Argonaut Project: Key successes and the Road Ahead

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Speaker

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What is the Argonaut Project?

The Argonaut Project is an implementation community comprising leading technology vendors and provider organizations to accelerate the use of FHIR and OAuth in health care information exchange.

The Argonaut Project is ...

- Private sector initiated and funded

- Creating open industry Implementation Guides in high priority use cases of importance to patients, providers and the industry as a whole

- Working collaboratively with other FHIR initiatives such as SMART-on-FHIR, CDS Hooks, and IPA.

The Argonaut Project is Not …

- A standards development organization
- A separate legal entity
- A proprietary activity

Argonaut Project Members

Technology Vendors

- Accenture
- Allscripts
- Apple
- Athenahealth
- Cerner
- Change Healthcare (Optum)

Technology Vendors (cont)

- eClincialWorks
- Epic
- Humana
- MEDITECH
- Microsoft
- Optum

Provider Organizations

- Intermountain Health
- Mayo Clinic
- Partners Healthcare
- SMART at Boston Children's Hospital

HL7
International

Argonaut Project Timeline

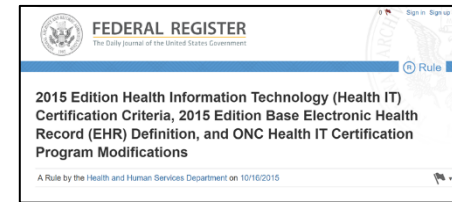**Oct 2014** — **Dec 2014** — **Oct 2015** — **Dec 2016**

JASON Task Force Recommendations

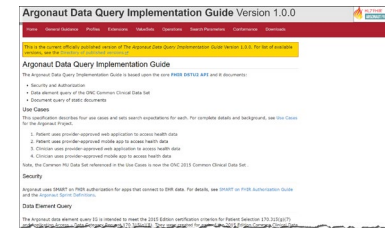*Call to action for APIs and FHIR*

Launch of Argonaut Project

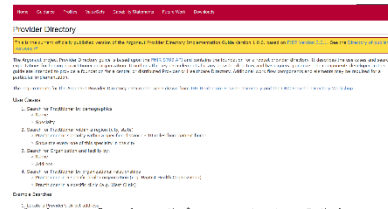*EHR certification includes API requirement*

S&I Initiative Data Access Framework

Data Query Implementation Guide published

Jun 2017

Provider Directory Implementation Guide published

CDS Hooks Implementation Guide

Four Short Years from Inception to Market Adoption

Carequality implements Argonaut Provider Directory specification

CommonWell includes Argonaut FHIR specifications in core services – MEDITECH goes live on FHIR

50% of 100+ certified vendors use FHIR APIs

Apple will let you keep your medical records on your iPhone

- Apple is moving deeper into health care with a service that lets users view their medical records.
- COO Jeff Williams tells CNBC that "Apple doesn't see the data unless the consumer chooses to share it."
- About a dozen hospitals have signed up, as have medical-record vendors.

Christina Farr | @chrissyfarr
Published 8:31 AM ET Wed, 24 Jan 2018 | Updated 2:21 PM ET Thu, 25 Jan 2018

CNBC
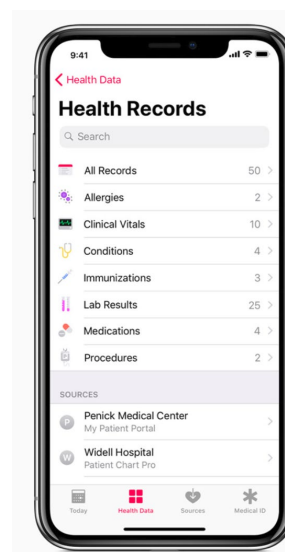
Apple enables secure iPhone access to medical records using Argonaut Implementation Guide

What have you done for me lately?

Argonaut Project Timeline

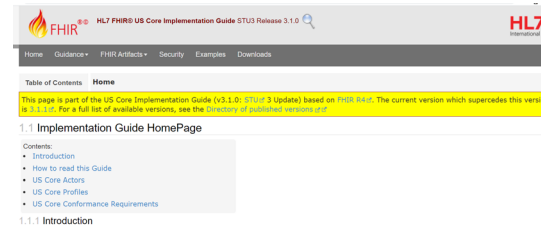**May 2018**

CDS Hooks ballot

Clinical Notes + Provenance design

Nov 2019

Argonaut R4 + Clinical Notes + Provenance added to US Core!

Clinical Data Subscriptions

2020

FHIR Release 4.0.1

US Core 3.1.1

Bulk Data Group Level Export

SMART App Launch

2021

SMART on FHIR STU2 published!

Subscriptions added to R4B and R5

US Core design sprints for USCDI v2

Argonaut 2022

2022 Projects 'completed'

- FHIR Endpoint and Structure
  - Develop a recommended format, for servers to publish customer endpoint information
  - Patient-access Brands and Endpoints
- EHI Export API
  - Enable patients to move and share all their healthcare data without requiring them to take on cumbersome and complex file management tasks
  - Draft EHI Export API IG
- FHIR Write App State
  - Enable patients to share data directly with their providers if they choose.
  - SMART App State specification
- SMART Health Links
  - Share any health record by presenting a QR
  - SMART Health Links Spec and Introduction

Recent Publications

- Subscriptions
  - R4b and R4 backport
- US Core R5.0.1
- CDS Hooks STU2 Published
- Argonaut ❤ IPA

January 2023 Ballots

- USCDI v3 design in US Core
- SMART App State

Prior Initiatives

- SMART on FHIR support
- Data Query and Document Query
- Provider Directory
- Scheduling
- CDS Hooks support
- Bulk Data
- Questionnaire and Questionnaire Response
- Clinical Provenance

- Clinical Notes
- SMART Web Messaging
- Clinical Data Subscriptions
- US Core Argonaut R4 - USCDI
- SMART on FHIR Granular Controls
- Patient List
- FHIR Write

SMART on FHIR Support

When

Summer 2015…and then Granular Permissions 2021!

What

SMART Health IT is an open, standards based technology platform that enables innovators to create apps that seamlessly and securely run across the healthcare system. SMART on FHIR provides reliable, secure authorization for a variety of app architectures through the use of the OAuth 2.0 standard. In 2015, the Argonaut Project performed a security review of SMART on FHIR.

In May 2021, HL7 took the Argonaut lessons and added support for "granular permissions," e.g. to provide access to resources at the category level in addition to the type level. This allows apps to request narrower access, like "all vital signs" rather than "all observations."

Outcomes

- SMART Application Launch Framework Implementation Guide Release 2.0.0: http://hl7.org/fhir/smart-app-launch/index.html
- Release 2.0.0 includes Argonaut guidance on granular permissions!
- Latest build: http://build.fhir.org/ig/HL7/smart-app-launch/

https://smarthealthit.org/

Data Query and Document Query

When

~2015 ....ongoing

What

The Argonauts built the de facto industry standard -- the Data Query Implementation Guide based upon **FHIR DSTU2 API** and the Data Access Framework (DAF).

This specification defines the minimum conformance requirements for accessing patient data. The lessons from Argonaut were added to the latest US Core Implementation Guide.

Outcomes

- **Clinical Notes Guidance**: https://build.fhir.org/ig/HL7/US-Core/clinical-notes-guidance.html

- **Basic Provenance**: https://build.fhir.org/ig/HL7/US-Core/basic-provenance.html

- Guidance on 'Must Support', free text units, vocabulary binding:
  http://build.fhir.org/ig/HL7/US-Core/conformance-expectations.html

...US Core

US Core Implementation Guide

- Built from Argonaut requirements
- US Core profiles *supersede* Argonaut Data Query profiles for FHIR R4
  - Version 3.1.1 published June 2020

- HL7 <u>balloted</u> US Realm FHIR profiles
  - Supports *United States Core Data for Interoperability (USCDI) which* superseded the *Common Clinical Data Set*
  - Used by US stakeholders when implementing FHIR
  - Basis for creating further US Realm profiles.

…fun fact: the Data Access Framework (DAF) = ONC sponsored DAF effort on FHIR preceded the Argonaut guide!

2023 Selection Process

4 Phases

- Collection ~25
  - Initial ideas
  - Short paragraph on the project
- Pitch development (~2 slides)
  - What problem are we solving, and for whom?
  - Is there an existing solution? (i.e., are we *standardizing* a FHIR-based approach that's already in use somewhere, converting a non-FHIR health IT approach to FHIR, or starting from a blank slate?)
  - Who needs to participate for a successful outcome? (e.g., EHR vendors, app developers, health systems, payers)
  - What does success look like
    - End product (e.g., best practice recommendations, testing sprints, a new IG, changes to FHIR core)
    - Real-world impact
- Pitch session + offline voting
- Final meeting to agree on selections

Project Candidates

Project name	Description	Pitch Date
1 - Patient Request for Corrections	Review and test the Patient Empowerment IG. Briefly discussed at the WGM with some Argonaut stakeholders.	2/3/2023
2 - Test new US Core Assessment design	Mini sprint to test new US Core design of Observation as the primary Resource to communicate Questionnaire results.	1/27/2023
3 - FHIR Write - Vitals	Provider facing-app or Patient facing-app: sprint focused on writing back Vitals. This information is structured in systems today, and Health Systems report they want to bring this discrete data into the EHR. Patient app could be consumer-wearables.	1/27/2023
4 - USCDI/US Core	Ongoing support to expand US Core to support new versions USCDI Expansion of US Core for priority Argonaut elements	1/27/2023
5 - Share digital insurance cards	Patients receive signed digital insurance cards and share with providers during new patient registration. Potential collaboration with CARIN.	1/27/2023
6 - API Access to Imaging data	Make imaging data accessible through the same SMART on FHIR API as clinical data. One authorization flow + one access token enables access to clinical + imaging. Bridge to DICOM web services under the hood.	2/3/2023
7 - Upgrade Prior Scheduling IG	Sprint to update the FHIR STU3 spec to FHIR R4, and develop plan for future ballot.	2/3/2023
8 - Enable patient-provider secure messaging from app	Message submission + Provider response. Some vendors have proprietary APIs to support messaging in their own portals, and occasionally expose to 3rd-party apps. Could be a general case of patient request for corrections by linking to resource that needs correction and including a text snippet. SMART on FHIR auth and a Communication or Task resource, maybe subscriptions	2/3/2023
9 - Enable medication refill request from app	Patient or provider apps requests refill. Scope request to refill an existing medication and maybe pharmacy location.	2/3/2023
10 - "The clipboard problem" (patient registration)	Design check-in API where patient apps can help fill out "the clipboard", guided by locally available data. Would focus on common data needs (confirming meds/allergies, conveying insurance information) [*defined as a 5-6 call requirements sprint]	1/27/2023
11 - Bulk STU3	Enhancements to the Bulk IG to support processing output without downloading all files ('output by patient'), publishing static files for synchronous access ('publish static file'), and collaboration with Helios to test IG use in IIS data transfer and evaluate spec updated to better support this use case ('match request').	1/27/2023
12 - International Patient Access (IPA)	FHIR empowers patients to access health data with third-party apps in a growing number of countries. As nations, locales and regulators across the world look to increase their citizens' access to health data through third-party apps, they naturally turn to FHIR. The International Patient Access (IPA) standard aims to enable regulators, empower patients, guide app developers, and promises greater consistency across countries for multinational apps and FHIR servers. This proposed "mini" project will continue Argonaut's support of the existing IPA project to update the STU1 publication with Grahame's MustSupport enhancements.	2/3/2023

FHIR Write - Vitals

What problem are we solving, and for whom?

- A recurrent request from health organizations has been to enable writing FHIR data into a patient's health record (either from patients directly or from another health org) so that the health organization can have the structured data included in their own data warehouse.
- Because the scope of FHIR write of all data is so large, it makes more sense to start with a narrow scope. Thus, we are proposing to a project to draft a simple guide to enable writing vital sign observation data only.

Is there an existing solution?

- There are various proprietary APIs that allow writing data to EHRs, but nothing standardized.
- In 2021 Argonaut launched a "Argo Write" that explored direct updates to a particular resource via FHIR. See the Executive Summary.

FHIR Write - Vitals

Who needs to participate for a successful outcome?

- EHR vendors
- App developers (native or web apps using SMART App Launch)
- Health organizations (to ensure that this is done in a way that can be adapted to fit within a provider workflow and knowing provider/organization requested data be ingested)

What does success look like?

- Creation of a draft IG outlining the mechanics of a FHIR write operation as well as considerations for health systems who may be accepting this data
- Successful testing of IG via sandbox and sample app

Argonaut 2023 – Full Projects

API Access to Images
- Make imaging data accessible through the same SMART on FHIR API as clinical data.
- One authorization flow + one access token enables access to clinical + imaging. Bridge to DICOM web services under the hood.

FHIR Write – Vitals
- Provider facing-app or Patient facing-app: sprint focused on writing back Vitals.
- This information is structured in systems today, and Health Systems report they want to bring this discrete data into the EHR.

US Core design to support USCDI v4
- Consistent deployment of USCDI requires, review, testing, and the development of clear FHIR profiles.
- Test new designs for USCDI

Argonaut 2023 – Minis

Enable patient-provider secure messaging from app (4-5 calls!)
- Patients using an app who want to share information with their providers need to screenshot or copy that information and then log in to a separate health system app to send a message
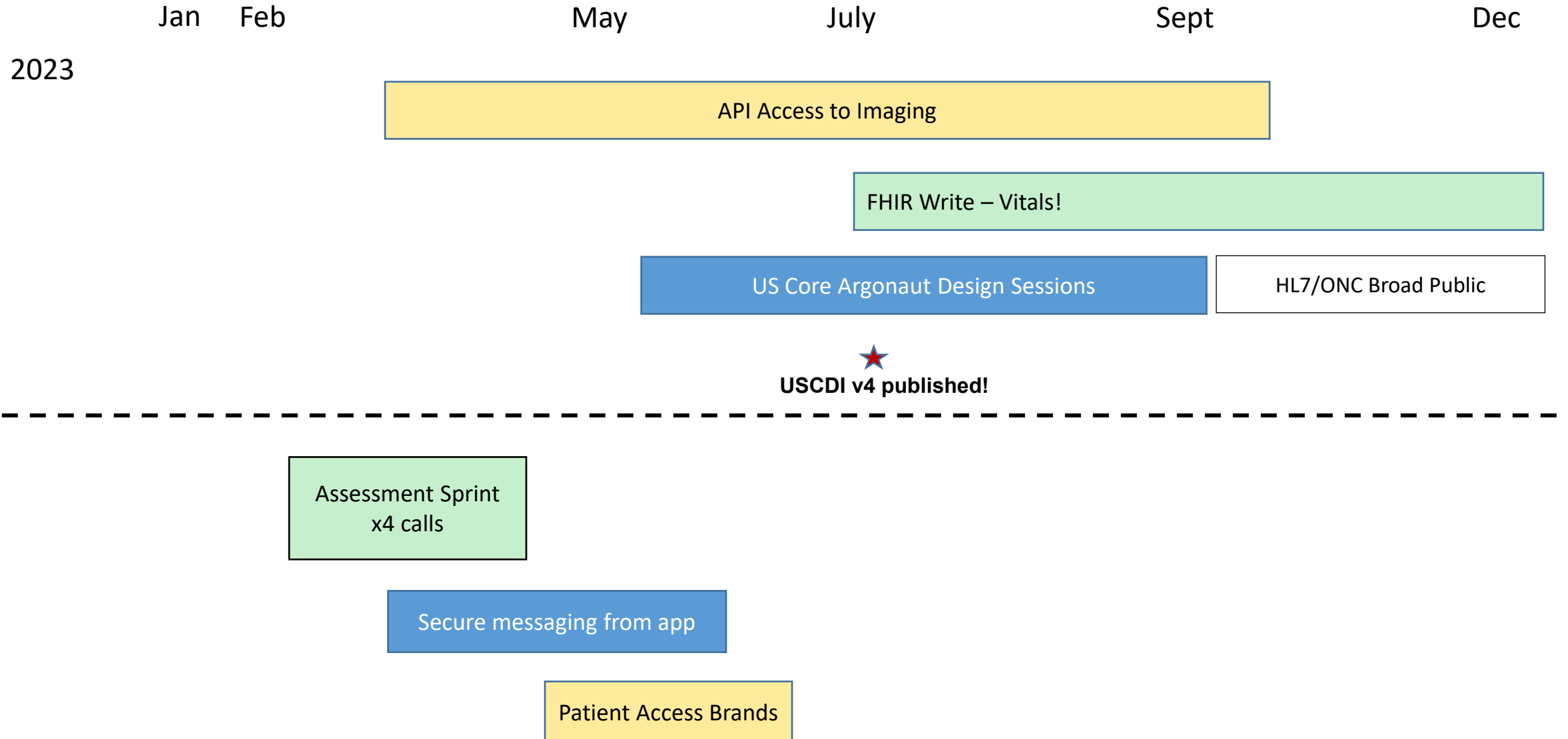
Testing of Patient Access Brands
- FHIR endpoints and associated branding information to create a seamless user experience connecting patients to their health records through various applications.
- Apps display recognizable cards or tiles representing different healthcare providers, payers, or organizations

Assessment Sprint
- Mini sprint to test new US Core design of Observation vs QuestionnaireResponse
- Updated design included in US Core 6.0.0 (expected publication May 2023!)

Project Schedule – All

Jan   Feb   May   July   Sept   Dec

2023

API Access to Imaging

FHIR Write – Vitals!

US Core Argonaut Design Sessions   HL7/ONC Broad Public

★
USCDI v4 published!

Assessment Sprint
x4 calls

Secure messaging from app

Patient Access Brands

Participation

How to Participate

- Review existing designs and comment using HL7 JIRA
- Zulip Chat Channel - Argonaut
- Argonaut Confluence Page

Contacts

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- Dan Gottlieb
- Eric Haas
- Josh Mandel
- Brett Marquard