

Leveraging *Testing During Development* (TDD) with FHIR Implementations

Richard Ettema, AEGIS.net, Inc.



HL7 FHIR DevDays International 2022 | Hybrid Edition, Cleveland, OH | June 6–9, 2022 | @HL7 | @FirelyTeam | #fhirdevdays | www.devdays.com

ORGANIZED BY



Who am I?

- **Name:** Richard Ettema
- **Position:**
 - Lead Architect / Developer, Touchstone, AEGIS.net, Inc.
 - HL7® FHIR® Proficient
 - HL7® Certified Educator (CE) - FHIR®
- **Background:**
 - 38+ years IT industry experience
 - 18+ years leading HIT development/implementation efforts
 - 8+ years contributing to the HL7® FHIR® specification (focus on testing)
 - Author of the AEGIS WildFHIR public test servers and clients



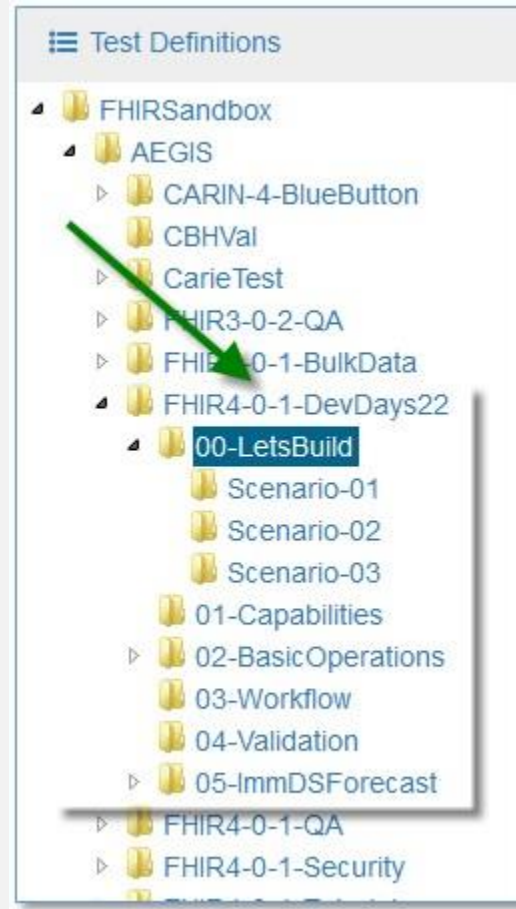
Let's Build – TDD with FHIR[®]

Learning Objectives

Illustrate (Show) *Testing During Development* (TDD) using test scenarios with test definitions (TestScripts) and FHIR® servers currently under development

- Scenario 1 – Execute simple predefined test definitions (TestScripts) against a FHIR server currently under development
- Scenario 2 – Execute a simple test definition (TestScript) under development against a conformant FHIR® server
- Scenario 3 – Various test definitions for the FHIR® R4 v4.0.1 specification executed against FHIR® R4 and R4B conformant servers

Scenario Locations in Touchstone



Scenario 1 – Predefined TestScripts, Server under Dev

Execute simple predefined test definitions (TestScripts) against a FHIR® server currently under development

- The results of the first test execution(s) show a failure due to incomplete or missing functionality
- Updates are applied to the FHIR® server implementation
- Subsequent test execution(s) show successful results
- Demonstrates **Efficiency**; i.e. “*Better outcomes – faster*”

Scenario 1 – Demo / Walk through / Q&A



Scenario 2 – TestScript under Dev, Conformant Server

Execute a simple test definition (TestScript) under development against a conformant FHIR® server

- Focus here is on test authoring
- The results of the first test execution(s) show a failure due to incorrect testing criteria
- Updates are applied to the test definition (TestScript) and then re-uploaded to Touchstone
- Subsequent test execution(s) show correct testing and results

Scenario 2 – Demo / Walk through / Q&A



Scenario 3 – FHIR® multi-version testing

Test definitions (TestScripts) to test FHIR® R4 v4.0.1 capabilities are executed against conformant FHIR® R4 v4.0.1 and R4B v4.3.0 servers

- The TestScript is executed against a FHIR® R4 v4.0.1 based server showing that server's conformance to FHIR® R4 v4.0.1
- That same TestScript is then executed against a FHIR® R4B v4.3.0 based server
- Results from both executions are then compared

Scenario 3 – Demo / Walk through / Q&A



Learning Objectives Review

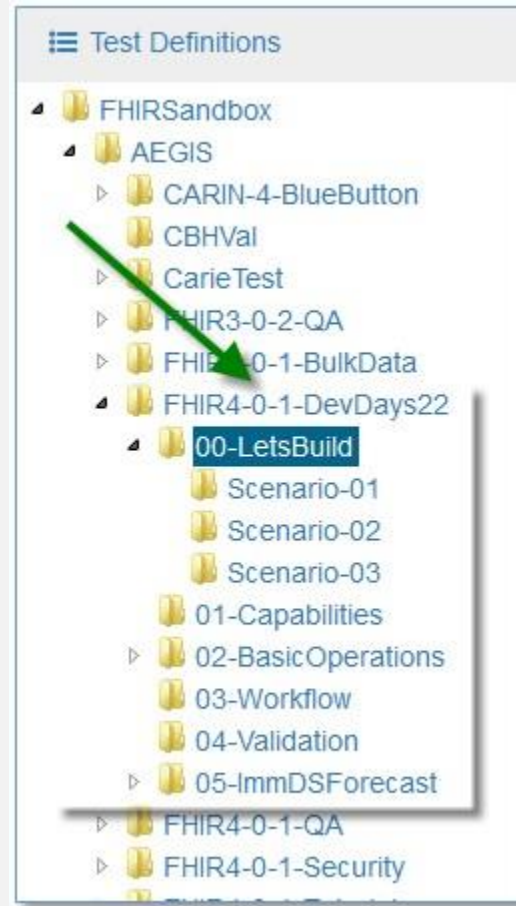
Testing **D**uring **D**evelopment accelerates FHIR® implementations

- Scenario 1 – Implementation under Development
 - Rapid discovery; guidance for how to fix; immediate “fixed” confirmation.
- Scenario 2 – Test Definition under Development
 - Rapid discovery of broken test(s); easy to update test(s) and re-deploy; immediate confirmation.
- Scenario 3 – FHIR® Version Mismatch
 - FHIR® (or IG) version incompatibilities will likely be subtle.
 - Testing can detect incompatibilities *before* they bite you in production.

Contact

- During DevDays, you can find / reach me here:
 - Via Whova App – Speaker’s Gallery
 - Email: richard.ettema@aegis.net
 - LinkedIn: [richard-ettema-9127835](https://www.linkedin.com/in/richard-ettema-9127835)
 - Twitter: @techknowman

Q&A



ORGANIZED BY

