



# **FHIR at Scale Taskforce (*FAST*)**

## **SME Session Summary Report**

*FAST* Proposed Methodology for Supporting  
Multiple Production Versions of FHIR

**November 15, 2021**



## Meeting Introduction

The FHIR at Scale Taskforce (*FAST*) obtained industry subject matter expert (SME) input to further refine the Taskforce's proposed solutions to FHIR scalability challenges.

More than two dozen SMEs from across the healthcare ecosystem participated in the *FAST* Versioning Proposed Solution Expert Panel on November 15, 2021, providing feedback based on their individual expertise and domain knowledge. The scalability needs and challenges of a broad range of stakeholders were represented, including interchange associations/Health Information Exchanges (HIEs), The Office of the National Coordinator for Health Information Technology (ONC), providers, payers, electronic health record (EHR) vendors, technology vendors, and HL7.

The SMEs shared their expertise and input with *FAST* facilitators concerning opportunities and challenges related to how the industry should deal with:

1. Identification and management of versions of FHIR and FHIR artifacts (e.g., extensions, value sets, etc.) and implementation guides;
2. Whether conversion between versions is possible and/or desirable, and at what point in the exchange this would occur; and
3. Whether *FAST* should prescribe who oversees data conversion.

The team explored many technical, policy, regulatory and implementation issues related to versioning. At the end of the day, the SMEs agreed that this is a complex space. Stakeholders had strong views and differing perspectives depending upon their roles within the health IT ecosystem, thus no consensus emerged regarding the proposed versioning solution document.

Feedback received through the SME Sessions will advance the Taskforce's proposed solutions into actionable recommendations and support project prioritization as *FAST* transitions to an HL7 FHIR Accelerator.

To learn more about the *FAST* solutions development process as well as the objectives and meeting materials for each SME Session, please visit the [FAST Proposed Solutions – Subject Matter Expert Panel Sessions](#) Confluence pages.

## Solution Overview

The *FAST* team reviewed a proposed solution to achieve the desired future state and intermediate goals needed to attain it.

### Proposed Future State

The *FAST* team has proposed a solution for how to handle version control more effectively, potential tooling, and recommendations for what organizations can do to mitigate versioning issues. The team recognizes that it is critical for the proposed solution to align with HL7 standard release plans and the versioning process, and will continue to collaborate with HL7 as further solution development work progresses.

In an ideal future state, relevant FHIR artifacts would be normative and any variation between FHIR releases would be focused on new functionality or edge cases. New FHIR versions would be backward compatible for all normative content, and all FHIR artifacts (e.g., resources, profiles, bundles) would provide version information as part of any exchange. There would also need to be policies and tooling in place to support migration to new “floor” versions of FHIR as they evolve (i.e., the minimum standard implementers must meet per regulation), such as a two-year window to sunset an old version, identification of any incompatible changes between new and old versions, and HL7 tools to translate between them.

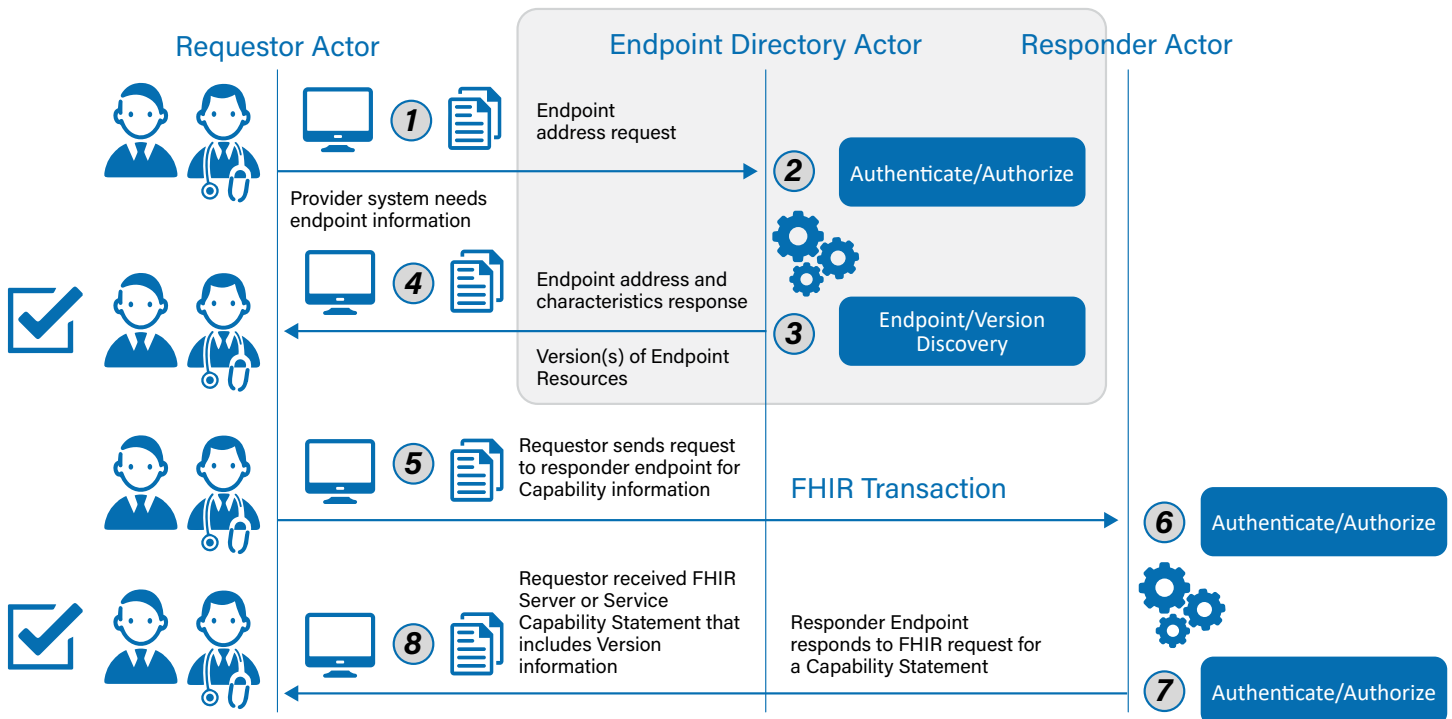


## Intermediate Goals

Progress can be made toward the future state with improvements in resource version identification, capability statements (i.e., documentation of the functionality supported for specific FHIR versions), and tooling such as authoritative mappings across versions. All directory FHIR endpoint entries should include information regarding the FHIR version(s) supported. This requirement to support endpoint version is being accounted for in the *FAST* Endpoint Directory solution and will be incorporated into the HL7 Implementation Guide(s) being developed for the exchange of directory information. In addition, as the FHIR standard continues to evolve, organizations may support different functions

at different times, making the capability statement an essential component to determine current endpoint support for specific versions and functionality. All endpoints will need to support the capability statement query and the FHIR \$versions operation that returns the supported version(s). While the FHIR Capability Statement resource is normative, there are elements included within it that are not, and so it will also need to be updated to ensure that it does not change in significant ways from FHIR release to release.

To learn more about the proposed solutions, please review the pre-reading and presentation materials available on the [FAST Methodology for Supporting Multiple Production Versions of FHIR - Expert Panel Discussion](#) Confluence page.





## Discussion Topics

The group spent two hours discussing various requirements related to the proposed *FAST* solutions. In general, SMEs suggested that versioning should be addressed in the context of implementation on a case-by-case basis, and that a forward-looking versioning solution may not be necessary. As a result, the group suggested the industry should address what's missing today and make sure what we have works, making iterative improvements over time.

SMEs agreed that more people must get involved in the HL7 FHIR standards development process to make informed decisions around versioning solutions to effect change, but there was no consensus from this multi-stakeholder group on recommended modifications to the proposed versioning solution document. Some themes emerged as SMEs provided their feedback, which are summarized below.

### 1. Capability Statements

As the FHIR standard continues to evolve, organizations may support different functions at different times, making the capability statement an essential component to determine current endpoint support for specific versions and functionality. Some SMEs questioned the *FAST* team's premise that capability statements currently are not always present for implementation guides or they are inconsistent, inaccurate or incomplete. However, others agreed that this has been their implementation experience as well. The group was concerned that if capability statements aren't published or accurate today, then implementers cannot necessarily be expected to adhere to a proposed solution which in part relies on capability statements.

### 2. Versioning Changes and Updates

The proposed future state assumes the need for a routinized method for overseeing FHIR version adoption, updates, and implementation details. Since multiple versions of FHIR are currently in production and will be for the foreseeable future, selecting a specific version at a particular point in time is challenging.

Some SMEs believed that relying on rulemaking by the federal government is problematic, since the regulatory process cannot keep pace with rapid changes in the industry. Other SMEs believed that this should be left for the marketplace to decide. Some suggested there should not be discrete versioning rules and processes for the United States and alignment is needed with the international community.

Another discussion point was how often should version changes occur. The proposed future state suggested that there be a two-year window to sunset an old floor version and migrate to a new one, while maintaining FHIR support services for two years afterward. Some SMEs felt this was too often given the costs and disruption to the industry that this would entail, suggesting that change should occur when it's needed and there's value, as opposed to selecting a timeframe.

### 3. Transformation

The group generally agreed that transformation is an exercise that should happen in the context of the data being exchanged. SMEs suggested that building a standard mapping model or transforms between versions is not feasible. Many noted that it was unrealistic for HL7 to "own" this, partly due to resource constraints, and partly due to the data exchange actors needing to move the data they care about for their specific purposes if the different versions allow for it.

### 4. Normative Content

There was considerable discussion about normative content (i.e., content considered to be stable, with infrequent changes). The group noted that problems with versioning decrease once content becomes normative. Some argued that a versioning solution is unnecessary; rather, we should focus our efforts to help content go normative as fast as possible. On the other hand, others argued that relying on normative status is not realistic. Instead, better assessment of content maturity levels may provide the right balance. For example, the current threshold might be too low, but waiting until content becomes normative might be too high a bar. Some commented that any regulation should only name normative content.



## 5. Community Expectations and Best Practices

Some SMEs noted that the proposed solution assumed that data is stored in the format in which it is received. Some indicated that is not necessarily the case, while others indicated it should not be the case. A number of SMEs agreed that architectural guidance could be provided to set baseline expectations, for example, implementers should:

- Build interfaces that expose their data in multiple ways
- Develop a migration and transformation strategy to support new versions as they come out
- Understand what their obligations are to maintain multiple versions
- Implement an API layer to map their data model to one or multiple versions of FHIR (i.e., data models should not be built on a particular version of FHIR)

It was also suggested that communities need to understand how to deal with issues around versioning, and perhaps a playbook could be created that describes the types of change that could occur and the best ways to handle them.

## 6. The Role of *FAST* in Versioning

The group was divided over who – if anyone – should prescribe versioning capabilities. Some SMEs believed this should be part of a *FAST* solution in some capacity in order to push for some progress, while others proposed leaving it to the market to decide. Some SMEs suggested that *FAST* stay away from developing a versioning “framework” and focus on tasks such as developing implementation guides based on specific versions and requirements, a potential mechanism for non-normative improvements, or support for \$versions.

## Conclusion

The *FAST* Team is analyzing the feedback they received. Results of this meeting will be incorporated into the next iteration of their solution documentation as needed, and will inform which recommendations will be prioritized for further solution development work.