Zoom Meeting Interface and Basic Logistics

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

- **VIDEO: Please enable your video using bottom left video button with camera icon.** Video sharing capability is accessible for SMEs and Panelists.
- **AUDIO:** Adjust your audio settings as needed (choose computer audio, call in, mute, etc.) using **audio button bottom left, microphone icon**
- **PLEASE MUTE WHEN NOT SPEAKING**: Click on your video box to mute yourself or use the audio button, bottom left
- **CHAT:** Chat function allows communication directly with all participants or privately with a specific person (bottom, middle right, highlighted in orange in this image), then use the drop down to choose visibility of message

FHIR AT SCALE TASKFORCE

FAST SME Session:

Proposed Solution: Scaling Requirements for FHIR RESTful Exchange in a Hybrid Environment

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.

Agenda

- Welcome
- SME Role
- Session Goals
- Brief Recap of Proposed Solution Overview
- Interactive Discussion
- Key Takeaways
- Next Steps

AK

Welcome

FAST Facilitators`	
Alex Kontur	ONC, *FAST* Lead
Alexandra (Alix) Goss	Imprado, *FAST* Directory, Versioning & Scale Tiger Team Co-Lead
Patrick Murta	Humana, *FAST* Chief Architect
Paul Oates	Cigna, *FAST* Chief Architect
Robert Dieterle	EnableCare, *FAST* Directory, Versioning & Scale Tiger Team Co-Lead
SME Participants	
*Alan Swenson**	Carequality
Arien Malec	Change Healthcare
Bela Labovitch	Athenahealth
Bill Gregg	HCA
*Cody Johansen**	UHIN
Eric Hefl	eHealth Exchange
Hans Buitendijk	Cerner
James Agnew	Smile CDR
Jamie Ferguson	Kaiser Permanente
Jason Vogt	CommonWell

SME Participants	
Jeff Danford	Allscripts/ Veradigm
John Kelly	Edifecs
*John Loonsk**	Association of Public Health Laboratories
Jon Copley	Centene
*Matt Spielman**	InterSystems
Michael Bauer	Availity
Michael Shoemaker	Providence St. Joseph
*Mike Gould**	BCBSA
*Patrick Haren**	Cigna
Paula Braun	CDC
Richard Hawes	CDC
*Rohit Shinde**	eClinical Works/ Healow
Sasha Volkov	Optum
Tim Pletcher	MIHIN
Vassil Peytchev	Epic
Verghese Abraham	Sutter Health
*Vijey Kris Sridharan**	United
Walter Suarez	Digital Bridge

**Invited, pending confirmation*

AK

FAST Directory, Versions & Scale Team Members

Alix Goss *(Co-Chair)*	Imprado
Robert Dieterle *(Co-Chair)*	EnableCare
Patrick Murta *(Chief Architect)*	Humana
Matt Becker	Epic
Brett Blackman	HealthSplash
Dan Chaput	ONC
Rick Geimer	Lantana
Alex Kontur	ONC
Jeff Brown	MITRE
Greg Meyer	Cerner
Linda Michaelsen	Optum
Brandon Neiswender	CRISP

AK

SME Role

SME Role

- You were selected for your domain expertise and the *FAST* team encourages you to provide input and perspective based upon your experience in your own field
- You will be asked to evaluate proposed solutions and provide your expert opinion and guidance on feasibility, unintended consequences, stronger alternate approaches and best implementation path forward

Session Logistics

- Place yourself on mute when not speaking
- Video is encouraged to enhance engagement with your peers, though not required, especially if you have any bandwidth or other issues that would prevent its use
- Polling questions will be used to capture your feedback and ensure the team is aligned on the recommendations SMEs make throughout the session
- The session is being recorded, and the *FAST* team will have access to the recording as well as the chat log – please note that even “private” chat messages are not private!
- All ideas are good and valid – your questions, comments, and critiques will only enhance our work!

AK

Session Goals

1. Solicit feedback regarding approach, architecture, and scope of performance expectations that both intermediaries and endpoints should agree to support to ensure predictable performance/availability of critical transactions (i.e., access to information in clinical workflow)
   - Validate requirements for exchange in a hybrid environment
   - Obtain feedback on missing or incorrect architecture considerations and concerns with any of the current proposed architectural solutions or design goals as defined in the solution document
2. Discuss role of intermediaries in supporting trust networks
3. Understanding the role that testing & certification should play in scalability via intermediaries
4. Solicit feedback regarding regulatory adoption and enforcement of interoperable solutions

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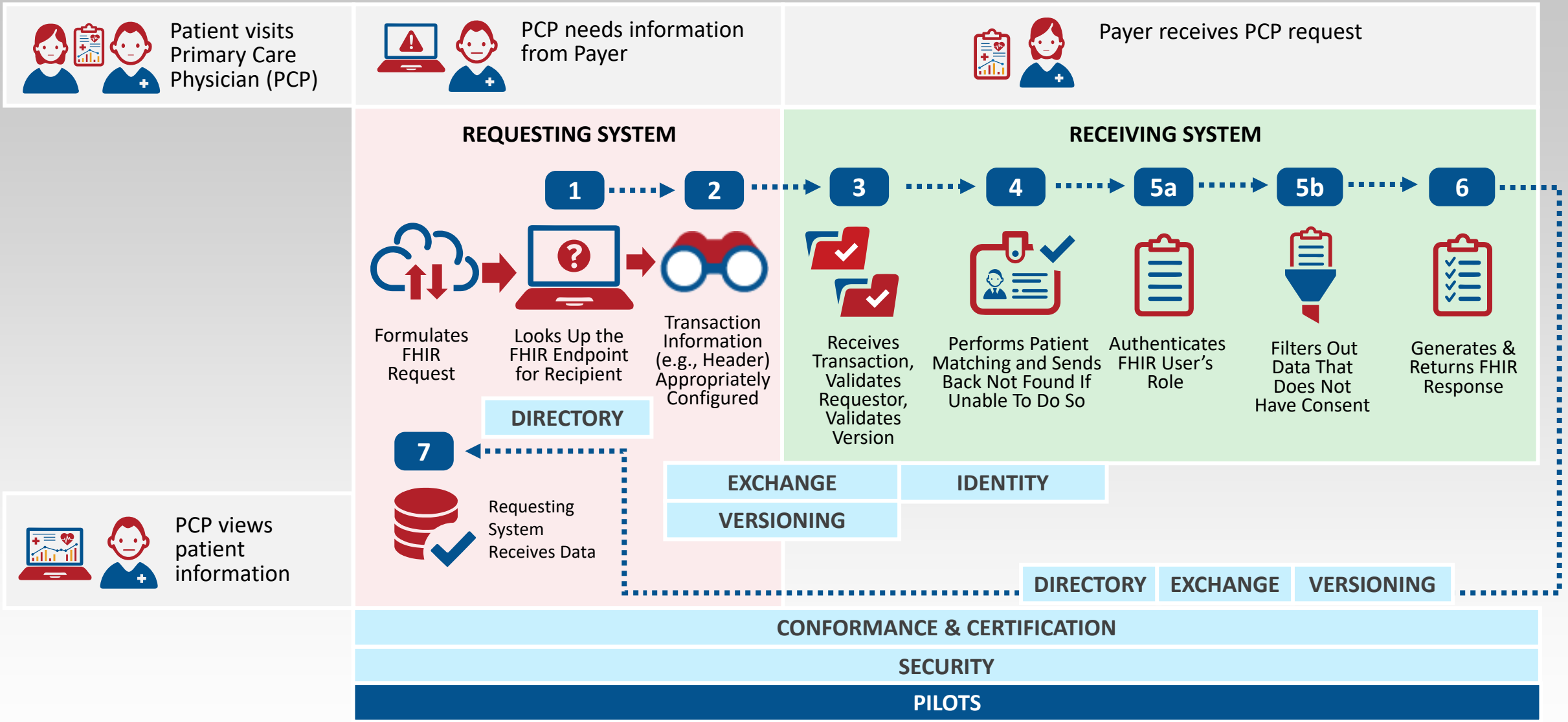
Example FHIR Transaction Journey



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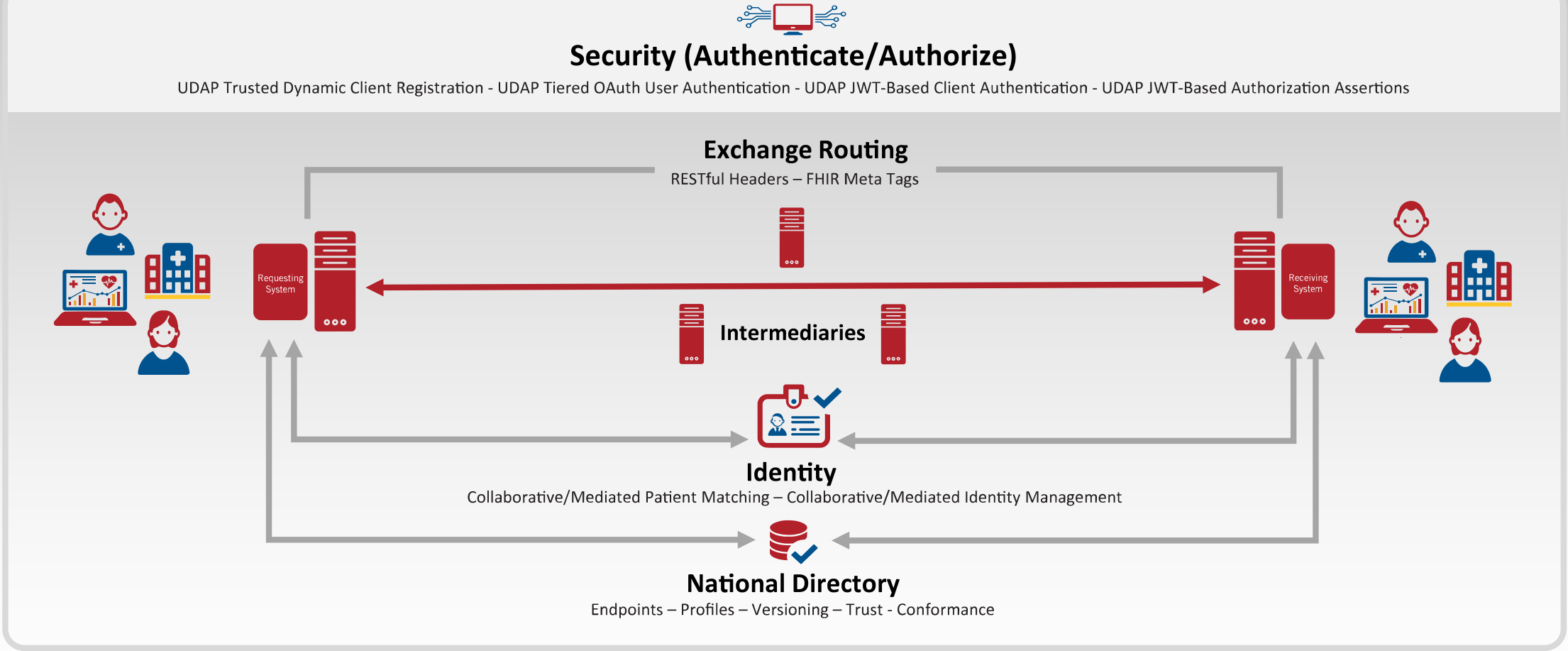
Conceptual Integrated Architecture



CONFORMANCE & CERTIFICATION (Testing & Certification Program)

PILOTS (FAST Capability Vetting with Existing HL7 Accelerators)

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FAST Solution Process and Where Are We Now

FAST Solution Input

- ☑ Tiger Teams
- ☑ TLC
- SME

Ecosystem Use Cases ☑

Core Capabilities

Technical Barriers ☑

Proposed (V2) Infrastructure Solutions ☑

Recommended (V3) Infrastructure Solutions

FAST Action Plan

Standards

Process

Regulation

Evaluation, Feedback, and Pilots

Operationalize Solutions

Ecosystem Use Case

Identity

Directory, Version & Scale

Security

Exchange Process

Testing & Certification

Pilots

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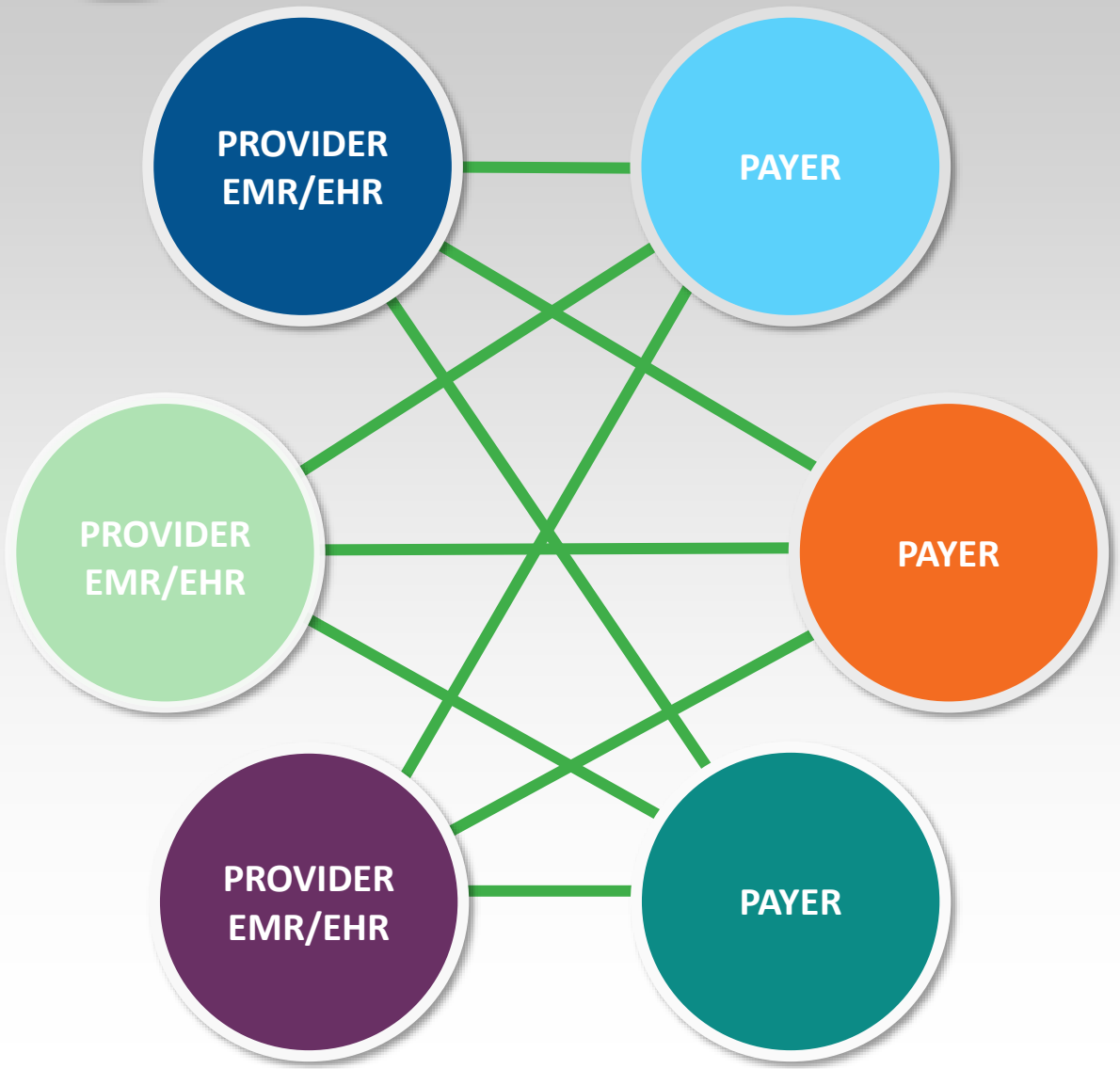
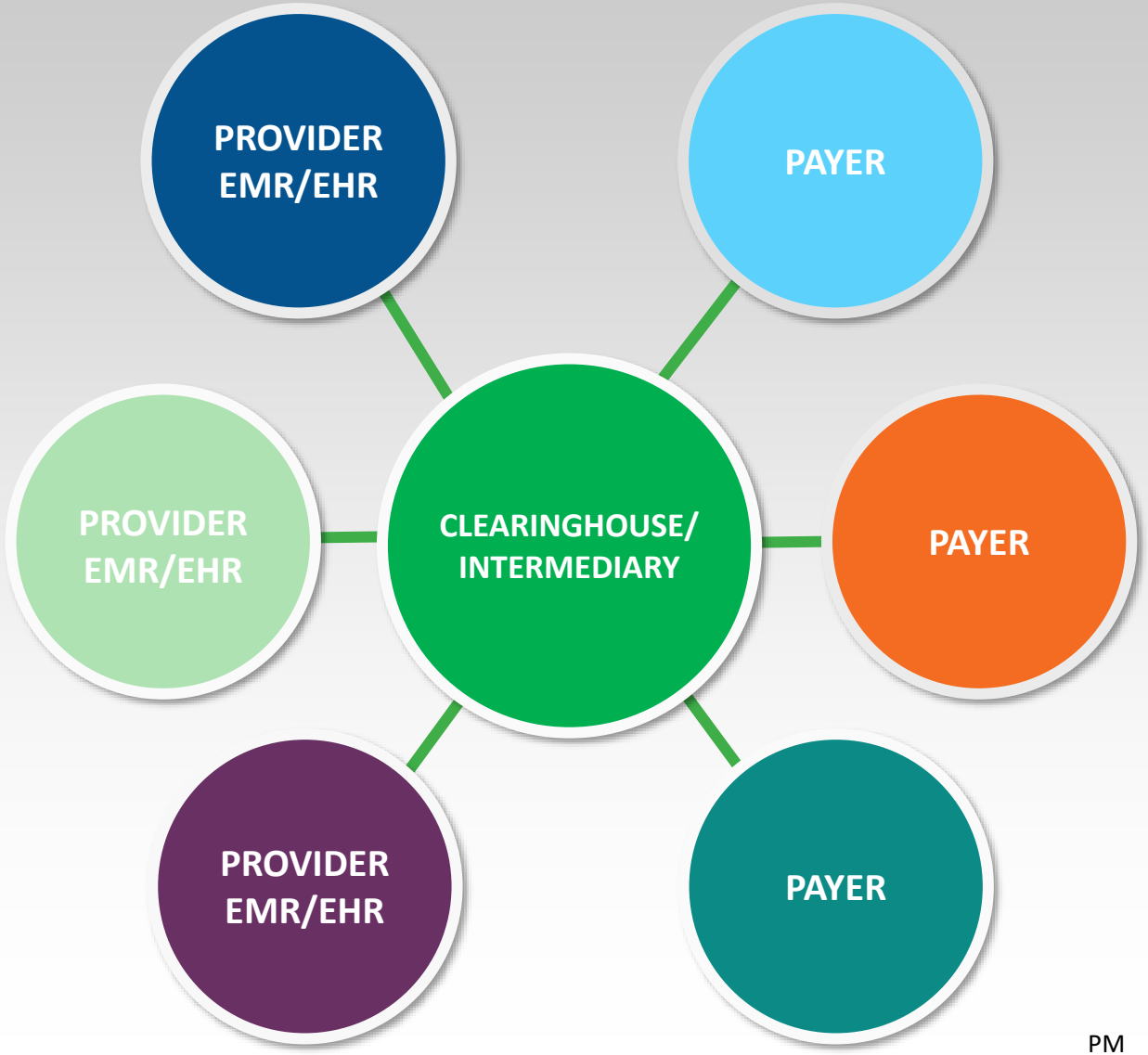
Brief Recap of Proposed Solution:

Scaling Requirements for FHIR RESTful Exchange in a Hybrid Environment

Supporting Both Point to Point & Intermediary Models





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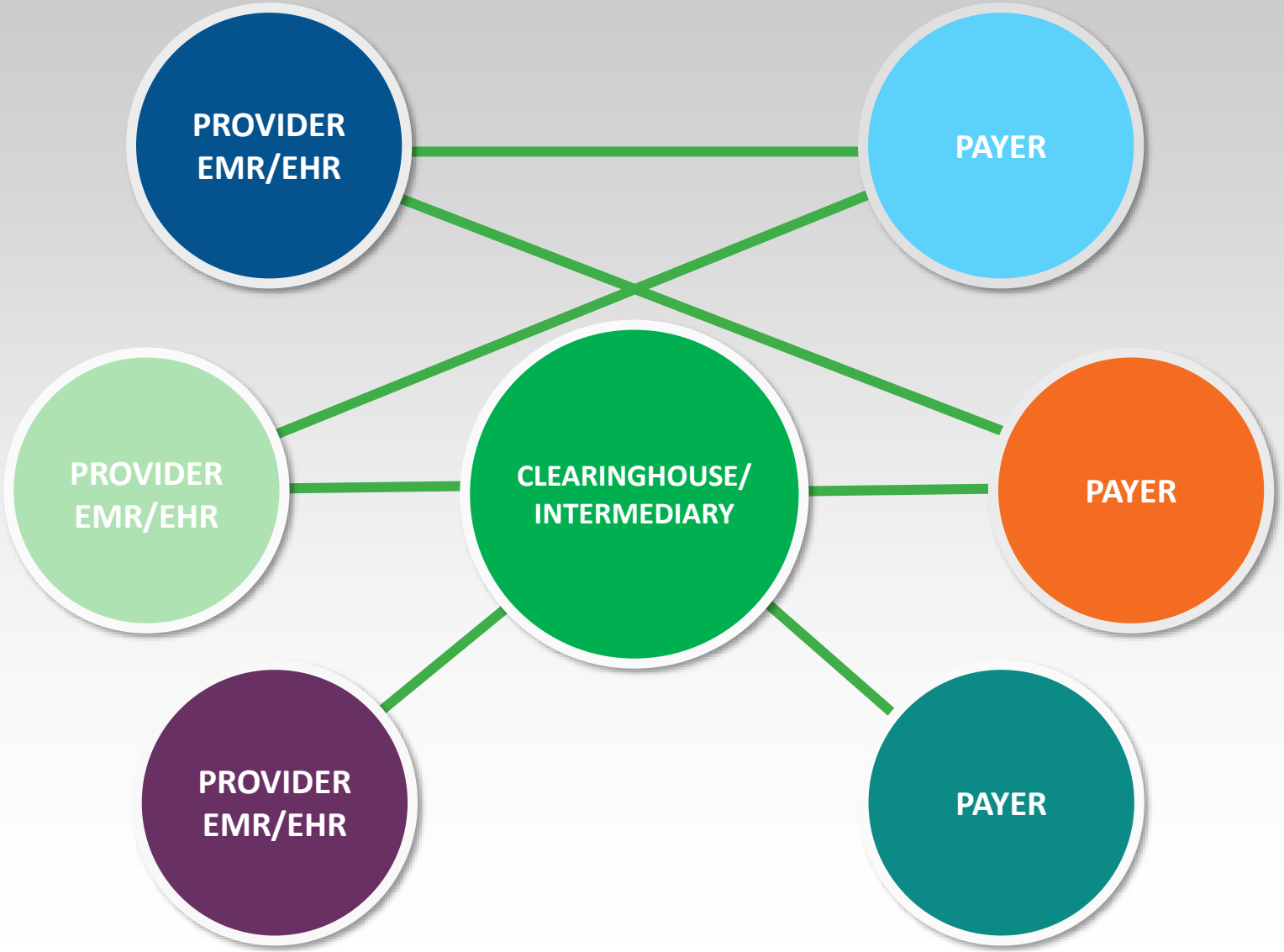
Supporting a Hybrid Model



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Definition: Intermediary

Intermediary: Any entity that facilitates data exchange, including FHIR based transactions, on behalf of other actors

- Examples include:
  - Clearinghouses
  - Health Information Exchanges (HIEs)
- These entities may provide services such as routing, version translation, operational onboarding, technical support, cloud scalability, data aggregation, authentication and authorization, and other value-add services
- The community recognizes that direct point to point RESTful interaction is a primary interaction pattern. However, we also recognize that intermediaries play important roles for some healthcare actors and having a set of best practices so that we don't put additional burdens on the client actors is key to running FHIR at scale. This is called the 'hybrid' model approach where connectivity is enabled both in point to point and intermediary facilitated exchange without the client actor needing to have knowledge of what model is executing

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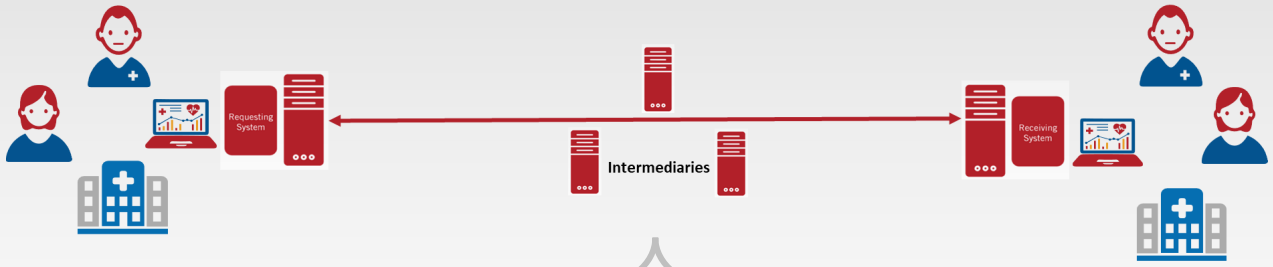
Scaling Architecture – Current State

Regulatory

- Inconsistent federal and state regulatory and policy environments related to real-time exchange of information
- Current issues related to privacy (e.g., minimum necessary) create barriers to national adoption of FHIR at scale

Existing Solutions

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



Standards

- Lack of experience using FHIR to handle synchronous exchanges and maintain connection state via intermediaries
- Impact of proprietary interoperability models on access to data endpoints

Experience

- Limited implementation of FHIR based solutions operating at scale to support anticipated healthcare needs
- Limited practical experience in scaling FHIR transactions via intermediaries or point to point
- Limited intermediary support for brokering FHIR interactions

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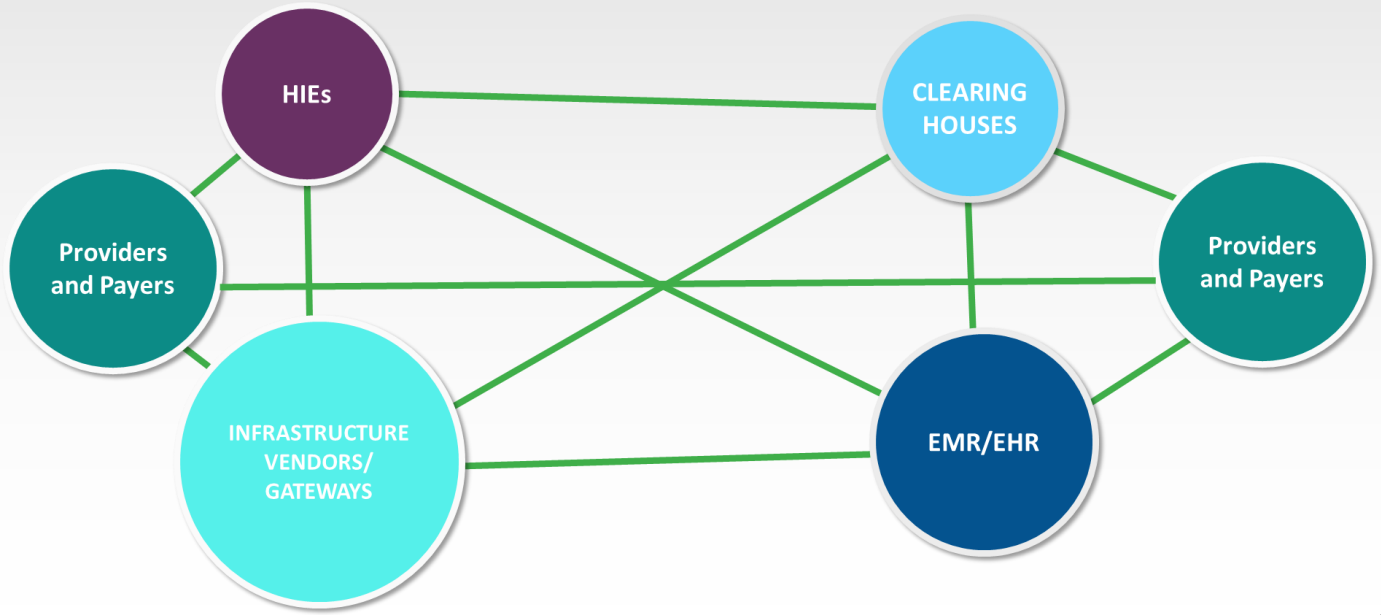
FAST Scaling Architecture – Technical Barriers

MULTIPLE 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. Consistency of routing across varied exchange models is also a challenge.
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 can make 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, it could constitute a new form of data blocking.

FAST Scaling Architecture – Future State

- Support a mixed model (point to point, gateways, and via intermediaries)
- Consistent minimum availability and performance requirements for any scale architecture (including multiple intermediaries)
- Support for synchronous transactions (e.g., maintaining “state” across intermediaries)
- Support for asynchronous RESTful transactions
- Intermediaries (regardless of the number) support, transparently, all FHIR workflow operations (including subscription)
- Intermediaries capable of handling volume, response time, and routing to all available endpoints
- Consistent support of metadata for “routing” through multiple intermediaries

Mixed (Hybrid) Model Environment with Full Connectivity



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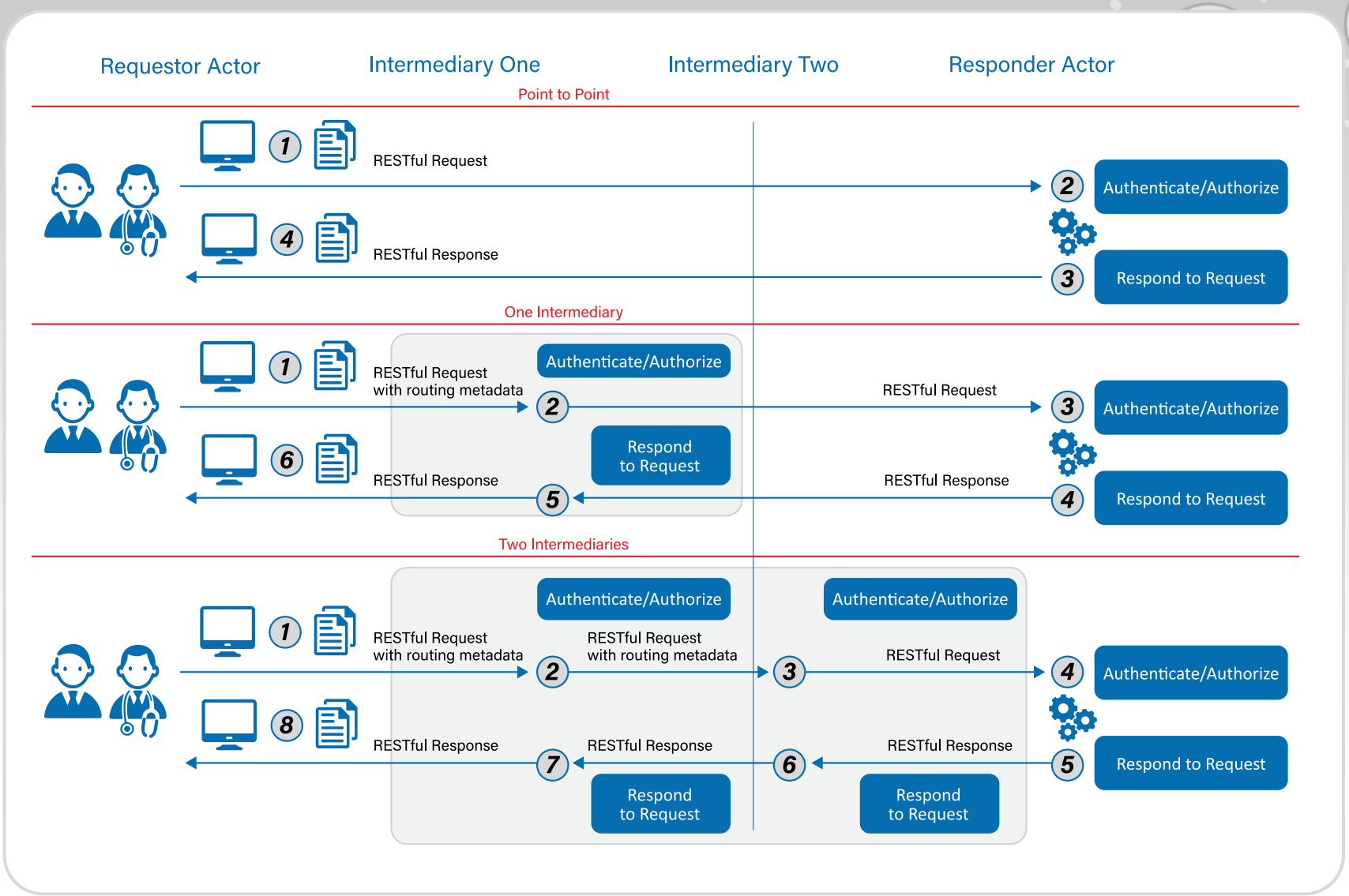
Intermediary Expectations

Every intermediary SHALL support the following capabilities:

- Connectivity to other intermediaries
- SLAs consistent with real-time exchanges regardless of volume
- Synchronous exchanges
- RESTful asynchronous exchanges (e.g., bulk data excluding non-RESTful exchange)
- Consistent error handling
- FHIR standards and implementation guide requirements related to transactions in which they participate except for pass-through exchanges of FHIR content
- Audit log of the received and modified data for troubleshooting for a specified period of time

FAST Scaling Architecture



Interactive Discussion

Polling Question: Proposed Future State

Do you agree with the proposed scaling architecture future state as described?

Please enter the reason(s) for your response and any proposed alternatives or commentary in the chat box to support group discussion.

- Yes
- No
- Somewhat

Discussion Topics

1. Service Level Agreement (SLA) Definition
2. Intermediary-to-Intermediary Connectivity
3. Intermediary Participation in Trust Networks
4. Testing & Certification of Intermediaries
5. Regulatory Impact
6. Path Forward

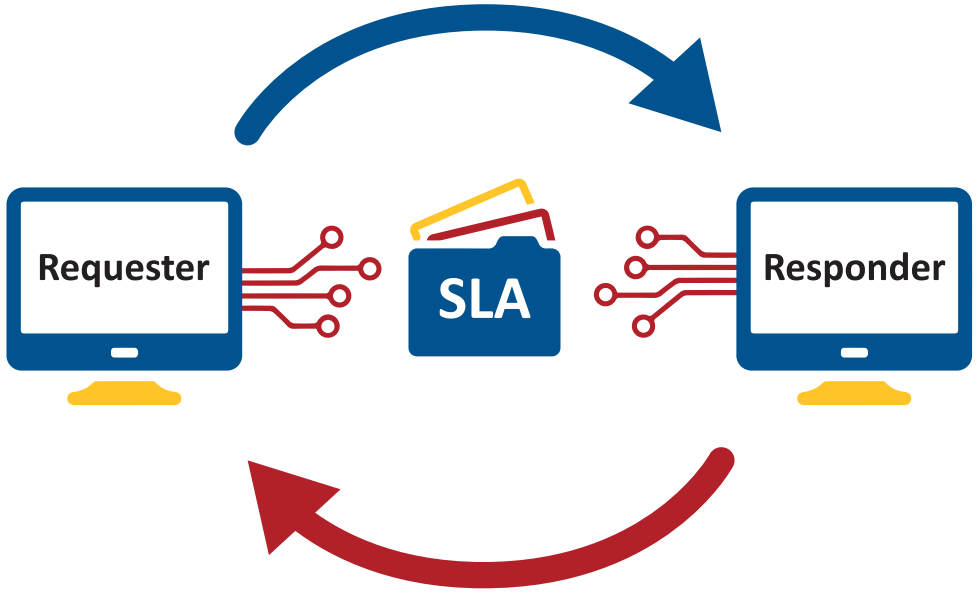
Discussion: Service Level Agreement (SLA) Definition

?

SLAs need to be established, (e.g., availability, response time, error handling, etc.) but who defines them?

HL7 standard(s)/ implementation guides? Regulation? Operating rules equivalent?

SLA Definition



Discussion: Availability & Performance Requirements

?

Discuss specific availability and performance requirements, for example:

- **Continuity of operations events or disaster recovery**
- **Response times (e.g., total transaction time vs. within node)**
- **Should SLAs depend on "transaction type", and if so, how? (e.g., clinical vs. other workflows – administrative, public health, research, community services, etc.)**

SLA Definition

BD

Polling Question: SLA Definition

Do you agree with the conclusions regarding SLA definition?

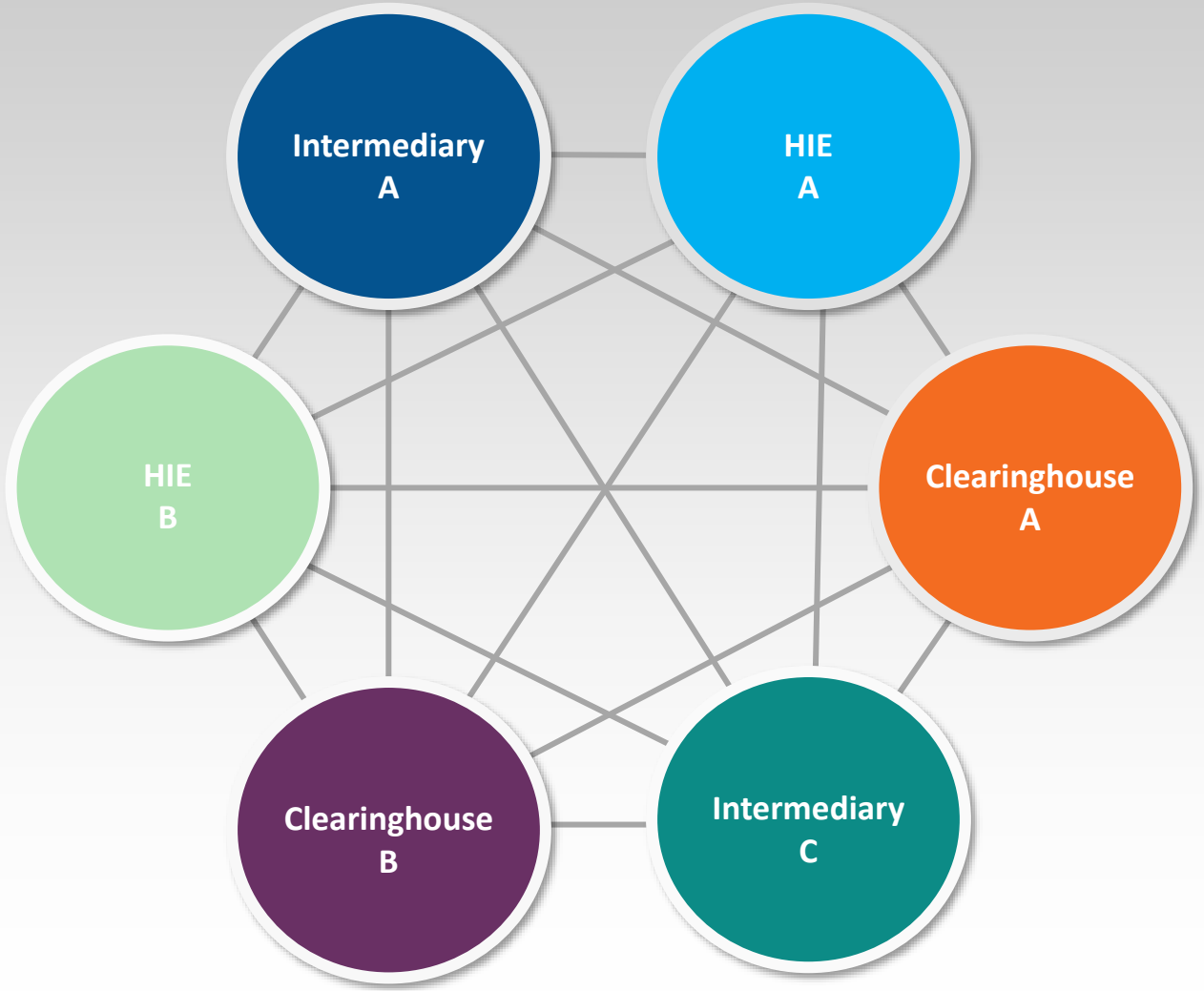
Please enter the reason(s) for your response and any proposed changes in the chat box to support group discussion.

- Yes
- No
- Somewhat

Discussion: Intermediary-to-Intermediary Connectivity

?

Should all intermediaries be required to connect with each other as a baseline/floor?



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Polling Question: Intermediary-to-Intermediary Connectivity

Do you agree with the conclusions regarding intermediary-to-intermediary connectivity?

Please enter the reason(s) for your response and any proposed changes in the chat box to support group discussion.

- Yes
- No
- Somewhat

Discussion: Intermediary Participation in Trust Networks

Do intermediaries, as envisioned by the Scaling Architecture document, play a role in creating, enforcing, or standardizing trust frameworks across all FHIR transaction participants? If so, then how would that work?

We expect that participants in these exchanges will also be participants in one or more trust networks (i.e., a collection of policies, technical specifications, and interoperability criteria)

BD

Polling Question: Intermediary Participation in Trust Networks

Do you agree with the conclusions regarding intermediary participation in trust networks?

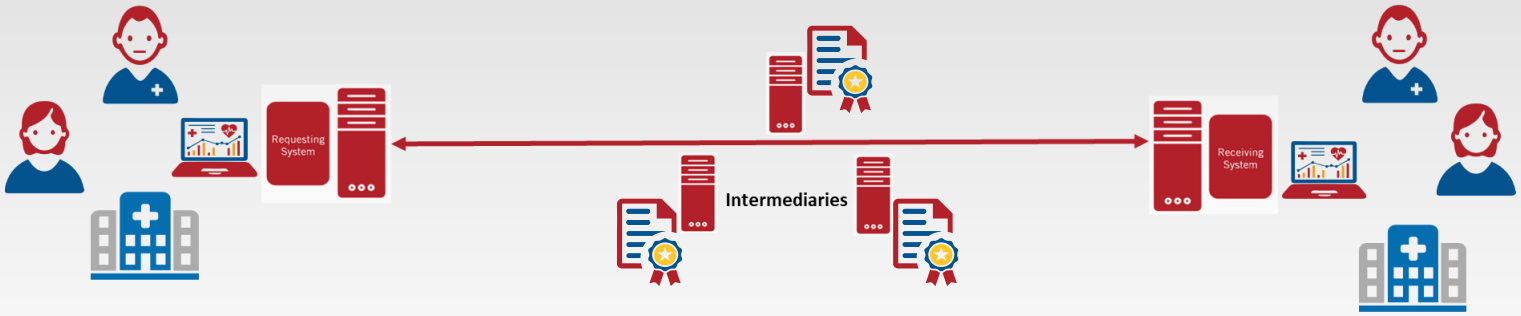
Please enter the reason(s) for your response and any proposed changes in the chat box to support group discussion.

- Yes
- No
- Somewhat

Discussion: Testing & Certification of Intermediaries

?

Do we anticipate testing and certification of intermediaries, and will intermediaries themselves be listed in the proposed directory along with their testing and certification information?



Polling Question: Testing & Certification of Intermediaries

Do you agree with the conclusions regarding testing & certification of intermediaries?

Please enter the reason(s) for your response and any proposed changes in the chat box to support group discussion.

- Yes
- No
- Somewhat

Discussion: Regulatory Impact

?

Are there impact considerations on ONC and CMS regulations?

BD

Polling Question: Regulatory Impact

Do you agree with the conclusions regarding regulatory impact?

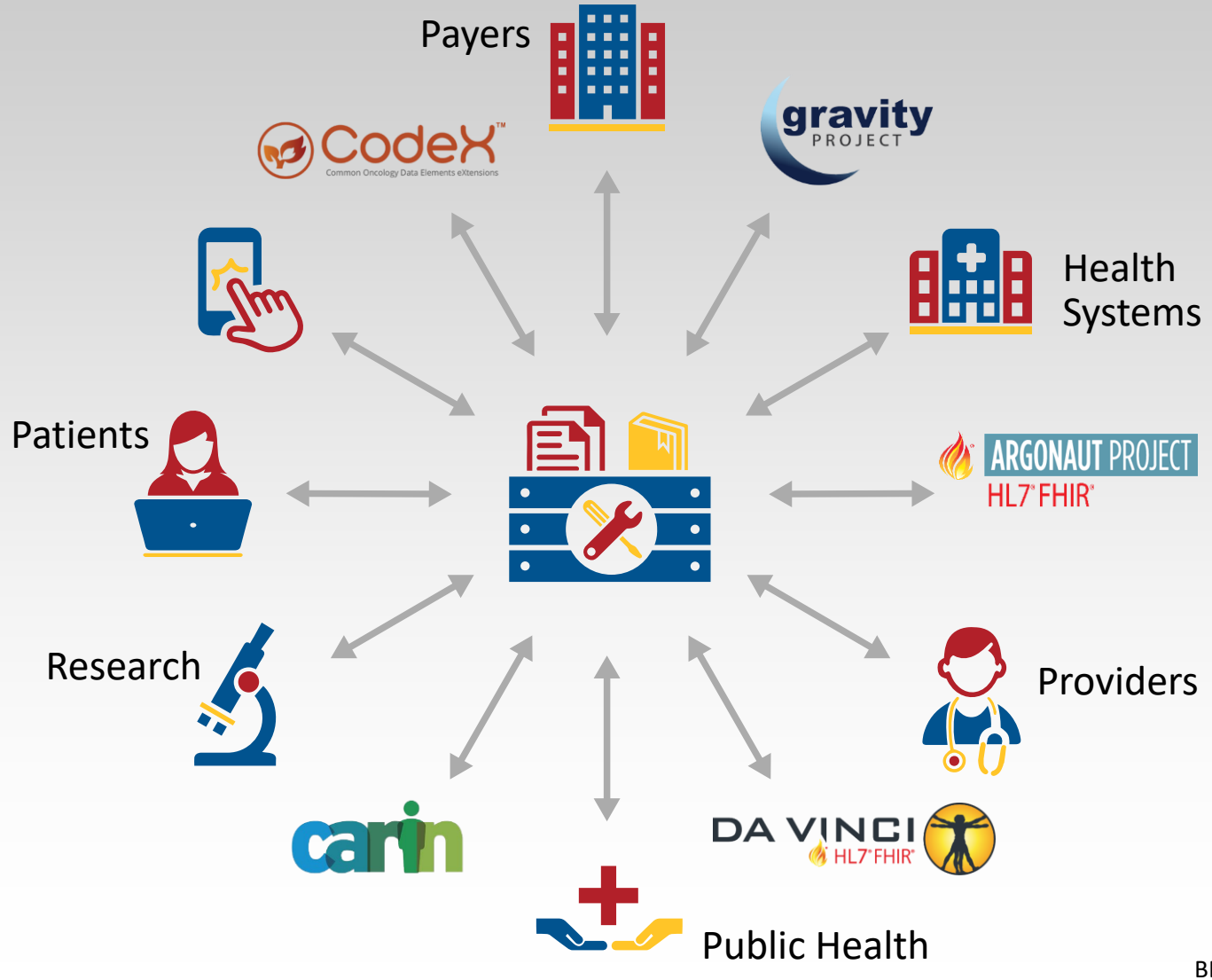
Please enter the reason(s) for your response and any proposed requirements in the chat box to support group discussion.

- Yes
- No
- Somewhat

Discussion: Path Forward

What is the right output of this initiative to support the industry?

What are the next steps?



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Polling Question: Path Forward

Do you agree with the conclusions regarding next steps?

Please enter the reason(s) for your response and any issues or alternatives in the chat box to support group discussion.

- Yes
- No
- Somewhat

Key Takeaways

Key Takeaways

- *To Be Filled In During Meeting by POCP*

FAST Next Steps

- *FAST* Report-Out to summarize SME Session discussion, decisions, and next steps: *FAST* Proposed Solutions – Subject Matter Expert (SME) Panel Sessions

- *FAST* Action Plan update to define proposed solution path (standard, regulation and/or process)

In the meantime, please reach out to the *FAST* team with additional feedback or questions!

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.

JOIN THE LINKEDIN GROUP

&

SIGN UP FOR THE TLC

Thank You – Today's Facilitators

Alexandra (Alix) Goss
FAST Directory, Versions & Scale Tiger Team Lead

Robert Dieterle
FAST Directory, Versions & Scale Tiger Team Lead

Patrick Murta
FAST Chief Architect

Paul Oates
FAST Chief Architect

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ONC FAST Lead

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 Alex Kontur at Alex.Kontur@hhs.gov