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***KEREVAL HEALTHLAB - Project IHE EUROPE***

**User Guide**

***Test Management – V5.x***

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■ **Table of content**

<b>1</b>	<b>INTRODUCTION .....</b>	<b>6</b>
<b>1.1</b>	<b>Purpose.....</b>	<b>6</b>
<b>1.2</b>	<b>Gazelle Test Management Feature List.....</b>	<b>6</b>
<b>1.3</b>	<b>Test Management Components .....</b>	<b>7</b>
1.3.1	Testing Session Management.....	7
1.3.2	Users Management .....	7
1.3.3	Contacts Management.....	7
1.3.4	Organizations Management.....	7
1.3.5	Contract Management .....	7
1.3.6	Fees Management.....	7
1.3.7	Systems Management .....	7
1.3.8	Tests Management.....	8
1.3.9	Proxy Management.....	8
1.3.10	Simulator Management.....	8
1.3.11	Configuration Management.....	8
1.3.12	Monitor Management.....	8
1.3.13	Samples Sharing Management.....	8
1.3.14	Pre-connectathon Test Management.....	8
1.3.15	Connectathon Test Management.....	9
1.3.16	Connectathon Test Grading.....	9
1.3.17	Patient Demographics for Testing Purposes .....	9
1.3.18	Single Sign On.....	9
1.3.19	Test Update Notification.....	9
1.3.20	Order Manager Binding.....	9
1.3.21	Mobile Test Grading for Monitors.....	10
<b>2</b>	<b>GAZELLE TEST MANAGEMENT USER MANUAL .....</b>	<b>11</b>
<b>2.1</b>	<b>Basic Terminology .....</b>	<b>11</b>
2.1.1	Test Types.....	11
2.1.1.a	No Peer .....	11
2.1.1.b	Peer to Peer.....	11
2.1.1.c	Group Test.....	11
2.1.2	Thorough / Supportive .....	11
2.1.2.a	Thorough Testing.....	11
2.1.2.b	Supportive Testing.....	11
2.1.3	Test / Test Instance .....	11
2.1.3.a	Test.....	11
2.1.3.b	Test Instance .....	11
<b>2.2</b>	<b>Registration Process .....</b>	<b>11</b>
2.2.1	Registering and managing users for an organization .....	12
2.2.2	Register Participants to Testing Session.....	12
2.2.2.a	Import from Users .....	13
2.2.2.b	Import from Contacts .....	13
2.2.2.c	Add Participants.....	13
2.2.3	Registering and managing system for an organization.....	13
2.2.4	Generation of the contract .....	14

2.2.4.a	<i>First Level Registration Errors</i> .....	14
2.2.4.b	<i>Second Level Errors: Dependencies</i> .....	16
2.2.5	User Preferences.....	16
<b>2.3</b>	<b>Testing Session</b> .....	<b>18</b>
2.3.1	Concept of the Testing Session .....	18
2.3.2	Selecting a Testing Session.....	19
<b>2.4</b>	<b>Sample Sharing</b> .....	<b>19</b>
2.4.1	Concepts of sample sharing .....	19
2.4.2	Sharing samples.....	20
<b>2.5</b>	<b>System Configuration</b> .....	<b>21</b>
2.5.1	HL7v2.....	21
2.5.2	Extract Configs from Gazelle .....	22
2.5.2.a	<i>Export Peers configuration parameters from the GUI</i> .....	22
2.5.2.b	<i>Export peers configuration parameter using SOAP webservices</i> .....	23
2.5.3	OID Management .....	24
2.5.3.a	<i>Export OIDs from GUI</i> .....	24
2.5.3.b	<i>Export OIDs using Rest webservices</i> .....	24
2.5.3.c	<i>Export OIDs using SOAP webservices</i> .....	24
2.5.4	Network Configuration .....	25
<b>2.6</b>	<b>Pre-Connectathon Testing</b> .....	<b>26</b>
2.6.1	Getting the list of test to be performed .....	26
<b>2.7</b>	<b>Connectathon Testing</b> .....	<b>26</b>
2.7.1	Different category of tests .....	26
2.7.2	Starting a Test Instance .....	27
2.7.2.a	<i>Connectathon Dashboard</i> .....	27
2.7.3	Monitor Workflow .....	28
2.7.3.a	<i>Test validation workflow</i> .....	28
2.7.3.b	<i>Gazelle Monitor App</i> .....	28
2.7.3.c	<i>How to proceed</i> .....	28
2.7.4	Test Instance Workflow.....	32
2.7.4.a	<i>Test Instances Statuses</i> .....	32
2.7.4.b	<i>Test Instances Transitions states</i> .....	33
2.7.5	Validation of test steps logs within test instance .....	34
2.7.6	Generate and Share patient data.....	37
2.7.6.a	<i>List of patients</i> .....	37
2.7.6.b	<i>Update patient data</i> .....	38
2.7.6.c	<i>Share a list of patients</i> .....	38
2.7.6.d	<i>Share a patient</i> .....	38
2.7.6.e	<i>Generate a patient</i> .....	39
2.7.6.f	<i>Permanent link</i> .....	39
2.7.6.g	<i>Quick search</i> .....	39
<b>2.8</b>	<b>Internet Testing</b> .....	<b>39</b>
2.8.1	Specificity of Internet testing .....	39
2.8.2	Registration .....	39
<b>2.9</b>	<b>Usage of Connectathon and PreConnectathon presets</b> .....	<b>40</b>
<b>2.10</b>	<b>Administration</b> .....	<b>41</b>
2.10.1	Administer users .....	41
<b>2.11</b>	<b>Systems Management</b> .....	<b>42</b>
2.11.1	Permanent link to system.....	42

3 TM - RELEASE NOTES .....43

## 1 Introduction

### 1.1 Purpose

This guide introduce the usability of Test Management platform.

### 1.2 Gazelle Test Management Feature List

The following table summarizes the list of features in the Gazelle Test Management Tool.

Feature	Bordeaux 2010	Pisa 2011	Chicago 2012	Bern 2012
<b>Registration Process Management</b>				
<a href="#">Users Management</a>	x	x	x	x
<a href="#">Contacts Management</a>	x	x	x	x
<a href="#">Companies Management</a>	x	x	x	x
<a href="#">Contracts Management</a>	x	x	x	x
<a href="#">Fees Management</a>	x	x	disabled	x
<a href="#">Systems Management</a>	x	x	x	x
<b>Test Definition Management</b>				
Tests Management	x			
Binding to Gazelle Master Model		x	x	x
<b>Test Session Management</b>				
<a href="#">Configuration management</a>	x	x	x	x
<a href="#">Proxy Management</a>		x	disabled	x
<a href="#">Order Manager</a>			?	x
<a href="#">Monitor Management</a>	x	x	x	x
<a href="#">Test Update Notification</a>			disabled	x
<b>Goodies</b>				
<a href="#">Mobile Test Grading for Monitors</a>		x	?	x
<a href="#">Single Sign On</a>		x	disabled	x

## 1.3 Test Management Components

### 1.3.1 Testing Session Management

Gazelle Test Management can handle multiple testing sessions. The Multiple Test session can be run in parallel. Monitor and Systems register for specific testing session. One can select the coverage of the testing session in terms of Domain and/or Profile. One can also specify the type of testing to be performed in a testing session : Pre-Connectathon, Connectathon, Certification.

### 1.3.2 Users Management

Module for the management of gazelle users and their roles. Handles the users account management: registration, lost password, user information update. Handles the management of the roles of the users.

Users are associated to an organization. .

### 1.3.3 Contacts Management

Management of the contacts for a participating company. Allows the participating companies to enter contacts within Gazelle. Contacts are mainly used for administrative purposes. Used to identify the financial contact, the contact for marketing questions and the contact for technical questions.

Contacts are NOT required to have a login.

### 1.3.4 Organizations Management

Management of all organization relative information. This information is mainly for the purpose of the connectathon management. Users, Contacts and Systems belongs to an organization. The module allows the management of the information about the organization : Address, Contacts, VAT information,... [Read more...](#)

### 1.3.5 Contract Management

Component that manages the creation of the contract for testing session participants. Summarize the registration of the participants and create a pdf document based on a template that can be customized for each testing session. This makes use of the jasperreport library. The link to the jasperreport template for the contract definition in a testing session, is specified within the properties of the testing session. One has the choice to enable or disable it for a given testing session. [Read more...](#)

### 1.3.6 Fees Management

Component for the management of invoice (generation of the invoice, based on a template) and estimation of the amount of the fees to be gathered for an event based on participation. Helpful for connectathon management. Invoice generation is dependent of the testing session and as for the contract based on a template that can be specific to a session. Can be disabled for a given testing session. [Read more..](#)

### 1.3.7 Systems Management

Module for the management of Systems Under Tests (SUT). Manages the registration of the SUT for a testing session. What are the actors, integration profiles and options supported by each SUT. Allow participants to copy system characteristics from one testing session to the other.

Contains a rules engine that checks if the system correctly implements the IHE requirements of dependencies among the actors and profiles.

### 1.3.8 Tests Management

Modules for the definition of the tests. Test requirements per Actor/Profile/Options. Test script definition : Who are the participants ? What are the instructions for the participants ? What are the steps required to perform the test ?

### 1.3.9 Proxy Management

Interaction with the Proxy component. Control of the proxy, instruct the proxy of the interfaces to open and close for testing purposes. Allow participants to link test instance steps to corresponding messages captured by the proxy.

### 1.3.10 Simulator Management

Component for the declaration and the management of the simulators that Gazelle uses to perform the tests.

### 1.3.11 Configuration Management

Management of the configuration of the systems and simulators performing together in a testing session. Knowing that most of the time spend during testing is lost during exchange of configuration parameters, it is essential that Gazelle allows the test participants to correctly and rapidly share configuration informations. That component allows the user to provide the information relative to their own systems. It also allow the test participants to rapidly find the relevant information about their peers in a test.

### 1.3.12 Monitor Management

Management of the monitors. Monitors are the independent and neutral individuals that check and validate the test performed during a testing session. The component allows the Technical Manager to assign tests to specific monitors. It allows the manager to split the load of test verification among the monitors. Test can be assigned to monitors either test by test, or monitor by monitor

### 1.3.13 Samples Sharing Management

Module for sharing samples. This component allows registered system to share and find samples. Some system need to provide samples, some need to render them. The component allows the participants to easily find the samples relevant for their systems. The sample sharing module is linked to External Validation Services for checking the conformity of the shared samples. The component makes also use of internal validation services

When relevant, the component module allows sample creators to provide a screen capture of the rendering of their samples. It also allows sample readers to provide a screen capture of the rendering of the sample on their system.

A sample and a test can be linked together. This is usefull in the case of scrutiny test. [Read more...](#)

### 1.3.14 Pre-connectathon Test Management

Allows managers to define the pre-connectathon test : Where to find the tool ? Where to find the documentation ? What actors/profile/options are concerned by the test.

Allows participants to find out what pre-connectathon tests they have to perform, to return corresponding logs and view result of logs grading. [Read more...](#)



### 1.3.15 Connectathon Test Management

Allows the managers to define the tests.

- What is the purpose of the test ? (assertion tested)
- What actors/profile/options are concerned by the test ? (test participants including the cardinality for each participants)
- The scenario of the test (sequence diagram of the interactions between the participants to the test), including the definition of what need to be checked at each step.
- How many instances of the test are required for a SUT to be declared as successful to the test.

Allows engineers to find out what test need to be performed by their systems.

Allows engineers to start a test and select its participants (peer system under test or simulators)

### 1.3.16 Connectathon Test Grading

Module to allow the grading of systems participation during the connectathon. Allows the project managers to review test performed a determine success or not of a system to the participation of a specific actor / integration profile / option combination.

### 1.3.17 Patient Demographics for Testing Purposes

Module for sharing patients among the participants to a test instance. The module allow generation of simulated patient data using the Demographic Data Server. Generated patient data can be send to a selection of test participants using HL7 V2 or HL7 V3 messages.

Selection of the target is done based on systems configuration as declared in Gazelle. Target can be also configured manually. The component allows the management of multiple patient identification domains. The generated patient are assigned a unique id in the various patient identification domains of the target systems.

Stored data information can be used for validation of messages exchange by test instance participants.

### 1.3.18 Single Sign On

When enable component of Gazelle Test Management allows user to use a CAS server for their identification. Allows harmonization of the logins among the different applications. All Gazelle simulators also use the CAS login component. JIRA bug tracking system makes also use of it. [Read more...](#)

### 1.3.19 Test Update Notification

The purpose of the Test Update Notification is to reduce the load on the server that is hosting the Gazelle application. It allows connectathon participants to be informed of updates on the test instances that are of concern for them. Instead of refreshing the Gazelle Connectathon Dashboard all the times the participants are informed of new tests instances creation, updates, comments and grading.

### 1.3.20 Order Manager Binding

This feature is an extension of the Patient Demographic for testing purposes. It allows in addition of the creation of dummy patients, to create encounters and orders for them and send them to test participants. This is useful in the context of preparing the right conditions for a test. All SUT participating to a test can be aware of the same patient, encounter and order. [Read more...](#)

### 1.3.21 Mobile Test Grading for Monitors

This feature add a webservice front end to Gazelle Test Management in order to allow the grading of the test using a mobile device like a WIFI enabled tablet PC (iPad) or a smart phone (iPhone, android...). Monitors can use their mobile device to scan a QR code on the page of test instance to grade and then directly access the page on their device. [Read more...](#)

## 2 Gazelle Test Management User Manual

### 2.1 Basic Terminology

#### 2.1.1 Test Types

##### 2.1.1.a No Peer

- Test run by your self. There is no need of a test partner to run this type of test
- Used for conformance testing of artefacts (document, messages) that the SUT can produce.
- No peer tests are usually pre-requisite to Peer to Peer tests.

##### 2.1.1.b Peer to Peer

- Test run with one or two partners SUT.
- Test scheduled by SUT manager.

##### 2.1.1.c Group Test

- Test run with a larger group of SUT
- Test scheduled by management

#### 2.1.2 Thorough / Supportive

See more information [there](#). The Thorough / Supportive testing mode is defined at registration time.

##### 2.1.2.a Thorough Testing

- For those who do not qualify for Supportive Testing. The default testing mode.

##### 2.1.2.b Supportive Testing

- For profiles in Final Text
- For Actor / Integration Profile / Option that have been tested by the vendor in a past connectathon
- There must be a published integration statement
- Used for participants who would like to help partners

#### 2.1.3 Test / Test Instance

##### 2.1.3.a Test

A definition of a test involving one or more IHE actors in one or more profile.

##### 2.1.3.b Test Instance

One instance of a test with specific test partners

### 2.2 Registration Process

In this section we present how to register a system into the Gazelle Test Management application. Gazelle calls a system an application to be tested. Others call it an SUT (or system under test).

When registering a system into the Gazelle Test Management Application the user defines the list of Actors / Profile / Profile Options that the system supports and that he/she would like to test.

Registration is required for participating to a test session.

A user may wish to register a single system into the Gazelle Test Management Application, and have this system participate to multiple testing session. If this is the case, the list of Actors / Profile / Profile Options that the system supports are identical in all the session the system is taking part to.

If a user wishes to test different Actors / Profile / Profile Options combination in different testing session then he/she needs to register different systems.

### 2.2.1 Registering and managing users for an organization

Users are person with a login in the Gazelle Test Management tool.

### 2.2.2 Register Participants to Testing Session

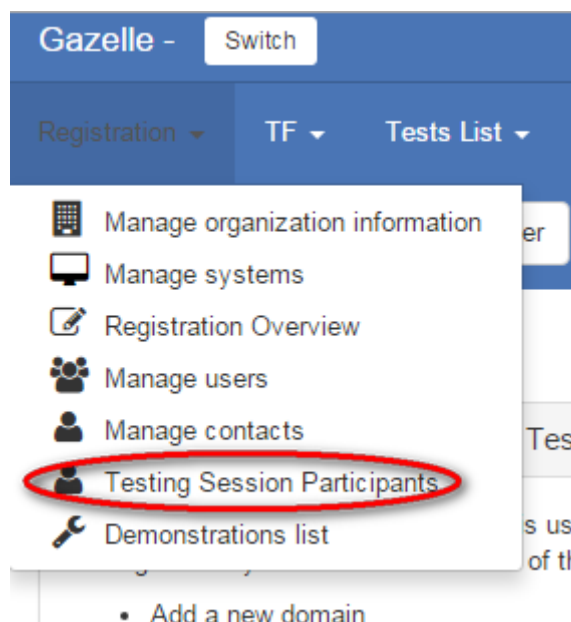
This page describe how to register the participants to a Testing Session. Participants to the testing session are the person who will get a badge and will be able to enter the floor where the testing is taking place.

Registration of the participants to the Testing Session can only take place when the registration of the systems is over.

Only the users with the role "vendor\_admin" can register participants to the testing session.

One accesses the participants registration page through the menu Registration -> Testing Session Participants

See the illustration below :



There are 3 means to register a participant to a testing session :

- I) import from users
- II) import from contacts

III) add participant

### 2.2.2.a Import from Users

By selecting the button **import from users**, one can select the participants to add in the list of registered users for the organization.

### 2.2.2.b Import from Contacts

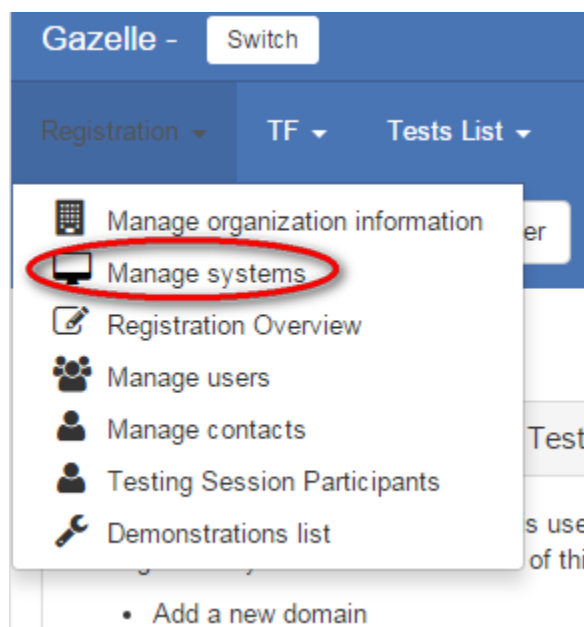
By selecting the button **import from contacts**, one can select the participants to add in the list of contacts already declared in Gazelle Test Management tool. Contacts do not need to have a login.

### 2.2.2.c Add Participants

When selecting the button **add participants**, the users can enter manually all the information about the participant to register.

## 2.2.3 Registering and managing system for an organization

The system registration page is accessed through the menu : **Registration -> Manage Systems**.



In that page you can :

### Systems management

Registered systems search

Organization Keyword: All organizations  ✖

Registration status: Please Select...  ✖

- **Add a system** : This will create a new system in the gazelle tool.
- **Add a system from an existing testing session** : This will attach a system that is already registered to another testing session to the session currently selected. The feature is interesting

to register systems both for a connectathon testing session and internet testing session at the same time. Note that when attaching a system from another session to the current session you will not be able to remove actors / profiles registered. If you want to add a system to the current session that is based on a system in a previous session but that does not implement the same list of actors and profiles, then the feature you want to use is the **Import systems from another testing session**.

- **Copy systems from another testing session** : A click on that button will create a new system, initialising it with the information of the selected system. The name and the keyword of the system are appended with the string "\_COPY" in order to distinguish the new system from the old one.

## 2.2.4 Generation of the contract

The Gazelle software system is used to generate a contract for IHE Connectathons that includes the systems to be tested and several contacts within your organization. If any of these are missing, the software will not let you generate a contract.

### 2.2.4.a First Level Registration Errors

To generate a contract, the administrator for your organization (the person who created the Gazelle account) will select **Registration -> Financial Summary** from the web interface. Next figure shows common error messages that occur when generating a contract. The error messages in red are generated by Gazelle. The numbers in ( ) are pasted onto the screen capture and refer to notes below the figure.

1. The **mailing address is missing for the company**
  - a. This is for general correspondence with your company.
  - b. Select **Registration -> Manage company information**
  - c. Under Mailing address, add an address for your company. This is on the right half of the form. Select **Click here to add a new address**. If you already have entered an address but you were presented with the error message, you need the next step that associates the address as your company mailing address. This first step adds an address to our database, but does not make it your mailing address.
  - d. The address that you entered is presented in a table with the rightmost column an action column. If you have added a second address, you will see a table with two lines. To associate an address as your mailing address, click on the **Select** link in the appropriate row.
  - e. You will now see the address copied from the right part of the form to the left side of the form, including the country flag. Scroll down and select Save. That should get rid of error (1).
2. **Missing address for Financial Contacts**
  - a. This address is for the person in your organization responsible for processing our requests for payment.
  - b. Select **Registration -> Manage company information**
  - c. Scroll down to the Billing address section. Add an address on the right side of the form; Select **Click here to add a new address**.
    - i. You might already have an address for your company that is the same for this person. Great; skip down to iii.
    - ii. If you don't have an address registered for this financial contact or the address of the financial contact differs from the main address, add it now.

- iii. In the table of addresses on the right side of the form, under the Billing address section, click on the Select link in the appropriate row.
        - iv. You will now see the address copied from the right part of the form to the left side of the form.
      - d. Scroll down and select the Save button.
3. **Missing Technical Contacts**
  - a. We need to verify that there are one or more staff members in your organization we can contact for testing and other technical details.
  - b. Select **Registration -> Manage contacts**
  - c. You will see a table of contact points in your organization. That table might be empty or already have members. You can add a contact person with the Add a contact button in the upper right corner. For this error (Missing Technical Contacts), make sure you select the checkbox for Technical.
  - d. If the Technical Contact was already listed in the table but is not indicated as a Technical Contact in the Professional functions column, edit the row for that person (right most column of the table, edit button). Select the checkbox for Technical and do not forget to hit Save.
  - e. We require at least one contact entered in the system for the generation of the contract. You are welcome to enter more technical contacts. This will be useful for organizations that have multiple systems, each with a separate technical contact.
  - f. If you are bringing one system and three engineers, please enter one candidate as your technical contact. That person would be able to answer most technical questions or delegate to someone else. Please do not enter a person who is merely going to contact your engineers and pass along the questions.
4. **Missing Marketing Contacts**
  - a. We need to verify that there are one or more staff members we can contact if we have marketing questions (is there a logo we can use in documentation? What is the exact name to use for your company?).
  - b. Refer to (3) above. Rather than selecting the checkbox for Technical, select the checkbox for Marketing/Commercial.
  - c. The same person can fill the roles for Billing, Technical and Marketing/Commercial. We split them out for those organizations that have separate duties.
5. **Missing System Information**
  - a. If there is missing system information, you have registered zero systems for testing. The purpose of the contract is to explicitly list what you will test and include a computation for fees. You will need to register the system or systems you wish to test and all profile/actor pairs to be tested.
  - b. Select Registration -> Manage systems
  - c. Enter one or more systems.
    - i. Make sure you save the systems.
    - ii. Make sure you select the Profile/Actors tab and enter what you want to test. Check for missing dependencies (ATNA requires CT).
    - iii. Fill in information if you plan to participate in a Showcase/Demonstration
6. **Missing Domain Information**
  - a. This means you have either entered zero systems, or you have entered systems but included no profile/actor pairs.
  - b. Refer back to (5) for details.

### 2.2.4.b Second Level Errors: Dependencies

Many IHE Integration Profiles have dependencies defined in the documentation. One example is that an ATNA Secure Node is always required to implement the Time Client actor in the Consistent Time profile. When you enter registration information, there is a button available to you labeled Check for Missing Dependencies. Rather than automatically register you, the system gives you this button to let you check when you feel it is appropriate. A box will pop up, list the missing dependencies, and give you the option to click a link to add them on the spot.

When you return to the financial page, one section will list all of your registered systems. The grid will give the system name, domains tested and fee information. One column will also indicate if all dependencies have been resolved. A green icon indicates sufficient registration; a red icon means that a dependency needs to be satisfied.

You cannot generate a contract if there are dependencies to be resolved, so you need to return to the page for managing systems.

- The rules defining dependencies are written in the Technical Frameworks. We transcribe those rules into Gazelle and might make mistakes. Please check carefully. We may have added a dependency that is not a requirement, or left one out. If we have omitted a dependency in our automated rules and you do not register, you are still responsible for those tests during the Connectathon.
- The rules defining dependencies do not identify all combinations that you will find important. For example, the XDS.b profile requires the Document Source and Document Consumer to obtain a consistent patient identifier for an Affinity Domain but does not specify the mechanism. We support that with the PIX and PDQ profiles for Connectathon testing, but do not require that. Participants fail to register for PIX or PDQ and are then surprised to realize they do not have a mechanism to obtain the patient identifier in the Affinity Domain.

### 2.2.5 User Preferences

User preferences are mainly used by Test Management application to customize some views according to the user's wishes. The main preferences you may want to update are

- The number of results (rows) in table
- Whether or not you want the diagram sequence of a test to be displayed on the Test Instance page. If not, you may save some space in the page, the one will be lighter to load.

User preferences can also be used to communicate some useful pieces of information to monitors and other connectathon participants, such as your photo, the languages you speak...

To configure your own preferences, you have first to be logged in. Then, on the top right corner of Test Management, hit the link with your user name and preferences (shown below).

This link leads you to your preferences management page. If you never change anything, the page may look something like this.



The screenshot displays the 'User Preferences' interface. The top navigation bar includes 'Gazelle - Connectathon EU 2016' and a 'Switch' button. Below the navigation, there are tabs for 'Registration', 'TF', 'Tests List', 'Configurations', 'Connectathon', and 'Administration'. A search bar and a 'Valider' button are also present. The user's name 'gthomazon' is shown in the top right corner. The main content area lists various user profile fields, some with explanatory text. A 'PHOTO NOT AVAILABLE' placeholder is shown. At the bottom, there are 'Edit' and 'Change password' buttons. A dropdown menu is open, showing 'Preferences' (circled in red) and 'Logout'.

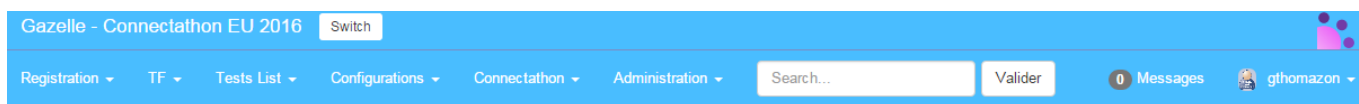
As you can see in the screen capture above, this page also enables you to change your password. Some fields have been recently added as

**Skype account** During the connectathon week, it can be useful to communicate using Skype. Such a field already exists for the system but a monitor for example, who does not own systems may want to "publish" his/her Skype name to speak with other monitors or participants.

**Table Label** During the connectathon week, you will sit at a table, the one will be localized by everybody thanks to a table label, typically A1, J10... When you sit the first day of the connectathon, fill this value so that other attendees will find you more easily.

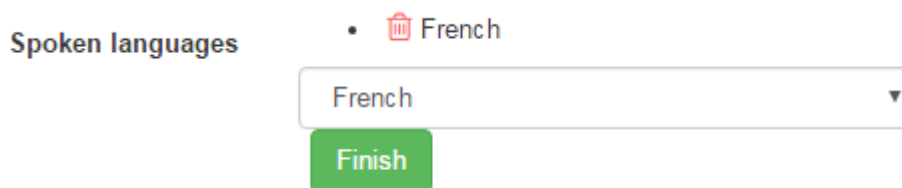
**Spoken languages** The languages you are able to speak.

Hit the Edit button to update those fields. The following panel will be displayed.



## User Preferences

When you hit the "plus" icon, a menu is displayed and you can pick up your language(s). If need, hit the "red cross" button in front of a language to remove it from the list. When finish, hit the "finish" button.



Do not forget to save your changes before leaving this page.

## 2.3 Testing Session

### 2.3.1 Concept of the Testing Session

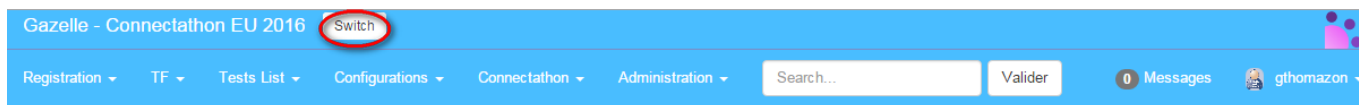
Gazelle Test Management can handle multiple testing session. There are testing sessions for multiple purposes.

- Connectathon
- Internet Testing
- Testing purposes

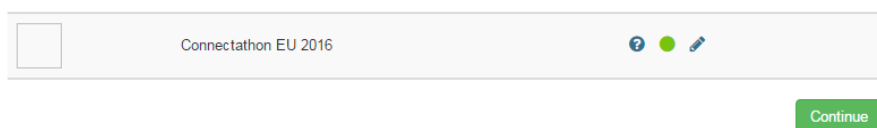
Testing sessions are created by Gazelle Test Management administrators and can be configured for the purposes listed above.

### 2.3.2 Selecting a Testing Session

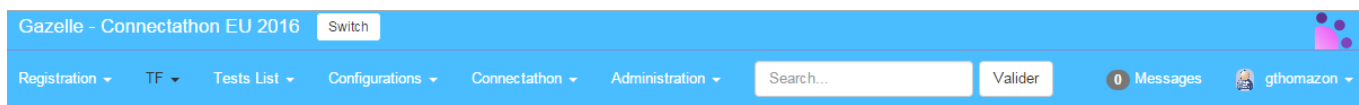
In order to change testing session, you need to click on Switch at the top of the application :



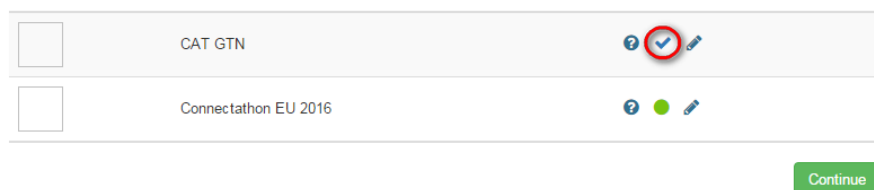
Please select one testing session. This will set context and only display systems, data and results relevant to that session.



Then select the session of your choice and you will be redirected to the home page.



Please select one testing session. This will set context and only display systems, data and results relevant to that session.



Make sure that once you have completed that task, the top of the screen displays the name of the testing session that you have selected.

Note that since Gazelle Test Management version 3.5 we can select different color scheme to differentiate the sessions.

## 2.4 Sample Sharing

This section is about sharing samples in the Gazelle Test Management application. Samples can be shared for testing purpose. Connectathon and Pre-connectathon scrutiny tests requires participants to share sample. Gazelle allows the participants to share the sample, find the samples shared by partners and perform validation of samples using External Validation Services access.

### 2.4.1 Concepts of sample sharing

Gazelle has a feature that allows to share samples among the participants.

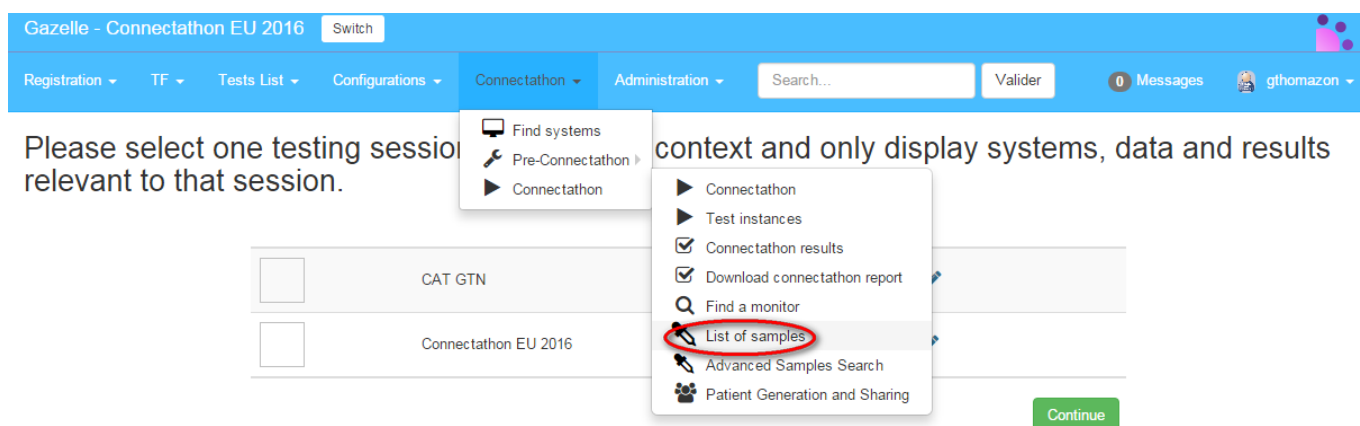
We are calling "sample" any document or object that an application creates and is used by another application. Typically samples are :

- sample DICOM object
- sample ISO image of DICOM CD-ROM or DVD
- sample CDA documents
- sample XDW documents...

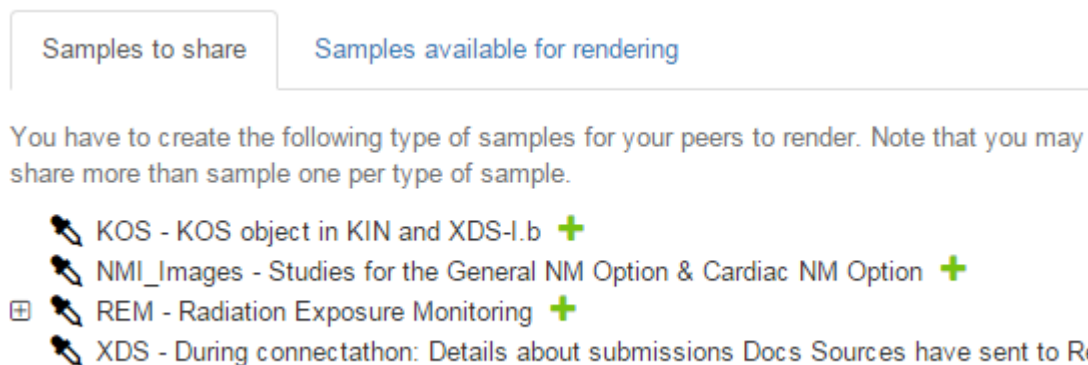
Gazelle Test Management provides the users with the list of possible sample to share or consume based on the registration of actor/profiles pair.

## 2.4.2 Sharing samples

Samples are accessed from the Connectathon Menu as shown on the following screen capture.



Example of the screen shown to the participants with the list of possible samples that can be shared for the systems selected.






















Exemple of the screen shown to the participants with the list of samples that partners have provided for sharing and are of concerns to the selected systems.

Samples to share      Samples available for rendering

 Export to excel

You have to render/consume some of the following objects that your peers have created. You can also add a comment on these samples.

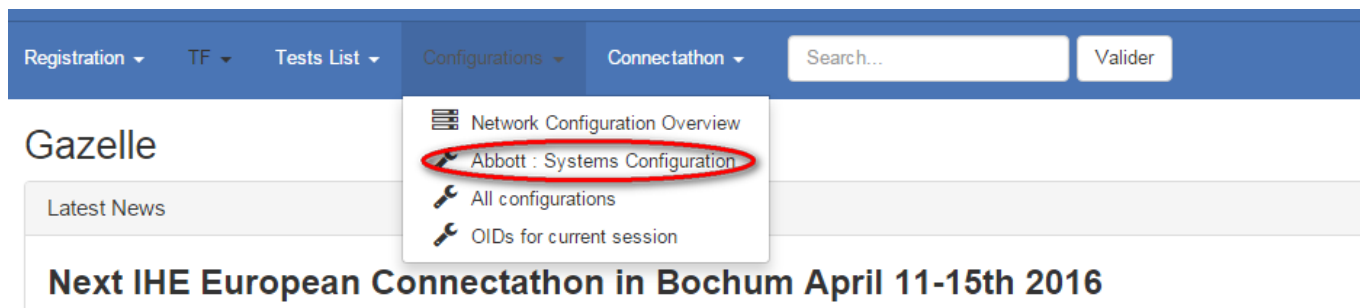
-   DICOM\_OBJECTS - Images produced by Acquisition Modalities in SWF, EYECARE, C
-  DIFF - Enhanced MR Diffusion Sample
-   ED - Evidence Document (SRs) 
-   GSPS - Grey Scale Presentation State 
-   KOS - KOS object in KIN and XDS-I.b 
-  MAWF - Sample images for MAWF Use cases
-   NMI\_Images - Studies for the General NM Option & Cardiac NM Option
-  PERF - Enhanced CT/MR Perfusion Samples
-   REM - Radiation Exposure Monitoring 

## 2.5 System Configuration

Default configurations are assigned to the systems participating to a testing session. Once the Testing Session manager has assigned the configurations, participants can edit them and approve them.

This section describe how to edit and approve the configurations in Gazelle Test Management

The configurations are accessed through the menu "Configurations" as shown on the following screen capture



### 2.5.1 HL7v2

This page present the form to edit the HL7v2 configurations :

## Add a config.

**System for this configuration**

PIX\_X\_REF\_MGR\_Acuo\_6.0.2 (6.0.2) ▼

**Actor**

PDS-Patient Demographics Supplier ▼

**Host name \***

acuo4 ▼

[Add a network config.](#)

**Is secured**

**Approved**

**Comment**

For ITI-21 Patient Demographic Query

**Type of configuration**

HL7 V2 responder ▼

**Receiving facility \***

Acuo

**Receiving application \***

PIX\_X\_REF\_MGR\_Acuo\_6

**Assigning-Authority**

ACPI

**Port Secured \***

9001

Last changed : 4/3/14 9:52:48 PM (CEST GMT+0200) by hgasser

[About](#) [Contact us](#) [Issue Tracker](#) Copyright 2016 IHE International [English](#) ▼

### 2.5.2 Extract Configs from Gazelle

This page explains how to export the configuration information from Gazelle in a format the SUT can use to configure themselves.

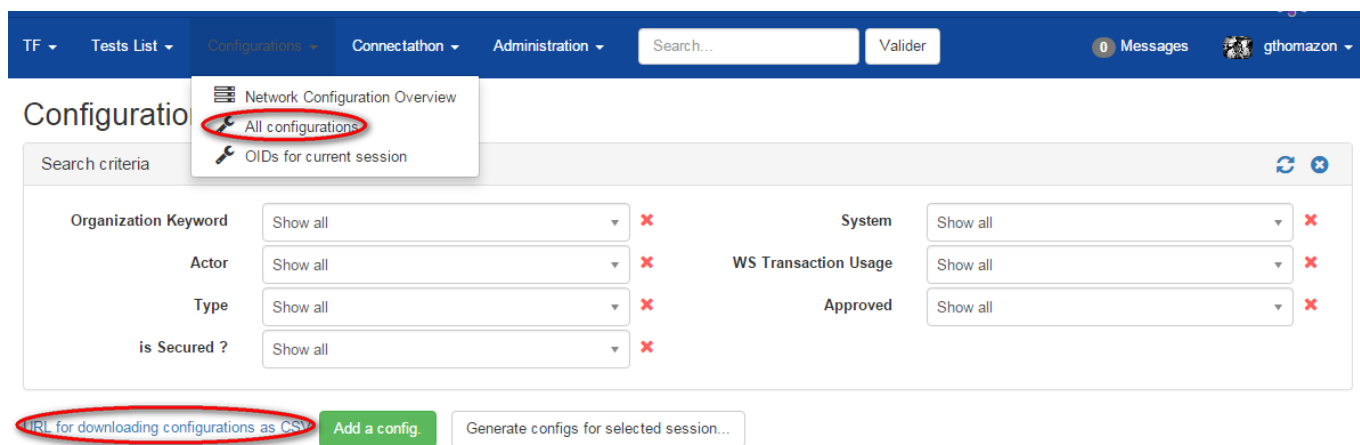
There are 2 methods to get the configurations from test partners :

- Using parametric URL webservices
- Using SOAP webservices

For the moment the only export format is CSV (Comma Separated Values) files generation.

#### 2.5.2.a Export Peers configuration parameters from the GUI

When searching for peers configurations in Gazelle (menu Configurations-> All Configurations)



In the configurations page, when available, click on the link "URL for downloading configurations as CSV" :

This URL is accessing the parametric service for downloading configurations.

**testingSessionId**, **configurationType** and **systemKeyword** are parameters that can be set by accessing the URL directly :

Europe : <http://gazelle.ihe.net/EU-CAT/systemConfigurations.seam>

North America : <http://ihe.wustl.edu/gazelle-na/systemConfigurations.seam>

System keyword is given if you use the GUI.

You can build the url that matches your need and have periodic query to the tool in order to feed your SUT with the most up to date information from the database.

Here are examples on how to use it :

- <http://gazelle.ihe.net/EU-CAT/systemConfigurations.seam?testingSessionId=25&configurationType=HL7V2InitiatorConfiguration>
- [http://gazelle.ihe.net/EU-CAT/systemConfigurations.seam?testingSessionId=25&systemKeyword=ADT\\_AGFA\\_ORBIS\\_8.4](http://gazelle.ihe.net/EU-CAT/systemConfigurations.seam?testingSessionId=25&systemKeyword=ADT_AGFA_ORBIS_8.4)

The response is a CSV file like this one :

```
"Configuration Type", "Company", "System", "Host", "Actor", "is secured", "is approved", "comment", "aeTitle", "sopClass", "transferRole", "port", "port proxy", "port secured"
"DICOM SCU", "AGFA", "WS_AGFA_0", "agfal3", "IMG_DOC_CONSUMER", "false", "false", "For optional DICOM Q/R", "WS_AGFA_0", "QR", "SCU", "", "", ""
"DICOM
SCU", "AKGUN", "PACS_AKGUN_2012", "akgun10", "PPSM", "false", "false", "", "PACS_AKGUN_2012", "MPPS", "SCU", "", "", ""
```

### 2.5.2.b Export peers configuration parameter using SOAP webservice

The wsdl of the webservice to access the peers configuration parameter is located there :

- For Europe :
  - <http://131.254.209.16:8080/gazelle-tm-gazelle-tm-ejb/ConfigurationsWS?wsdl>

- For NA :
  - <http://ihe.wustl.edu:8080/gazelle-tm-gazelle-tm-ejb/ConfigurationsWS?wsdl>

The function of the SOAP webservice are richer than the REST as the it allows filtering on the actor concerned by the configuration. If this functionality is need/requested it will be added to the REST service as well. Note that we do not provide a sample client for that service.

### 2.5.3 OID Management

This page explains how to access the OID values assigned to the systems participating to a testing session.

There are 3 methods for that purpose :

- Export as an Excel file from the GUI
- Using REST webservice
- Using SOAP webservice

#### 2.5.3.a Export OIDs from GUI

You can get the list of OIDs from the GUI : configurations --> "OIDs for current session". On this page, you can do a search for a specific OID by filtering on the institution, the systemKeyword, the testing session, the integration profile, the actor, the option, and the label of the OID (homeCommunityId, organization OID, etc).

You can then use the link "Export as Excel file" to get an xls file containing all OIDs looking for.

#### 2.5.3.b Export OIDs using Rest webservices

You can generate directly a CSV file containing the oid, the label and the system keyword, by using REST webservice. The URL of the webservice is :

<http://131.254.209.16:8080/EU-CAT/oidSystems.seam?systemKeyword=XXX&testingSessionId=YYY&requirement=ZZZ>

where arguments used are :

Argument	Opt	Type	List of Possible Values
systemKeyword	O	String	
testingSessionId	R	Integer	
requirement	O	String	<ul style="list-style-type: none"> <li>sourceID OID,</li> <li>sender device id.root OID,</li> <li>repositoryUniqueID OID,</li> <li>receiver device id.root OID,</li> <li>patient ID assigning authority OID,</li> <li>homeCommunityID OID,</li> <li>organization OID.</li> </ul>

#### 2.5.3.c Export OIDs using SOAP webservices

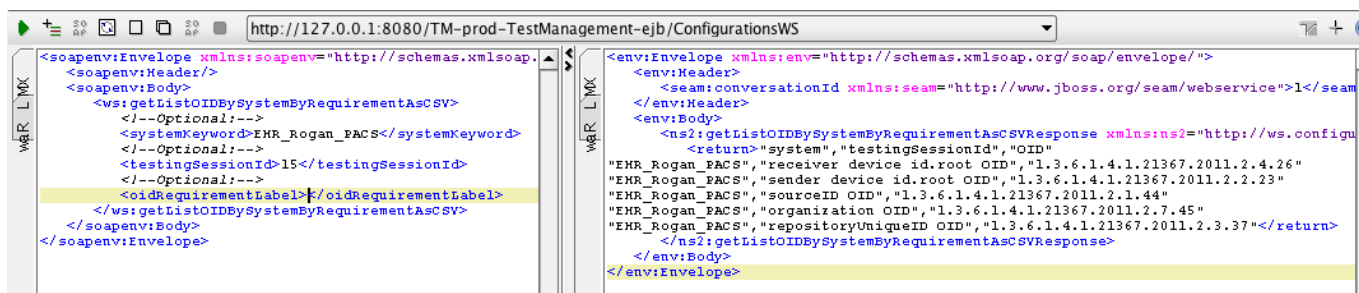
The wsdl of the webservice to access the OIDs of systems is located there :

<http://131.254.209.16:8080/EU-CAT-prod-TestManagement-ejb/ConfigurationsWS?wsdl>



The concerned methods are :

- **getListOIDBySystemByRequirementAsCSV** : return a csv string which contains all OIDs searched by systemKeyword, testingSessionId and oidRequirementLabel
- **getOIDBySystemByRequirement** : return exactly the first OID searched by systemKeyword, testingSessionId and oidRequirementLabel



The screenshot shows a web browser window with the URL `http://127.0.0.1:8080/TM-prod-TestManagement-ejb/ConfigurationsWS`. The left pane displays the SOAP request XML, and the right pane displays the SOAP response XML. The request includes parameters for `systemKeyword` (EHR\_Rogan\_PACS), `testingSessionId` (15), and `oidRequirementLabel`. The response returns a list of OIDs in CSV format, including receiver device id, sender device id, source ID, organization ID, and repository unique ID.

Note that here again the testingSessionId is a required argument, then you need to specify either the systemKeyword or the requirement, or the both of them.

## 2.5.4 Network Configuration

The page Network Configuration Overview provides the users with the necessary information for the current testing session.

The information provided in that page is of 2 kind.

A blob where the administrator of the current testing session can provide to the participants a list of usefull an relevant information. This can be the networking parameters:

- Default gateway
- DNS
- Netmask
- ...

But it may also contain the information for the printer that is on site.

The page also provides a button to download a hosts file for the configuration of the systems that do not support DNS.

The preferred method is for the participants to the testing session to use DNS in order to resolve hostnames. However we have encountered some systems in some past session that could not use DNS. So we have provided a mean to give the participants the access to a hosts file that can be installed on their SUT for name resolution.

Note that hosts file is NOT dynamic and the hosts file will have to be reloaded and reconfigured by the participants who have chosen not to use DNS after each test partner IP or name change.

Once the hosts file is downloaded it can be used to configure the SUT. Please refer to the operating system of the SUT for the set up of that file. Below is a list of pointer for 3 OSes

- [Configuration of host file on windows system](#)
- [Configuration of host file on MacOSX system](#)
- [Configuration of host file on Linux system](#)

## 2.6 Pre-Connectathon Testing

Testing before IHE Connectathons is a requirement and is achieved using software written by several different organizations

An index to all available tools for testing IHE profiles is provided at the following URL: [http://wiki.ihe.net/index.php?title=IHE\\_Test\\_Tool\\_Information](http://wiki.ihe.net/index.php?title=IHE_Test_Tool_Information)

Gazelle helps Connectathon participants manage the pre-connectathon test.

- Based on the system declared list of actors and profiles, Gazelle will identify the list of test that needs to be executed.
- Gazelle provides information about the location of the documentation of the tests
- Gazelle provides a mechanism for a participant to return the test logs and for a connectathon manager to grade the returned logs.

### 2.6.1 Getting the list of test to be performed

The following screen capture present the pre-connectathon test overview page. The page is accessed through the menu : **Connectathon->Pre-Connectathon Testing.**

List of systems for testing

Search criteria					
Testing session	European Connectathon 2014 - Vienna - Results	Organization	Show all		
System keyword	System/Product name (Version)	Number of tests to do	To complete	Completed	Verified
PACS_AKGUN_2014	AKGUN PACS Server V4 (4.0)	34	1	2	31
WS_AKGUN_2014	AKGUN PACS Workstation V4 (4.0)	12	0	0	13
OTHER testing ?	VDS suite (2.0)	60	10	0	60

It shows for a given vendor the list of systems registered by the vendor and for each system :

- the number of test to do
- the number of test to complete
- the number of test completed
- the number of test verified

Click on the number in order to view the detailed list of test for each system.

## 2.7 Connectathon Testing

### 2.7.1 Different category of tests

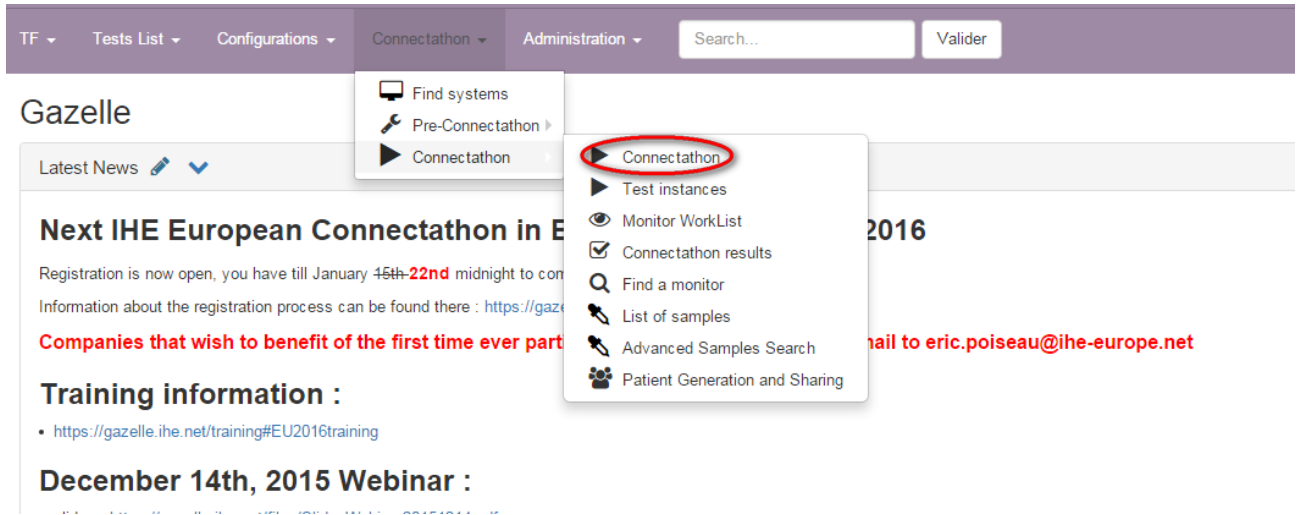
There are 3 types of tests :

- No peer tests
- Peer to peer tests
- Group tests

## 2.7.2 Starting a Test Instance

### 2.7.2.a Connectathon Dashboard

Gazelle Test Management users access the connectathon dashboard through the menu "Connectathon - > Connectathon " as shown on the following screen capture.



The dashboard offer advance filtering capabilities and allows the user to have an overview of the testing progress from different angles.

#### Main Connectathon Page

**Search criteria**

Testing session	European Connectathon 2015 - L...	Last update :	2/22/16 4:33:48 PM
Organization	Show all	System	Show all
Domain	Show all	Int Prof. option	Show all
Integration profile	Show all	Transaction	Show all
Actor	Show all	Test Type	Show all
Results	Show all		

All test types 
  No Peer 
  Peer To Peer 
  Unassigned 
  Group

**Save search criteria**

You can add up to 4 filters presets for this page :

Name of preset :

Check the box if you want to make it your default page

None

Sys	Profile	Actor	Profile Option	Type	R/O	Partners	V	W	P	F	Vendor comments
XDSab_REG_Forcare_3	APE	CONTENT_CONSUMER	NONE	T	2/0		50%	0%	0%	0%	Pass
	Test		Meta test								
	APE_View_or_Import_Document			+	R / 2	0/1					
	IHECDA_Do_This_First			+	R / 1		38110				
	2 tests										
EHR_Tiani - Cisco	APE	CONTENT_CONSUMER	NONE	T	2/0		50%	0%	0%	0%	No Peer
	Test		Meta test								
	APE_View_or_Import_Document			+	R / 2	0/1					
	IHECDA_Do_This_First			+	R / 1		38210				
	2 tests										
EHR_Tiani - Cisco	APE	CONTENT_CONSUMER	PCC_DISCRETE_DATA_IMPORT	T	1/0		0%	0%	0%	0%	Did not complet
	Test		Meta test								

## 2.7.3 Monitor Workflow

### 2.7.3.a Test validation workflow

- Find test in the monitor worklist
- Claim test (release it if necessary)
- Review test requirements
- Visit participants, look for evidence
- Grade the test
  - Verified -> Done
  - Failed -> Enter comments, done
  - Partially Verified -> Enter comments, done

### 2.7.3.b Gazelle Monitor App

The Gazelle Monitor application has been developed to help monitors validating tests without spending their time running from their desk to the participants' table. If the monitor own a smart phone with a WiFi connection, they will be able to claim and validate tests from their smart phone.

The GazelleMonitorApp is a tomcat application designed for mobile screens. It requires the installation of an application on the mobile device that scans a QR code (for example [http://en.wikipedia.org/wiki/QR\\_code](http://en.wikipedia.org/wiki/QR_code)). The application you choose will depend on your device. You can download Barcode scanner, Google or other free applications from your market places. The use of MobileTag is discouraged since it accesses the links through an external server, and that will not work from most connectathon floor.

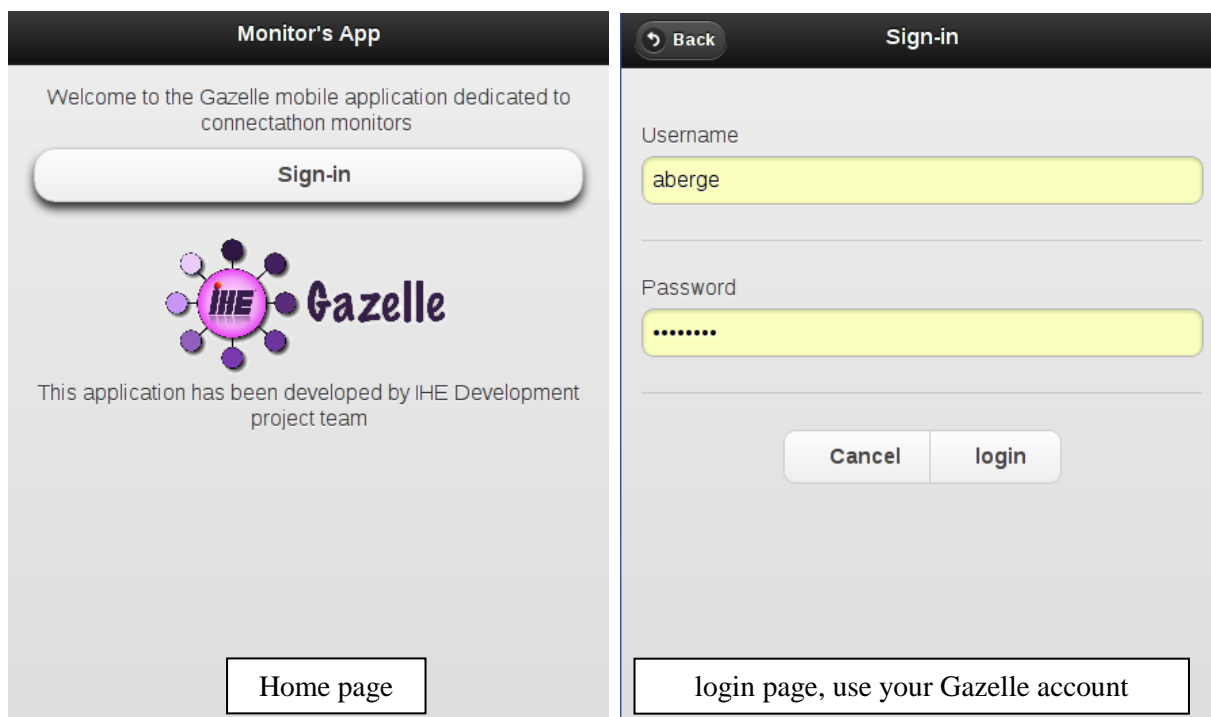
We have successfully tested the application with Android phones, iPhones and Windows phones.

In Europe, you will access the application at the following URL : <http://gazelle.ihe.net/GazelleMonitorApp> , the QR code leading to this application is given below:

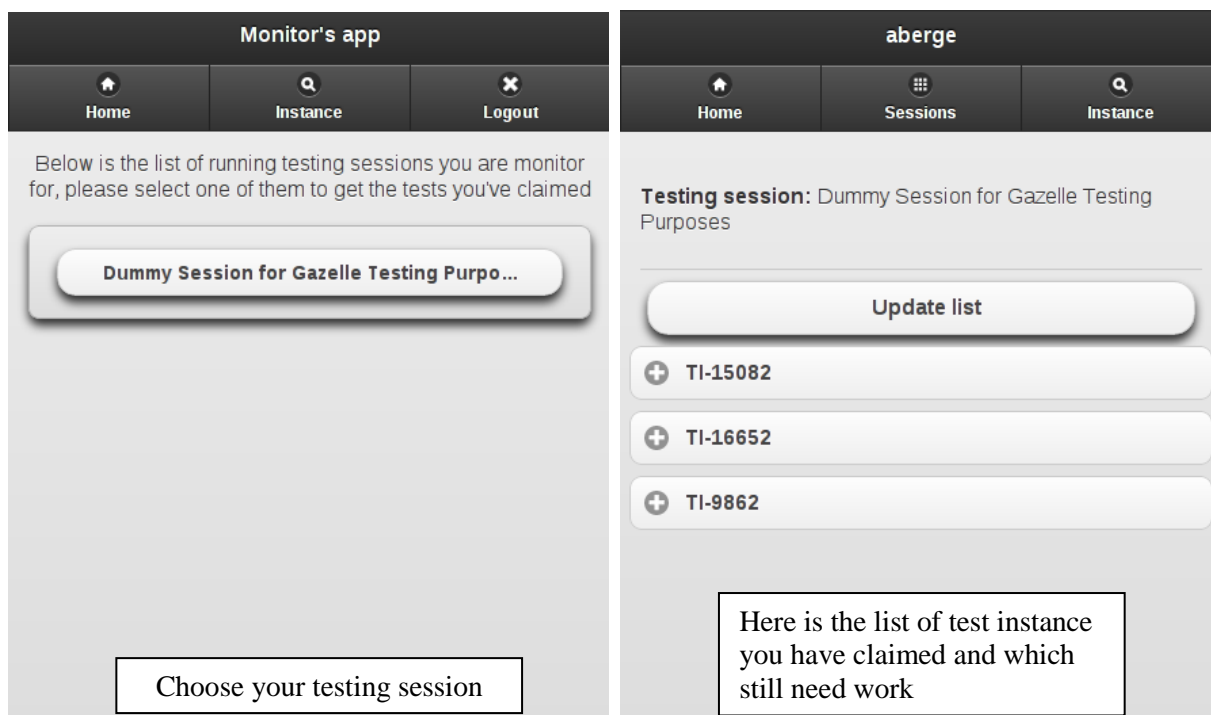


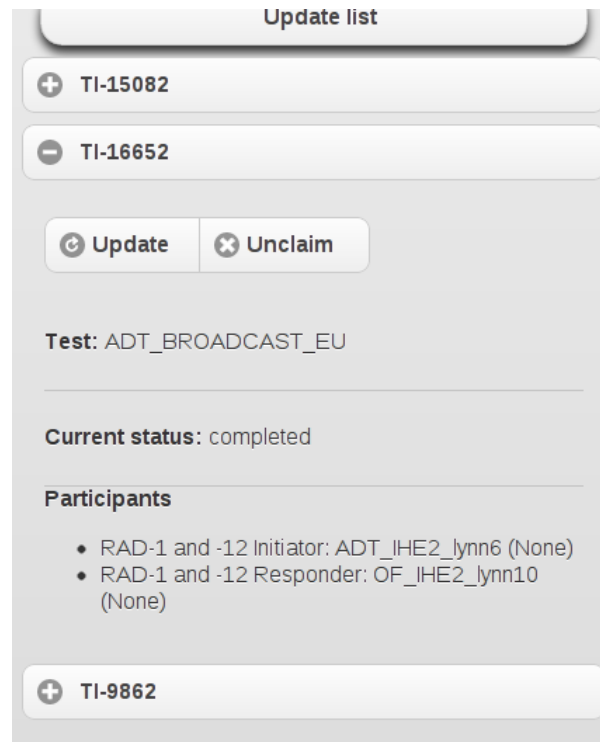
### 2.7.3.c How to proceed

After you have installed the QR scanner, connect your mobile device to GazelleMonitorApp application and sign in using your login and password; they are the same as what you use to connect to Gazelle (Test Management). Once the application has identified you, a cookie is stored in your (mobile) browser for 7 days (connect-a-thon duration) so that you will not have to sign in again even if your session expires. If it does not work, check that cookies are enabled in your browser. To remove this cookie, go to the application home page and use the "logout" button.



This workflow assumes that you have claimed one or more tests from the Gazelle Monitor Worklist, most likely using a laptop/PC. Once you are logged in with your mobile device, hit the "View claimed tests" button. If you are monitor at a Connectathon that is currently in progress, you will see the list of available testing sessions, as shown below. Selecting one of the testing sessions will lead you to the list of test instances you have claimed for that testing session. To select another testing session use the "Sessions" button of the navigation bar.





summary of a test instance.  
Click on update to see details  
and verify it, click on unclaim  
to release it

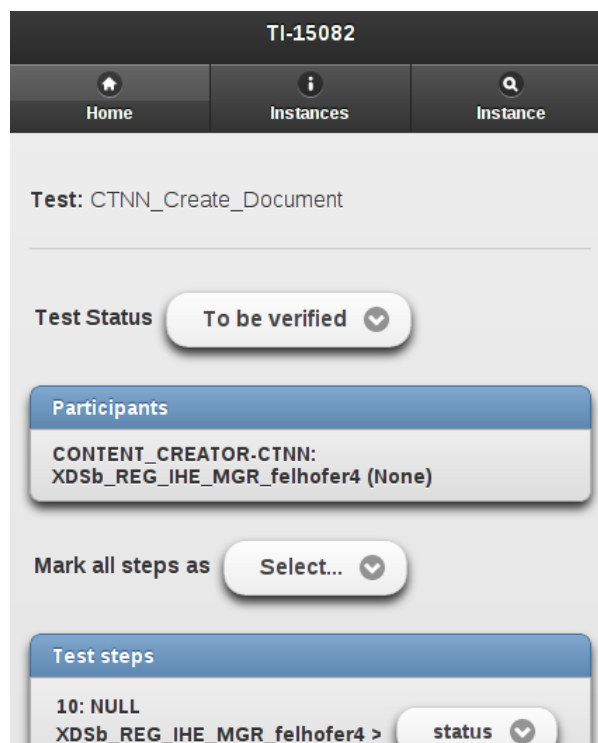
A second workflow allows you to claim a test directly with your mobile device. You can do this at the participant table or using Gazelle at your laptop/PC. At your laptop/PC, go to Connectathon --> Monitor Worklist, you will see the list of test instances you can verify and claim them. Select a test instance by its identifier (id). When that brings up the Test Instance page, a QR code is displayed beside the metadata of each test instance (see the photo below). By scanning this QR code, for instance, you will be lead to the home page of GazelleMonitorApp; hit the "I've flahed a code" button, the test instance will appear (if you have access rights !)



Run a QR code scanner and flash the code



Click on "I've flashed a code" to confirm and display the test informations



Update informations and submit the result ("submit" button at the bottom of the page)

By clicking the "View selected test instance" you confirm that you want to claim this instance. Nevertheless, the application may not be able to assign you this test for one of the following reasons:

- No test instance with the given id has been found within Gazelle

- You are not logged in or not a monitor for the testing session in which the test instance has been performed
- The test instance has already been claimed by someone else
- The test instance status is not either "to be verified", or "critical", or "partially verified"
- The connect-a-thon in which the test instance has been performed is over

When you get the screen with the test instance information, change the test status to failed, passed or partially verified. You may optionally change the status of individual test steps or leave a comment before submitting the result. If you want to add a long comment or if you prefer to change the step status using Gazelle Test Management, submit only the test status using the mobile app and then go to GazelleTest Management for further work. You can easily retrieve a test instance by its id using the search bar at the top of the home page of Gazelle Test Management on your laptop or PC.

## 2.7.4 Test Instance Workflow

### 2.7.4.a Test Instances Statuses

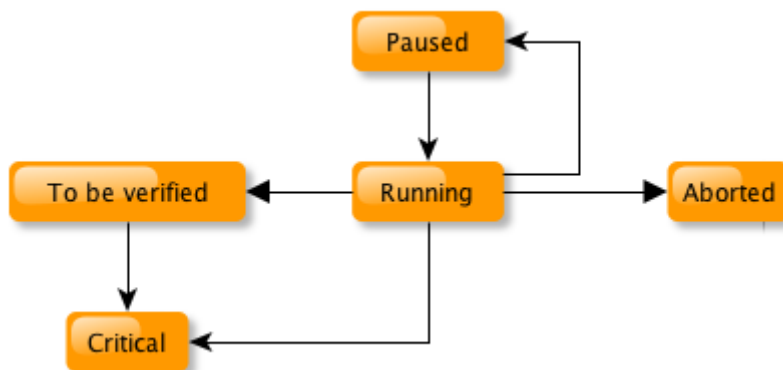
A test instance can have the following statuses :

- **Running** : this is the initial state of a test instance, once the user press on the "Start" button.
- **Paused** : A test instance can be paused, and the restarted by the user.
- **Aborted** : If the test instance was started per mistake, or is a duplicate of an existing test instance. Then one can abort it. Aborted test instances are not checked by monitors.
- **To be verified** : Once a test instance is completed, the user can set it status to "to be verified". Monitors work list contains test instances with that status.
- **Failed** : Based on the evidences and the observation of the logs or the actual run of the test by vendors, a monitor may fail a test.
- **Verified** : A monitor once convinced that the test is successful can mark it as verified
- **Partially verified** : If a monitor thinks that a test is incomplete but that there is a chance that the vendor may fix the problem during the test session, then he/she can mark the test as partially verified.
- **Critical** : Sometime toward the end of the connectathon, the project manager activates the "critical" status mode in Gazelle. Monitors verify then the Test instances with the status critical first.



### 2.7.4.b Test Instances Transitions states

#### 2.7.4.b.i From the Vendor perspective



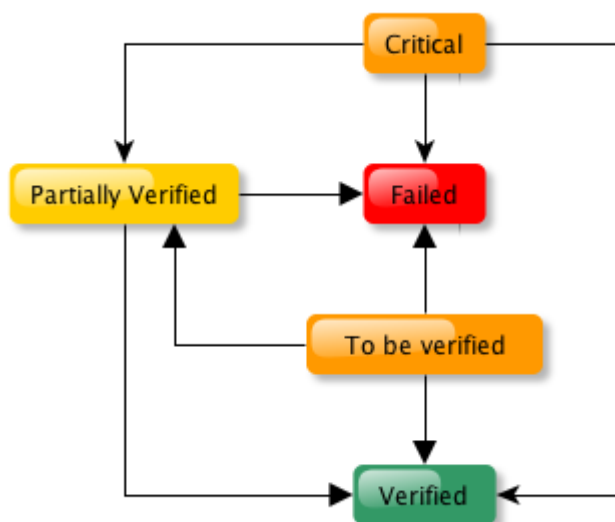
#### 2.7.4.b.ii From the Monitor perspective

Monitors work on test instances that have one of the 3 following status:

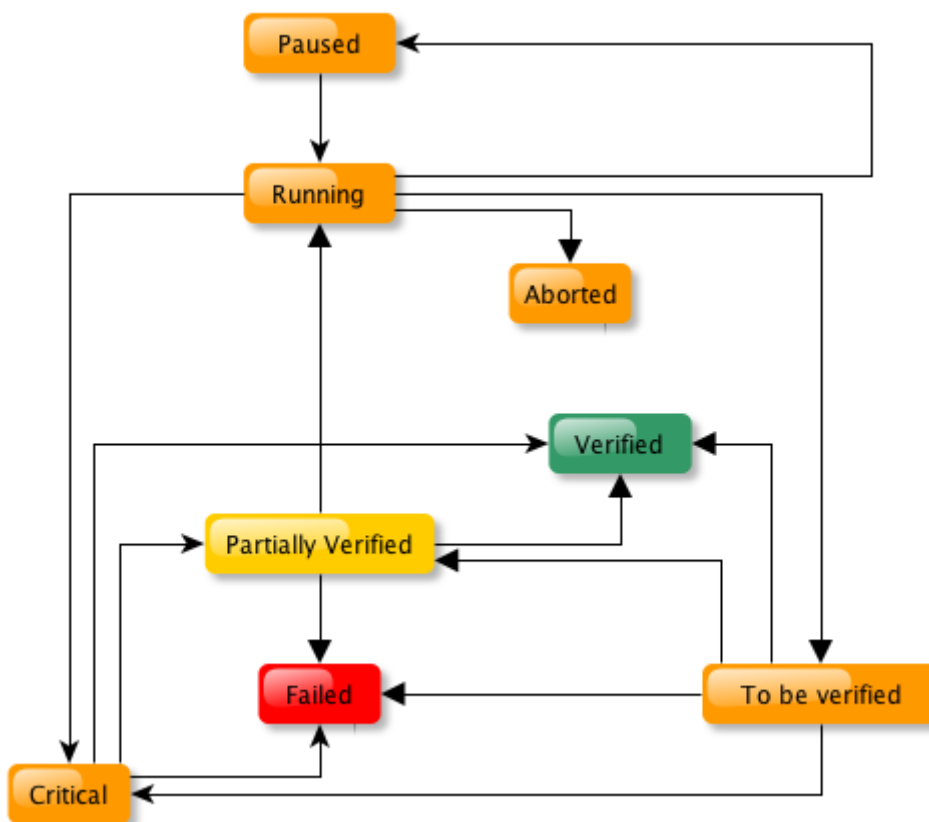
- To be verified,
- Critical or
- Partially Verified.

The output status are :

- Failed
- Verified
- Partially Verified



2.7.4.b.iii Complete state diagram for Test Instances



**2.7.5 Validation of test steps logs within test instance**

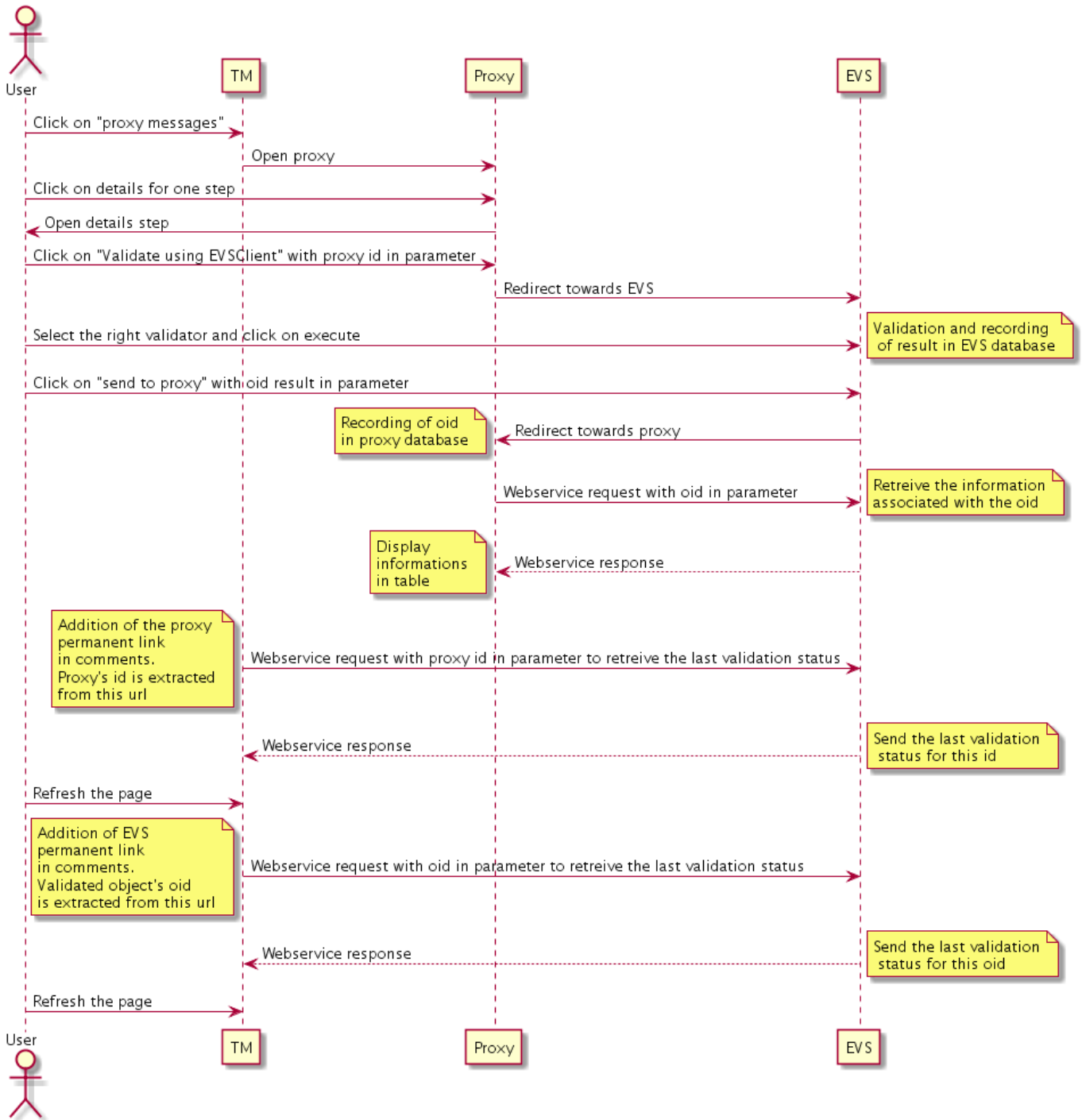
The aim of this page is to explain how the validation result displayed on a test instance page are retrieved from the EVSClient tool.

When a test instance is created, the page looks like:

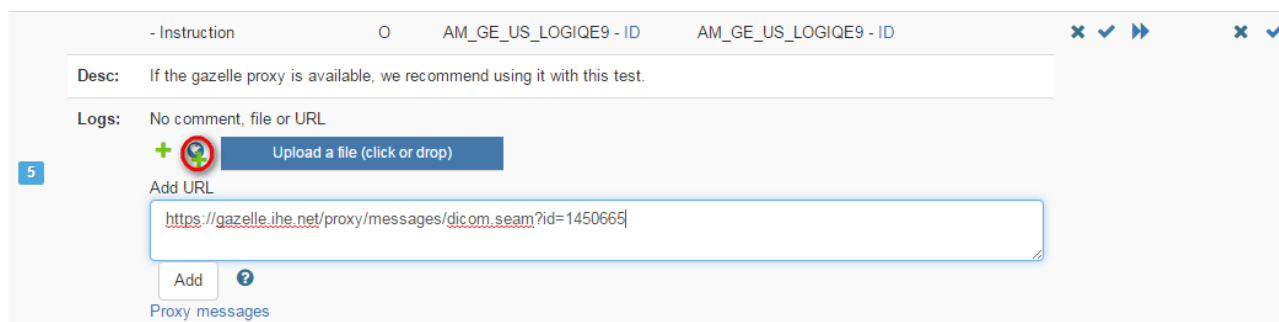
Test Instance Steps							
Step	Trans.	Trans. - Message Type	Opt.	Sending Actor	Receiving Actor	Status	Validation Status
		- Instruction	O	AM_GE_US_LOGIQE9 - ID	AM_GE_US_LOGIQE9 - ID	x ✓ ▶▶	x ✓
Desc: If the gazelle proxy is available, we recommend using it with this test.							
5	Logs: No comment, file or URL Upload a file (click or drop) Proxy messages						
		RAD-14 - C-Find	R	AM_GE_US_LOGIQE9 - ID	TOOL_IHE-EU_ORDER_MGR_2015 - IM	x ✓ ▶▶	x ✓
Desc: (RAD-14 or CARD-13 or EYECARE-5) Query the IM for images. Use a variety of query criteria - see list in the Evaluation section.							
10	Logs: No comment, file or URL Upload a file (click or drop) Proxy messages						
		RAD-16 - C-Move	R	AM_GE_US_LOGIQE9 - ID	TOOL_IHE-EU_ORDER_MGR_2015 - IM	x ✓ ▶▶	x ✓
Desc: (RAD-16 or CARD-4 or EYECARE-3) Retrieve by Study, by Series and by Image.							
30	Logs: No comment, file or URL Upload a file (click or drop) Proxy messages						
		--	R	AM_GE_US_LOGIQE9 - ID	AM_GE_US_LOGIQE9 - ID	x ✓ ▶▶	x ✓
Desc: Note any Query or Retrieve failures in the chat window for this test.							
70	Logs: No comment, file or URL Upload a file (click or drop) Proxy messages						
Step	Trans.		Opt.	Sending Actor	Receiving Actor	Status	Validation Status

Test current status : Running




There are different possibilities, like the next sequence diagram shows :











If we choose the first case, which is to add the permanent link from the proxy in a step message :



When it 'is added :

Date	User	Type	Data	Actions
2/22/16 5:13:12 PM	gthomazon	Proxy	/messages/dicom.seam?id=1450665	   

The file is to be validated in Proxy to EVSClient, the test instance page looks like (use the refresh button is not) :

Date	User	Type	Data	Actions
2/22/16 5:13:12 PM	gthomazon	Proxy	/messages/dicom.seam?id=1450665	   
2/22/16 5:18:29 PM	gthomazon	Proxy	/messages/http.seam?id=1451673	   

We can see in data column the last validation status from EVSClient.

We can see in Actions column :

- A color button (green=passed, blue=unknown or not performed, red=failed)
- The refresh button
- A map button which is an hyperlink to go to the posted link.

If the user click on color button, then he is redirected towards the last result of validation.

If the user click on refresh button, then TM reloads the last validation status.

The button's color evolves according to the result and the date is update.

## 2.7.6 Generate and Share patient data


One of the numerous fonctionnalities of Test Management is called "Patient Generation and Sharing". This feature, available under the "Connectathon" menu, enables testers to generate patient demographics and to share them among systems registered within Gazelle for the same testing session. In this way, systems involved in a same test can be pre-filled with the same patients, the ones will be used during the test process.

### 2.7.6.a List of patients

The first tab available in the "Patient Generation and Sharing" page is entitled "Existing patients". It list all the patients registered in Test Management, you can restrain the list of patients using the filters available in the table column headers. If you need to find a patient created by yourself, select your username in the "Select creator" drop-down list.


For some of the patients, the "test keyword" column is filled, it matches the test keyword in which you have to use this patient. For instance, if you want to pre-fill your system for testing PIX, enter "PIX" in the filter box of the "Test keyword" column, you will get the list of patients to use for this set of tests.

#### **2.7.6.b Update patient data**

Test Management enables you to edit a patient in order to update his/her demographic data. Actually, instead of updated the information in the database, a new patient is created with the new demographics and the original patient cannot be updated anymore. For the new patient, a link to the "original patient" is made. To access this feature, use the edit button displayed on each row of the table  (except for patients already updated once).

#### **2.7.6.c Share a list of patients**

Using the "Export as CSV file" link, below the table, you will get a CSV file gathering all the demographics data for all the patients displayed in the page. If you need patients displayed on several pages, please, before clicking on that link, increase the number of "results per page" in a manner that you will see all the patients you want to export.

In the same way, the  button at the bottom of the page enables you to share those same patients using an ADT message. See below for explanations about how to set the sending options.

#### **2.7.6.d Share a patient**

The tab entitled "Share patient" is available only if at least one patient is selected. The purpose of this page is to send HL7 messages to the CAT participants in order to help them with sharing the same patients demographics. You will first have to select the message to send and then to select the systems to which send those messages.

Four HL7 message types are available in this section:

- ADT^A01^ADT\_A01 (HL7v2.3.1)
- ADT^A04^ADT\_A01 (HL7v2.3.1)
- ADT^A28^ADT\_A05 (HL7v2.5)
- PRPA\_IN201301UV02 (HL7v3)

Depending if you select a message with a version equals to HL7v2.x or HL7v3, the list of available systems will gather systems registered with respectively an HL7v2 Responder or HL7v3 Responder configuration approved within Gazelle. Those systems are listed by HL7 Responder actors. Select all the systems you need (by double-clicking on a system, it will pass from a box to the other). Once the systems, for a given actor, are selected, click on the "Add selection" button. The systems and their configurations will appear in the table below.

If the system you are looking for is not available in the displayed list or if you are using this functionality out of a connectathon period, you may want to manually enter the configuration of the system (IP address, port, receiving application/facility ...). To do this, use the form available in the right hand part of the screen.

You can use at the same time Gazelle and manual configurations. When all of them are selected, click on the "Send Message" button.

A table will then appears which gathers all the logs of the event. For each selected systems, the message sent by Gazelle and the acknowledgment received are stored there; so that you can see which systems received and integrated the message.

### **2.7.6.e Generate a patient**

This part of the tool is available under the "Generate patient" tab. The generation of patients' demographics and addresses is done calling the webservice offered by the Gazelle tool named Demographics Data Server (DDS). The generator can be configured to return or not such or such data. For instance, you might not want your patient to have a religion or a race but you want it to be called MY\_COMPANY MY\_SYSTEM. You can do that. Select the "random" option for the generation of names and fill out the first name and last name; also select the gender of the patient. Then, select the other criteria you want and click on the "Generate patient" button. After a while, the patient demographics will show up.

If you want to immediate share the just generated patient, click on the "Share patient" button, available under the patient's demographics.

### **2.7.6.f Permanent link**

Each patient can be accessed using a permanent link. This one is available in the page gathering the data of a particular patient.

### **2.7.6.g Quick search**

Using the quick search box available beside your username at the top of the tool, you can search the patient by its name, first name (criteria: Patient by name) or by id (criteria: Patient by id).

For learning more about this functionality and seeing annotated screen shots, refers to the attached [pdf file](#).

## **2.8 Internet Testing**

The purpose of this chapter is to explain how to use gazelle test management in order to perform testing over the internet.

Using Gazelle Test Management for Internet testing provides testers with the following functionalities.

- [Registration](#)
- Sharing of configurations
- Partner discovery
- Test execution and logging

### **2.8.1 Specificity of Internet testing**

Internet testing using Gazelle Test Management is very similar to testing during the connectathon. The major difference between connectathon testing and Internet testing is an increased difficulty to achieve the communication between the different test partners.

- Test Partners are not located in the same room.
- Communication between the SUT needs to go through corporate firewalls

### **2.8.2 Registration**

Registration to an Gazelle Internet testing session is easy. There is no need to create a specific system for the internet testing session. One can import a system that is already registered within another testing session.

## 2.9 Usage of Connectathon and PreConnectathon presets

The purpose of this chapter is to explain how to use presets in Gazelle pages where they are available.

Presets are available for the following page :

- Connectathon page
- Pre-Connectathon page

The aim of the preset is to allow the user to save some filtering configuration and directly load the page with the filtering value set with the saved ones. The intent is double : speed up navigation for the user and reduce the load on the server by avoiding loading all the tests when only a few of them needs to be loaded.

First of all, a preset use **cookies,you need to activate them!** Normally if you are able to log into the application your browser is already configured to accept cookies

Let's take the PreConnectathon result page for instance, it is very similar to the Connectathon page.

Search Pre-Connectathon Test Instance

The screenshot shows the search interface for Pre-Connectathon Test Instance. The search criteria section is highlighted with a red rectangle, showing filters for Testing session, Organization, Domain, Integration profile, Actor, Test, Status, System, Int Prof. option, and Transaction. A 'Save search criteria' dialog box is also highlighted with a red rectangle, showing the 'Name of preset' field and a 'Save' button.

You can see in red rectangle the new feature.

Select an organization, add a name to your preset and clic on save. Your preset is added !

Search Pre-Connectathon Test Instance

The screenshot shows the search interface for Pre-Connectathon Test Instance. The search criteria section is highlighted with a red rectangle, showing filters for Testing session, Organization, Domain, Integration profile, Actor, Test, Status, System, Int Prof. option, and Transaction. A 'Save search criteria' dialog box is also highlighted with a red rectangle, showing the 'Name of preset' field and a 'Save' button.

Two fonctions are available:

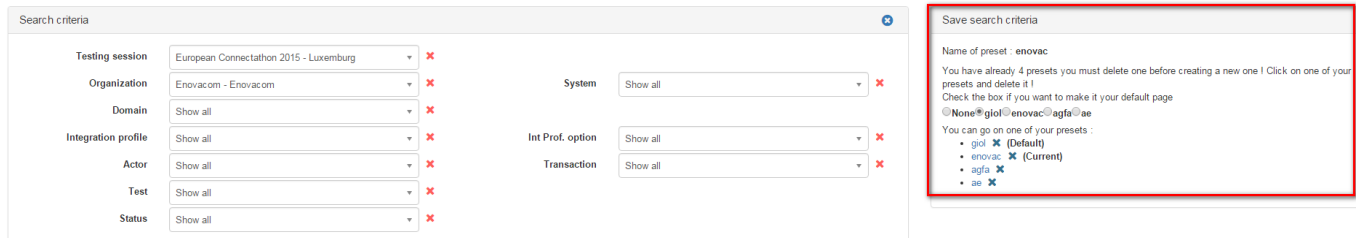
- You can check a box to replace your main PreConnectathon result page. By default, it's none.



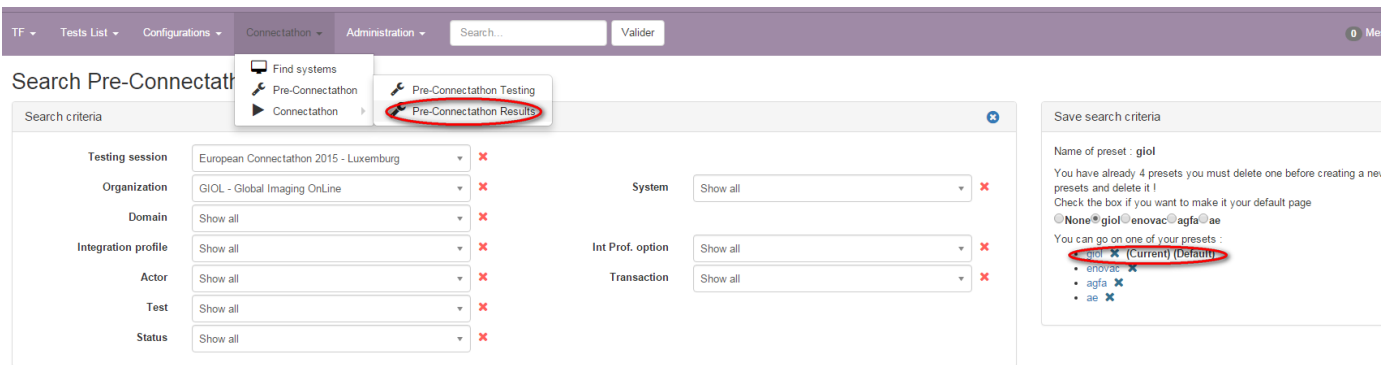
- You have a list of all of your presets with the name, the possibility to remove it, the current and default page.

You can save up to 4 presets. Once they are all created, you need to remove one before creating a new one.

Search Pre-Connectathon Test Instance



Now you can click on PreConnectathon results page and the loaded page is your default page :

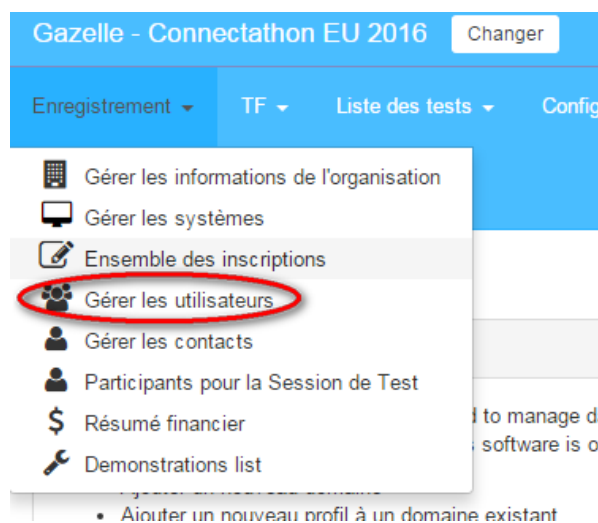


## 2.10 Administration

### 2.10.1 Administer users

- Users with the role admin can edit users from all companies registered into the system.
- Users with the role vendor\_admin can edit the users linked to their own company.

As a user with the role **vendor\_admin** visit the page **Registration -> Manage Users**



## 2.11 Systems Management

### 2.11.1 Permanent link to system

For each system, there are a permanent link from gazelle to go directly to the summary of the system on the specified session. The link contains the description of the system, implemented IHE actors/profiles, system information summary, and the list of demonstrations that the system is registered for.

This permanent link has this form :

<http://gazelle.ihe.net/EU-CAT/systemInSession.seam?system=XXXX&testingSessionId=XX>

- system : the keyword of the system
- testingSessionId : the id of the testing session (15 for pisa, 8 for Bordeaux, etc).

### **3 TM - Release notes**

Gazelle Test Management release notes can be found on the JIRA pages of the project at the following URL :

<http://gazelle.ihe.net/jira/browse/GZL#selectedTab=com.atlassian.jira.plugin.system.project%3Achange-log-panel>