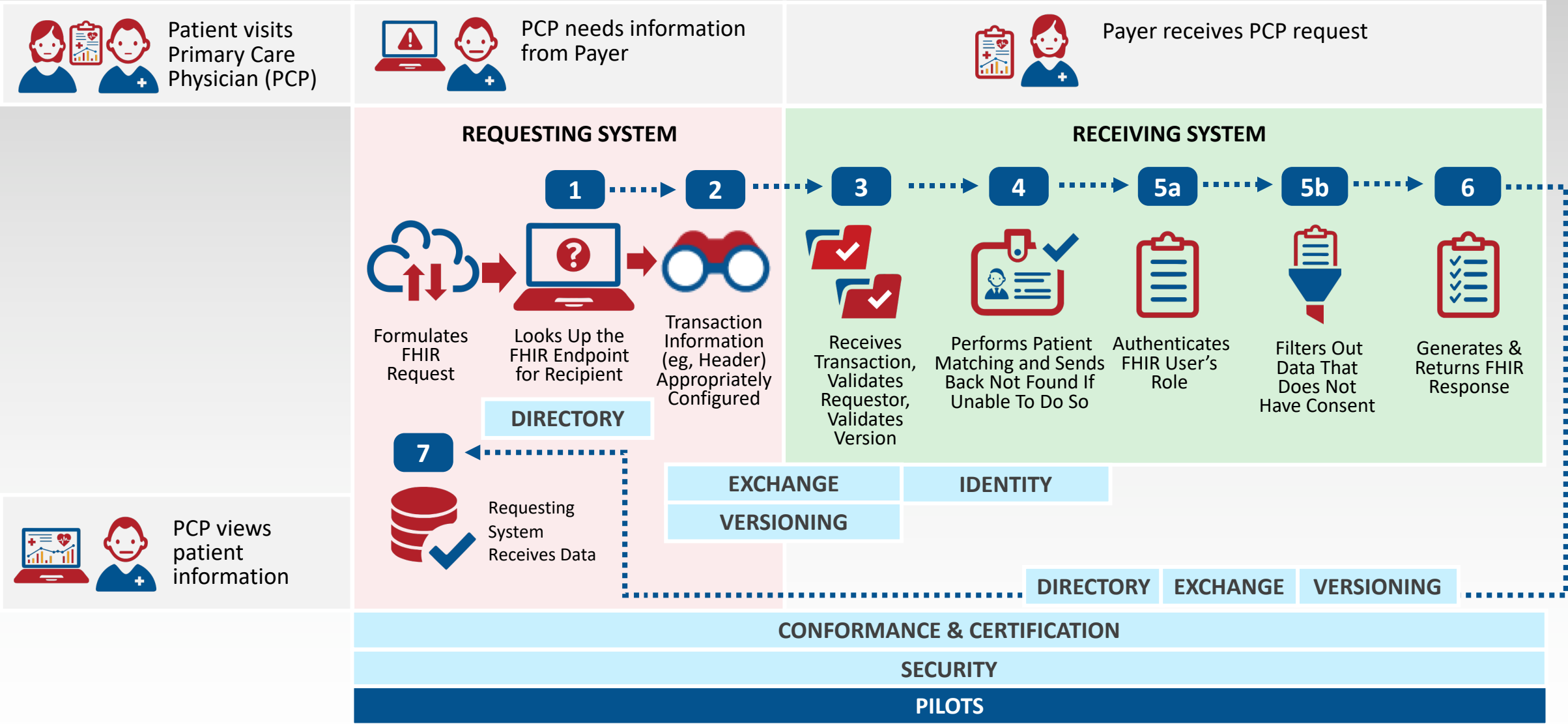


1 Directory Services 2 Identity 3 Security

4 **Testing, Conformance, & Certification** 5 Versioning 6 Scaling

For more information view [FAST 101](#) and [Technical Barriers](#)

Example FHIR Transaction Journey



Polling Question 2

What level of subject matter expertise do you have in Testing and Certification of standards?

1. Expert
2. Advanced
3. Beginner
4. None



FAST Testing & Certification Members & Expertise

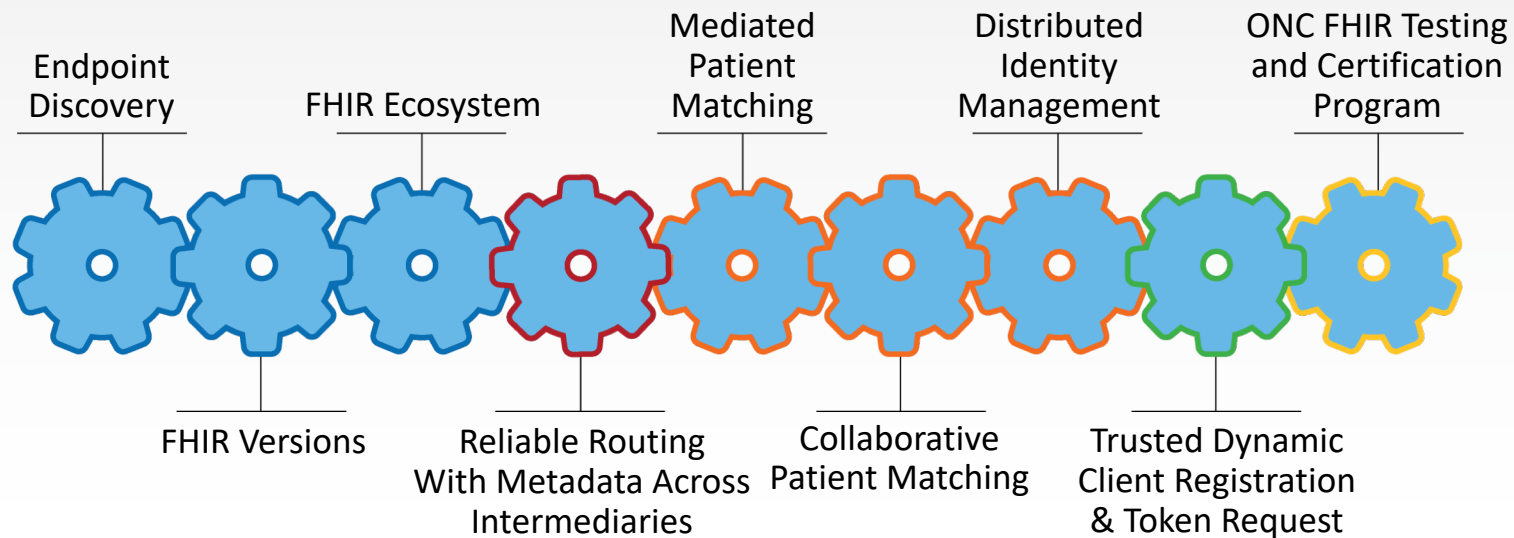
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<i>Sandra Vance</i>	AEGIS – Tiger Team co-lead
<i>Gary Beatty</i>	Independent Consultant – X12 Leadership/SME
<i>Timothy Bennett</i>	Drummond Group Consulting - Certification
Durwin Day	BCBS IL HL7 SME
Matt Englehartt	MiHIN FHIR SME
Drew Hannah	Smile CDR, FHIR SME
Dan Kazzaz	Secure Exchange Solutions SME
Sagy Mintz	Greenway Health, HER API SME
Ron Moser	Moserhaus Consulting Accreditation SME
Deb Strickland	Independent Consultant Industry SME
Tammy Banks	Providence St. Joseph Health SME





FAST Process

1. Convene industry SMEs into Tiger Teams
2. Identify problems and solutions in each area
3. Propose solutions and vet them with others in the industry
4. Provide guidance to the Office of the National Coordinator





Preparing an Industry through Testing & Certification

- **Problem:** There are ecosystem and infrastructure barriers that prevent the wide-scale adoption and deployment of FHIR for payers and providers.
- **Purpose:** Through a collaborative effort, the taskforce aims to address ecosystem barriers and accelerate adoption of FHIR for production exchange of clinical information between providers and payers.
- **Scope Statement:** The Testing and Certification Tiger Team will focus on process and specifications for testing and certification of the requirements defined to meet the core competencies of identity, security, Endpoint discovery, scaling and exchange process.



Preparing an Industry through Testing & Certification Cont.

- **Software testing** is an investigation conducted to provide stakeholders with information about the quality of the **software** product or service under **test**.
- **Certification** refers to the confirmation of certain characteristics of an object, person, or organization.
- **Base FHIR** HL7 FHIR Conformance to the specification
- **FAST Readiness Criteria** refers to the minimum capabilities the FAST Tiger Teams have established to scale FHIR in that area.
- **FHIR Implementation Guides** – Focused on Clinical and Business Use Cases



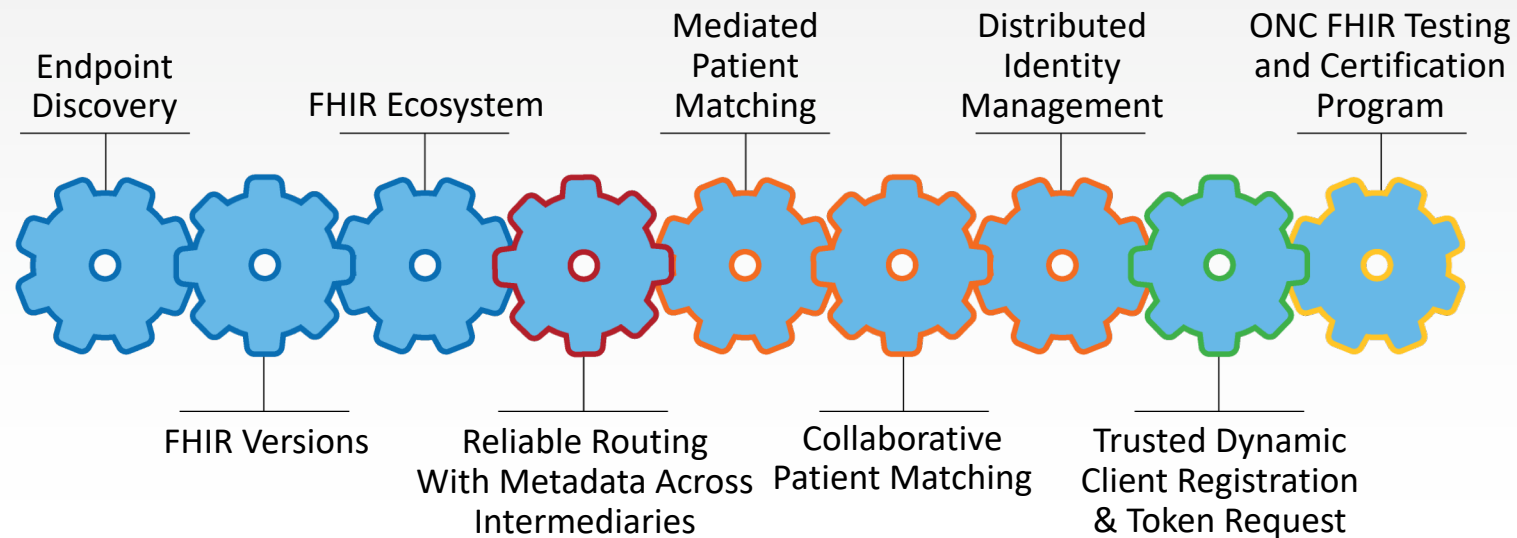
Base FHIR Validation

- **Value Set** – Defines a set of coded values
- **Structure Definition** - Makes rules about how a resource (or type) and its data elements are used in a particular context, including defining how extensions are used. A structure definition references value sets for the coded elements in a resource
- **Capability Statement** - A statement of the kinds of resources and operations provided and/or consumed by an application. The Capability Statement references profiles to describe specific use of resources by the application
- **Implementation Guide** - A single coherent collection of capability statements, profiles, extensions, value sets, and documentation describing a set of interoperable applications



FAST Readiness Criteria Validation

- Comprehensive set of criteria from FAST Tiger Teams
- Focused on Scalability of the Infrastructure NOT clinical use cases
- Foundation of baseline test assertions for FAST Certification





FAST Core Capabilities

1. End Point Discovery
2. Authentication
3. Authorization
4. Resource Version Identification
5. Reliable Patient Identity Management
6. Data Provenance
7. Reliable Provider Identity Management
8. Event/Message/Topic Subscription/Publication
9. Guaranteed Message Delivery
10. Role/Context Identification
11. Readiness Credential
12. Standard Based Endpoint Access
13. Synchronous Transaction Support
14. Asynchronous Transaction Support
15. Reliable Payor Identification





Steps to FHIR Adoption

FHIR SPECIFICATION
CONFORMANCE



INFRASTRUCTURE USE
CASE CERTIFICATION



FUNCTIONAL
USE CASES



RAPID INDUSTRY
ADOPTION



1. Conformance statements
2. Resources, Profiles and Operations
3. FHIR Versions



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FHIR Solutions for VBC

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 Payers/Providers

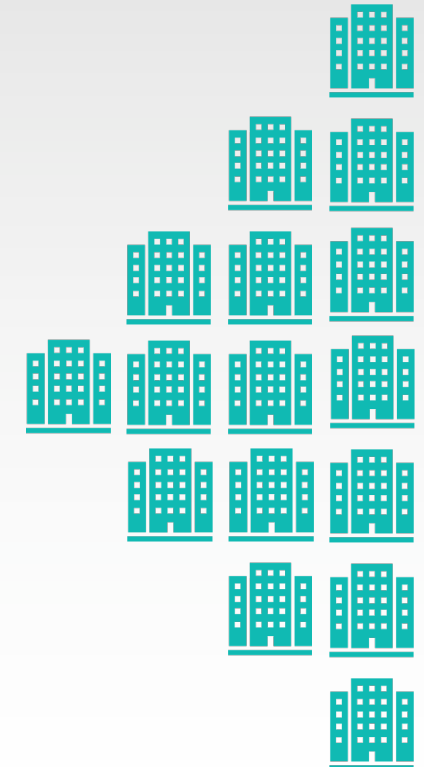
Core Data Services

 **ARGONAUT PROJECT**
 **HL7 FHIR**
 Provider/Provider

FHIR Consumer Solutions

carin
 Consumers

Other Collaborative Efforts to Develop & Implement FHIR Solutions



Polling Question 3

Which areas that we have discussed should **ONC** establish conformance for?

1. Base FHIR Conformance
2. FHIR at Scale Infrastructure (*FAST* Readiness Criteria)
3. Both
4. Other (Please add more details in the question box)



Tiger Team Approach

Industry Initiatives and Research	<p>Considered best practices and approaches from:</p> <ul style="list-style-type: none">• ONC Certification Programs• FHIR Tooling platforms including Inferno and Touchstone• Certifiers EHNAC and Drummond
Community feedback	<p>Soliciting early and continued feedback</p> <ul style="list-style-type: none">• Interviewed SMEs• Requesting feedback from <i>FAST</i> TLC through Webinars and LinkedIn Group
<i>FAST</i> Internal Reviews	<p>Leveraging expertise on the taskforce</p> <ul style="list-style-type: none">• Feedback from <i>FAST</i> Coordinating Committee• Reviews with <i>FAST</i> Chief Architects and other Tiger Teams



FAST Testing & Certification Barriers to FHIR Scalability



TESTING/CERTIFICATION BARRIERS



IMPLICATIONS

Maturity of Requirements



FHIR specification itself is continually evolving. Any conformance process needs to account for versioning with full backward compatibility.

Lack of Minimum Level of Conformance



Need to be able to assume Conformance to BASE FHIR prior to working on scaling, but this pushes the limits for this group's scope.

Tooling



Needs to support validation of several layers, multiple versions and standard tests.

Certification Governance



Define steps and levels to achieve certification, what or whom is being certified (i.e., FHIR implementation approach or participants, stakeholders, and intermediaries)

Costs



Costs must not be prohibitive to vendors who are developing systems for payers, providers, or patients.



Proposed Solution: ONC FHIR Testing & Certification Program



DEVELOPER



FAST Readiness Criteria

1. End Point Discovery
2. Authentication/Authorization
3. Version Identification
4. Patient/Provider Identification
5. Patient Information Request, Provider Request to Plan
6. Patient Information Request, Plan Request to Provider
7. Documentation Templates and Rules
8. Event Based Alerts
9. Quality Reporting
10. Push Patient Information
11. Shared Care Planning
12. Referrals/Consults
13. Care Team Coordination
14. Scheduling



Proposed Solution: Automated FHIR Testing Platform – Scope

In Scope

- Base FHIR Specification
- FAST Readiness Criteria

Out of Scope

- HL7 FHIR Validation Engine
- RFP development to select entity to provide services

Assumptions

- Easy to use and submit FHIR transactions
- Dashboard Review of transaction with feedback
- Cost of certification is low and is not a barrier

Pre-Conditions

- Specifications and requirements are agreed upon
- FHIR Validation Engine determined
- Certifier(s) selected
- Developers involved in reviewing and beta testing of platform and committed to process

Post-Conditions

- Reporting process and mechanism in place
- Feedback mechanism for developers/users to refine and streamline the process
- Ongoing interaction with HL7, ONC, Developers and other key stakeholders

Complexity

- High

Polling Question 3

Do you agree with the proposed solution ?

1. Yes
2. No
3. Somewhat (Please add more details in the question box)



Testing & Certification– Status

Proposed Solution Status

- Readiness criteria has been developed and are currently being vetted
- Use Cases being reviewed to determine any other requirements or considerations that should be factored in
- Testing specifications and requirements need to be drafted and finalized

Open Items

- Complete Use Case Review
- Complete development of testing specifications for readiness criteria
- Develop RFP Requirements based on Testing assertions
- Testing Model: Determine Certifier(s) and #

Polling Question 5

Should there be a single or multiple certification bodies?





Thank You – Today's Presenters

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Connect with us on [LinkedIn](#) to stay informed

For more information on the *FAST* Initiative,
visit the *FAST* [Project Page](#) or <https://tinyurl.com/ONC-FAST>

Have any further questions/suggestions?

Please contact Stephen Konya at Stephen.Konya@hhs.gov
& Diana Ciricean at Diana.Ciricean@hhs.gov