

PRESCRIPTION SEARCH SUPPORT

Integration Guide

This document is a manual for integrating into the Prescription Search Support project. It provides guidelines and instructions to ensure seamless participation in the project.

Contact: integration-support@ehealth.fgov.be



1. Contents

1.	Contents	1
2.	Document version	2
3.	Glossary	3
4.	Preface.....	4
5.	Introduction	5
6.	Integration flow.....	6
6.1.	The global flow.....	6
6.2.	Prerequisite.....	9
6.3.	Flows	10
6.3.1.	Use Case Radiology - Pro Web App (Simple Flow )	11
6.3.2.	Use Case Radiology - Web Component (Intermediate Flow)	11
6.3.3.	Use Case Radiology - PSS FHIR API.....	11
6.3.4.	Use Case Antimicrobials Pro Web App (Simple Flow )	13
6.3.5.	Use Case Antimicrobials - Web Component (Intermediate Flow).....	13
6.3.6.	Use Case Antimicrobials - FHIR API (Complex Flow ).....	14
7.	Testing the integration of PSS FHIR API	16
7.1.1.	Flow.....	16
7.2.	IAM Connect	17
7.2.1.	Flow.....	17
7.2.2.	IAM Connect Onboarding document.....	17
7.3.	IAM Token exchange Flow	19
8.	Contacts.....	23
9.	Resources and links	23
10.	FAQ.....	23

2. Document version

Version	Status	Date	Author	Description
0.1	Draft	21/01/25	Smals	Initial version
0.2	Draft	23/01/25	Smals	Adaptations
0.3	Final	30/01/25	Smals, INAMI	Added use cases, adaptations text
0.4	Final	13/05/25	Smals	Adaptations, added target group midwife

3. Glossary

Term	Meaning
PSS	Prescription Search Support
FHIR	FHIR (Fast Healthcare Interoperability Resources) is a standard framework created by HL7 (Health Level Seven International) to facilitate the exchange of healthcare information electronically.
IAM	Identity & Access Management
SSIN	Social Security Identification Number
UHMEP	Digital Referral Prescription Platform (Web application, web component, FHIR API)

4. Preface

This is an ongoing project, meaning that only the following target groups are currently supported

Target groups
Pharmacist
Physician
Dentist
Midwife

5. Introduction

Prescription Search Support (PSS) aims to improve the quality in a number of domains: prescriptions for radiological examinations and for antibiotics. We do this by offering support to prescribers in searching for the prescription for the most appropriate care in that situation.

PSS:

- Creates efficiency gains by subjecting more patients to adequate and qualitative care with the same resources and thus also improving the appropriateness of care,
- Reduces safety risks for the patient that may be associated with the provision of care.

As a result, PSS also contributes to reducing safety risks for the society as a whole.

Functionalities:

- Online support (*integrated in the prescription package and in the software package of the radiological department*) for prescribers in the prescription process for radiological examinations and for antibiotics
- online validation of a prescribed radiological examination by a radiological department.

Depending for which prescription (radiology or antimicrobial) you will apply PSS different integration solutions are available:

- for **antimicrobial prescriptions** the software integrator can use **PSS FHIR API, PSS web application** that interfaces with the PSS FHIR API or PSS web components. The PSS web application utilizes 2 web components that allow to fill out a questionnaire with the state of the patient parameters for a given clinical indication, and to show a recommendation with advice about the medication based on national guidelines.
- for **digital radiology referral prescriptions** the software integrator can use Digital Referral Prescription radiology web application & web components (please consult Digital Referral Prescription Integration guide (UHMEP)) or PSS FHIR API in order to apply PSS Radiology.

This integration guide is intended for all companies interested in integrating various PSS solutions. We present the different methods and outline the procedures in order to be recognized as certified integrators.

6. Integration flow

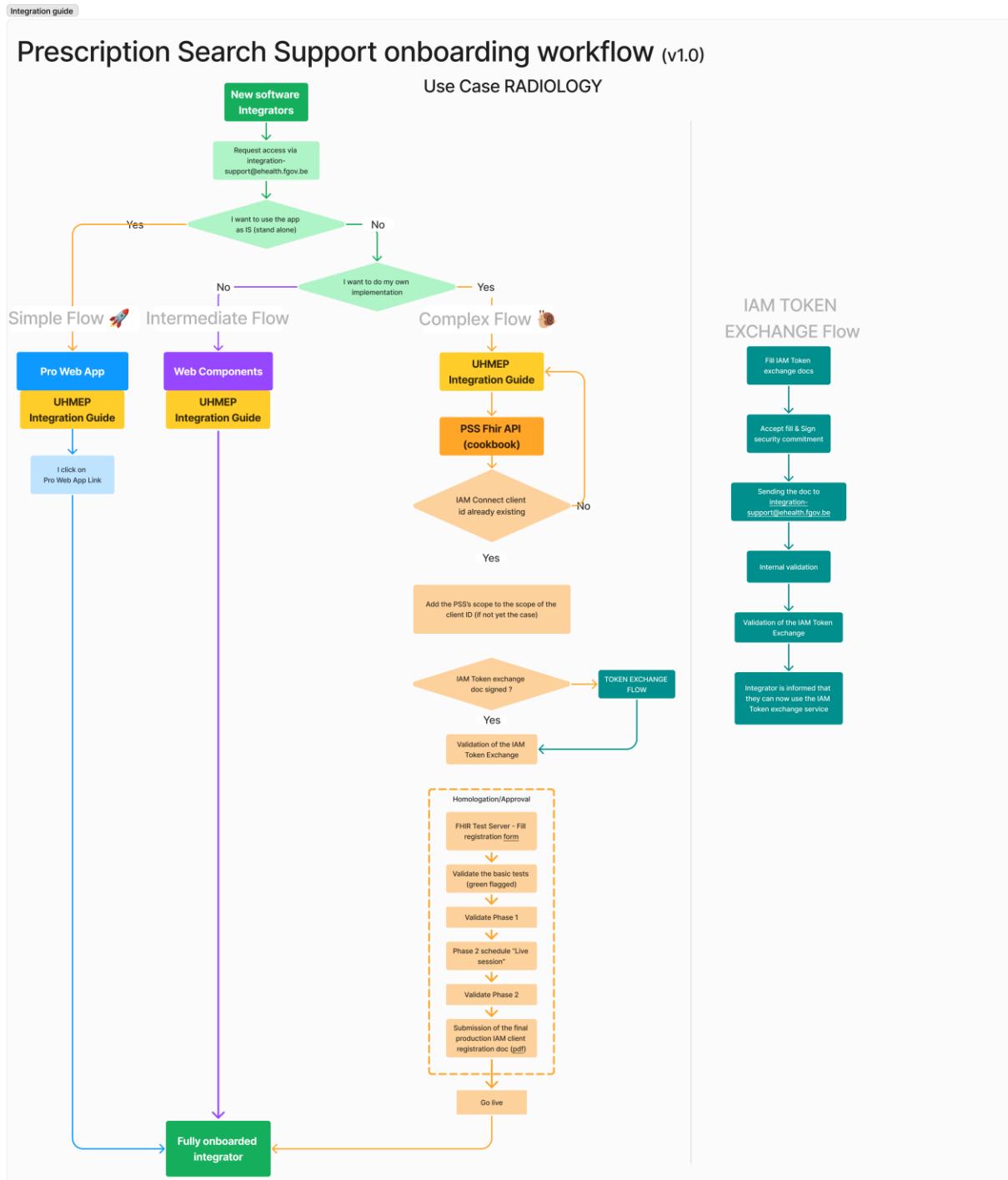
This chapter will explain how to integrate with the Prescription Search Support project.

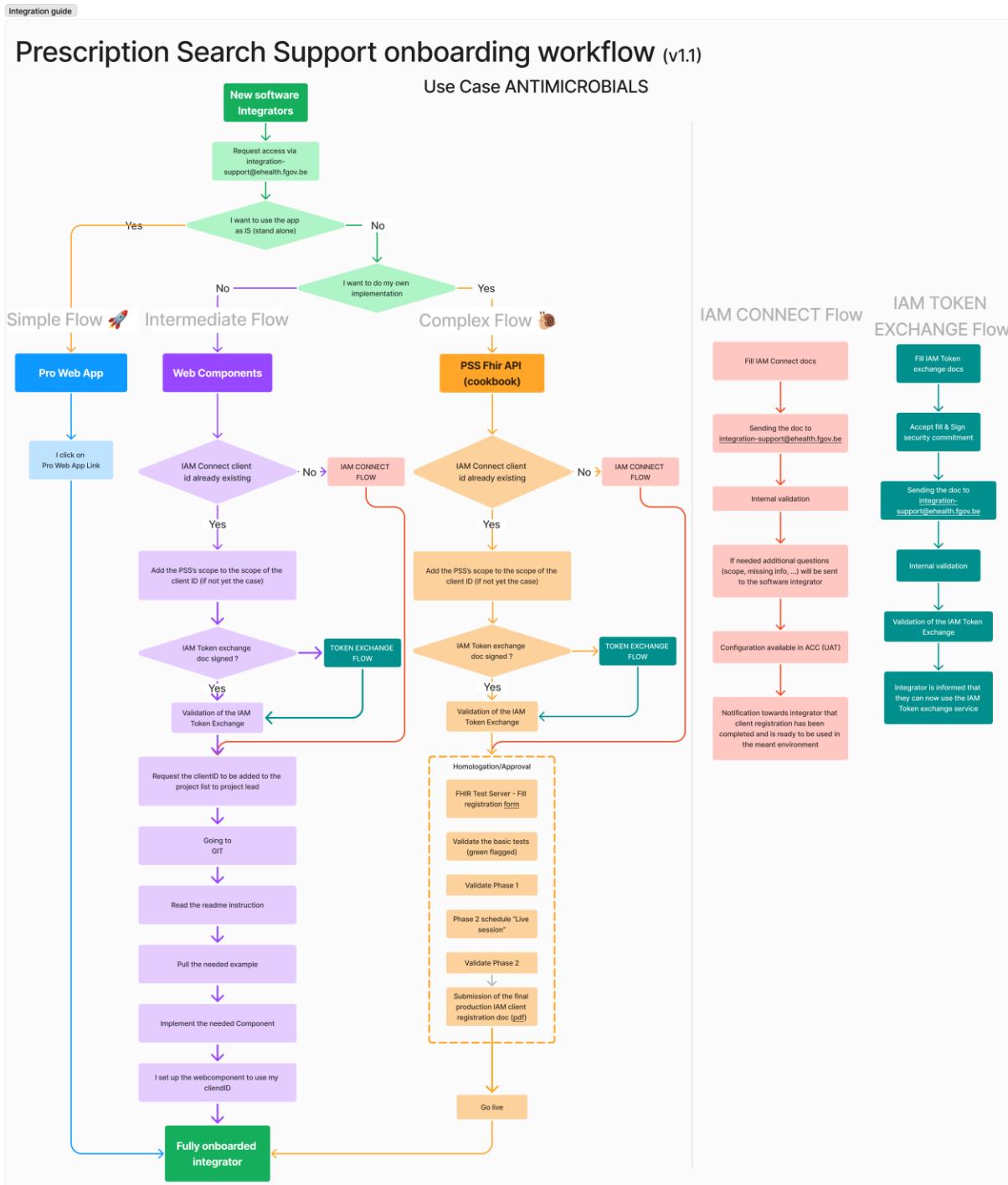
The chapter is divided into sections, the global flow overview and the three main sections explained.

6.1. The global flow

The flow presented in this section outlines the step-by-step actions required to transition from an un-integrated state to full integration. Subsequent sections of this document will elaborate on each step in greater detail. We identify two use cases:

1. **Radiology:** In this case, the PSS is used within the context of guidelines for medical imaging. Therefore, integration with the UHMEP platform is a prerequisite. The use of radiology guidelines is only possible in combination with UHMEP (the radiology referral prescription).
2. **Antimicrobials:** This use case focuses on guidelines for creating prescriptions for medication.





6.2. Prerequisite

This flow is designed to guide integrators through the optimal integration process.

To request to register as a candidate, it is requested that all integrators introduce themselves and their company by sending an email to integration-support@ehealth.fgov.be with the following info:

What	Description	Example
First and last name	The first name and last name of the company's contact person	<i>John Doe</i>
Organization	The software integrator company name	<i>Aqme Care</i>
Professional email address	The email address that should be used to contact the software integrator	<i>john.doe@aqme.be</i>
Short description of the access request	Description of the reason why the company is willing to integrate the project	<i>We are a leading actor in the prescription software industry providing services for all Belgian prescribers and are eager to integrate your web component within our web solution.</i>
Which use case we are going to implement	Choose which use case you are willing to implement (1-n)	<ul style="list-style-type: none">• Use Case Radiology• Use Case Antimicrobials
Which solution we are interested in	Choose which solution you are willing to use (1-n)	<ul style="list-style-type: none">• PSS FHIR API• Web Component• Professional Web App
Users type of your solution	Which medical disciplines make use of your software for the creation, consultation of the prescription?	<i>General Practitioner, Dentist,....</i>
Volumetry	The target average amount of prescriptions treated by your services	<i>200 prescriptions a day</i>

6.3. Flows

Currently, the project Prescription Search Support offers 1 possible integration, the integration with PSS FHIR API, which will be described in this section. Later, an integration using web components will be foreseen.

Name	Professional Web App	Web Components	PSS FHIR API
Description	Simple Flow  <ul style="list-style-type: none"> • No integration needed • No update to do 	Intermediate flow <ul style="list-style-type: none"> • Integration needed: integrator should send the required patient data for a given indication to the web component • Updates to do 	Complex Flow  <ul style="list-style-type: none"> • Full integration needed • Security Commitment • Validation needed • Updates to do
Validation through registration process	<ul style="list-style-type: none"> • Required <p>Only administrative doc to fill in</p>	<ul style="list-style-type: none"> • Required + validation testing <p>Administrative doc to fill in and prove that the web components were well integrated</p>	<ul style="list-style-type: none"> • Required + validation testing <p>The full approval process - testing and proof need to be performed</p>

Use Case Radiology			
Name	Professional Web App	Web Components	PSS FHIR API
	<i>Please read the UHMEP Integration Guide</i>		
	<i>-> See documentation below Use Case Radiology - PSS FHIR API (6.3.3)</i>		

Use Case Antimicrobials			
Name	Professional Web App	Web Components	PSS FHIR API
	(6.3.4)	(6.3.5)	(6.3.6)

6.3.1. Use Case Radiology - Pro Web App (Simple Flow

T Pro web app is a fully functional solution that includes the whole solution, integrated completely in the UHMEP web app. Please read the UHMEP integration guide if you choose for this.

6.3.2. Use Case Radiology - Web Component (Intermediate Flow)

Since the recommendation of medical imaging according to clinical guidelines is highly linked with the referral prescription, please read the UHMEP integration guide.

6.3.3. Use Case Radiology - PSS FHIR API

For the integrator already having software and willing to integrate the prescription support service from a backend point of view, all of the functionalities are available through an API.

The following constraints must be respected to be able to integrate with the API :

- **Be authenticated by eHealth** (I.AM Connect – HealthCare Client) - PSS FHIR API is accessible through the eHealth API Gateway. Your software must therefore be authorized via eHealth onboarding (cfr. [7.2.3](#)) and thus allow your end users to access the service through Realm Healthcare for persons. Due to the integration with UHMEP, a prerequisite to start using PSS for the use case Radiology, an access token will already be obtained for UHMEP. As such, this access token can be exchanged for PSS rights, via IAM Token Exchange.
- **IAM Token Exchange** - Using the [IAM Token Exchange](#) service to exchange the initial user token is a security prerequisite in order to be able to contact the PSS FHIR API. A signature of security commitment is also required.
- **FHIR standard** - PSS API will use models based on the international FHIR standard and adapted at the national level by the eHealth standardization team. FHIR is a standard that describes the format and the exchange of medical data between different computer systems.
- **Approval** - To receive access configurations for production, your software will have to go through an approval procedure;
 - a. Performing use cases made available on the [FHIR Test Server](#).
 - b. Completion of business use cases during a live session to validate the Smals/eHealth best practices integration and RIZIV-INAMI business cases.

In order to integrate with the FHIR “PSS” API, in addition to eHealth service documentation, you will need:

Artefact	Description
PSS FHIR API - Cookbook	<ul style="list-style-type: none"> ● FHIR reference ● description of operation ● endpoint to call ● users ● business rules ● request to send ● response
PSS FHIR API - Error code list	List of error codes returned by the PSS service to make it easier for your users to understand the errors.
RIZIV INAMI Business documentation	<p>https://www.riziv.fgov.be/nl/thema-s/egezondheid/beslissingsondersteunend-platform-voor-voorschrijvers-meer-gepaste-zorg-en-minder-veiligheidsrisico-s</p> <p>https://www.inami.fgov.be/fr/themes/esante/plateforme-d-aide-a-la-decision-pour-les-prescripteurs-des-soins-plus-adaptes-et-moins-de-risques-de-securite</p>

6.3.4. Use Case Antimicrobials Pro Web App (Simple Flow

The pro web app has the fastest flow when using Prescription Search Supports. Requiring a simple registration process, the Pro web app is a fully functional solution that includes the whole solution to get a recommendation from Prescription Search Support. The onboarding is straightforward, as prescribers simply need to authenticate themselves via the provided link to access and start using the app according to their needs.

Role	Link
Professional	https://wwwacc.prescriptionsearchsupport.be/professional

6.3.5. Use Case Antimicrobials - Web Component (Intermediate Flow)

These web components are small applications designed to be integrated directly into the integrator's ecosystem for implementing the Prescription Search Support project. By utilizing these components, integrators can significantly reduce the work required for full integration. Additionally, they will not need to foresee any type of validation (registration process) to access the referral prescription materials.

There are 3 web components currently accessible via GIT (links available in May).

A client ID is needed to integrate the web component (see [IAM onboarding document](#)).

 Tips: a showcase is available on Git see [9. Resources and links](#)

6.3.5.1. *Introduction of patient parameters*

The web component "Support parameters" allows listing the parameters, given an indication, for the patient.

6.3.5.2. *Get recommendation*

The web component "Recommendation" shows the advice based on the clinical guidelines.

6.3.5.3. *Patient situation summary*

The web component "Patient situation summary" shows parameters taking into account.

6.3.6. Use Case Antimicrobials - FHIR API (Complex Flow

For the integrator already having software and willing to integrate the referral prescription project from a backend point of view, all of the functionalities are available through an API.

The following constraints must be respected to be able to integrate with the API :

- **Be authenticated by eHealth** (I.AM Connect – HealthCare Client) - PSS FHIR API is accessible through the eHealth API Gateway. Your software must therefore be authorized via eHealth onboarding (cfr. [7.2.3](#)) and thus allow your end users to access the service through Realm Healthcare for persons. (This step is only needed if you didn't have an access token from eHealth)
- **IAM Token Exchange** - Using the [IAM Token Exchange](#) service to exchange the initial user token is a security prerequisite in order to be able to contact the PSS FHIR API. A signature of security commitment is also required. (This step is used if you already have another access token from eHealth).
- **FHIR standard** - PSS API will use models for each type of referral prescription as well as for care proposals. These models will be based on the international FHIR standard and adapted at the national level by the eHealth standardization team. FHIR is a standard that describes the format and the exchange of medical data between different computer systems.
- **Approval** - To receive access configurations for production, your software will have to go through an approval procedure;
 - a. Performing use cases made available on the [FHIR Test Server](#).
 - b. Completion of business use cases during a live session to validate the Smals/eHealth best practices integration and RIZIV-INAMI business cases.

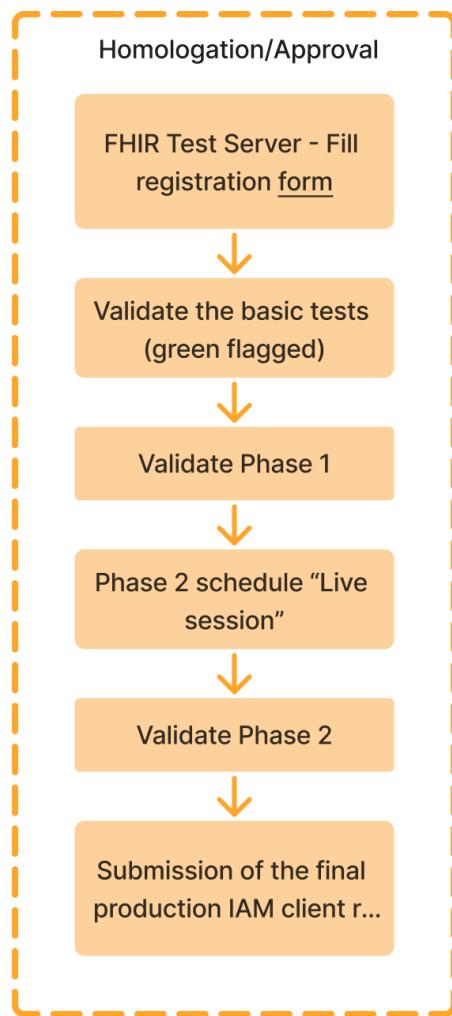
In order to integrate with the FHIR “PSS” API, in addition to eHealth service documentation, you will need:

Artefact	Description
PSS FHIR API - Cookbook	<ul style="list-style-type: none">● FHIR reference● description of operation● endpoint to call● users● business rules● request to send● response
PSS FHIR API - Error code list	List of error codes returned by the PSS service to make it easier for your users to understand the errors.

Artefact	Description
PSS FHIR API - Cookbook	<ul style="list-style-type: none"> ● FHIR reference ● description of operation ● endpoint to call ● users ● business rules ● request to send ● response
RIZIV INAMI Business documentation	<p>https://www.riziv.fgov.be/nl/thema-s/egezondheid/beslissingsondersteunend-platform-voor-voorschrijvers-meer-gepaste-zorg-en-minder-veiligheidsrisico-s</p> <p>https://www.inami.fgov.be/fr/themes/esante/plateforme-d-aide-a-la-decision-pour-les-prescripteurs-des-soins-plus-adaptes-et-moins-de-risques-de-securite</p>

7. Testing the integration of PSS FHIR API

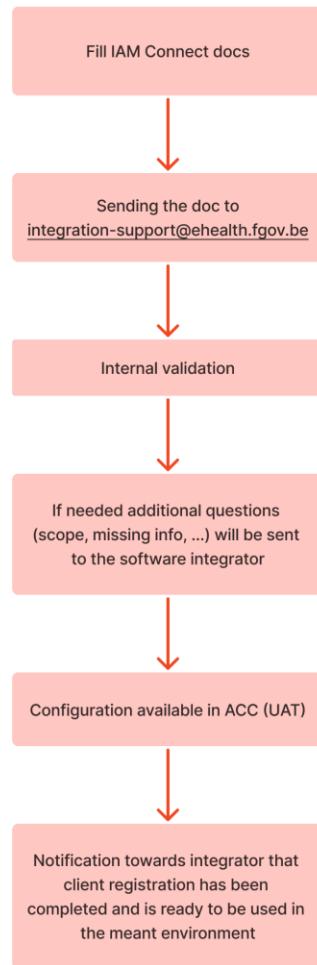
7.1.1. Flow



7.2. IAM Connect

7.2.1. Flow

IAM CONNECT Flow



7.2.2. IAM Connect Onboarding document

☞ The document can be downloaded via [9. Resources and links](#)

The Identity Access Management (IAM) Connect service is an authentication service provided by the eHealth platform. Its goal is to gather the necessary information to authenticate and authorize traffic coming from a server, granting it in a secure way the required access to utilize certain services, such as the Prescription Search Support project.

The project requires the use of the **I.AM Connect – HealthCare Client**. Each healthcare professional or entity must register upfront and gain access to the platform for accessing the prescription search support service, requiring human authentication and identity verification.

Here below, find a list of needed information that would needs to be provided ([current version 1.2](#)) as well as some examples.

Information (fields with an * are mandatory)	Explanation and allowed values	Example
General information		
Client ID *	Enter the name of your application that will be used to perform the request	software-name
Name *	Enter the full name of your application	Software name
Specific Information		
Valid redirect URIs (separated by ;)	A valid redirect URI is needed in the configuration to redirect the user after a successful authentication. This URI is also used for redirecting the user after a logout.	https://app-acc.software-name.be/iam-connect-endpoint/ ; http://localhost/iam-connect-endpoint/
Scope	The list of access needed to use the PSS FHIR API	<ul style="list-style-type: none"> ● nihdi:pss

7.3. IAM Token exchange Flow

The use of the IAM Token exchange Flow is a security prerequisite for the use of the PSS FHIR API solution, when used together with another service for which already an access token was obtained.

The **IAM Token exchange** has been put in place. Software Integrators will exchange the token obtained at the user connection for another token to call the PSS FHIR API. In this token exchanged, if there is the right for the pseudonymization, it has been removed.

Here is a comparison between the two tokens generated for a physician.

Not Exchanged token (example UHMEP)	Exchanged token
{ "exp": 1737967646, "iat": 1737967346, "auth_time": 1737967340, "jti": "488677cb-0b67-4638-9298-f37d5cf01d", "iss": " https://api-int.ehealth.fgov.be/auth/realms/healthcare ", "aud": ["nihdi-uhmep-hcp", "nihdi-uhmep-api", "ehealth-pseudo-api"], "sub": "0696c186-f968-4f65-a955-9d5f96a162f0", "typ": "Bearer", "azp": "nihdi-uhmep-hcp", "nonce": "c44bd655-d25d-4a11-b0af-0f6290cf5b34", "session_state": "f44b3fe2-5d87-490c-ae25-8be9c5216a37", "allowed-origins": ["https://wwwint.referral-prescription.ehealth.fgov.be", "https://referral-prescription.int.ext.vascloud.be", "https://referral-prescription.int.pub.vascloud.be"], "resource_access": { "nihdi-uhmep-api": { "roles": ["prescriber", "restricted", "pss"] } } }	{ "exp": 1737709658, "iat": 1737709358, "auth_time": 1737709336, "jti": "955c87bf-2a83-4a47-9152-40288660bad0", "iss": " https://api-int.ehealth.fgov.be/auth/realms/healthcare ", "aud": ["nihdi-pss-fhir-hcp", "nihdi-pss-api"], "sub": "0696c186-f968-4f65-a955-9d5f96a162f0", "typ": "Bearer", "azp": "nihdi-pss-fhir-hcp", "session_state": "d0a1d95c-0d07-4189-acce-e98eef37e042", "allowed-origins": ["https://unavailable"], "resource_access": { "nihdi-pss-api": { "roles": ["pss"] } } "scope": "roles profile nihdi:pss", "sid": "d0a1d95c-0d07-4189-acce-e98eef37e042", }

<pre> "pseudo"], }, "ehealth-pseudo-api": { "roles": ["identify", "pseudonymize"] }, "scope": "openid ssin pseudo:api:identify roles nihdi:uhmep:hcp pseudo:api:pseudonymize nihdi:uhmep:pseudo profile", "sid": "f44b3fe2-5d87-490c-ae25-8be9c5216a37", "ssin": "72062401939", "name": "Fabrice Claes", "preferred_username": "72062401939", "locale": "nl", "given_name": "Fabrice", "family_name": "Claes", "userProfile": { "firstName": "Fabrice", "lastName": "Claes", "ssin": "72062401939", "physician": { "recognised": true, "nihii11": "13671654004" } } } </pre>	<pre> "act": { "azp": "nihdi-uhmep-hcp" }, "name": "Fabrice Claes", "preferred_username": "72062401939", "locale": "nl", "given_name": "Fabrice", "family_name": "Claes", "userProfile": { "firstName": "Fabrice", "lastName": "Claes", "ssin": "72062401939", "physician": { "recognised": true, "nihii11": "13671654004" } }, "client_id": "nihdi-uhmep-hcp" } </pre>
---	---

Step by step

Steps	Description
1	Integrator must first retrieve an access token from IAM Connect.
2	Integrators can then send a request to retrieve the exchanged token. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> Token Exchange Request </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> Content-type : application/x-www-form-urlencoded </div>

```
POST https://api-acpt.ehealth.fgov.be/iam/v2/protocol/oauth/tokenExchange  
?requested_token_type=urn:ietf:params:oauth:token-type:access_token  
&grant_type=urn:ietf:params:oauth:grant-type:token-exchange  
&subject_token={acces_token}  
&subject_token_type=urn:ietf:params:oauth:token-type:access_token  
&client_id={client_id}  
&audience=nihdi-pss-fhir-hcp
```

Success

If everything went well, you should receive a response with a HTTP status code equals to 200 and the following body :

```
{  
    "access_token": "{new_access_token}",  
    "token_type": "bearer",  
    "refresh_token": null,  
    "issued_token_type": "urn:ietf:params:oauth:token-  
type:access_token"  
}
```

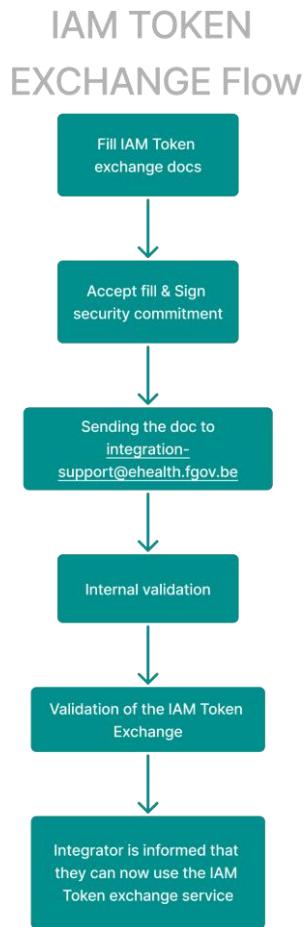
7.3.1. Security Commitment for IAM Token Exchange

∅ The document can be downloaded via [9.Resources and links](#)

An integrator playing the role of a “Trusted Platform” must also sign and abide by the Annex A – Security commitment from the Trusted Platform document.

The signature of this document is required in the integration with the UHMEP FHIR API solution.

7.3.2. Flow



8. Contacts

Question	Contact
General questions about integration or project	integration-support@ehealth.fgov.be
Specific issue to log in to eHealth	integration-support@ehealth.fgov.be
Business project leader	PSS Radiologie: pss@riziv-inami.fgov.be PSS Antimicrobial : pssa@riziv-inami.fgov.be

9. Resources and links

Resource	Version
I.AM Connect Healthcare Client Registration	1.2
Fhir test server registration form	1.0
Github smals-belgium	N/A
Onboarding flow – PSS Integration Guide	0.3

10. FAQ

ID	Question	Answer
1.	How do I reach for help?	See 8. Contacts

2.	Where do I download examples of code?	See 9. Resources and links
3.	How do I get my access to the project?	See 8. Contacts
4.	IAM configuration, is it possible to use wildcards?	Yes
5.	IAM configuration, is it possible to give several URLs?	Yes, see 7.2.2. Onboarding document
6.	What is the communication standard used within the project?	Fhir
7.	As an integrator can I onboard without IAM connect?	No is it mandatory to onboard with IAM Connect
8.	As an integrator, can I onboard without IAM Token exchange?	It is mandatory to onboard with the IAM token exchange for the use of UHMEP FHIR API solution. If you already have an access token for UHMEP or other eHealth service,

		<p>you can make use of Token exchange to exchange it with a PSS access token.</p> <p>For the Pro Webapp and Web components solution this is not required.</p>
9.	What is the list of all authorized target groups?	See section target groups
10.	What if my target group is not present in the list	Get in contact with the Business project leader. See 8. Contacts
11.	IAM connect, can I reuse an already existing Client ID	Yes
12.	When will the PSS Pro web app and web components be available for usage?	The web components and professional web app will be later available, from June 2025. Acceptation from May 2025.