

Inferno Tech Talk – April 2025

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Inferno Tech Talk Introduction

- Purpose: to provide regularly scheduled updates on the Inferno tool and its implementation of the (g)(10) test procedure
- Typical agenda to include:
 - Announcements about upcoming releases
 - Training on new features
 - Highlight outstanding issues or known problems
 - Open discussion
- Monthly recurrence: 2nd Wednesday at 1PM ET
- This call is being recorded and will be posted on <https://inferno.healthit.gov/events/>

Content reflects Inferno's implementation of applicable Test Procedure and does not necessarily reflect ASTP/ONC policy.

Today's Agenda

- Inferno Framework Updates
- (g)(10) Standardized API Test Kit v7.1.0/v7.2.0
- Other Test Kits Update
 - Bulk Data Test Kit v0.12.1
 - SMART App Launch v0.6.1
 - UDAP Security v0.11.3
 - PAS v0.12.2
- Discussions / Questions

Inferno Framework Updates

- ALL Inferno Test Kits are updated to Ruby v3.3.6
 - For local deployment using Ruby environment:
 - Need update Ruby version to v3.3.6.
- Move shared testing logic into Inferno Core
 - Ex: Must Support assertions
- AuthInfo
 - If you have automatic test using UI integration, you should update for the new UI layout.

ONC (g)(10) Standardized API Test Kit v7.1.0/v7.2.0

- Test Update:
 - Test changes that should not result in new failure: 0
 - Due to core Inferno updates (Ruby version and authorization-related input changes), we categorized these two releases as "minor" releases instead of "patch" releases, as test behavior may have changed slightly as a result
 - Test changes that should not affect score of passing implementations: 2

(g)(10) Updates: Observation BMI dataAbsentReason Validation

- FHIR Validator throws error if a resource
 - Does not have valueQuantity but provides dataAbsentReason
 - Is validated using US Core BMI profile
- Observation: Slice 'Observation.value[x]:valueQuantity': a matching slice is required, but not found (from <http://hl7.org/fhir/StructureDefinition/bmi|4.0.1>).
- Reason:
 - US Core BMI profile has an optional valueQuantity slice
 - FHIR BMI profile has a required valueQuantity slice
 - When validator validate a resource, the resource has to not only conform to its own profile but also profiles in FHIR base spec.
- Solution:
 - Add a validation error filter.

SMART App Launch v0.6.1

- Fixed a bug when running POST authorization request in some Inferno Test Kit, such as US Core Test Kit.
 - (g)(10) Certification Test Kit is NOT affected by this change.

Authorization Request Method

GET POST

! 1.3.2 SMART Standalone Launch

About SMART Standalone Launch

✓ 1.3.2.01 OAuth 2.0 authorize endpoint secured by transport layer security

1.3.2.02 OAuth server redirects client browser to app redirect URI

! Error: bad argument (expected URI object or URI string)
/usr/local/lib/ruby/3.1.0/uri/common.rb:694:in `URI'

Bulk Data Test Kit v0.12.1

- New Bulk Data Access Client Test Suite
 - For Bulk Data v2.0.0

Start Testing

Test Suite

- Bulk Data Access v1.0.1 Server
- Bulk Data Access v2.0.0 Server
- Bulk Data Access v2.0.0 Client

[+ Create Test Session](#)

Bulk Data Access v2.0.0 Client v.0.11.1

- Bulk Data Access v2.0.0 Client
 - 1 Bulk Data Client Export Tests
 - 2 Bulk Data Client Delete Tests
- Report

1 Bulk Data Client Export Tests

The Bulk Data Client Export tests verify the ability of a client to:

- Kick-off a new bulk data export request
- Poll the in-progress request for status updates
- Download a completed bulk data export file

- 1.01 Wait For Request Sequence
- 1.02 Bulk Data Kick-off Request
- 1.03 Bulk Data Status Request
- 1.04 Bulk Data Output File Request

SMART App Launch v0.6.1 and UDAP Security v0.11.3

- Added client tests for server-to-server flows, including
 - UDAP business to business client credentials flow
 - SMART backend services

UDAP Security Client v0.11.3

SHARE SESSION NEW SESSION

Preset: None

UDAP Security Client

1 UDAP Client Credentials Flow

- 1.1 Client Registration
- 1.2 Client Access

UDAP Security Client

RUN ALL TESTS

Overview

The UDAP Security Client Test Suite verifies the conformance of client systems to the STU 1.0.0 version of the HL7® FHIR® [Security for Scalable Registration, Authentication, and Authorization \(UDAP Security\) FHIR IG](#).

SMART App Launch STU2.2 Client v0.6.1

SHARE SESSION NEW SESSION

Preset: None

SMART App Launch STU2.2 Client

1 SMART Backend Services

- 1.1 Client Registration
- 1.2 Client Access

SMART App Launch STU2.2 Client

RUN ALL TESTS

Overview

The SMART App Launch STU 2.2 Client Test Suite verifies the conformance of client systems to the STU 2.2.0 version of the HL7® FHIR® [SMART App Launch IG](#).

Scope

PAS v0.12.2

- Implemented PAS Subscriptions for pended prior authorization requests within the Client tests.

Da Vinci PAS Client Suite v2.0.1 v.0.12.2

SHARE SESSION NEW SESSION

Preset: None

Da Vinci PAS Client Suite v2.0.1

- 1 Client Registration
- 2 Subscription Setup
- 3 PAS Workflows
 - 3.1 Approval Workflow
 - 3.2 Denial Workflow
 - 3.3 Pended Workflow**
- 4 Must Support Elements
 - 4.1 Submit Request Must Support
 - 4.2 Inquiry Request Must Support
- 5 Review Authentication Interactions

Report

3.3 Pended Workflow

RUN TESTS

During these tests, the client will initiate a prior authorization request and show it can respond appropriately to a 'pended' decision, including waiting for a notification that an update has been made and making an inquiry request to retrieve the final result.

- 3.3.1 Perform the pended workflow
- 3.3.2 Verify \$submit interaction
- 3.3.3 Verify notification interaction
 - 3.3.3.01 [USER INPUT VERIFICATION] Tester-provided event notification Bundle is conformant
 - 3.3.3.02 [USER INPUT VERIFICATION] Tester-provided event notification Bundle matches the Subscription
 - 3.3.3.03 Client accepts the "claim updated" event notification

Open Discussion / Feedback

Resources and Contact Information

- <https://inferno.healthit.gov/>
 - General materials & live demonstration server
- <https://inferno-framework.github.io>
 - Create your own Inferno Test Kits!
- <https://github.com/onc-healthit/onc-certification-g10-test-kit/>
 - ONC Certification tests repository, downloads, issues
 - “Watch” repository to receive alerts (new releases, etc)
 - Note: this repository is specific to ONC Certification testing
- inferno@groups.mitre.org (or rscanlon@mitre.org)
- FHIR Zulip Chat: <https://chat.fhir.org/#narrow/stream/179309-inferno>

Upcoming Meetings

- Next Inferno Tech Talk: **Wednesday May 14** at 1 PM ET
- Please reach out with questions & issues