Test Plan

E h e a l t h   A t h e n a   T r a c k

REVISIONS

Version	Date	Revision Description	Author
0.1	12-02-2019	First Draft Version	Youssef Baouider

DOCUMENT INFORMATION

File Name	Test Plan: Ehealth Athena Track
Author	Youssef Baouider

1   <u>Introduction</u>

1.1   Goal

The goal of this document is to define a clear set of requirements/guidelines for the Project 'Test center: eHealth basic services' in the specific defined track 'Athena' with an outline of who is responsible for specific task of that track inside the project. As a smaller focus and project defined track, a higher quality is assured at delivery. With the help of the defined requirements through risks, approach, planning, … a set of deliverables is thus designed and should be provided at project delivery. Furthermore, to support the full project, the services mentioned in this document must be fully user minded and testable by the vendors with a creation of predefined generic set of integration. The by IMEC created and delivered tests for integration of the 'User Access Management' service of the eHealth platform has its purpose to support the vendors functional test and become a standard for vendors who would like to use this integration of the eHealth Platform. The documentation guidelines will thus also be mentioned in this document to keep consistency throughout the set of tests created & delivered and should be clear to the vendor as result for further use.

1.2   Scope

The focus will be held on the 'User Access Management' Service. The Use of other services will exist on known dependencies for testing the Main Scope.

1.3   Responsibilities

Role	Person	RACI	Specific Responsibility
IT Program Manager	Katrien Van Gucht		
Project Sponsor	eHealth Platform		
Scrum Master	Youssef Baouider		
Test Analyst			
Test Scripter			

This document must undergo a review.
R (Responsible) Has the responsibility
A (Accountable) Has final say; veto right
C (Consulted) Will be informed before a decision is made if a task is to be executed
I (Informed) Will be informed

1.4   To inform changes

Condition to inform	To inform of functions, roles or group
Release of new versions	
Deactivation of document	
…	

1.5   Structure of the document

The document is divided in three parts.
In the first part (chapter 2) is the description of how tests will be organized and managed.
In the second part (chapter 3) the focus will be held on infrastructure, tools, resources… that are necessary to achieve the organization and management as described in the first part.
The third part (chapter 4) will contain references, clarification and attachments that we're previously mentioned or explained in the test strategy.

2   Scope of the test activities

2.1   Context

In accordance with the master test plan, the scope defined for 'Track 3: Athena' will be the focus here. This means the main focus will be held on the User Access Management service so correct use case driven testing can be applied on design and later on execution of the test. The purpose also of those tests is to provide Integration tests in scope of the defined track as support for functional tests. As designed team members will provide those tests a final validation will also be needed to be done by the eHealth Platform.

2.2   In scope

In the scope of test activities there will be worked based on flows applicable for the eHealth services. The purpose of the given flowchart is to provide a general understanding of the services general flow that will be covered during the test designs. It is also to understand the all possible variations on the main flow should be applicable and covered in the test design with the help of the available documentation/cookbooks of the to integrate services of the eHealth platform into the vendors application.

The eHealth UAM service is based on two main processes:
1. The identification, authentication, checking of qualities & relations and authorization process
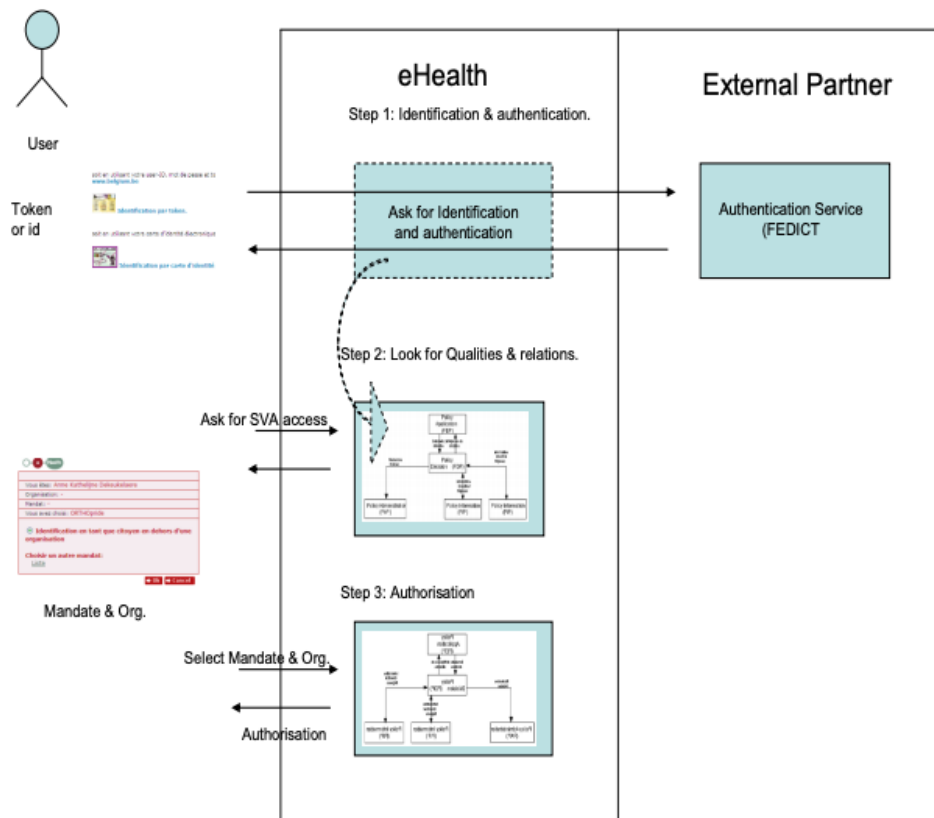
2. The process of managing the authorizations, consisting of maintenance of accesses and authorizations for individuals as well as maintenance of rules for applications.
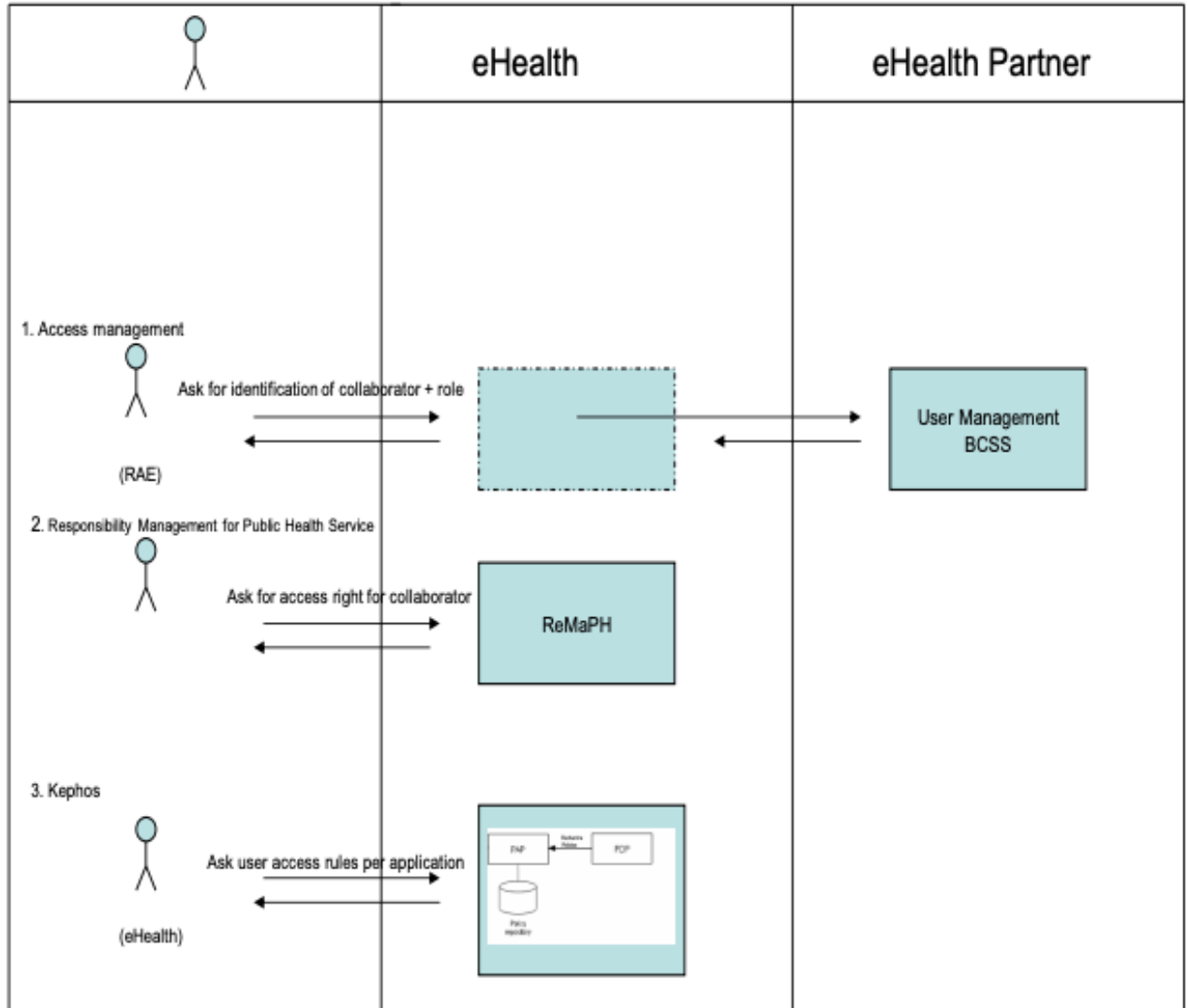
3   Test Strategy

The agile Scrum Ban methodology will be used. Inside of the Kanban progress board the team will be able to see all progress at any time. The agile Team will be composed of by the following people:
- Scrum master
- Test Analyst (Will also assume the role of product owner)
- Test Scripter

3.1   Project Risks

All risk known beforehand must be known, identified and mitigated, so the necessary measures can be taken to prevent those risks at a maximum level.
Project risk and the identification that jeopardize the test activities must be documented in the table below. It is preferably also discussed on a daily/weekly basis during the project status meeting (daily-standup).

Find hereunder the identified known risk at the draw of this document.

N°	Risk	Mitigation
	Stability/Uptime ACC environment of the eHealth Services	For design and test of the deliverables we will need the ACC environment of the eHealth services. Planned or Unplanned availability can produce delay in the project planned delivery.
	Bus factor of 1	For each role defined in this project only one person is available. This means that if something happens to that person (leave, medical leave, …) he/she must be replaced. The possible downside, especially at unplanned leave is that knowledge can be lost. This can partially be prevented by documentation and/or knowledge sharing where possible with the adequate role of persons in the other teams/tracks of the master project.
	Test resources knowledge and experience in healthcare	Delays in test design because productivity is lower than expected. Test Coordinator is taking in depth eHealth courses and reading documentation, he will be responsible for knowledge transfer.
	Limited availability Business owner	Business owners at the eHealth platform have a limited availability and have to review and validate assumptions made by the teams on minimum a monthly basis. This causes a risk in things are unclear or necessary decisions have to be made on a timely basis.
	Political urgency	The total project setup is subject to high political aspirations so the urgency to come up quick with results is present. However, the set-up of this ambitious project will need the required time and urgency will have a negative influence on top -end results. Eventually an intermediate deliverable can be agreed upon and necessary resources are included in the budget to that goal.
	Budget	Budget is set up with the high-level knowledge of the work and related tasks. However, normally such projects are preceded by the analysis and documentation phase. This means that during phase 2 and 3 scope can be adapted. In this project the budget and assigned resources had to be estimated upfront, meanwhile project execution will possibly present some deviations. Deviations of the current plan will be buffered in the scope of the support agreement.

3.2   Operational Risks

Extra risks may occur and must be reported while the project is ongoing. Inside the Scrum Ban methodology, we'll preferably use the daily stand-up to make them known to the team and stakeholders so the necessary measures can be taken. It is thus expected of each team member to speak up those risks when they occur.

3.3   Approach

Basic flow of approach for test Design with a use case approach.
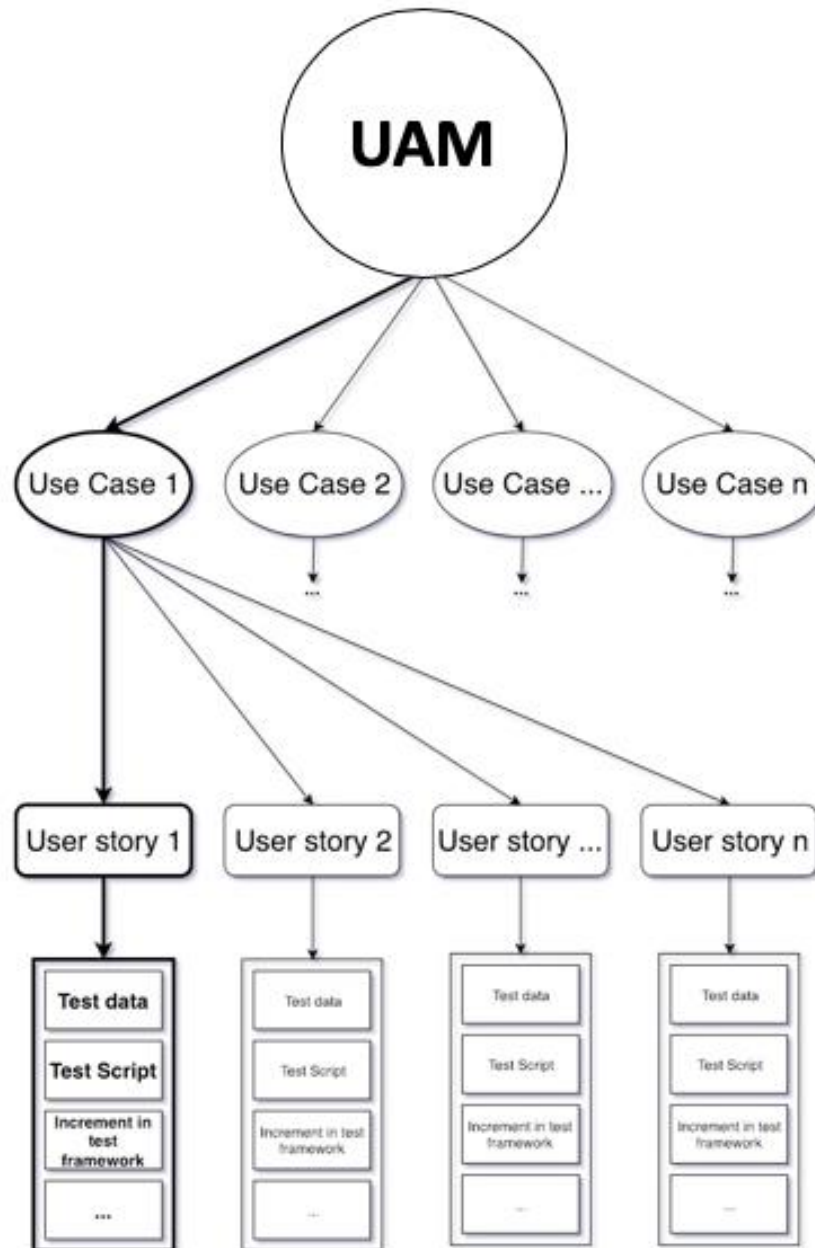
First of all, the methodology that will be used in this project is Agile, more specifically the use of Scrum Ban. With the use of Jira, a Kanban board will be provided to the teams, so all progress can easily be tracked during the project.

Further on with the help of available cookbooks concerning the services that will be tested in this track a set of Use Cases will be created, always with the mind of a user. This will help to cover the most use cases possible. Based on the use case a set of User stories will be designed in order to focus on smaller aspects of the system under test which test scripts will be written. To Help support the designed test scripts/framework created along the project a set of test data will be provided.

A Basic vendor mock tool, and eHealth mock tool will both be designed to support the tests written to simulate user driven behavior.

3.4   Deliverables

Use cases flows
A use case is a diagram who covers a set of requirements, features of the system. It is also based on a user minded approach. The application of use case design in this project should help identify and specify those contexts. The design of use cases should be simple and can be visualized through diagrams such as state transitioning to make the user flows clear and understandable. Base on those flows a set of User Stories can should be defined in order to cover the functionalities used inside those flows.

User stories
As a general aspect of the user stories we will implement at least a template such as:

"As an [actor]…, I want [goal]…, so that [reason]…."

With the help of this template the more specific features focused inside the User Story will contain its user minded approach to more in-depth requirements along the parent Use Case.
The user stories must contain specific information on the focused functionality and should contain any technical aspects and test data if required.

If the details of a user story are not clear at the start of its design, it can be preceded by analysis or spikes where required.

Test scripts
Test scripts will be a set of instruction that can be automated to test the system's functions as expected

Test reports
A Summarization of the designed test activities will be created after each predefined sprint period. The purpose of those test report is so that progress can be demonstrated to the stakeholders along with the results it has provided. It should be clear to the stakeholders in this document what effort and progress has been done. Also based on the results provided in the test reports an evaluation should be possible on the ongoing test activities.

Test framework
For the vendor a test framework will be provided with an integrated data validation so IMEC can have the control of the validation of data sent to eHealth services. It will be required in the test activities of this project to ensure a correct coverage of the system test based

Test data
As soon test data is required for any to be executed test, it should be created, provided and documented for further use.

Vendor mock tool
Exclusively for IMEC a basic Vendor mock tool will be created so their own written tests independent of the

vendor's system can be tested before delivery. It has as purpose a simulation of user minded requirements. It is to understand that this tool is in no case publicly accessible, neither for the vendor.

3.5   Environments

eHealth ACC
In order for the test to work properly before delivery, the test must be run against an Acceptance environment of the eHealth Platform where access if given by eHealth Platform itself. Without access to this environment the tests can not be executed before deliver of the project, nor by vender before delivery of their product.
For this track of the project access is thus also required to the ACC environment of the eHealth platform.

3.6   Management Test Data through validation

XML
The service is KMEHR based, this means all data communication will be in XML format following the KMEHR structure. As communication in between will occur on a general basis, data validation will be done using XML schemes. The advantages of those schemes:
- Validation of structure can be done
- Validation on content can be done
- No code for validation required except for the API call inside the tool used for validation.
- Data parsing from the user input or received response is possible if required.

Therefore, it could be required that xml schemes or request are created for testing of the vendors application.

For more information on the KMEHR standards following link can be consulted:
https://www.ehealth.fgov.be/standards/kmehr/en

JSON
Depending on test tools used, potential conversion will have to be done in a JSON format before further validation could be done. If this should be the case JSON schemes may be required to be created or JSON data to be manipulated. As for the advantages of JSON it holds the same those for XML validation.

3.7   Resources

eHealth Platform Business Owner
The business owner represents the eHealth Platform and is its voice, is responsible and accountable for maximizing the value that the team delivers. The Business owner reviews and validates the use cases and user stories, prioritizes them based on importance and dependencies. The business owner will focus on the business and spend the majority of its time liaising with stakeholders and should not dictate how the team reaches a technical solution. There can be one business owner per eHealth basic service, or several eHealth basic services are bundled in on business owner.

Scrum Master
He has an overview of the entire project, will keep the digital boards, charts and daily progress up to date. He will facilitate the ceremonies and its communication and take the teams entire administrative burden of reports and progress away. He will report its progress and results directly to the project manager, the client and the eHealth Platform.

Test Analyst
Because of the limited time available by the eHealth platform business owners (0,5 day/month). The project needs a profile with a detailed knowledge of the cookbooks. To identify the use case flows respective to that

tracks. This profile will draw process flows, write first approach user stories for automation. Optionally, he/she can even make suggestion of changes to the eHealth Platform. The test analyst is responsible for use case flows deliver but not accountable.

Test Scripter
A technical scripter profile is needed for the usage of several technical tools (automation, integration and interoperability). For the creation and keeping up to date of test scripts and validation input based on use case flows and user stories. The test scripter must automate as much as possible; every user case flow and user story must be automated the moment its drawn. Is responsible for test scripts and validation input delivery but not accountable.

3.8   Tools/Frameworks

Castle mock
Castle mock is a free open source application. This tool has the possibility to mock out RESTful API's and SOAP web services. It will be put to use to mock the eHealth services as part of the test framework that will be delivered.

https://castlemock.com/

Citrus
Citrus is a test automation framework available for free. It is used to automate integration tests for message protocols such as HTTP Rest, JMS, TCP/IP, SOAP, FTP, SSH, XML, JSON and more!
This tool will be used inside test scripts/framework delivered to support the required message exchanges between vendor and eHealth Platform.

https://citrusframework.org/

Postman
Postman has a simple to use GUI, for use of Saved API requests which can be stored in collections, environments, tests. The created collection can also be shared in between users. This tool should be used inside the teams so the eHealth platform could be called and tested for better understanding and design of tests.

https://www.getpostman.com/

SOAPUI
Soap UI is an advanced REST & SOAP Testing tool. It can be used for API applications: Functional, Performance, Security, Mocking, Data-Driven Testing and also includes Test Reporting.

https://www.soapui.org/

3.9   Incidentals

Introduction
Identification
Approvals

4   Evaluation criteria & guidelines

4.1   Entry & Exit criteria

Entry criteria for start design Use Cases
Before design of use case can be done all documentation regarding the to test eHealth service should be available. Without it no correct estimation of use cases can be done.

Entry criteria for start design User stories
As the User stories are based on a parent Use case, the specific use case should exist and be complete before al linked User Stories can be defined.

Entry criteria for start design test scripts, test data, ...
As test scripts, and other will be created/designed base on existing User stories, they must be clearly created before design of test scripts is possible.
All documentation concerning the to test eHealth services should also be available for technical specifications.

4.2   Suspension & Resumption criteria

5 Test & quality tasks and planning

5.1 Tasks

ID	Tasks	SM	PO	TA	TS
	Designing use cases			X	
	Review of use cases		X	X	X
	Designing user stories			X	
	Review of user stories		X	X	X
	Designing test scripts			X	X
	Review test scripts			X	
	Creation of test data		X	X	X
	Setup test specifications		X	X	X
	Defect in test scripts logging			X	X
	Solving defects in test scripts				X
	Retesting of test scripts			X	X
	developing of vendor mock tool				X
	Set up of progress report	X			
	Coordination, follow up and progress reporting	X			
	Set up and facilitating meeting according the agile/Scrum ban methodology	X			
	Follow up of agreements set up by the team	X	X	X	X
	Removing impediments	X			

[1]SM=Scrum Master, PO=Product Owner, TA=Test Analyst, TS=Test Scripter

5.2 Planning