# FHIM Profile Builder
Profile Editor

FPB Profile Editor July 2019 Release

- The Profile Editor is a component of the FHIM Profile Builder

- It uses a FHIR construct (called StructureDefinition) to retrieve class and template information from the FHIM and store new FHIM templates in the FHIM
  - It also uses a resource (called FHIR Bundle) to manage the results of a "search" operation

- The web user interface uses the following tools:
  - React
  - Material Design - lightweight
  - Google Firebase authentication

- Users of the editor can:

  - Retrieve class information from the FHIM

  - Create templates and identify which class attributes are mandatory, supported, or not supported

  - Retrieve existing templates and apply edits

  - Retrieve a template and generate a FHIR profile from that template

Login screen

- Google OAuth2 developer SDK (firebase)

- Placeholder for future Open Group authorization server integration
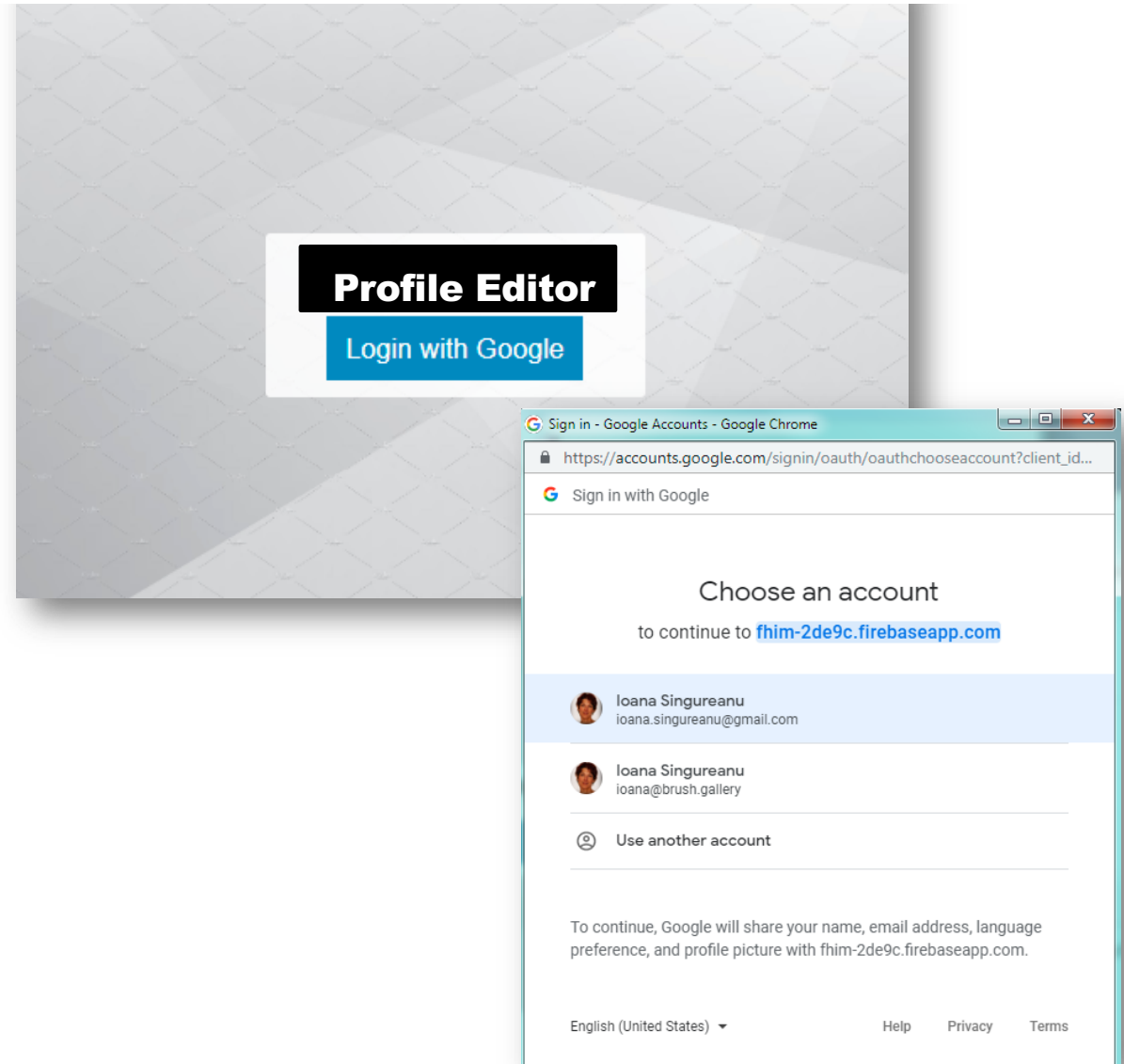
Search

- Enter a "structure name" to search classes and templates defined in FHIM

- The search string will use the structure name:
  - Class name or
  - A composite name for Templates consisting of
    - Base class name
    - Organization
    - Template title
    - Template version

Search

- The search matches returned from the server are displayed by "structure name" and "type"

- They can be sorted by those columns
  - By default they are all sorted by structure name
  - This way the user can find everything related to the specific class (the first part of the structure name) with one query

- The structure name consists of:
  - The class name if the structure type is "class"
  - A composite name if the structure type is "template"
    - Base class name (E.g. ImmunizationReport)
    - Organization (e.g FHA)
    - Implementation Guide (e.g. US-Core, Argonaut, CRN)
    - Template title (e.g. Immunization)
    - Template version (e.g. STU4, 1.1, etc.)

1

Create a template from a FHIM class

If the user selects a class from the list, the user may edit "usage" and enter the metadata listed at the bottom of the screen:

- Organization responsible for the project

- Implementation Guide that contains the template

- Template title

- Template version

Profile Editor   Logo

🔍 SEARCH

used for the template

Class: ImmunizationReport

Data Element	Type	Usage
ImmunizationReport.time	time	Supported ▼
ImmunizationReport.count	integer	Supported ▼
ImmunizationReport.status	code	Supported ▼
ImmunizationReport.vaccineCode	CD	Supported ▼
ImmunizationReport.occurrences	time	Supported ▼
ImmunizationReport.organization	Organizatoin	Supported ▼

/class
/class
/template
/template
/template
/template

1 - 6 of 6 items

|◄ ◄ **1** 2 ► ►|

1 - 6 of 10 items

Organization Name

Implementation Guide

Profile Name

Profile Version

SAVE   GENERATE FHIR PROFILE   CANCEL

Create a template from a FHIM class

- If the user identifies which data element/attributes of the FHIM class are either mandatory, supported, or not supported (i.e., not required/prohibited)

- The Save button is disabled until the metadata is filled out →

2

Profile Editor

Class: ImmunizationReport

Data Element	Type	Usage
ImmunizationReport.time	time	Mandatory
ImmunizationReport.count	integer	Not supported
ImmunizationReport.status	code	Supported
ImmunizationReport.vaccineCode	CD	Mandatory
ImmunizationReport.occurrences	time	Supported
ImmunizationReport.organization	Organizatoin	Supported

Mandatory

1 2

Supported
Mandatory
Not supported

1 - 6 of 10 items

Organization Name

Implementation Guide

Profile Name

Profile Version

SAVE   GENERATE FHIR PROFILE   CANCEL

3

Create a template from a FHIM class

- The user may go to the next page when all the data elements/attributes are annotated according to the project requirements.

- The Save button is enabled when all the metadata is filled in and the profile can be saved in the FHIM. (This uses a FHIR-based API.)

- Save will close the profile editor and take the user back to the search dashboard.

Class: ImmunizationReport

Data Element	Type	Usage
ImmunizationReport.time	time	Mandatory ▼
ImmunizationReport.count	integer	Not supported ▼
ImmunizationReport.status	code	Supported ▼
ImmunizationReport.vaccineCode	CD	Mandatory ▼
ImmunizationReport.occurrences	time	Supported ▼
ImmunizationReport.organization	Organizatoin	Supported ▼

|◄ ◄ **1** 2 ► ►|

1 - 6 of 10 items

Organization Name
MyOrganization

Implementation Guide
MyImplementationGuide
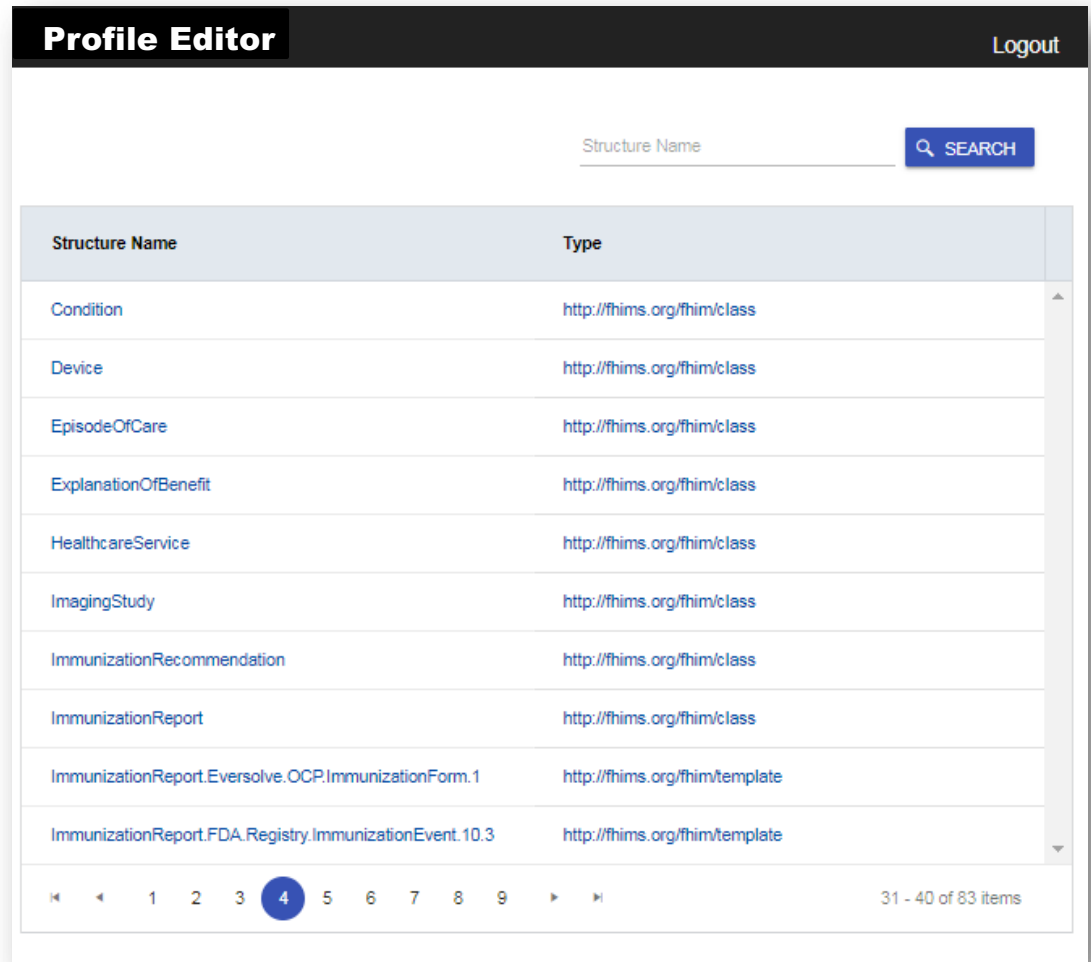
Profile Name
PediatricImmunization

Profile Version
1|

SAVE   GENERATE FHIR PROFILE   CANCEL

Search – after saving a template

- If the search string is left blank, all the structures will be queried and displayed in alphabetical order, by structure name
  - Template structure names contain the base class
- After saving changes, a search operation will retrieve the latest version of a template.

Profile Editor   Logout

Structure Name [   ]   🔍 SEARCH

Structure Name	Type
Condition	http://fhims.org/fhim/class
Device	http://fhims.org/fhim/class
EpisodeOfCare	http://fhims.org/fhim/class
ExplanationOfBenefit	http://fhims.org/fhim/class
HealthcareService	http://fhims.org/fhim/class
ImagingStudy	http://fhims.org/fhim/class
ImmunizationRecommendation	http://fhims.org/fhim/class
ImmunizationReport	http://fhims.org/fhim/class
ImmunizationReport.Eversolve.OCP.ImmunizationForm.1	http://fhims.org/fhim/template
ImmunizationReport.FDA.Registry.ImmunizationEvent.10.3	http://fhims.org/fhim/template

|◄ ◄ 1 2 3 **4** 5 6 7 8 9 ► ►| 31 - 40 of 83 items

Future Enhancements

- Create/publish FHIR StructureDefintion corresponding to the FHIM classes and FHIM templates used by the profile builder framework.
  - The profile builder introduces an extension to data elements corresponding to the "usage" of each data element and requires a specific subset of data within the FHIR StructureDefiniton to be populated
  - This demonstrates that the tooling is using the same profile-based approach as the overall framework
  - Currently, in place of a specification we have a set of examples
- Add support for workflow tasks during the creation of an implementation guide from FHIM classes and templates
  - In addition to creating a new template from FHIM classes and modifying an existing FHIM template, add support for reusing a FHIM template as the base structure for a new FHIM template. For example, provide a library of FHIM templates corresponding to US Core. Those could be the basis for creating new FHIR profiles that inherit all the US Core constraints and add additional content based on FHIM. Effectively this would make both "classes" and "templates" base structures. Currently, only FHIM classes are base structures for profiling.
  - Typically, each update of FHIR resources creates a new version of a template. Since we are using a FHIR resource to store FHIM templates, a future enhancement would allow users to access previous versions of a template stored in FHIM, accessible as FHIR StructureDefinition resources.
  - Add support for FHIR ImplementationGuide resource to organize FHIM templates associated with one or more use cases
- Integration with Terminology Server
  - Implement a FHIR Terminology Server to support editing of terminology-based constraints
- Update the editor look-and-feel/theme to be consistent with other Open Group tools and to use the membership directory
  - Another possible editor enhancement is to use GoldenLayout https://golden-layout.com/ to organize the content
- Add more options to the generator component of the FPB in addition to generating FHIR Profiles.
  - Users should be able to specify the target standard (e.g. HL7 FHIR, HL7 CDA, HL7 V2) to generate from FHIM templates.
- The Open Group authorization server should be used for accessing the editor