



Zoom Meeting Interface and Basic Logistics



*image above is a publicly available tutorial image obtained from Zoom website

- **VIDEO:**
 - **Panelists/Presenters/Facilitators** - Please enable your video using **bottom left video button with camera icon.**
 - **Attendees** - If you did not receive an invitation to be a panelist, you are in attendee only mode and **will not have access to enable video**
- **AUDIO:**
 - **Panelists/Presenters/Facilitators** - Adjust your audio settings as needed (choose computer audio, call in, mute, etc.) using **audio button bottom left, microphone icon. Please remain muted unless speaking.**
 - **Attendees** - If you did not receive an invitation to be a panelist, you are in attendee only mode and **will not be able to enable audio**
- **CHAT:** The chat function is open to **ALL** participants (bottom, middle right, highlighted in orange in this image). Those in Attendee only mode are encouraged to provide feedback and questions via chat throughout the discussion. Chat will be monitored by the *FAST* team and key themes will be pulled into the discussion.
- **TECHNICAL DIFFICULTIES:** Having trouble hearing the presenters or seeing the shared screen? Put your issue in chat and the Meeting Host will help you.



Intermediary Discussion

ONC *FAST* Workshop

September 14, 2020



FAST Taskforce Antitrust Notice

- The ONC FHIR At Scale Taskforce (*FAST*) (Hereinafter “Taskforce”) is committed to full compliance with existing federal and state antitrust laws.
- All members involved in the Taskforce effort, including its advisory groups, will comply with all applicable antitrust laws during the course of their activities. During Taskforce meetings and other associated activities, including all informal or social discussions, each member shall refrain from discussing or exchanging competitively sensitive information with any other member. Such information includes, but may not be limited to:
 - Price, premiums, or reimbursement charged or paid for products or services
 - Allocation of customers, enrollees, sales territories, sales of any products or contracts with providers
 - Any other competitively sensitive information that is proprietary to a member company
- If you have any specific questions or concerns, seek guidance from your own legal counsel.
- Members should not bring confidential information or intellectual property (hereinafter “Intellectual Property”) owned by their respective member companies into Taskforce meetings. To the extent such Intellectual Property is shared with the Taskforce that shall not be construed as a waiver of member company’s rights to, or ownership in, the Intellectual Property.



Session Facilitator



ROBERT DIETERLE

CEO

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FAST Directory, Versions & Scale
Tiger Team Co-Lead





Agenda

- **Welcome & Introductions**
- **Session Goals**
- **Overview**
- **Discussion Topics**
 - Interactive Panel
 - Participant Q&A
- **Wrap Up/ Key Takeaways**





FAST Panelists

FAST Panelists	
<i>Brett Stringham</i>	Optum, <i>FAST Security Tiger Team Lead</i>
<i>Carmen Smiley</i>	HHS ONC, <i>FAST Identity Tiger Team Lead</i>
<i>Durwin Day</i>	HCSC, <i>FAST Exchange Tiger Team Lead</i>
<i>Timothy Bennett</i>	Drummond Group, <i>FAST Testing and Certification Tiger Team Member</i>





Roles & Logistics: Panelist vs. Attendee Modes

FAST Key Panelists

- Invited to join, actively engage and support the conversation
- Encouraged to communicate verbally (mics on) and to turn on video
- Monitor the attendee chat box for feedback, address questions via chat or promote questions that are significant to the discussion topic or warrant a verbal debate /reaction with the panel group

Industry Expert Reaction Panelist (in panelist mode)

- Invited to join the live interactive discussion with the *FAST* team
- Encouraged to communicate verbally (mics on) and to turn on video
- Provide their industry expertise and feedback
- Discuss or debate the topic with the facilitator and the panelist group
- Raise questions or concerns
- Feedback will inform *FAST* next steps

General Audience and *FAST* Technical Learning Community Members (in attendee mode)

- Encouraged to engage and contribute feedback and questions via the chat box
- Do not have the ability to contribute verbally to the conversation (mics off)
- No ability to be on video



Intermediary Discussion

Session Description

A scalable ecosystem infrastructure requires standards, process, and regulation to be addressed and aligned. By working collaboratively with industry solutions that currently exist or are in development, *FAST* can leverage these building blocks to make more rapid progress towards the final goal of supporting the industry need for a scalable architecture for FHIR based exchanges.

This session will focus on:

- 1) the current state of intermediary support of RESTful FHIR exchanges,
- 2) scalability of the solutions, and
- 3) the need for industry wide coordination.

We will specifically focus on any intermediary – intermediary issues that would impact the ability to provide the same real-time services that are available in direct connections between exchange partners.

We are anticipating a lively discussion on the role of intermediaries in supporting scalability of FHIR based solutions.



Intermediary Discussion

Session Goals

1. Identify intermediary requirements for RESTful FHIR exchanges
2. Identify intermediary-intermediary exchange requirements
3. Define service level required for intermediaries to meet goals (1) and (2)

Overview





Definition: Intermediary

Intermediary: Any entity that participates in the exchange of a FHIR based transaction other than the ultimate requester and responder (e.g., business associate, Clearinghouse, HIE, technical switch)

The FAST team has no preconceived preferences for the type of intermediary

- There can be one or more intermediaries between the originator of the transaction and the ultimate destination
- The intermediary is responsible for ensuring delivery of any request and any response
- The initial intermediary always has a formal FHIR endpoint – this may or may not be true of others in the chain
- Some “intermediaries” can act as an organizational endpoint, if they have access to the data



Scaling Architecture – Current State

EXPERIENCE

- Limited implementation of FHIR based solutions operating at scale to support anticipated healthcare needs
- Limited practical experience in scaling FHIR transactions via intermediaries
- Limited support for messaging relevant information to interested parties, especially through intermediaries, using FHIR

EXISTING SOLUTIONS

- Current scaling solutions may not handle anticipated volume and predictable response time requirements
- Multiple competing, potentially incompatible, solutions for scaling (HIEs, Clearinghouses, Trust Framework based exchanges)
- Concern with multiple intermediaries and impact on performance, scaling, synchronous transactions

STANDARDS

- Lack of experience using FHIR to handle synchronous exchanges and maintain state via intermediaries
- Impact of competing interoperability models on access to data – e.g. whether endpoints are discoverable and accessible depends on the model used

REGULATORY

- Inconsistent legislative, regulatory, and policy environments
- Current issues related to privacy (e.g., minimum necessary) create barriers to national adoption of FHIR at scale



Problems to Be Solved



SCALABILITY PROBLEMS



IMPLICATIONS

MULTIPLE CURRENT INTEROPERABILITY MODELS



Hybrid exchange models (e.g., spoke/hub, direct connections/point-to-point, and regionally interconnected spoke/hub) create challenges in adopting standards for scaling FHIR and implementing consistent approaches such as authentication, endpoint detection, standards for matching, and end-to-end performance.

LACK OF PREDICTABILITY AND RESPONSE TIMES



Scaling real-time transactions requires infrastructure that may not be currently available through existing intermediaries. The lack of predictable end-to-end response time limits specific use cases where providers require a response prior to proceeding with diagnosis or treatment. Some intermediary models do not support end-to-end synchronous real-time applications. The industry will need to adopt synchronous FHIR front-end interfaces and migrate to near real-time backend solutions.

ANTICIPATING INCREASE IN FHIR-BASED VOLUME



There are currently no models to predict the volume of FHIR-based transactions as FHIR is adopted broadly in the ecosystem. This may lead to unpredictable scaling and performance challenges. Adopting real-time (RESTful) solutions to solve real-time synchronous FHIR scalability is required by the industry. Payers and providers need to increase services (and related perception of reliability) to support significant increase in real-time transactions embedded in the clinical workflow.

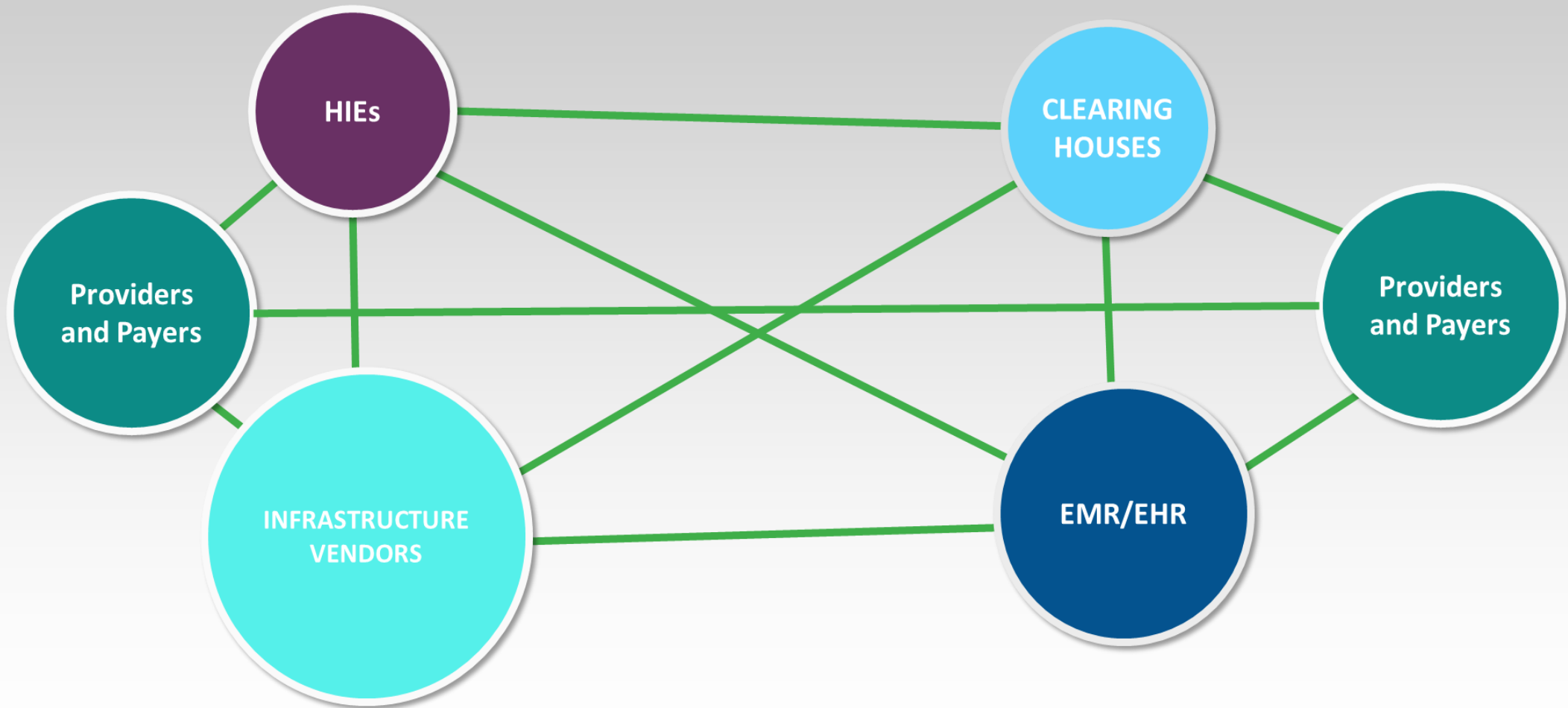
DATA BLOCKING



The industry is moving to a utilization model for access to patient data using FHIR APIs. As FHIR makes information readily available within an encounter clinical workflow and through multiple mobile, portable and wearable devices in real time, the volume of transactions will increase exponentially. If there is limited access to this information, or the cost per access/transaction is too high, this will constitute a new form of data blocking. The CMS NPRM is working to address both of these issues.



Mixed Model Environment with Full Connectivity (Future State)





Scaling Architecture – Future State

Future State

1. Support a mixed model (point to point, gateways, and via intermediaries)
2. Established minimum availability and performance requirements for any scale architecture (including multiple intermediaries)
3. Requirement to support real-time RESTful exchanges (e.g. maintaining “state” across intermediaries)
4. Intermediaries (regardless of the number) need to support, transparently, all FHIR workflow operations (including subscription)
5. Intermediaries capable of handling volume, response time, and routing to all available end points
6. Consistent support of metadata for “routing” through multiple intermediaries

Intermediate Goals

1. Establish performance standards for intermediary support for FHIR exchanges
2. Define and test an appropriate intermediary – intermediary exchange solution
3. Test performance for intermediaries

Discussion



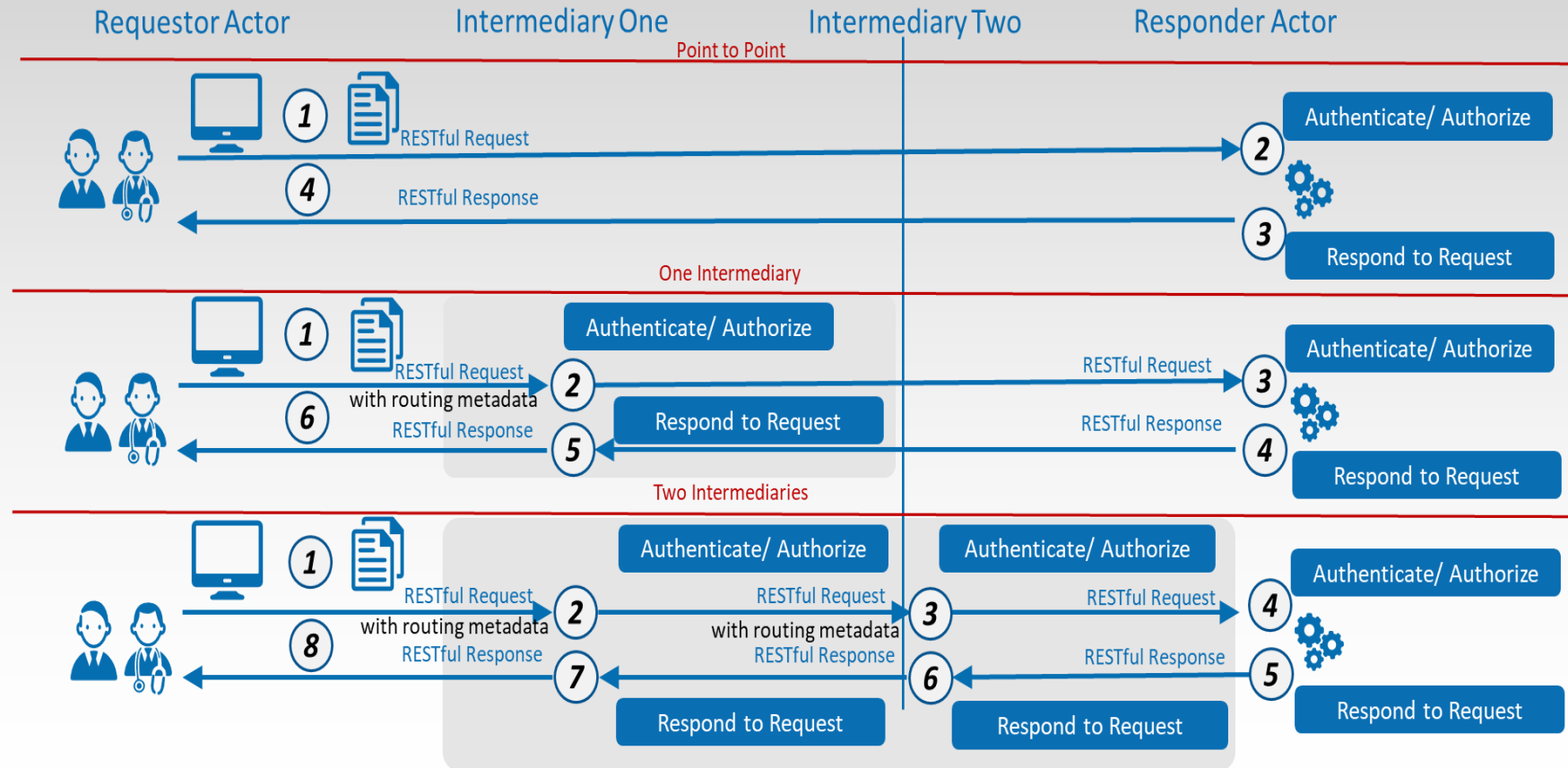


Discussion: Session Goal 1

Session Goal 1: Identify intermediary requirements for RESTful FHIR exchanges



What specific intermediary requirements are necessary to act as a transparent intermediary to support real-time RESTful FHIR Exchange?



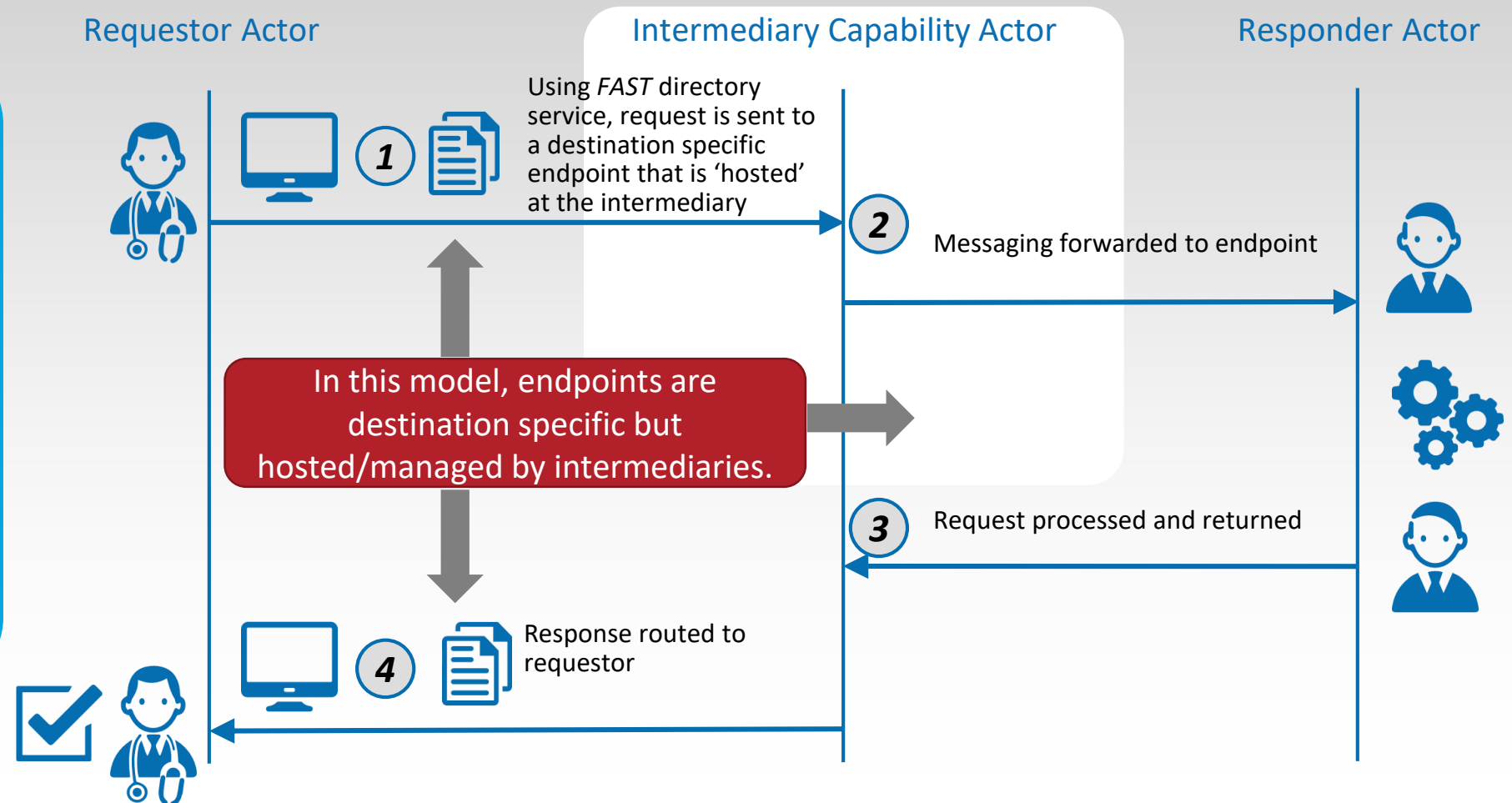


Discussion: Session Goal 1

Session Goal 1: Identify intermediary requirements for RESTful FHIR exchanges

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What specific intermediary requirements are necessary to act on behalf of an organization to proxy their FHIR endpoint?



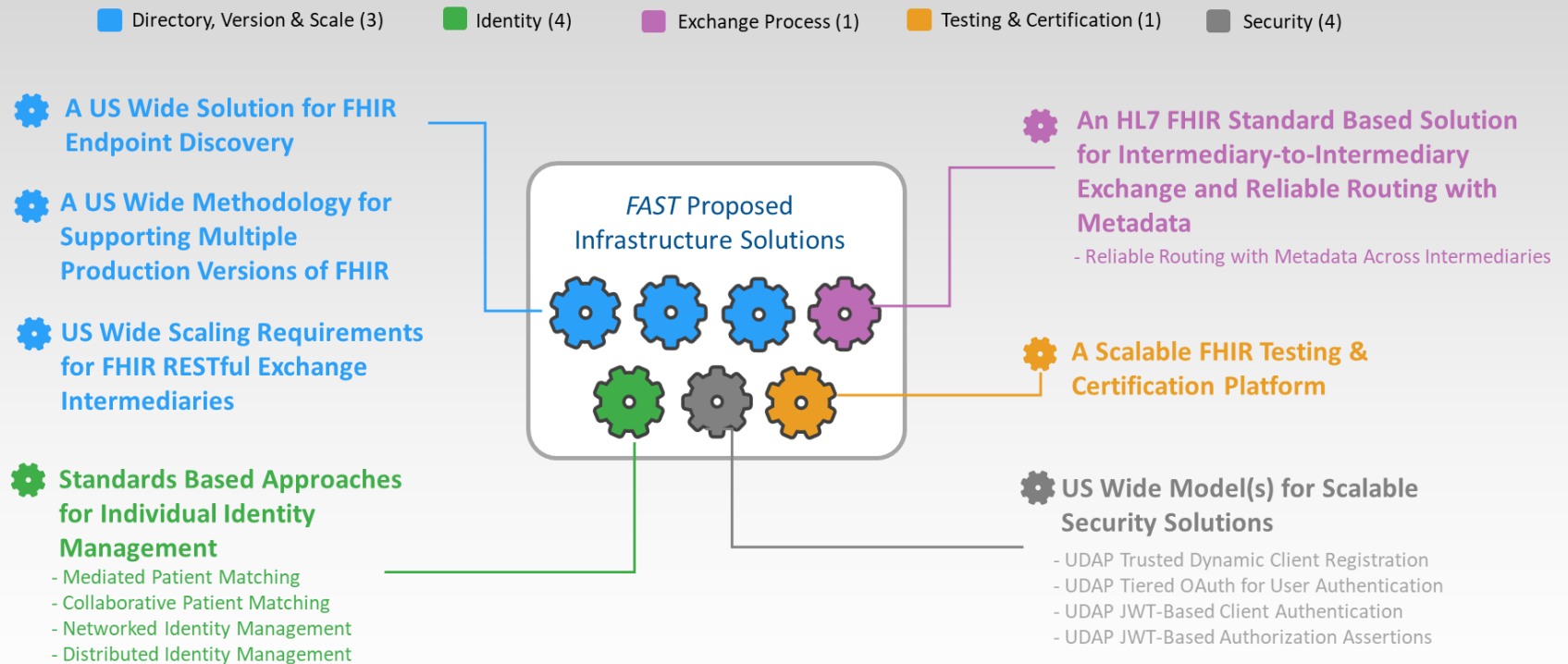


Discussion: Session Goal 1

Session Goal 1: Identify intermediary requirements for RESTful FHIR exchanges



Identify issues related to *FAST* solutions (Directory, Security, Identity, Metadata and Testing & Certification) that require intermediary specific adaptations?



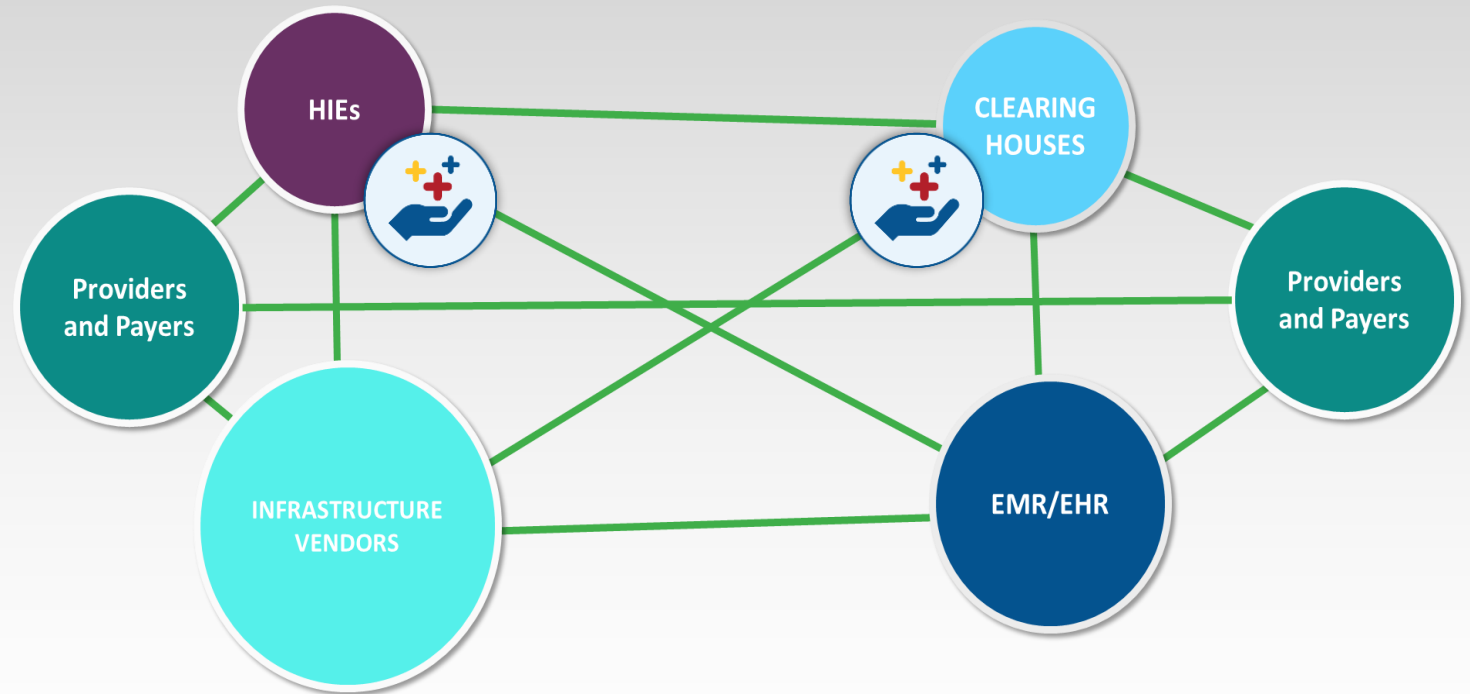


Discussion: Session Goal 1

Session Goal 1: Identify intermediary requirements for RESTful FHIR exchanges

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What value-added services should be required of all intermediaries?



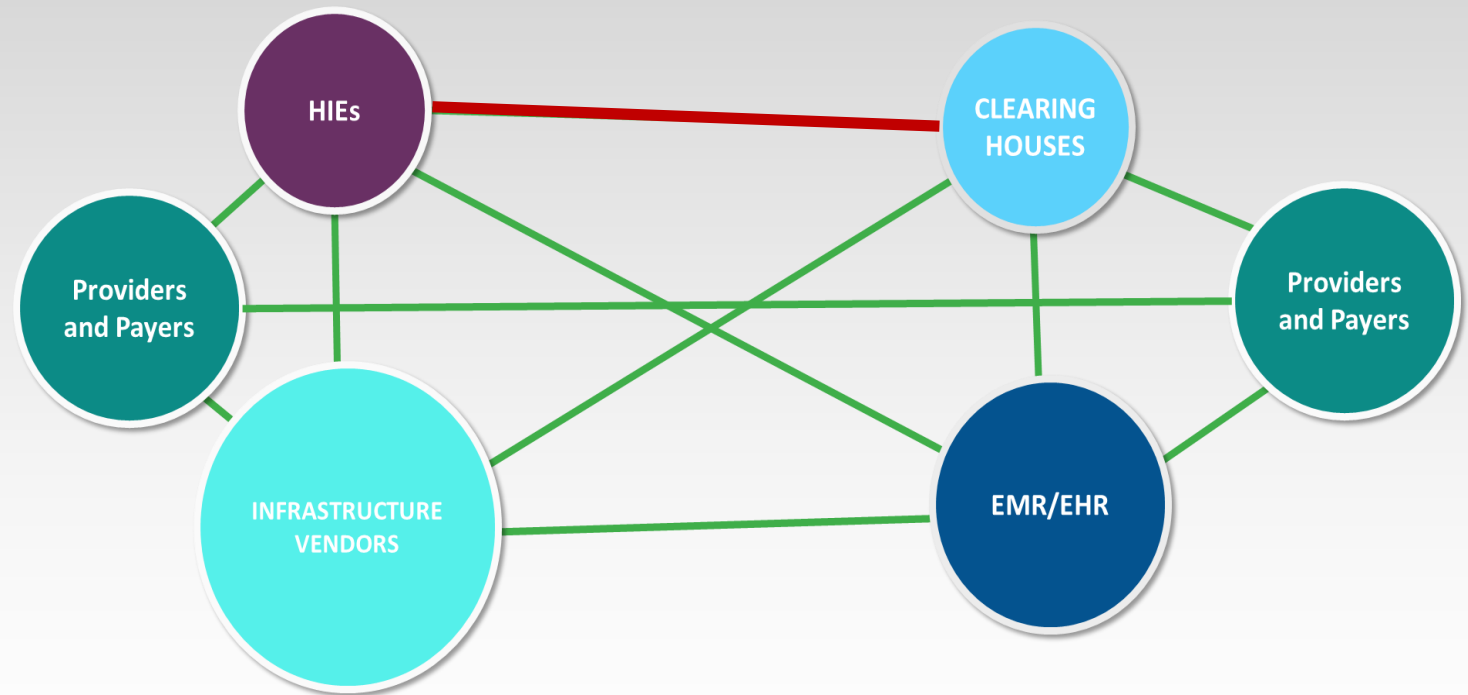


Discussion: Session Goal 2

Session Goal 2: Identify intermediary-intermediary exchange requirements



1. Should we require that all intermediaries connect transparently with each other?
2. If not, what is the impact on interoperability nationally?
3. If we should, what specific standards/ requirements need to be developed to ensure transparent support of real-time RESTful FHIR exchanges?



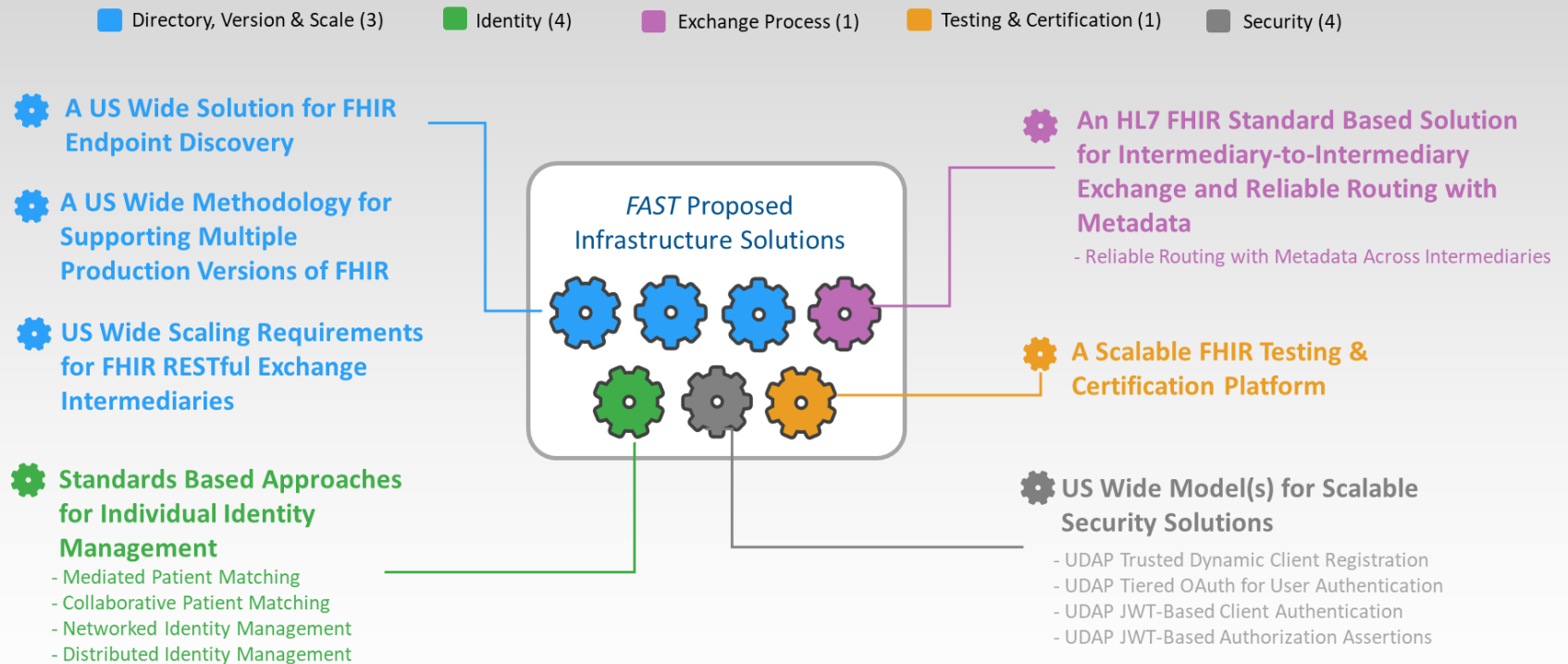


Discussion: Session Goal 2

Session Goal 2: Identify intermediary-intermediary exchange requirements



How are *FAST* solutions (Directory, Security, Identity, Metadata and Testing & Certification) impacted by exchange across multiple intermediaries?





Discussion: Session Goal 3

Session Goal 3: Define service level required for intermediaries to meet goals (1) and (2)



1. Do we need national standards for intermediary service levels (e.g., availability, response time, throughput...)?
2. If not, how do we ensure that the intermediaries are able to meet client expectations?
3. If we do, what specific Service Level Agreements (SLAs) should be part of the requirements?

Ceiling:
Not applicable?

Floor:
Availability
Response Time
Throughput
Etc...



Wrap Up





FAST Workshop – Full Day Agenda and Resources

- View the [FAST Workshop Summary and Detailed Agenda](#)
 - Morning and Closing Plenary
 - Breakout Room Sessions Schedule
 - Handouts and Resources
- Explore these *FAST* resources
 - New to *FAST*? Breakout sessions target interactive discussion and references the *FAST* work to date. Please consider exploring any of the following *FAST* artifacts before attending these breakout sessions:
 - [The FAST 2020 Mid-Year Report](#)
 - [The FAST 2019 End of Year Report](#)
 - [SME Panel Session Pages](#)

CONTINUE THE CONVERSATION!

Join the Technical Learning Community to stay up to date – receive updates about FAST presentations & events, provide additional input and follow our progress.

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&

[SIGN UP FOR THE TLC](#)

All content is available on the [FAST Project Page](#) or <https://tinyurl.com/ONC-FAST>



Thank You

Connect with *FAST* 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?

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