Zoom Meeting Interface and Basic Logistics

- **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

*image above is a publicly available tutorial image obtained from Zoom website*
Proposed Solution: Methodology for Supporting Multiple Production Versions of FHIR
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
• Proposed Solution Overview
  – Proposed solution approach
  – Future & intermediate goals
  – Solution architecture
• Interactive Discussion
• Key Takeaways
• Next Steps
## Welcome

### FAST Facilitators

<table>
<thead>
<tr>
<th>Name</th>
<th>Role and Organization</th>
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<tbody>
<tr>
<td>Alex Kontur</td>
<td>ONC, FAST Lead</td>
</tr>
<tr>
<td>Alexandra (Alix) Goss</td>
<td>Imprado, FAST Directory, Versioning &amp; Scale Tiger Team Co-Lead</td>
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<tr>
<td>Patrick Murta</td>
<td>Humana, FAST Chief Architect</td>
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<tr>
<td>Paul Oates</td>
<td>Cigna, FAST Chief Architect</td>
</tr>
<tr>
<td>Robert Dieterle</td>
<td>EnableCare, FAST Directory, Versioning &amp; Scale Tiger Team Co-Lead</td>
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</table>

### SME Participants

<table>
<thead>
<tr>
<th>Name</th>
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<tr>
<td>Alan Swenson*</td>
<td>Carequality</td>
</tr>
<tr>
<td>Arien Malec</td>
<td>Change Healthcare</td>
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<tr>
<td>Brett Marquard*</td>
<td>WaveOne</td>
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<tr>
<td>Ewout Kramer*</td>
<td>Firely</td>
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<tr>
<td>Grahame Grieve*</td>
<td>HL7</td>
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<tr>
<td>Heather Kennedy*</td>
<td>BCBST</td>
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<tr>
<td>Hans Buitendijk*</td>
<td>Cerner</td>
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<tr>
<td>Isaac Vetter*</td>
<td>Epic</td>
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<tr>
<td>James Agnew*</td>
<td>Smile CDR</td>
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<tr>
<td>Jamie Ferguson*</td>
<td>Kaiser Permanente</td>
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<tr>
<td>Jason Vog</td>
<td>CommonWell</td>
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<tr>
<td>John Kelly</td>
<td>Edifecs</td>
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<td>John Moehrke</td>
<td>IHE</td>
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<tr>
<td>Josh Mandel*</td>
<td>Microsoft</td>
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<tr>
<td>Lloyd McKenzie</td>
<td>Gevity, HL7</td>
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<tr>
<td>Maidul Mohammad Islam</td>
<td>Optum</td>
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<tr>
<td>Mark Iantorno</td>
<td>Smile CDR</td>
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<tr>
<td>Chris Moesel*</td>
<td>MITRE</td>
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<tr>
<td>Mark Kramer*</td>
<td>MITRE</td>
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<tr>
<td>Nick George*</td>
<td>Google</td>
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<tr>
<td>Nick Radov*</td>
<td>United</td>
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<tr>
<td>Ricky Bloomfield</td>
<td>Apple</td>
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<tr>
<td>Sarah Andres*</td>
<td>Availity</td>
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<tr>
<td>Tony Benson</td>
<td>BCBS AL</td>
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<tr>
<td>TBD</td>
<td>Amazon AWS</td>
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*All SME participants with an asterisk by their name are invited, pending confirmation.*
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<td>Matt Becker</td>
<td>Epic</td>
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<tr>
<td>Dan Chaput</td>
<td>ONC</td>
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<td>Rick Geimer</td>
<td>Lantana</td>
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<td>Alex Kontur</td>
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<td>Jeff Brown</td>
<td>MITRE</td>
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<tr>
<td>Greg Meyer</td>
<td>Cerner</td>
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<tr>
<td>Linda Michaelsen</td>
<td>Optum</td>
</tr>
<tr>
<td>Brandon Neiswender</td>
<td>CRISP</td>
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</table>
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.

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!
Session Goals

1. Provide perspective on how the industry needs to deal with identification and management of versions of FHIR and FHIR artifacts (e.g., extensions, value sets, etc.) and implementation guides.

2. Consider whether conversion between versions is possible and/or desirable, and at what point in the exchange this would occur.

3. Discuss whether FAST should prescribe who converts data between different versions of FHIR, and/or define a process for conversion.
Example FHIR Transaction Journey

**REQUESTING SYSTEM**

1. **PCP needs information from Payer**
   - Formulates FHIR Request
2. **Looks Up the FHIR Endpoint for Recipient**
   - Looks Up the FHIR Endpoint for Recipient
3. **Transaction Information (eg, Header) Appropriately Configured**
   - Performs Patient Matching and Sends Back Not Found If Unable To Do So
4. **Receives Transaction, Validates Requestor, Validates Version**
   - Validates FHIR User’s Role
5. **Responds with Transaction Information (eg, Header)**
   - Filters Out Data That Does Not Have Consent
5a. **Generates & Returns FHIR Response**
5b. **Authenticates FHIR User’s Role**
6. **Generates & Returns FHIR Response**

**RECEIVING SYSTEM**

7. **Directs System Receives Data**

**DIRECTORY**

- **EXCHANGE**
- **IDENTITY**
- **VERSIONING**

**CONFORMANCE & CERTIFICATION**

**SECURITY**

**PILOTS**
Conceptual Integrated Architecture

Security (Authenticate/Authorize)

UDAP Trusted Dynamic Client Registration - UDAP Tiered OAuth User Authentication - UDAP JWT-Based Client Authentication - UDAP JWT-Based Authorization Assertions

Exchange Routing

RESTful Headers – FHIR Meta Tags

Intermediaries

Identity

Collaborative/Mediated Patient Matching – Collaborative/Mediated Identity Management

National Directory

Endpoints – Profiles – Versioning – Trust - Conformance

CONFORMANCE & CERTIFICATION (Testing & Certification Program)

PILOTS (FAST Capability Vetting with Existing HL7 Accelerators)
**FAST Solution Process and Where Are We Now**

**Tiger Teams**

- Ecosystem Use Cases

- Technical Barriers

**Core Capabilities**

**Proposed (V2) Infrastructure Solutions**

**Recommended (V3) Infrastructure Solutions**

**FAST Solution Input**

- Tiger Teams
- TLC
- SME

**FAST Action Plan**

- Standards
- Process
- Regulation

**Evaluation, Feedback, and Pilots**

**Operationalize Solutions**
Proposed Solution:
Methodology for Supporting Multiple Production Versions of FHIR
Interoperability initiatives and federal policy objectives are advancing FHIR standard and IGs to address gaps and support innovation.

ENDPOINTS
- Multiple incompatible versions of FHIR are in production (DSTU2, STU3, R4)
- Most FHIR endpoints only support one version of FHIR
- CapabilityStatement resources are often:
  - used inappropriately or not at all
  - inaccurate reflections of endpoint capability (despite FHIR specification requirements)

• Resources, extensions, profiles, value sets, and implementation guides are version specific
• A single exchange of FHIR content (e.g., a FHIR bundle) is limited to one version of FHIR
• Version(s) are not fully backward or forward compatible and breaking changes may exist between versions, except where resources are normative

• Limited ability to convert data between versions without loss of fidelity for most clinical resources
• CapabilityStatement resource currently has a scope that is in flux (especially as regards to security/authentication)
## FAST Versioning – Technical Barriers

<table>
<thead>
<tr>
<th><strong>MULTIPLE VERSIONS IN PRODUCTION</strong></th>
<th>Trading partners may need to support multiple versions of FHIR with no guarantee of backward compatibility across versions except for those resources which are normative. While transforms exist for some resources to convert from one version to another, their quality and completeness vary from resource to resource and do not exist for IGs.</th>
</tr>
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<tbody>
<tr>
<td><strong>CONTINUED EVOLUTION OF THE STANDARD</strong></td>
<td>Supporting new functionality creates timing and adoption challenges (e.g., lag time to support new resources, operations, etc.). Since vendors may support different functions at different times, the capability statement becomes an essential part of determining current endpoint support for specific functionality.</td>
</tr>
<tr>
<td><strong>VARIABLE ADOPTION OF THE STANDARD</strong></td>
<td>Vendors adopt support for the ability to read or read/write specific resources. Maintaining capability statements and periodically pulling/processing statements are challenges.</td>
</tr>
<tr>
<td><strong>USING DIFFERENT FHIR VERSIONS FOR THE RECORD OF A SINGLE PATIENT</strong></td>
<td>Depending on architectural models deployed for receiving and storing data, multiple FHIR versions may seriously impact decision support or negatively impact the ability to communicate the complete record to another entity.</td>
</tr>
<tr>
<td><strong>PROFILES THAT ARE VERSION SPECIFIC</strong></td>
<td>Profiles and implementation guides are version specific. This creates complexities when supporting multiple versions of FHIR and migrating from one version to the next, leading to substantial implementation issues.</td>
</tr>
<tr>
<td><strong>COMPLEXITIES CREATED BY EXTENSIONS</strong></td>
<td>A new version of FHIR introduces new content that impacts the definitions of the extensions or how the extensions are used in Implementation Guides/Resources.</td>
</tr>
<tr>
<td><strong>CAPABILITY STATEMENT MATURITY</strong></td>
<td>While the CapabilityStatement resource is normative, there a significant number of flagged elements that are marked as “for trial use”. Until the relevant flags are also normative or removed, the CapabilityStatement resource may also change in significant ways from FHIR release to release.</td>
</tr>
</tbody>
</table>
Current process for version adoption for transactions and APIs mandated by regulation continues to be supported

Willing trading partners (without any financial incentives or penalties), may choose to adopt newer versions as long as they continue to support the floor

Sunset old floor version
2 years after newer version is required to be supported

Existing FHIR services shall be supported for at least 2 years after adoption of a new version or until there is no production activity at the endpoint for 3 months.

- Most commonly used HL7 FHIR resources are “normative”
- FHIR versions solutions focus on US Realm with considerations for international solutions to address health care for US citizens globally
- Variation between releases is focused on new functionality and edge cases

- Any new version shall be backward compatible for all normative content
- All FHIR artifacts shall provide version information as part of any exchange
- Any incompatible changes (non-normative) between versions shall be fully defined and where possible, HL7 tooling shall be created to manage translation between versions
FAST Versioning – Intermediate Solution Goals

**STANDARD**
Reconcile issues with incompatible changes between versions (e.g., R4 and R4B releases related to MedicationKnowledge)

**CAPABILITY STATEMENTS**
All endpoints shall support capability statement query and the $versions operation that returns the supported version(s)
Relevant flags in the capability statement are normative or removed

**DIRECTORY**
All endpoint or validated health care directory entries shall include information regarding the version(s) of FHIR supported (e.g., expanded support for the endpoint resource as part of the new directory exchange IG)
Support for endpoint version and validation of support is in-scope for the directory and testing/validation Tiger Teams and will be part of those final solutions

**TOOLING**
Incompatible changes between versions shall have improved HL7 tooling, where possible, to manage translation between versions
HL7 maintained transforms exist and are supported by FHIR endpoints for all USCDI resources and profiles to convert to/from versions of FHIR cited in regulation, or via sub-regulatory process

**EDUCATION**
Support industry education programs to reinforce the understanding and use of version adoption and version related issues.
FAST Versioning

Requestor Actor

1. Endpoint address request
2. Requesting system needs endpoint information
3. Endpoint address and characteristics response
4. Version(s) of Endpoint Resources
5. Requestor sends request to responder endpoint for Capability information
6. FHIR Transaction
7. Requestor received FHIR Server or Service Capability Statement that includes Version information
8. Responder Endpoint responds to FHIR request for a Capability Statement

Endpoint Directory Actor

2. Authenticate/Authorize
3. Endpoint/Version Discovery

Responder Actor

6. Authenticate/Authorize
7. Process Capability Request
Interactive Discussion
Polling Question: Proposed Future State

Do you agree with the proposed versioning future state as described?

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

- Yes
- No
- Somewhat
Do you support the intermediate goals?

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

- Yes
- No
- Somewhat
Do you think FAST should be prescribing versioning responsibilities?

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

- Yes, they should be prescribed as part of a FAST solution
- No, they should not be – the market should figure it out
- Somewhat – please describe in the chat
1. **Artifacts & Issues**
   - Different Paths for Different FHIR Artifacts
   - Normative vs. Non-Normative Implementation Guides
   - Multi-Version Bundles vs. Separate Bundles
   - Data Portability and Version Management
   - Profile and Implementation Guide Proliferation

2. **Process**
   - Translation
   - Mapping and Tooling
   - Conversion
   - Version Adoption and Deprecation
   - Coordination and Alignment with HL7

3. **Regulations**
   - Implications of ONC Standards Version Advancement Process (SVAP)
   - Impact on Future ONC and CMS Regulations

4. **Path Forward**
   - Solution Path Forward
Artifacts & Issues
Discussion: Different Paths for Different FHIR Artifacts?

Do we take a different path for different FHIR artifacts (i.e., base resources, extensions, profiles, value sets)?
Do you agree with the conclusions regarding different paths for different FHIR artifacts?

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

• Yes
• No
• Somewhat
Implementation Guides (IGs) cannot be normative unless all resources are normative – is that the long-term rule?

How do we handle IGs named in regulation, which becomes the de facto industry standard?
Do you agree with the conclusions regarding normative and non-normative implementation guides?

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

- Yes
- No
- Somewhat
Discussion: Multi-Version Bundles vs. Separate Bundles

Should multi-version bundles be allowed, or should recipients request 2 separate versions of the bundle?

OR

STU 3 Resources

R4 Resources

DSTU 2, STU 3, and R4 Resources
Polling Question: Multi-Version Bundles vs. Separate Bundles

Do you agree with the conclusions regarding multi-version vs. separate bundles?

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

- Yes
- No
- Somewhat
Discussion: Data Portability & Version Management

Discuss how version management works over time in response to new data portability requirements (e.g., a current record may contain multiple versions of data, or the current record may be the result of multiple data translations).

Patient A Record

Patient B Record
Do you agree with the conclusions regarding data portability and version management?

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

- Yes
- No
- Somewhat
Discuss the proliferation of IGs and Profiles that provide for different solutions to the same fundamental use case – is this a core capability issue or an HL7 issue?

Discuss incompatible profile constraints on underlying resource in ways that do not permit reuse by other IGs (e.g., US Core constraints that do not support specific IG requirements such as PractitionerRole for Directory)

Are these FAST or HL7 FHIR issues, or both if we want policy and technical resolution?
Do you agree with the conclusions regarding profile and implementation guide proliferation?

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

- Yes
- No
- Somewhat
Process
Discussion: Translation

What are the differences in translation methodologies for normative and non-normative artifacts? What are the implications? (i.e., backwards compatibility issue)
Do you agree with the conclusions regarding differences in translation methodologies?

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

- Yes
- No
- Somewhat
To ensure interoperability, which organization should be responsible for the creation and maintenance of maps between versions?

Which organization(s) creates and maintains the translation tooling?

Discussion: Mapping and Tooling
Do you agree with the conclusions regarding mapping and tooling?

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

- Yes
- No
- Somewhat
Which entity does the conversion between versions – the recipient or the source?

Request made using R4

Source data is STU 3
Do you agree with the conclusions regarding which entity is responsible for conversion?

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

- Yes
- No
- Somewhat
Discussion: Proposed Approach to Version Adoption and Deprecation

Discuss the proposed approach to version adoption and deprecation

Current process for version adoption for transactions and APIs mandated by regulation continues to be supported.

Willing trading partners (without any financial incentives or penalties), may choose to adopt newer versions as long as they continue to support the floor.

Sunset old floor version 2 years after newer version is required to be supported.

Existing FHIR services shall be supported for at least 2 years after adoption of a new version or until there is no production activity at the endpoint for 3 months.
Do you agree with the conclusions regarding version adoption & deprecation?

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

- Yes
- No
- Somewhat
How do we coordinate the direction proposed in the solution document with HL7 FHIR leadership to ensure alignment with FHIR standard release plans?

What is the future of FHIR versions and release method?
Do you agree with the conclusions regarding coordination and alignment with HL7?

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

- Yes
- No
- Somewhat
Regulations
Discussion: Implications of ONC SVAP

What are the implications of the ONC Standards Version Advancement Process (SVAP) establishing the “floor” – FHIR R4 today vs. R5 in the future?
What is the impact on current and future ONC and CMS regulations?
Do you agree with the regulatory conclusions?

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

- Yes
- No
- Somewhat
Path Forward
Discussion: Path Forward

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

What are the next steps?
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  
Vice President and Senior Consultant  
Imprado

Robert Dieterle  
CEO  
EnableCare

Patrick Murta  
Solutions Architecture Fellow  
Humana

Paul Oates  
Senior Enterprise Architect and Lead for the IT M&A Practice  
Cigna

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