HoliDes

Holistic Human Factors **Des**ign of Adaptive Cooperative Human-Machine Systems

HoliDes Platform Builder user handbook

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1 Introduction

This document is a user guide of the PB app to help a system engineer / developer who wants to apply HF methods within the system engineering process.

In this document the content (navigation bars, menu bars) is explained as well as how users can work with the PB app to find their MTTs (methods, techniques and tools) and how they can manage their projects. Moreover, it is described how one can add new MTTs to the PB system.

section 3 Understanding how PB works explains the content included in the navigation and menu bars.

section 4 Screens details the performance for each screen.

The following requisites are covered:

- Authentication/ Authorization for each user in order to access the PB.
- Filtering by domain, regulations, related activity and HF issue to find the appropriate MTTs.
- How the user can save their projects and manage them easily.
- Managing the MTTs database to include new MTTs.
- MTTs statistics per user.
- MTTs graphic visualization.
- Adaptation framework to build a specific AdCos requirement.

PB is the nomenclature used in this document that means Platform Builder.

2 Definitions, acronyms and abbreviations

Acronym	Meaning
Business Process	It is the system life cycle development and management process that represents a whole given process, covering development phase and product management phase. Life cycle management comprises tasks of product management process as: traceability, configuration and versioning, user and process management. In the other hand, life cycle development covers tasks of development process (as requirements elicitation and formalization, design, implementation, validation and verification).
HF-RTP	Human Factor - Reference Technology Platform
HoliDes	Holistic Human Factors Design of Adaptive Cooperative Human-Machine Systems
MTTs	Methods, techniques and tools
PB	Platform Builder
RTP	Reference Technology Platform

3 Understanding how PB works

This section explains the different parts that the application PB contains.

The PB has been designed including some common objects for all screens. These objects are detailed below:

3.1 The navigation bar in the main screen

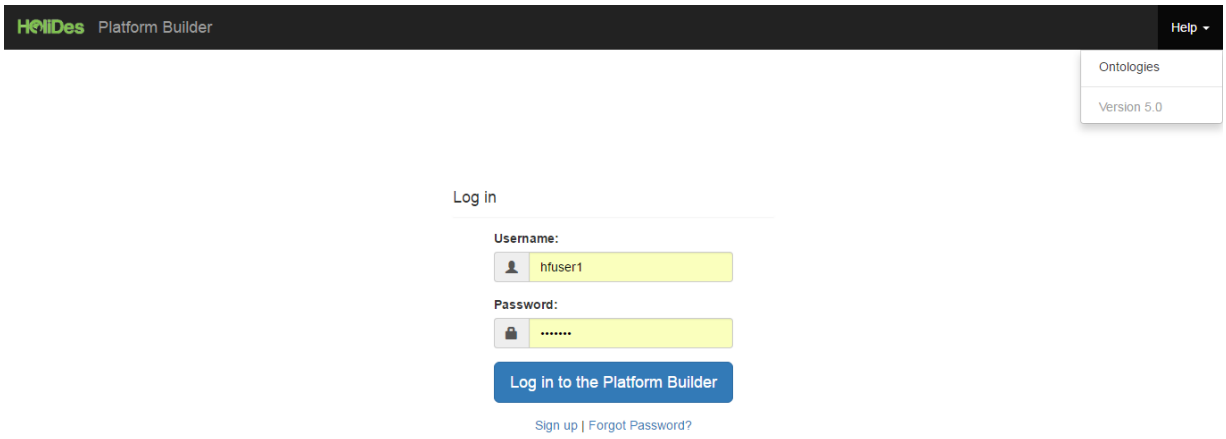

Figure 1 PB navigation bar in the main screen

In the main screen the navigation bar appears:

- The HoliDes **logo** on the left side, followed by the name of the application PB.
- The dropdown list **help**:
    - Appears The ontologies web site.

- The **version** of the PB.

3.2 The navigation bar in the land page screen.

Once a user has been logged in the PB, appears the Land page with three possible options and the information in the navigation bar, this section explains the operation of the navigation bar into the land page, the navigation bar is divided in the follow parts:

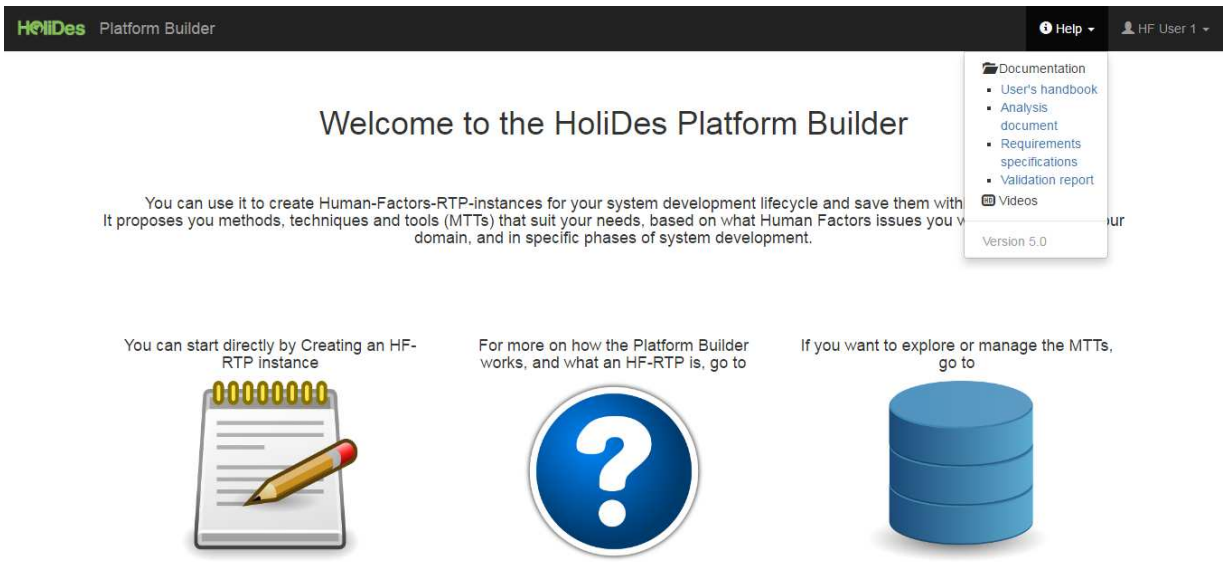

Figure 2 PB navigation bar in the land page

- The HoliDes **logo** on the left side, followed by the name of the application PB.
- The dropdown list **help**:
  - **Documentation** group:
    - **User's handbook**, clicking on it will download the version for the handbook for the users.

- **Analysis document**, documentation explaining the architecture of the PB.
- **Requirements specifications**, documentation explaining the functional and no functional requirements for the PB.
- **Validation report**, document with tests checking all the requirements proposed in the requirement specifications.
- **Videos**, link to the PB video channel tutorial.

o The **version** of the PB.

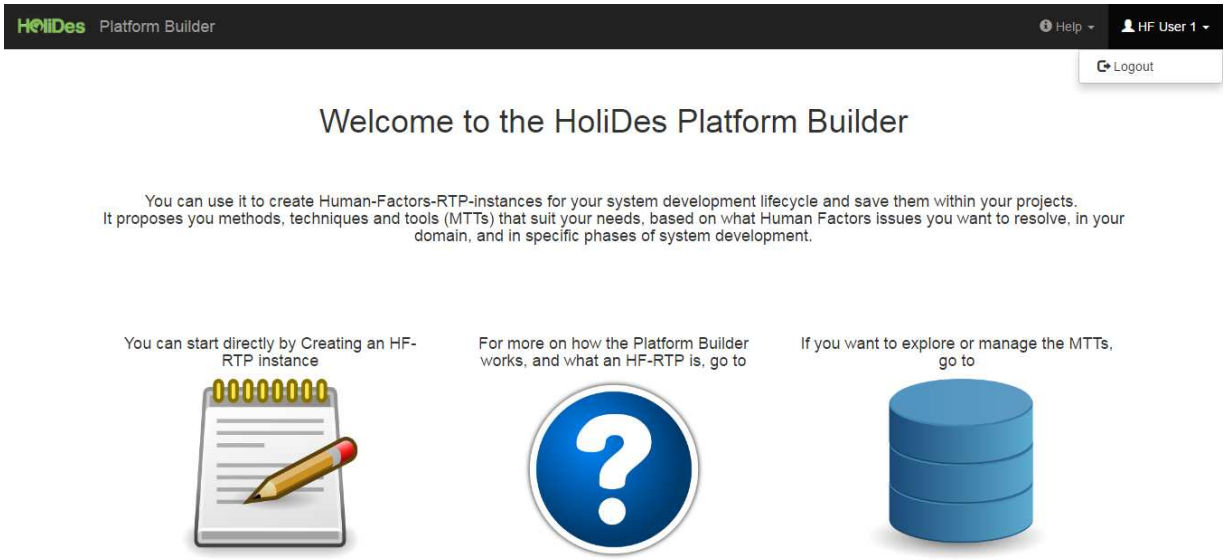

Figure 3 PB navigation bar user menu

- The dropdown list **User name** displays the user name on the right side. This is the name of the logged user, clicking on it appears the option:

- **Logout.** Clicking here you log out from the PB and your session will expire. If you want to access the application again you should enter user/password at the main menu.

3.3 The navigation bar in rest of the PB screens.

Once a user has been clicked some option in the PB land page, appears the screen chosen with several options and information in the navigation bar, for instance the navigation bar clicking the item: "Create an HF-RTP Instance" appears:

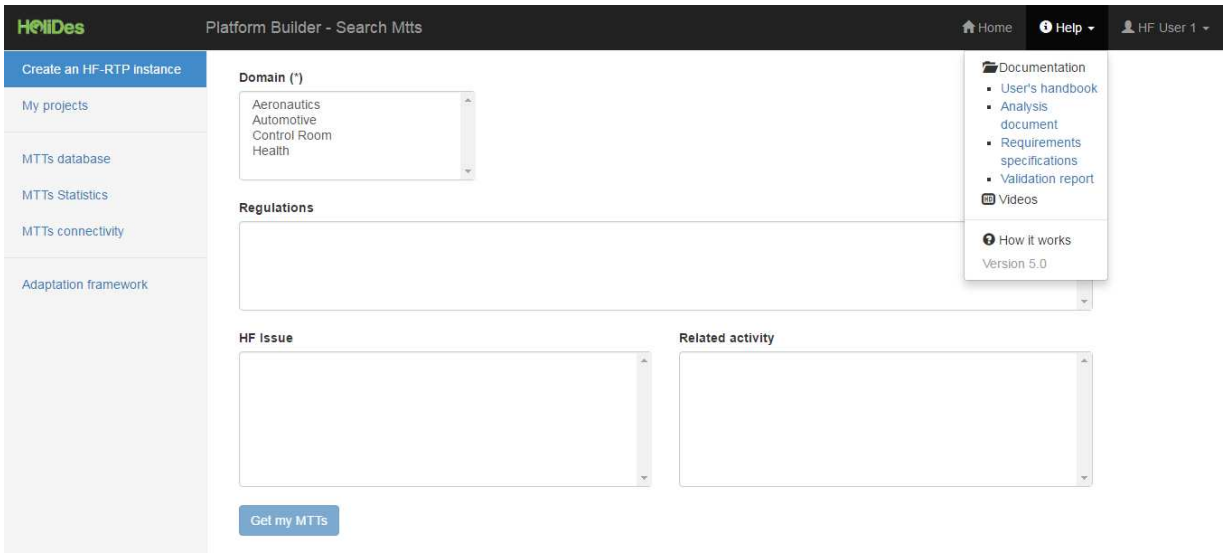

Figure 4 PB navigation bar in the rest of screens

- The HoliDes **logo** on the left side, followed by the name of the application PB and the functionality name (in this case Search Mtts).
- The **Home** option redirects to the main page.
- The dropdown list **help**:
  - **Documentation** group:

- **User's handbook**, clicking on it will download the version for the handbook for the users.
- **Analysis document**, documentation explaining the architecture of the PB.
- **Requirements specifications**, documentation explaining the functional and no functional requirements for the PB.
- **Validation report**, document with tests checking all the requirements proposed in the requirement specifications.
- **Videos**, link to the PB video channel tutorial.

o The **How it works** help**,** provides some further information about the functionality in a modal screen, for instance in this case helps to the user how it's working the search criteria in the Search MTTs, look the picture below:

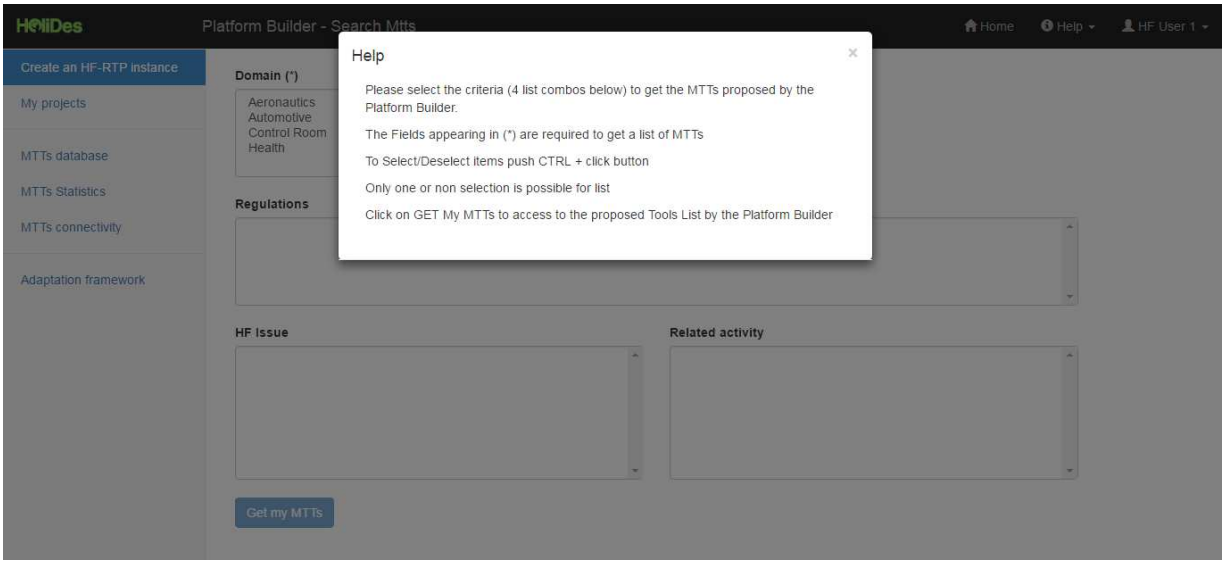

Figure 5 PB How it works option

o The **version** of the PB.

- The dropdown list **User name** displays the user name on the right side. This is the name of the logged user, clicking on it appears the option:

    - **Logout.** Clicking here you log out from the PB and your session will expire. If you want to access the application again you should enter user/password at the main menu.

3.4 Menu to redirect to the functionalities

The figure below displays the PB menu (figure 3). The menu bar is placed on the left side of the screen (for a mobile device or small screens this menu appears on the top side).

The PB menu includes all the options that the user logged-in has as a rights.

The active screen is indicating with a strong **blue colour** in the PB menu.
The options have been divided by horizontal bars grouped by functionalities taking into account the common features:

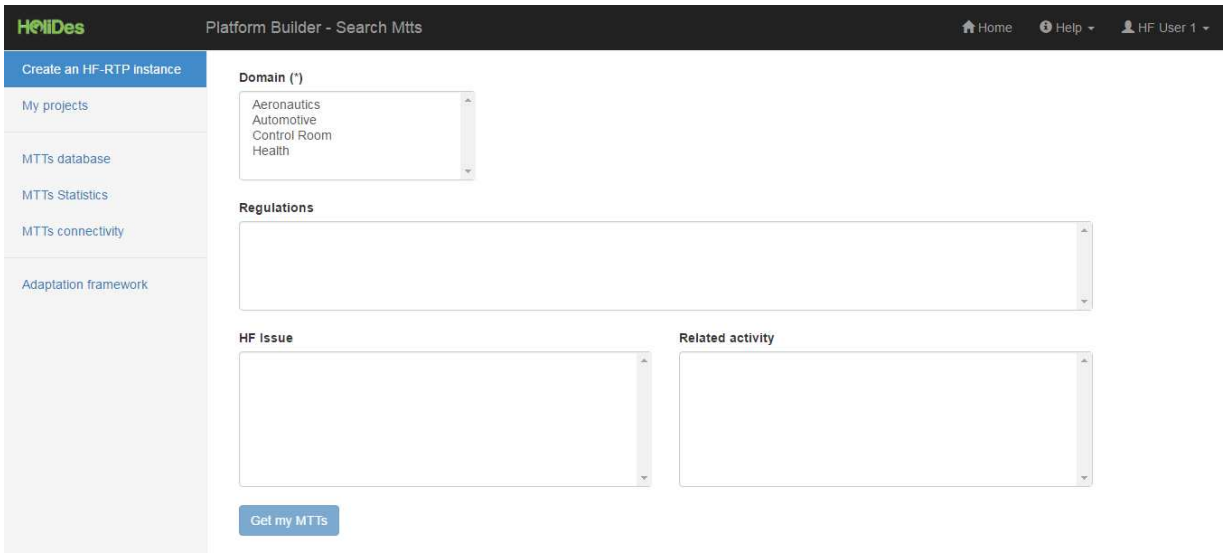

Figure 6 PB menu bar 1

Figure 7 PB menu bar 2

Functionalities grouped by screens that allow the users managing their projects:

- "Creating an HF-RTP instance":
  - Displays the "Search MTTs" screen, then searching and filtering by criteria proposed for the app appears the next screen:
  - "Preliminary MTTs", the user can select the MTT/MTTs for their project, and selecting it appears the screen:
  - "HF-RTP Instance" which the user can create a project, saving it correctly.

- "My projects":
  - The users can get information about the projects created and can follow the traceability of their HF-RTP instantiations.

Functionalities grouped by screens that allow the users work with MTTs creating, managing or showing interesting information about MTTs.

- "MTTs database": managing MTTs (creating, deleting or viewing MTTs) only the users with special user rights can delete MTTs.
- "MTTs statistics": getting information about the number of MTTs used by user and domain.
- "MTTs connectivity": having a look at the "MTT connectivity" graphic the user can have a better vision of the purpose of the MTT.

Functionalities related with the AdCos:

- Adaptation framework: Set up the AdCos using cognitive loop primitives.

All the functionalities exposed above are explained in more detail in the *D1.7-Annex IV - HF-RTP Handbook* document section "Creating an HF-RTP Instance".

4 Screens

This section explains the functionalities of the different sections of the PB.

4.1.1 Main Screen

The application can be accessed by the following link: www.holides.eu/PlatformBuilder

After typing in the URL, the main screen appears (figure 1), asking for user credentials (login and password).

First step is register to the Platform Builder clicking on the "Sign up" link:

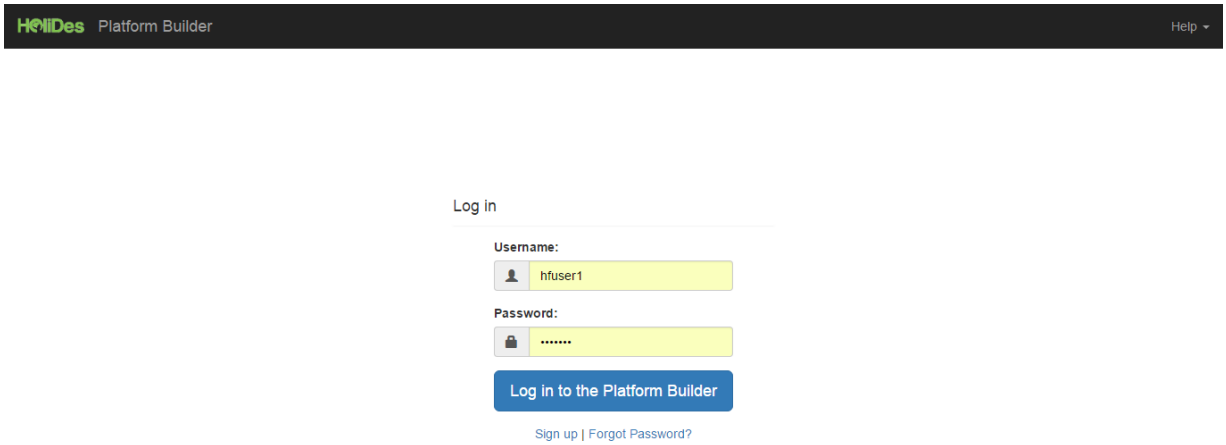

Figure 8 PB main screen

It appears a screen to introduce the user details as is detailed in the picture below:

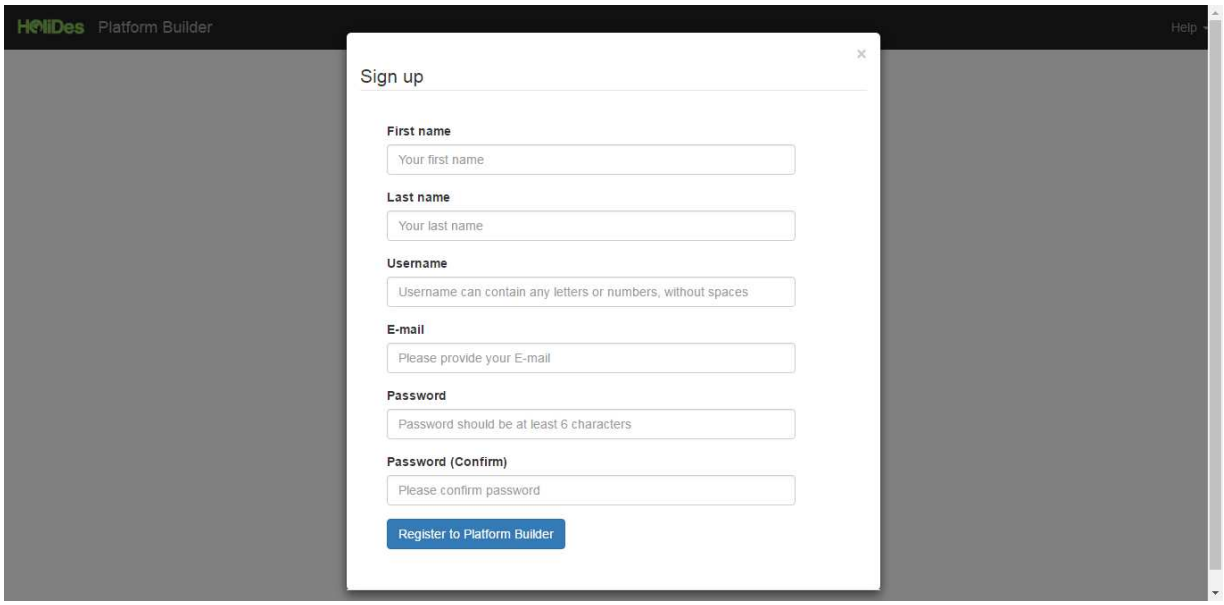

Figure 9 PB sign up

Once the user has been registered will be able to access to the PB app.

In case of forgot the password or user, click on the link "Forgot your password" and contact with the mail address provided.

There are a generic option introducing a general user/password if some user has forgotten his/her credentials, it's possible to access to the PB with one of this user accounts:

User: **hfuser1**
Pwd: **hfuser1**

User: **hfuser2**
Pwd: **hfuser2**

4.1.1.1 Search MTTs

The objective of the PB is that users can search MTTs appropriate for their system development and create according instantiations (selected MTTs).

This screen provides the possibility to choose between domains, regulations, human factors issues and related activities to filter / specify the MTT search, the figure below shows the graphical user interface (GUI) of this PB Input:

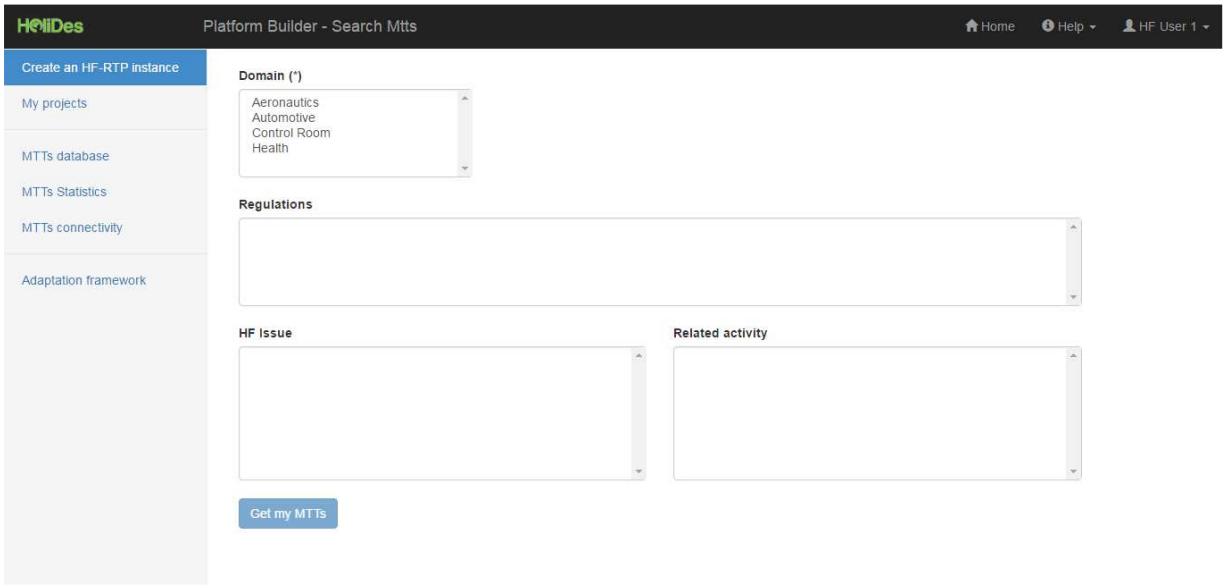

Figure 10 PB search MTTs 1

The field Domain* (* means mandatory) includes four domains (Automotive, Aeronautic, and Control Rooms and Health).

The button "Get My HF-RTP" is disabled until the mandatory domains (currently only one) have been selected. The steps to search for MTTs are:

1- Select a domain
2- According to the chosen domain, the fields Regulations, HF Issues and Related Activity show related items retrieved from the database.
3- Choose the HF Issue, Regulation and / or Related Activity. These are non-mandatory criteria, so the user can also choose to omit these options.

4- By clicking on "Get My HF RTP" a list of MTTs appears resulting from the selected criteria.

An example:
A user wants to search for MTTs applicable to the automotive domain that address the Human Factors Issue "Distraction". Accordingly, the user selects from the "**Domain"** list **"Automotive"**. Based on this first selection, relevant items turn up in the selection fields **"HF Issues"**, **"Regulations"** and **"Related activities"**. The user clicks on **"Distraction"** in the HF Issue list and then clicks on **"Get my HF-RTP"**.

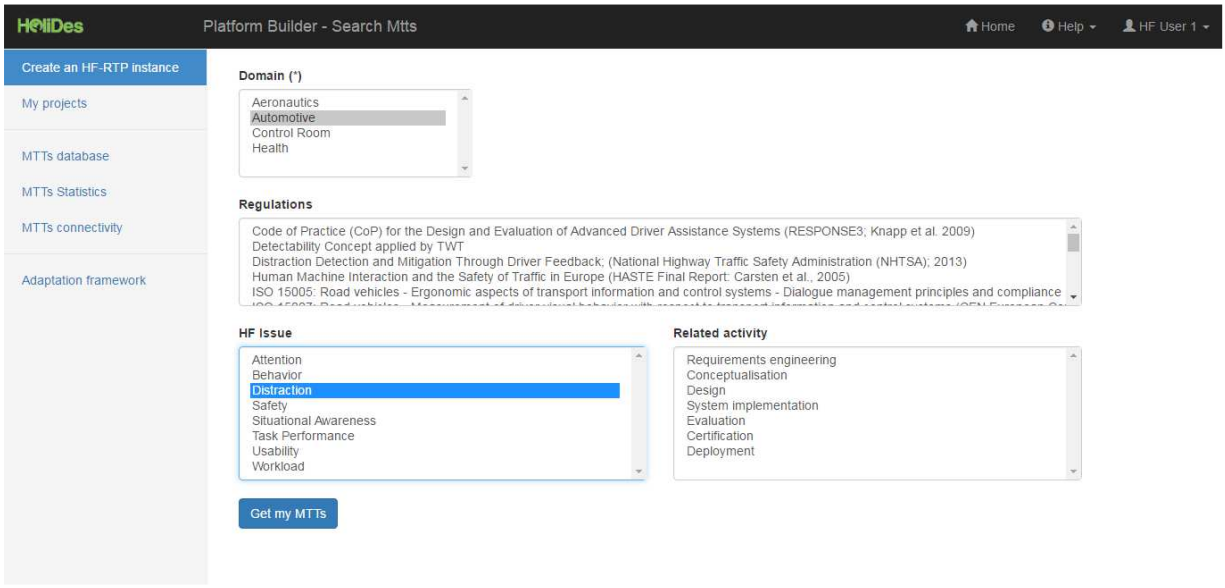

Figure 11 PB Search Mtts 2

A new screen will appear with a list of MTTs that accomplish the selected criteria conditions. This new screen is detailed in the next section "Preliminary MTTs List Screen"

4.1.2 Preliminary MTTs List Screen

This screen proposes a list of MTTs that accomplish the criteria selection from the PB Input screen. The screen shows the user a list of details for each tool (termed comparator tool). Based on the detailed information on the proposed MTTs, the user can choose more than one MTT which fit best to his/her purpose.

This screen is divided in two sections:

4.1.2.1 Section 1 of the Preliminary MTTs List Screen

In the upper part of the screen appears a list of MTTs proposed by the system (taking into account the search done by the user in the PB input). This list contains the name, a description of the MTT and the connector to the OSCL for each MTT, also provides a field "Search" that allows the user to find MTTs filtering by word.

An example of the "Preliminary MTTS list" screen:

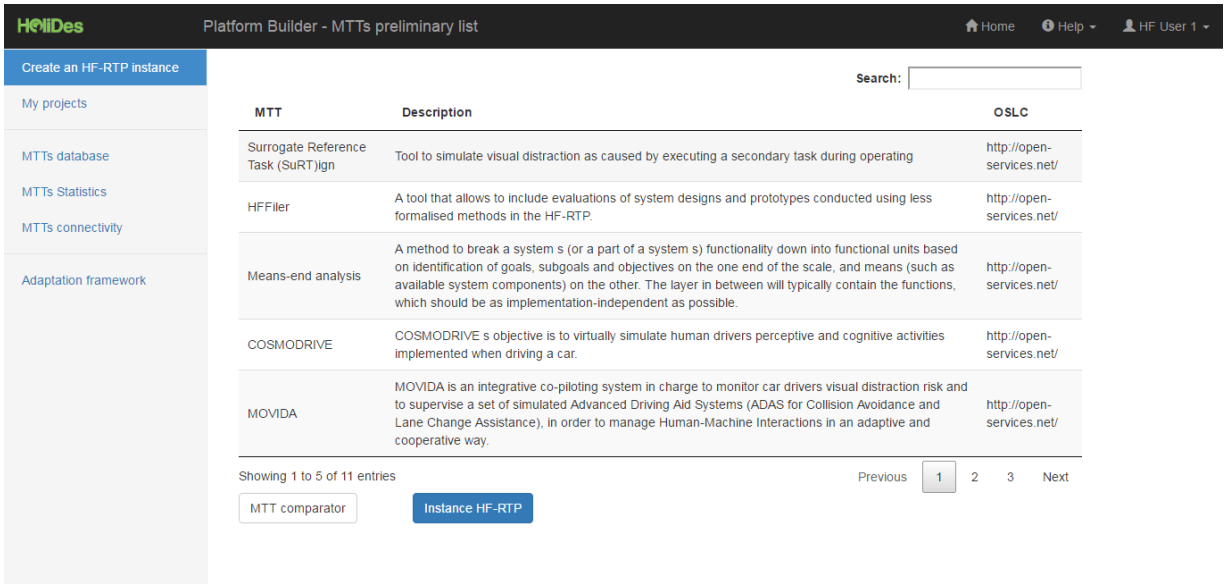

Figure 12 PB preliminary MTTs list

4.1.2.2 Section 2 of the Preliminary MTTs List Screen

The screen further displays a MTTs comparator table, appearing in a modal window, detailing for each MTT the most relevant features, so the user can compare the most important or relevant aspects of the MTTs guiding his/her decision of choosing the MTT which fits best.

For example in this case, the Tool comparator table contains the MTTs Driver Distraction Classifier and V-HCD and their details:

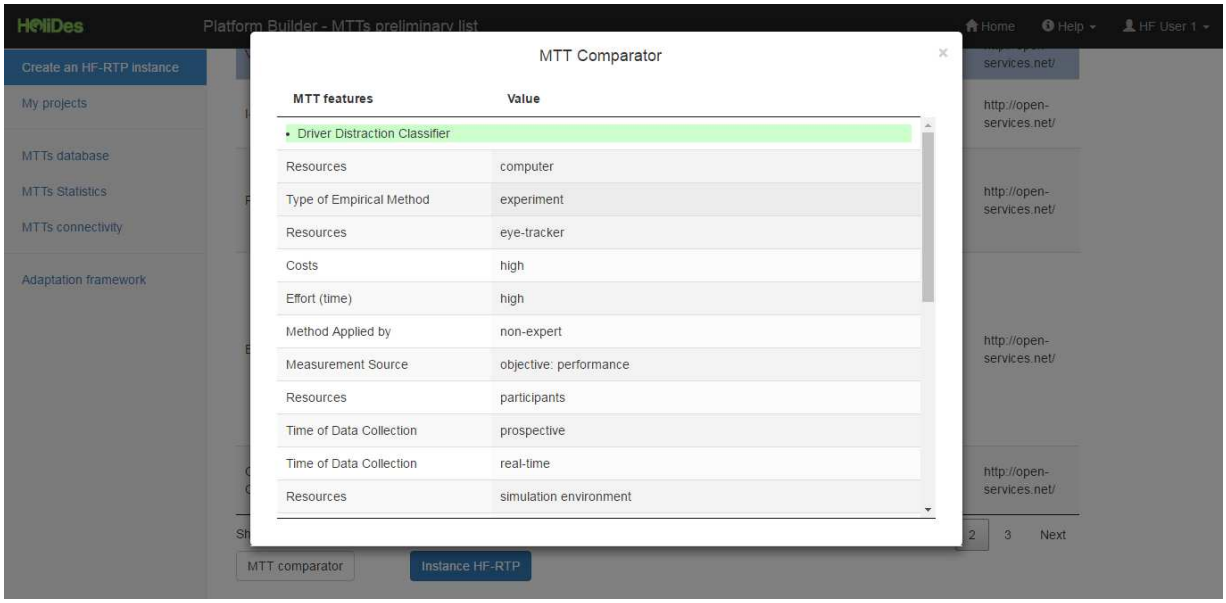

Figure 13 PB tool comparator

Selecting one or more than one MTT from the MTTs list and clicking on the button "Instance HF-RTP" the user can instantiate, create and save own projects.

Choosing an MTT/MTTs and clicking on instance HF RTP the new screen RTP instance screen appears.

4.1.3 RTP Instance Screen

This screen shows the MTTs selected in the previous screen, this is the final result of the PB app instantiation.

The table includes the MTT/MTTs selected in the previous screen (Preliminary MTT list) and the user can save it together with a description of the MTT (it's a mandatory field) for his/ her project, also should include a phase description.

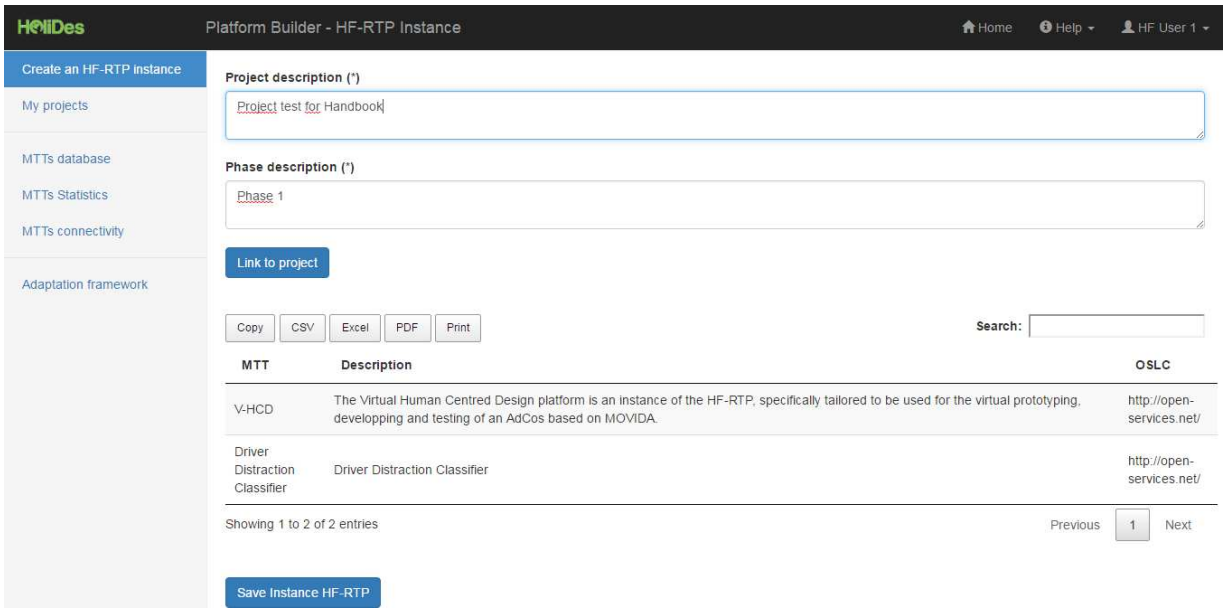

Figure 14 PB HF-RTP instance screen

Clicking on "Link to project" is possible to create a MTT chain for a project existing (only in the same domain). For example in this example is possible to link with the projects that are appearing in the screen below:

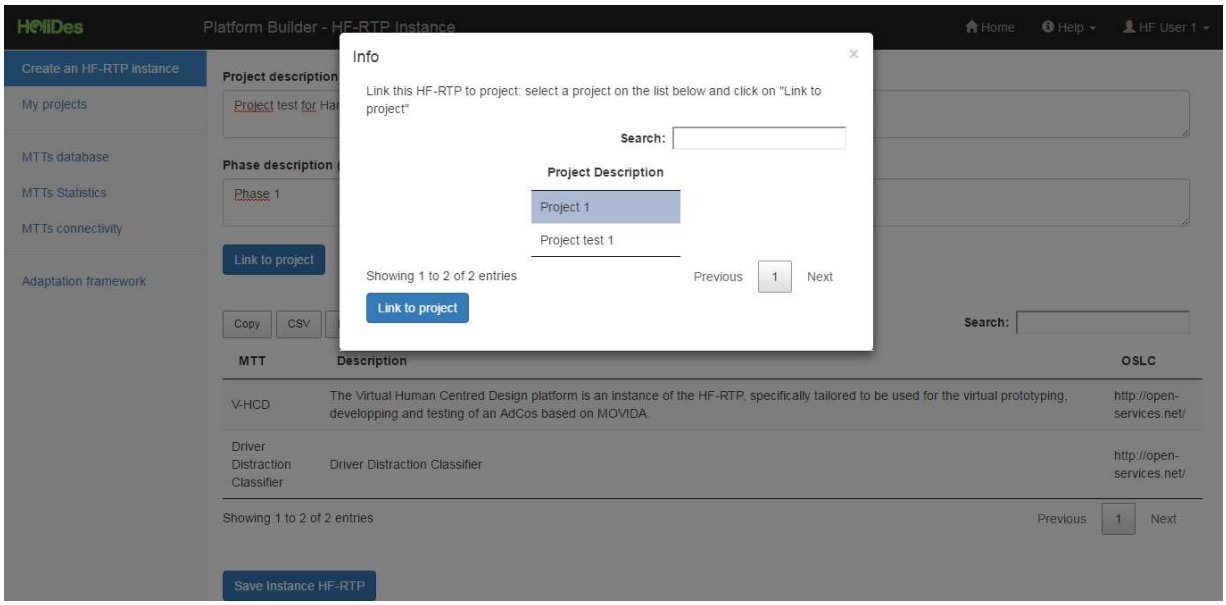

Figure 15 PB linking a project

Selecting one of the projects proposed the description of this project appears in the "HF-RTP instance" screen:

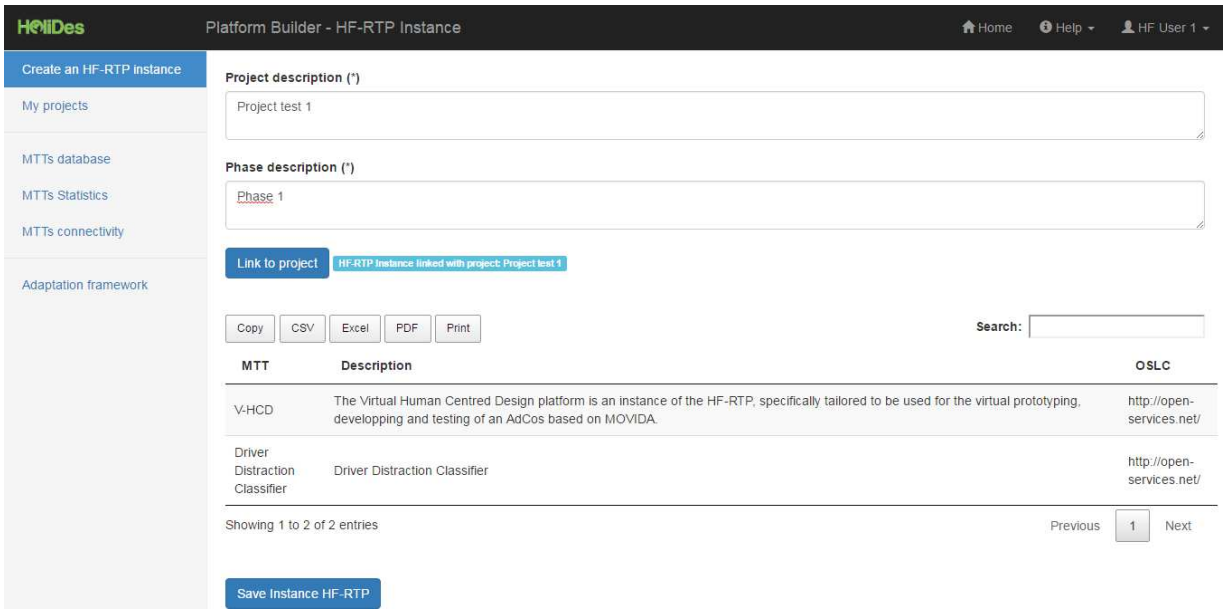

Figure 16 PB phase description

Clicking on "Save Instance HF-RTP" the project will be saved.

The project will be stored in the database and can be reviewed in the My Projects options menu detailed in the next section.

4.1.4 My Projects Screen

This screen shows the projects saved by the logged-in user.

A list of projects with the according descriptions is shown in a grid. Clicking on one of the projects and then clicking on "Show Project selected" redirects the user to the "My Project Details" screen for the selected project.

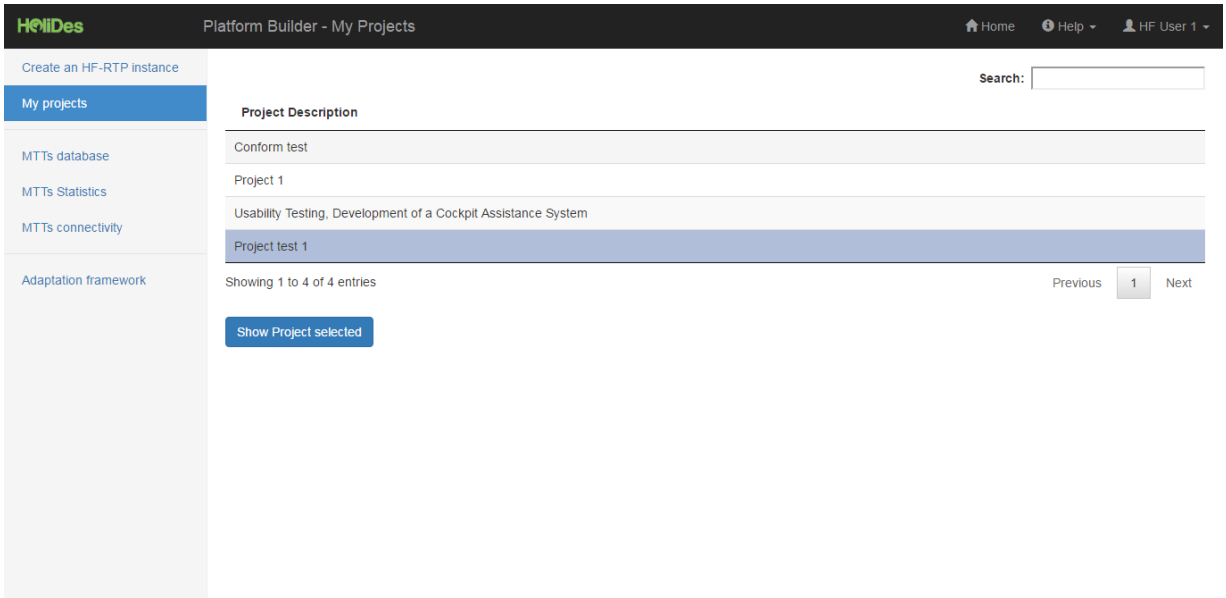

Figure 17 PB my projects screen

The screen provides a search field in the top right side working as a filter in the project search by word (this search could be useful in case that we have a lot of projects).

4.1.5 My Projects Details Screen

This screen is only available from "My Projects". Selecting one project (for example the project linked in the section HF-RTP Instance screen) redirects the user to a screen like this:

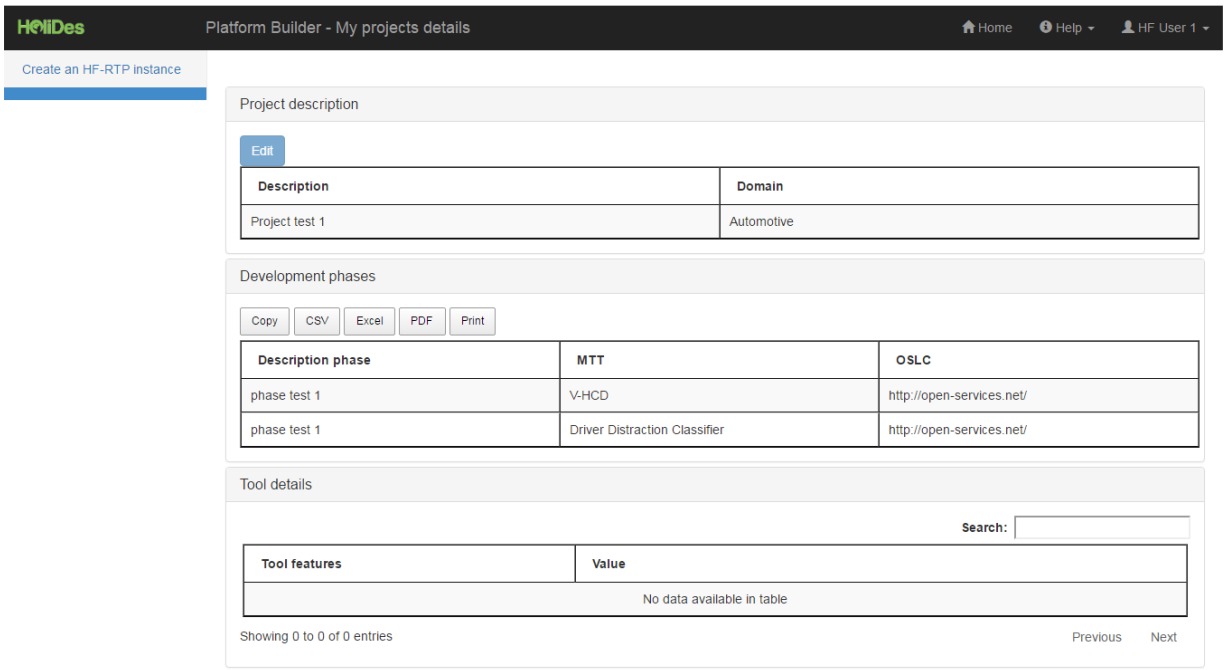

Figure 18 PB my projects details

The screen is divided in 3 parts:

4.1.5.1 Project information part

Includes the project description and the searches done in the PB input screen.

Selecting a project enables the button "Edit" placed on the top left side of the table. When clicking on "Edit" a screen appears with the description of the project and the system now allows changes to this description by clicking on the update button. An example:

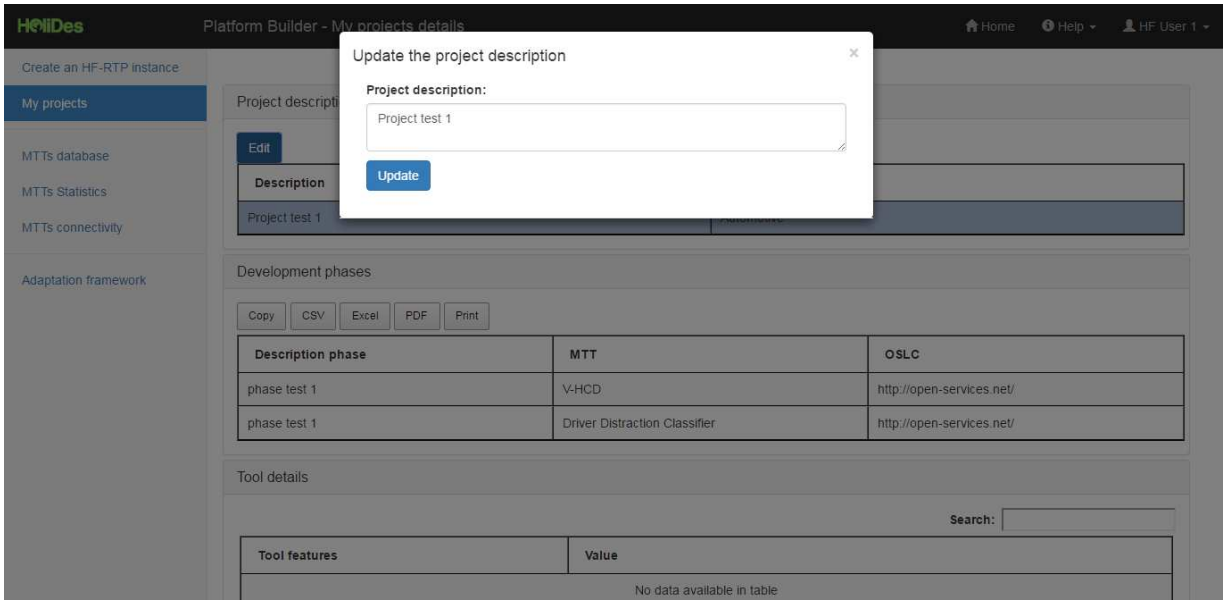

Figure 19 PB updating the project description

When changes are saved ("update") the new project description appears in the project grid.

4.1.5.2 Tool name and description part

Shows the information about the MTT/MTTs selected: MTT name, description and the OSCL connector. This section shows the tool chain created for this project:

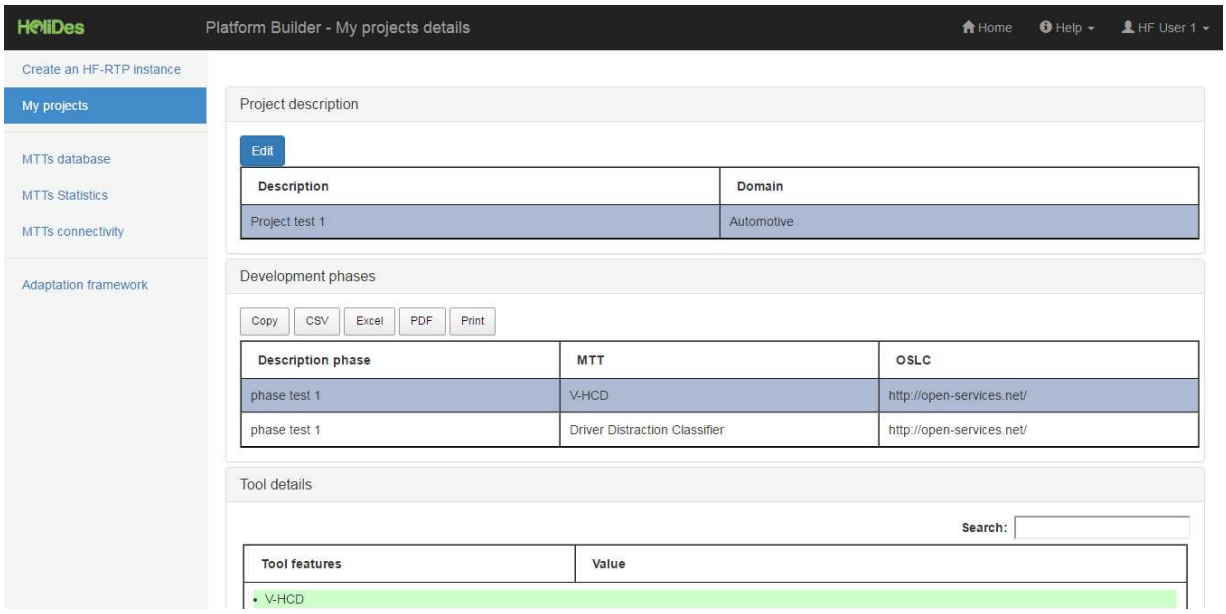

Figure 20 Viewing MTTs in a project

4.1.5.3 Tool details part

Includes the most relevant aspects for each tool.

It's possible to filter by the field "search" placed on the right and top side of this grid.

Clicking on an MTT in the "Development phases" section, shows the features of the tool selected:

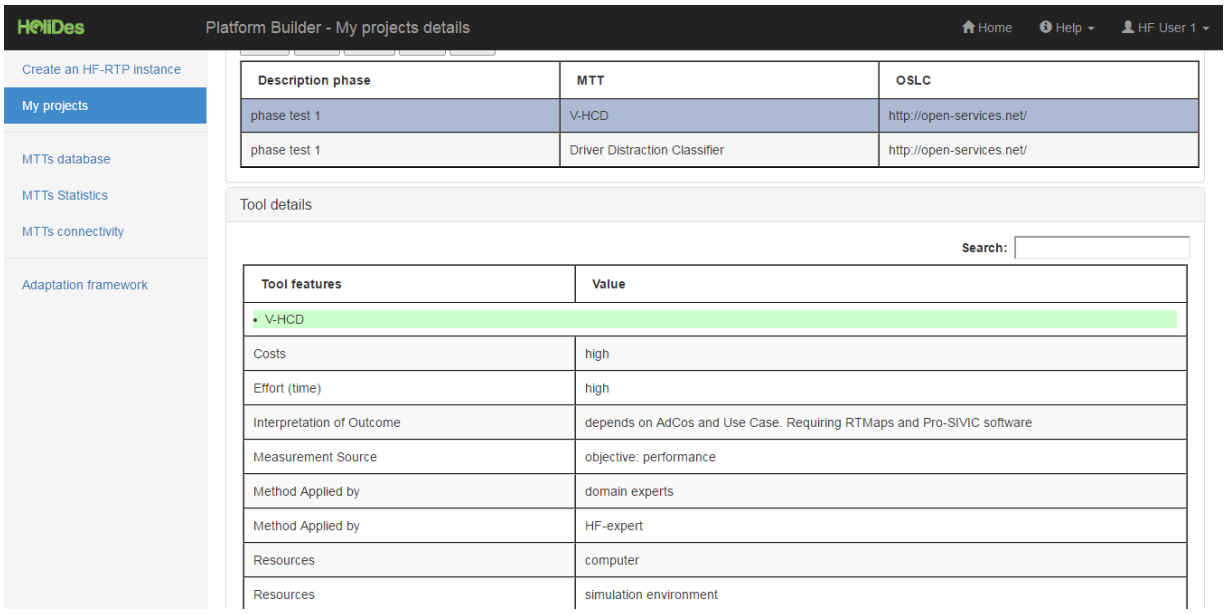

Figure 21 PB features for MTT

4.1.6 MTT database

Provides the possibility to manage MTTs.

The users can include new MTTs. These MTTs are then available to other users. Some users (depending on the rights assigned) can delete MTTS, only is possible delete an MTT if the MTT has never been used in an HF-RTP Instance.
By clicking on the menu "MTTs database" the "MTT administrator tool" appears.

The tool is divided in 2 parts.

4.1.6.1 Inserting new MTTs to the PB app

Includes the possibility to insert a new MTT to the system, providing the MTT name, description and detail (this information is required).

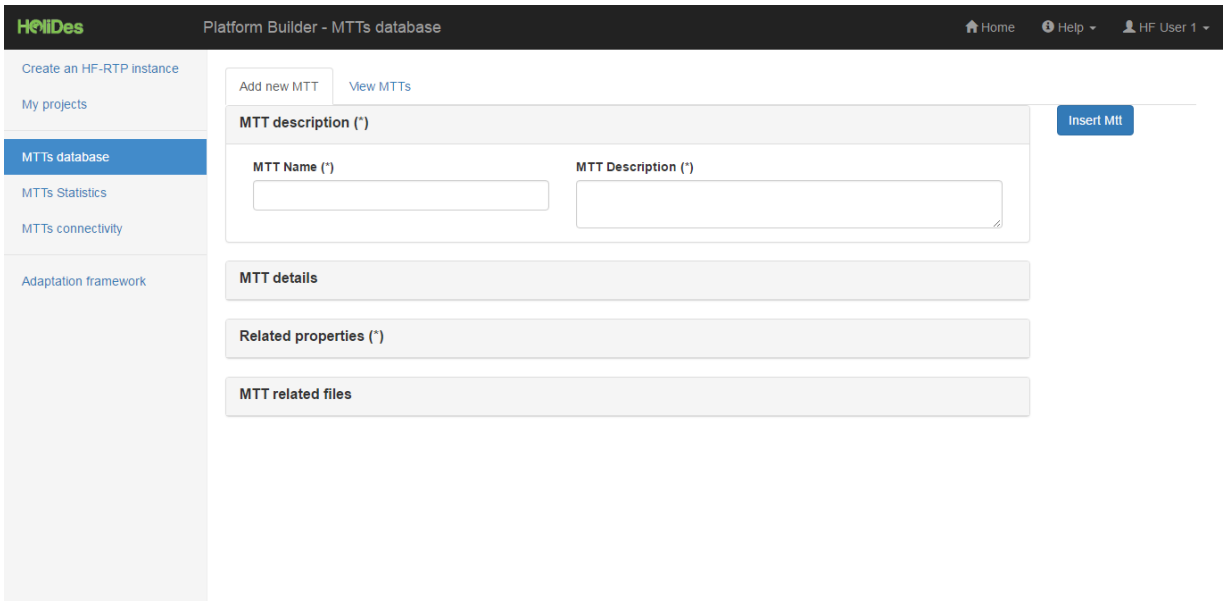

Figure 22 PB Insert MTTs in the database

To insert new details for the tool, select "Detail" and "description detail" in the list combos and click on the button "+". The grid below will appear with the new detail.
Repeat this action for each detail of the MTT.

To insert URL files related with MTT, click on Related Files section and add the file path in "URL related file" and click on the "+" button, repeat this action for each related file:

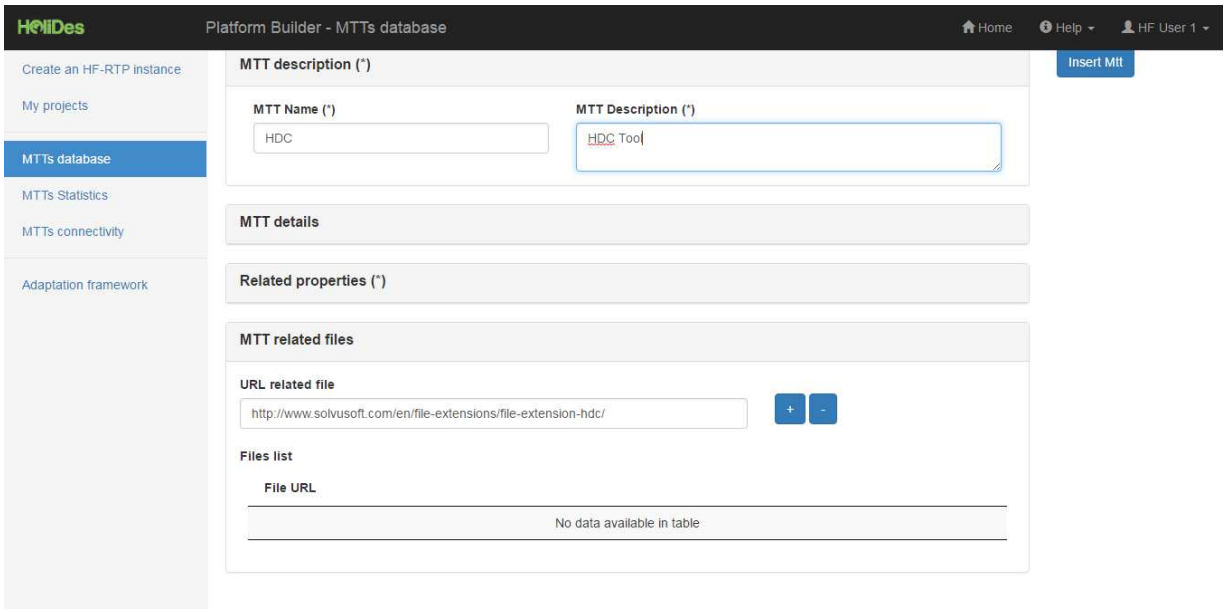

Figure 23 PB add URL related files for MTTs

Once you finish click on the button "Insert MTT" and the MTT will be stored in the database.

To avoid possible MTTs repetitions in the database, the PB search in the database for the MTT "name" provided, if the PB found some coincidence it will ask to the user like the example below:

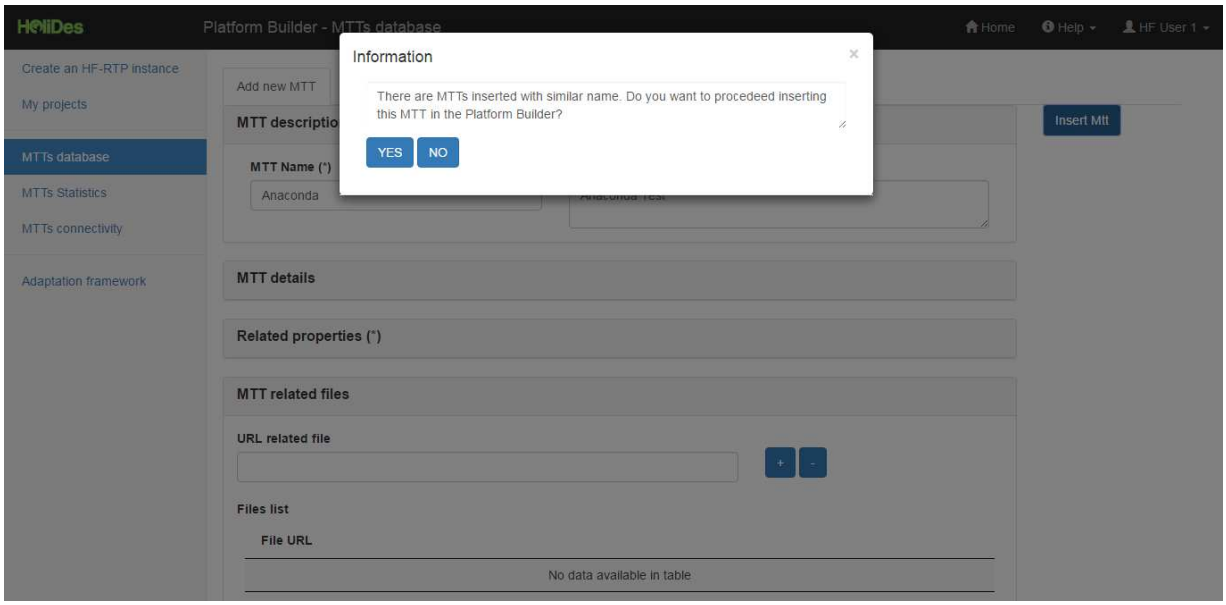

Figure 24 PB MTT repetition message

If the user click on "YES" the MTT will be inserted in the PB, if not ("NO" option), it will return to the insert MTT screen again.

4.1.6.2 List of MTTs of the PB

The user can view all the MTTs inserted in the system.
Filtering by word in the "Search" field allows the user to access MTTs easily.

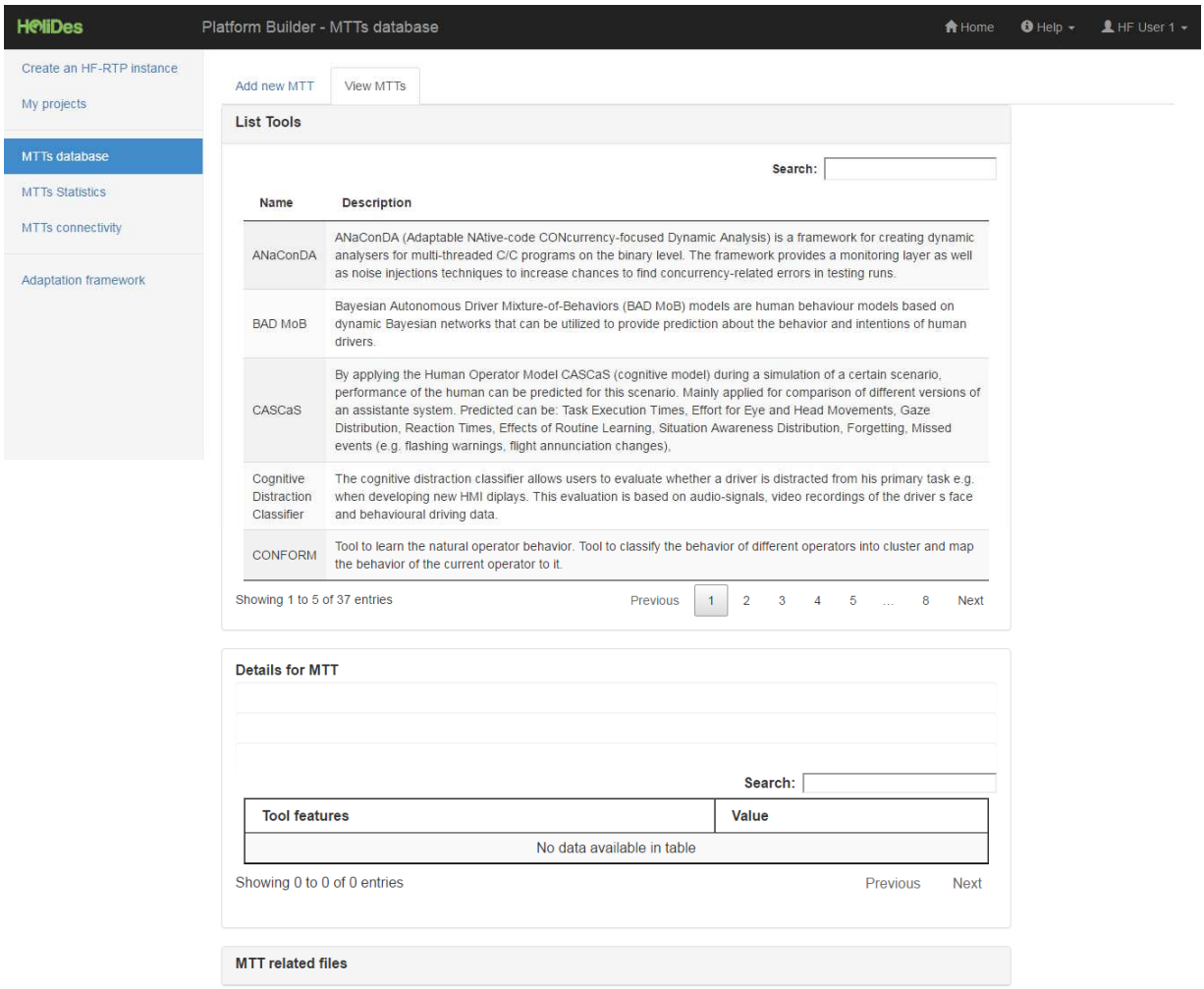

Figure 25 PB list of MTTs

A new option has been included "remove MTT" only for users with rights provided by PB administrator.

Selecting the MTT that we wish to remove and clicking on "Remove MTT", for example last MTT inserted like "AnaConDa" tool:

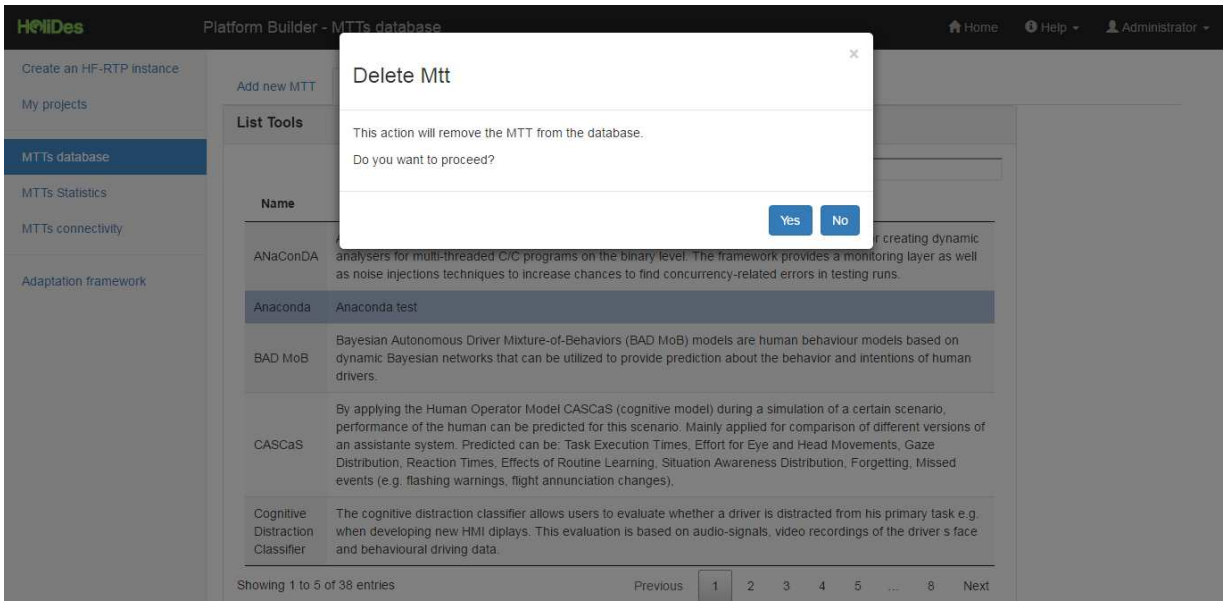

Figure 26 Removing an MTT

Clicking on "YES" button will remove the MTT from the database. Clicking on "No" button or closing the window the MTT will be in the PB database.

4.1.7 MTTs statistics

This screen provides a graphic environment on the frequency of use regarding the available MTTs, detailing how often MTTs were selected by users.

Clicking on the "Statistics" in the option menu directs the user to the statistics screen.

A selection of the field domain is required to enable the button "Generate Stats".

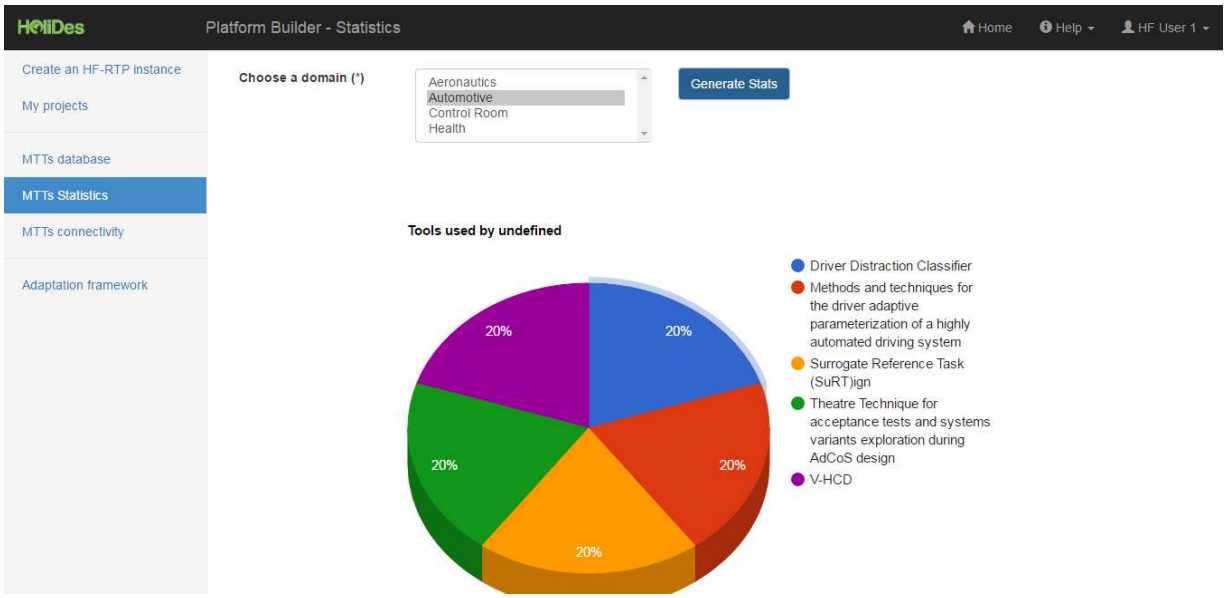

Figure 27 PB statistics

4.1.8 MTTs Connectivity

This screen provides a graphic environment.

The goal of this functionality is to show the MTTs selected before into a picture (V-model design picture). The MTTs will be as a rectangular shapes of different colours which are corresponding with different related activities: analysis, evaluation, design, conceptualization, deployment, certification and system implementation.

How it's working the MTTs connectivity?

1- Clicking on the "MTTs connectivity" in the option menu directs the user to the MTTs connectivity screen.

2- Selecting some of the combos appearing in the top size of the screen: domain, HF issues, related activity or regulations, a list of MTTs will appear in the right size into the "List of MTTs".

3- Selecting the MTTs from the "List of MTTs", will appear in the V-model as a rectangular shape with a colour for each related activity associated.

4- Clicking on "Select all MTTs", will appear all the MTTs from the "List of Mtts" in the V-Model picture and deselecting "Select all MTTs" all the MTTs in the V-model picture will be deleted.

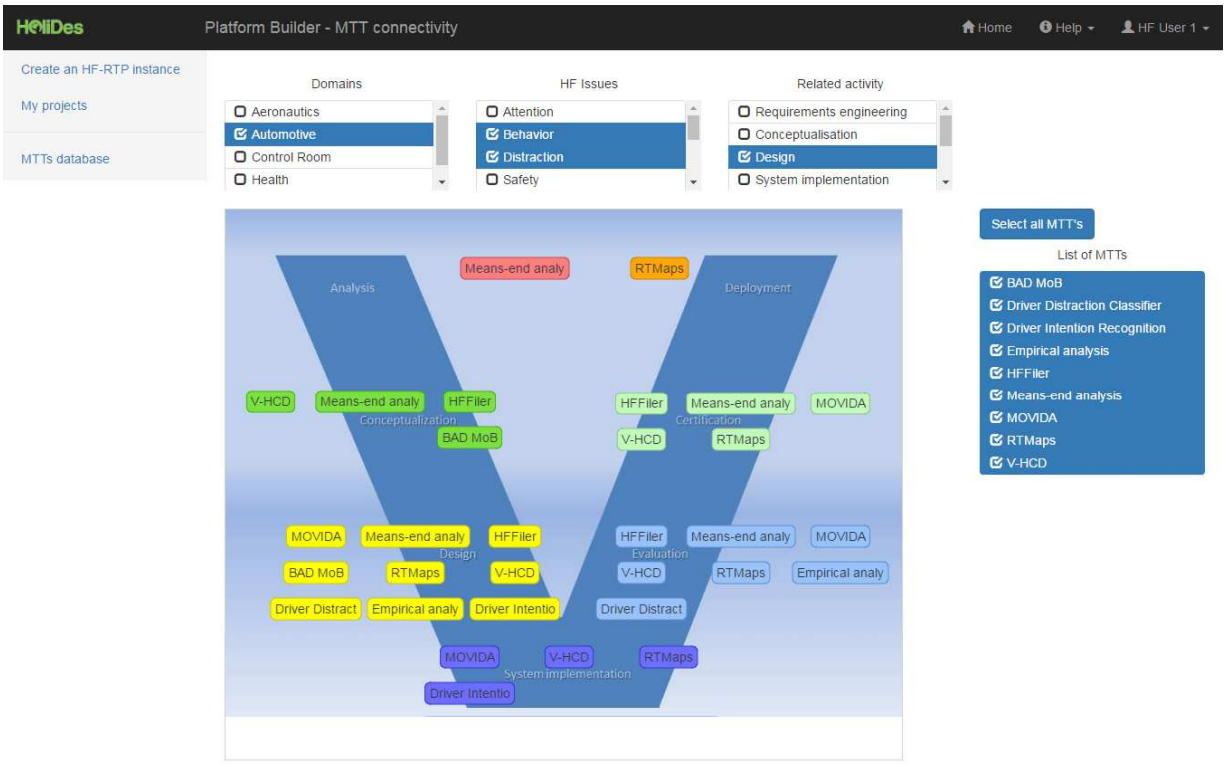

Figure 28 PB MTTs connectivity

4.1.9 Adaptation framework

This screen allows the users to build their AdCos requirement kernel.

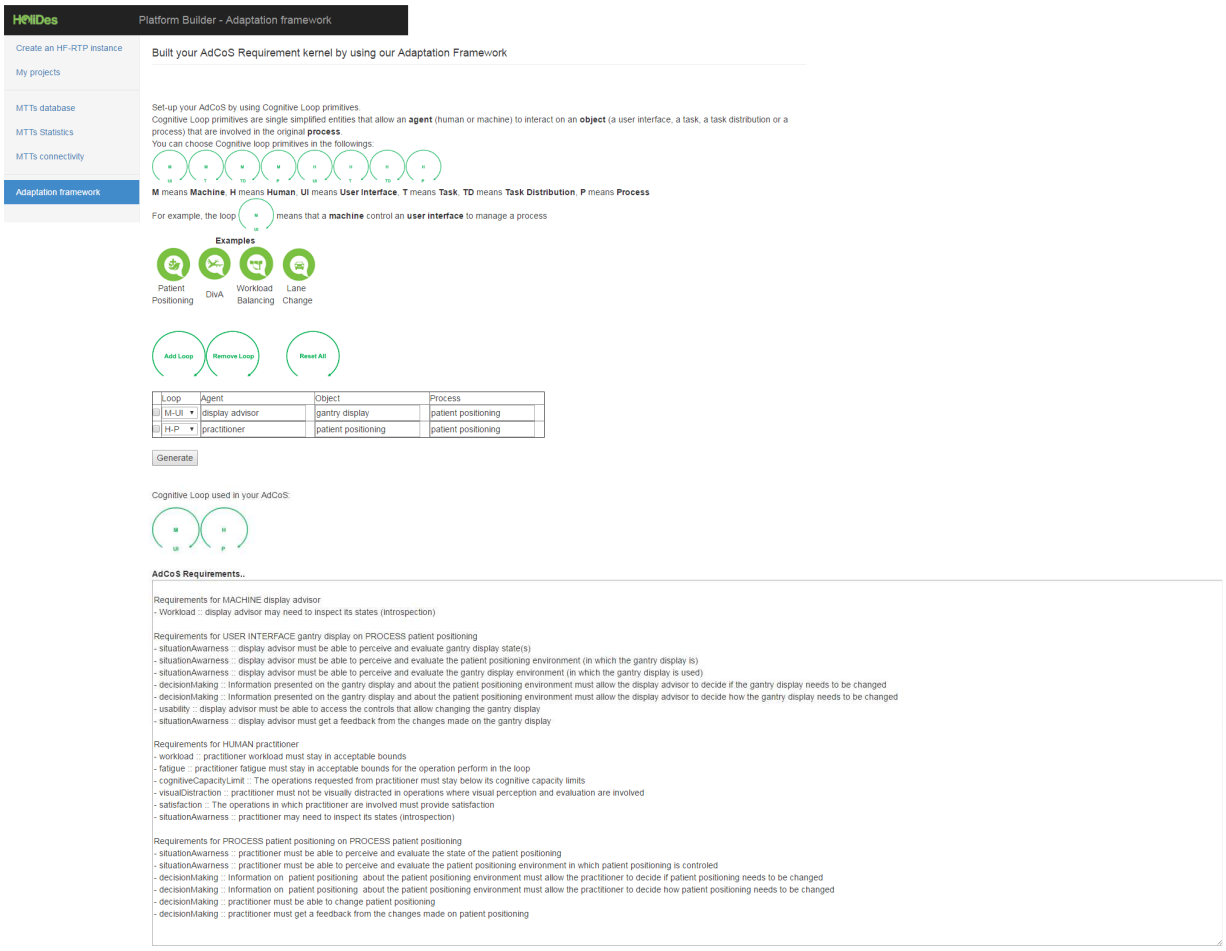

Figure 29 PB adaptation framework