TOUCHSTONE

FHIR® North
Canada's FHIR Connectathon

FHIR Testing with Touchstone

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Mohawk College, Hamliton, ON - 16, October 2019 | @TouchstoneTest | @AEGISNet | @techknowman

Presented by

- **Name:** Richard Ettema
- **Position:**
  - Lead Consultant, AEGIS.net, Inc.
  - HL7 FHIR® Proficient Certified
- **Background:**
  - 36+ years IT industry experience
  - 16+ years leading HIT development/implementation efforts
  - 6+ years contributing to the HL7® FHIR® specification (focus on testing)
  - Sr. Architect / Lead Developer for the Touchstone Project
  - Author of the AEGIS WildFHIR public test server and client

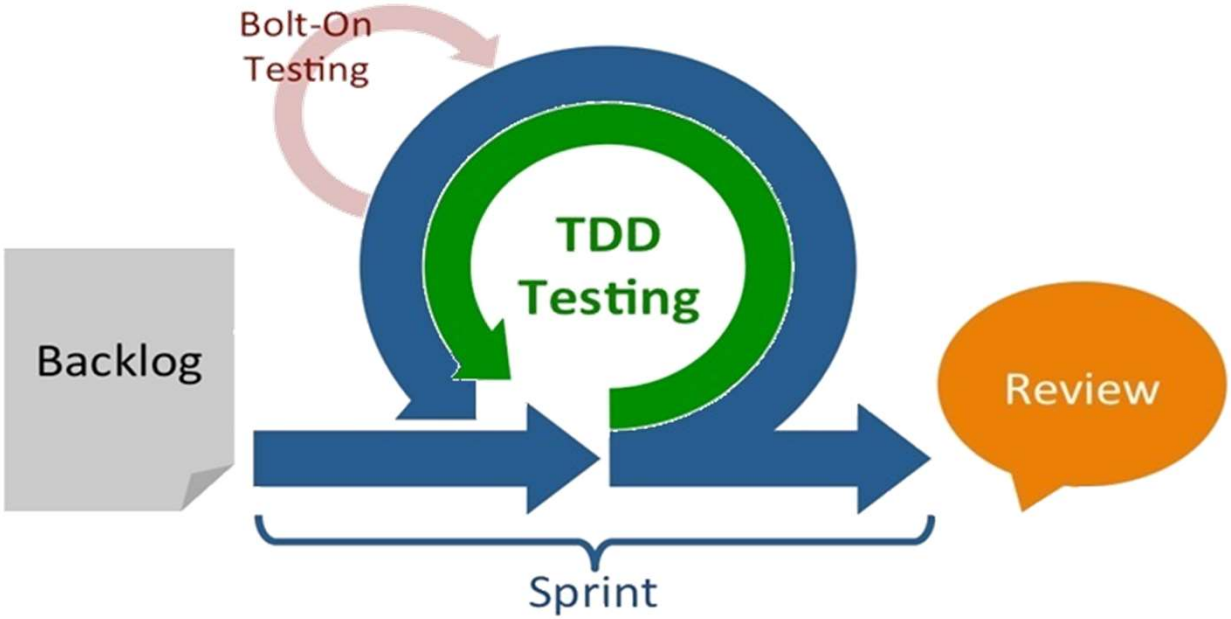
What would happen if airlines practiced “one and done” testing?

How important is on-going or continuous testing?

Test Driven Development Philosophy

- Software development technique that implements short development cycles
- Building on the Agile technique of coding to User Stories; Test Driven Development asks developers to build functionality to pass very specific Test Cases
- Each short development cycle requires that the software pass these Test Cases

How to integrate TDD into the development lifecycle



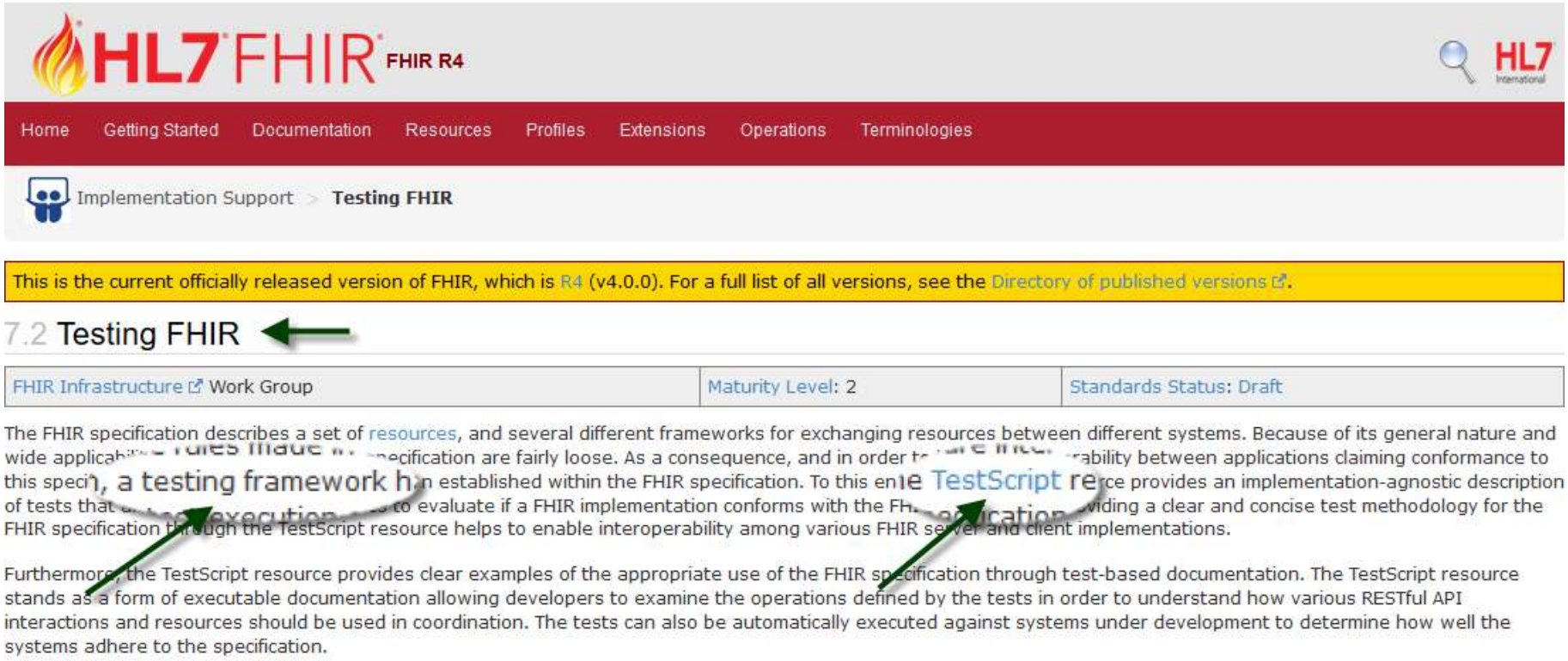
Test Driven Development with FHIR

- To ensure interoperability between applications claiming conformance to the specification, a testing framework has been established within the FHIR specification itself
  https://www.hl7.org/fhir/testing.html

- This framework defines a Test Engine for processing a TestScript resource as a natural language, computable format of a test case
  https://www.hl7.org/fhir/testscript.html

FHIR Testing Framework

http://hl7.org/fhir/testing.html



AEGIS' FHIR Testing Platform

- Available as a publicly accessible, cloud-based, Testing as a Service (TaaS) platform
- Provides automated, internet-based interoperability testing of a test system against the HL7® FHIR® specification
- Tests the capabilities of and interoperability between both FHIR Server and Client implementations
- Is a FHIR Testing Framework conformant FHIR Test Engine and environment for storing and executing TestScripts, and reporting test results

Touchstone Demo

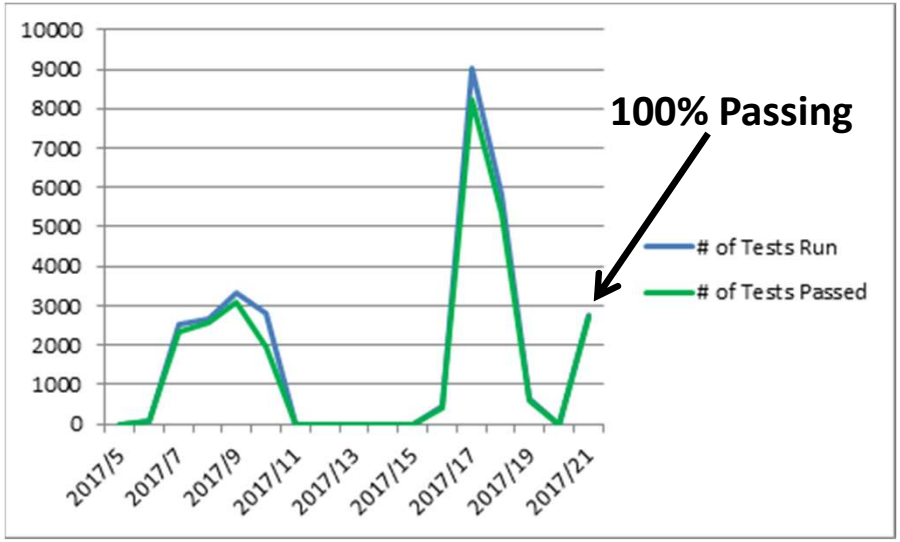
http://www.touchstone.com

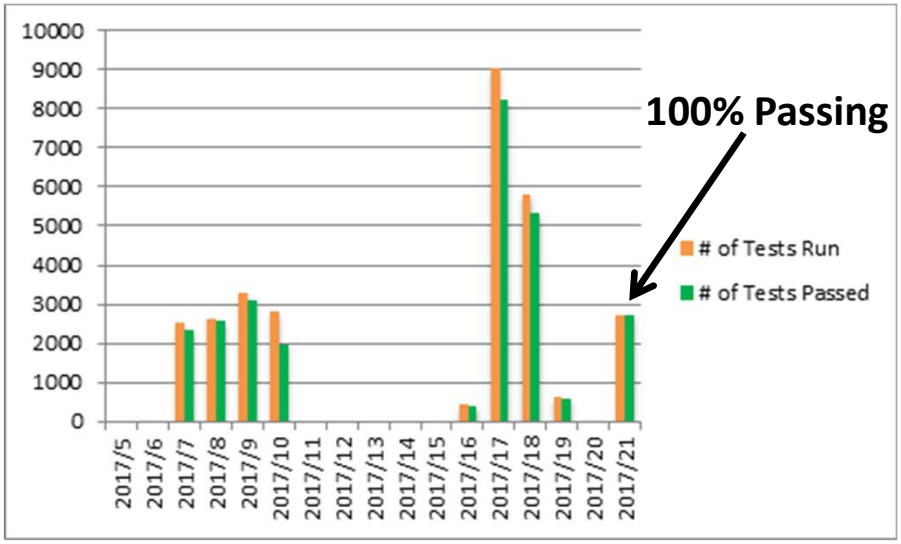
Evidence-Based Quality Assurance

- Continuous Testing against a defined standard ensures ‘no surprises’ when publishing new releases
- Continuous Testing generates data used in analytics which can
  - show patterns and predict trouble areas
  - pinpoint issues in development
  - help show continuous interoperability to your customers, highlighting your competence and reliability
  - provide metrics that can tell the story about problem areas or where there is little volatility

Benefits of using Touchstone – A Real world example

- The following graphs show the progression of testing for an organization using the Touchstone production environment.





***Data used with organization's permission**

How can your organization use Touchstone?

- First and foremost, Touchstone can help your organization with FHIR conformance testing
- Second, organizations can utilize the Touchstone test suites during software build cycles
- And, organizations can write, upload and run their own TestScripts within Touchstone

★AEGIS offers Multi-day tutorials and training on Touchstone, FHIR Testing and TestScript Authoring

https://touchstone.aegis.net/touchstone/features#Training

Exercises

- Getting Started – registration and test system setup

- Test Setup and Execution - FHIR Basic Operations
  - Read, Search, Create, Update and Delete
  - /FHIRSandbox/AEGIS/FHIR3-0-1-North19
  - /FHIRSandbox/AEGIS/FHIR4-0-0-North19

- Presentation Slides and Exercise Documents and TestScripts available on Github: https://github.com/rettema/FHIRNorthPresentation

Discussion (Q & A)

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Thank you!

See you at the FHIR Testing table!

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