EUROPEAN ORGANISATION
FOR THE SAFETY OF AIR NAVIGATION

EUROCONTROL

TOKAI USER MANUAL

Edition: ***v3.1***

DIRECTORATE NETWORK MANAGEMENT

Contents

Table of Figures

USER MANUAL

Introduction

If you are an investigator, notifier, reader, or even an organization nmanager who wants to use the tool as one of the previous roles, please continue with using this USER MANUAL.

In case you are an Organization Administrator, get the ORGANIZATION ADMINISTRATOR MANUAL to read about the Organization Administration roles available in eTOKAI.

The USER MANUAL has the purpose of explaining the roles of an investigator, notifier or reader, together with the necessary steps to follow in order to create a notification and start the data gathering related to an occurrence that took place within a specific Organization.

It is composed of the following main sections:

1. **Notification Module**

   This module is offering information about the creation of a notification from scratch, the roles that are assigned to a notifier and how one can use them, and also it offers information about the features available in the notification inventory.

2. **Data Gathering Module**

   This module explains how to create a new occurrence that will trigger an investigation if necessary and how to start the investigation process. An existing investigation can be edited, and one can see how to do this using this section. The Occurrence options and inventory are some other subjects tackled in this module.

3. **Risk Analysis Tool Module**

   Here, the user can see how a Risk Analysis can be done and how can it be integrated with the occurrences in the inventory, using the specific RAT Tool. (Please see the separate RAT user guide document on the e-TOKAI website (click for the link).

4. **HERA Module**

   The Human Error in European Air Traffic Management (HERA) is a tool dedicated to the human factors perspective in incident/accident investigation. It is used to help the classification of Human Error in the operational air traffic management environment.

5. **Statistics Module**

   In the Statistics Module the user can see the current situation of the Organization he is working in and also access the query system and RAT Specific statistics.

Following, the modules listed above will be discussed.

1 Notification Module

1.1 Create a new notification

To start creating an ATS Notification you first need to have at least 1 Notification template created (please see **Layout Engine chapter** in Admin Manual on how to create a template – only for admins). The user you log in with should have "Manage ATS Notifications" permission assigned. If these prerequisites are met, navigate to the create notification page following the steps below:

1. Login as a user with manage ATS Notifications permission
2. Go to main menu and click/tap on **ATS Notification**, select **New ATS Notification** from the dropdown;
3. Select a template from the template list by clicking/ tapping it;
4. Add a name to the notification;
5. Complete the input fields that you need, as well as those that are required;
6. Click the **Save** button.

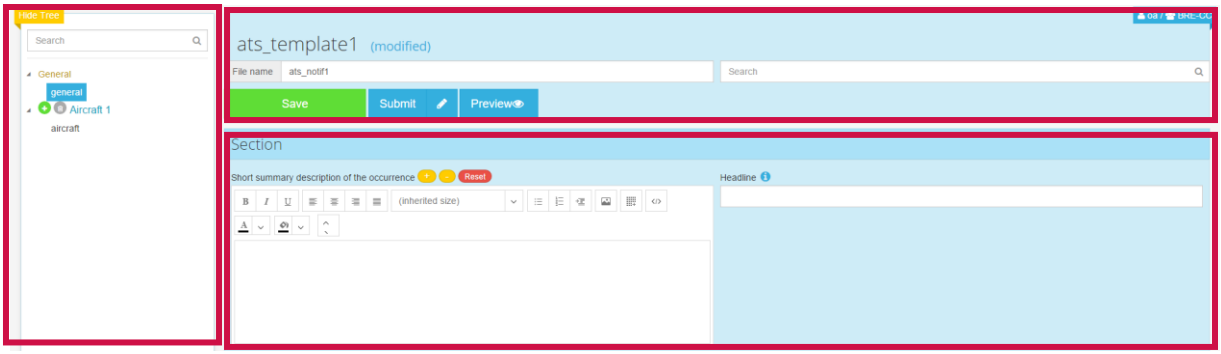


Figure 1.1-1 Creating a new notification

In the above screenshot we have the 3 main panels in the *Create notification* page:

1. **The layouts panel** where the template layouts are listed in a tree structure according to their category;
2. **Options panel** in the top right for saving, searching and adding a name to the notification;
3. **Section panels**, as created in the template, containing input fields, checkboxes etc.;

To verify that your notification has been saved, go to **main menu – ATS Notification – ATS Notification Inventory** and in the inventory page notice that your report is listed with the specified name. Also notice that your report has status: *un-submitted*. This means that your notification has been saved but has not been submitted so no one got your notification. To do this, on the last step click the ***"Submit"*** button instead of the "***Save"*** button.

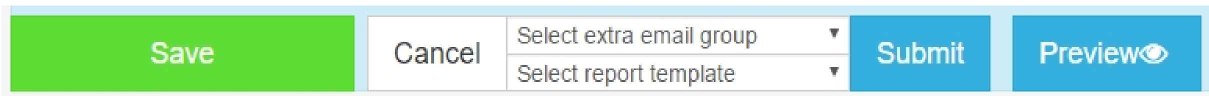


Figure 1.1-2 *Extra email group*

When clicking in the "**Submit**" button, there are two possibilities:

1. If there is no Email Group or no ATS Notification Report Builder Template set as default for the current unit, two drop-down lists appear where you can select them. After selecting the Email Group and Report Template, you must click submit again and the following confirmation popup window will appear on the screen. To finalize the process, you have to click *Submit* in the confirmation window.

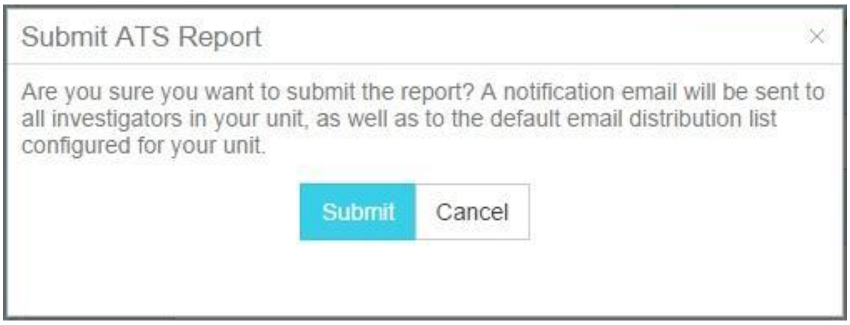


Figure 1.1-3 *Submit confirmation*

2. If an Email Group and ATS Notification Report Builder Template were previously set as default for the current unit, after firstly clicking ***Submit***, the confirmation window appears, and you must click again ***Submit*** in order to finalize the process. If you are not satisfied with the default submission settings, you can modify them by clicking the ***Edit*** button located near Submit, illustrated in the following picture:

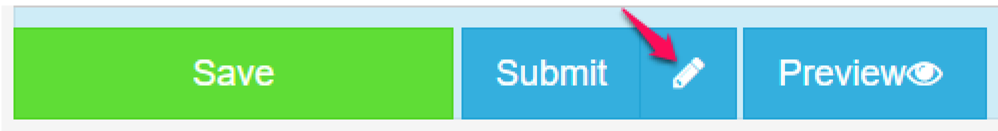


Figure 1.1-4 Edit submission settings

By clicking the "***Edit***" button the two drop-down lists appear, and you can manually select the Email Group and ATS Notification Report Builder Template for submission.

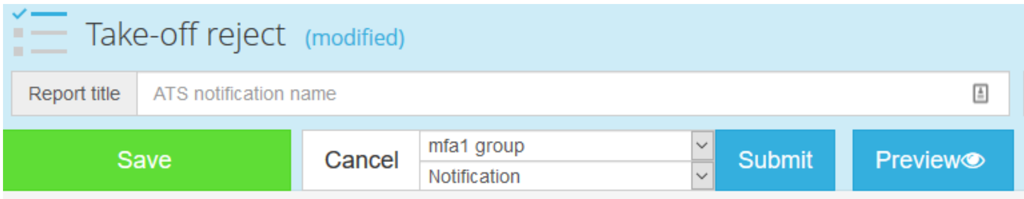


Figure 1.1-5 Edit Submit options

Verify that your notification has now the status "**Submitted**" in the ATS Notification inventory.

You can skip the save button altogether because when you submit a notification, it automatically gets saved in the inventory. When the notification has been saved, an info message appears on a green panel on the top right of your browser window. If anything goes wrong in the saving process, then this info popup will have a red background and will display a message informing what happened.

Figure 1.1-6 Save successful pop-up

NOTE: When a user that belongs to a certain unit creates a notification and submits it, all investigators in that unit are informed via the push notification system that a notification has been created.

1.2 Edit an existing notification

To edit an existing notification please follow the steps below:

1. Navigate to **ATS Notification – ATS Notification inventory**
2. Click on the name of the notification that you wish to edit from the inventory list
3. In the notification page modify what information or content you desire
4. Submit your notification again by clicking the "***Submit***" button once, then next to the email notification dropdown again, then in the confirmation popup once more.

1.3 Dismiss a submitted notification

To be able to dismiss a submitted notification, an organization administrator should have created the "**Report dismissed alert**" template:

ADMIN STEPS:

1. Navigate to **Admin –Organization Management**
2. Go to **Custom workflows**
3. Select "**Report dismissed alert**" from the **Notification Event** dropdown and "**Notifier**" from the **Role** dropdown and then click "**Save**"

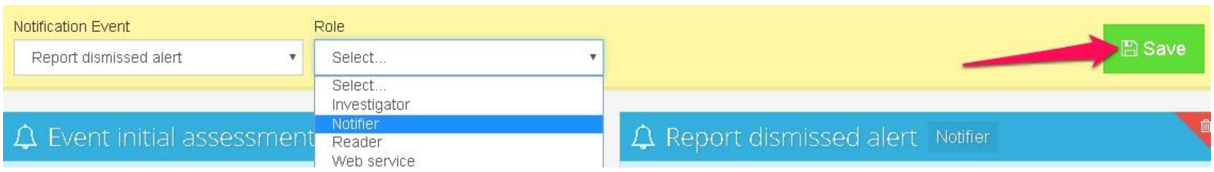


Figure 1.3-1 Save the template for the Report submitted alert

You should now see the template for the **Report dismissed alert.**

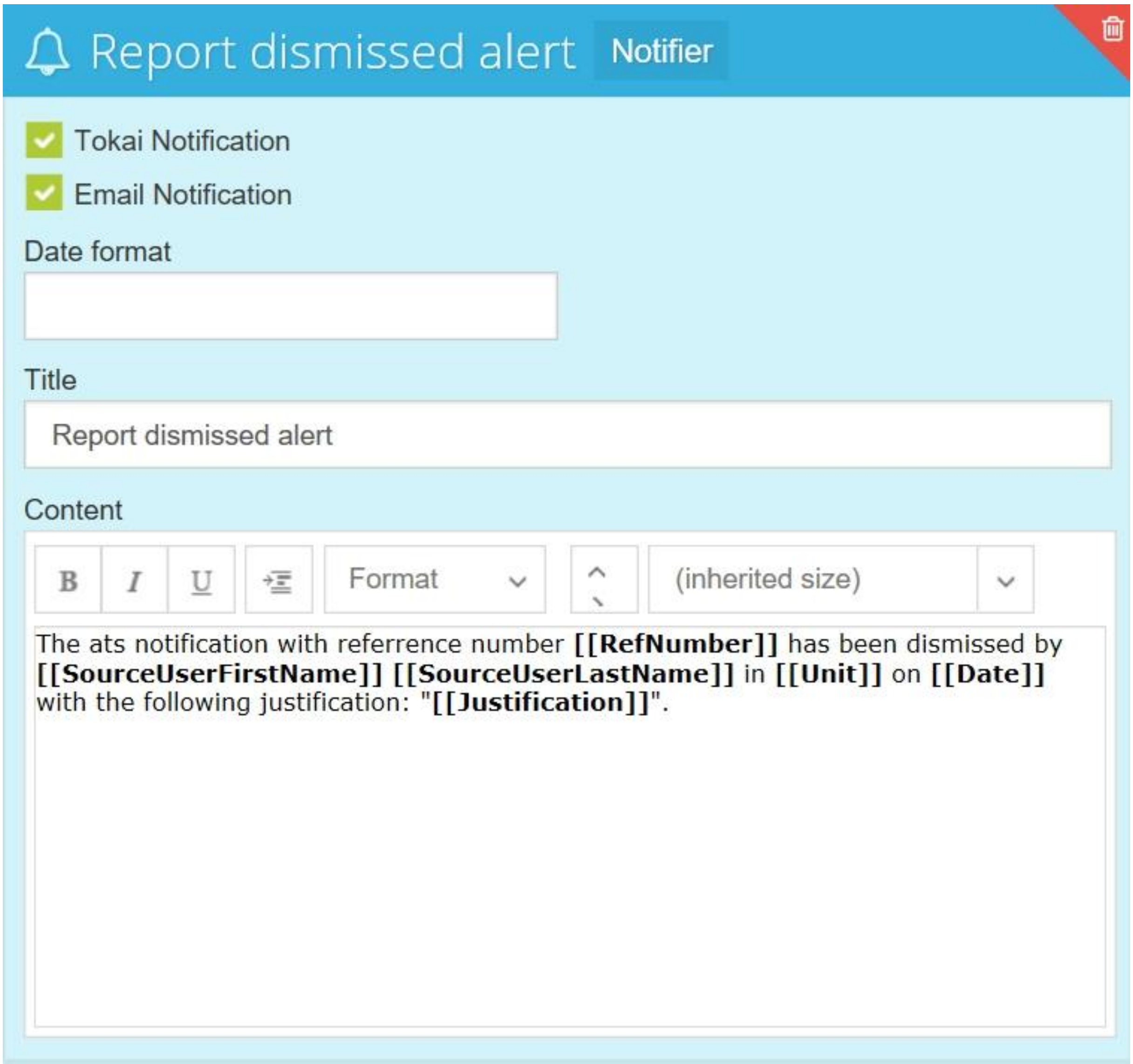


Figure 1.3-2 The template for the Report submitted alert

To dismiss a submitted notification please follow the steps below:

1. Navigate to **ATS Notification – ATS Notification inventory**
2. Click on the name of the notification that you wish to dismiss from the inventory list
3. In the notification page click the "**Dismiss**" button
4. After clicking the "**Dismiss**" button, fill the text area field with the dismiss justification
5. Then click the "**Submit**" button, then click "**Yes**" in the confirmation popup to dismiss the notification or the "**Cancel**" button to quit the dismiss procedure

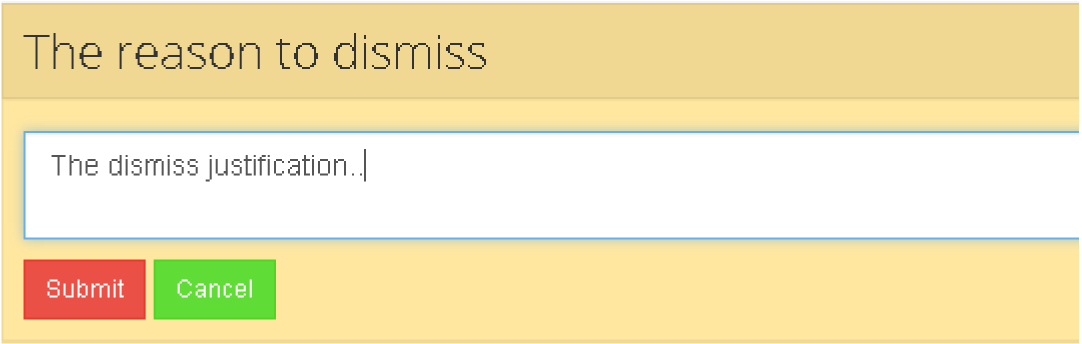


Figure 1.3-3 The panel for the dismiss justification

The green confirmation panel in the top right will tell you that the notification has been dismissed successfully.
The notifier will be informed about the dismissed ATS Notification by receiving an email and / or an internal notification (visible in the notifications area).

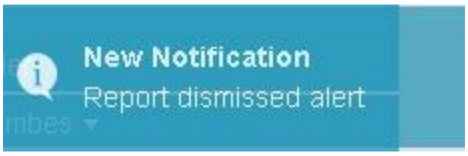


Figure 1.3-4 The confirmation panel for receiving the notification about the dismiss

The ATS notification is now set as dismissed. You can check the dismiss justification by clicking the "**Dismiss justification**" button.

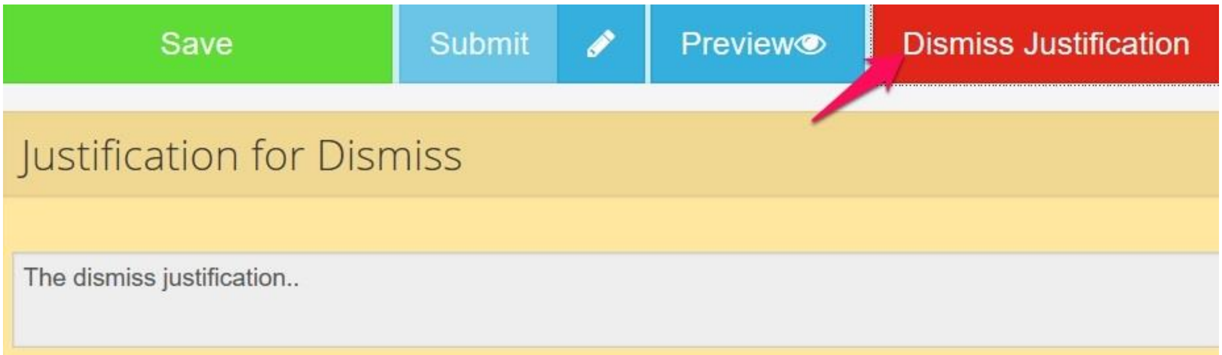


Figure 1.3-5 The justification for the dismissed notification

NOTE: Only the investigators with report submitted alert subscription in that unit can dismiss the notification.

2 Data Gathering Module

The Data Gathering module is the most important part of the entire application. It is where investigators come to collect notifications, create occurrences based on them and generate reports. Just like the ATS Notification module, we have a "***create***" page, an ***inventory***, a ***template list*** page, a ***link reports*** section and more.

Let's start with the "**create**" page. The user interface is identical to the *ATS Notification* "create" page, the only difference being that the user has a different Options panel.

2.1 Create a new occurrence (investigation)

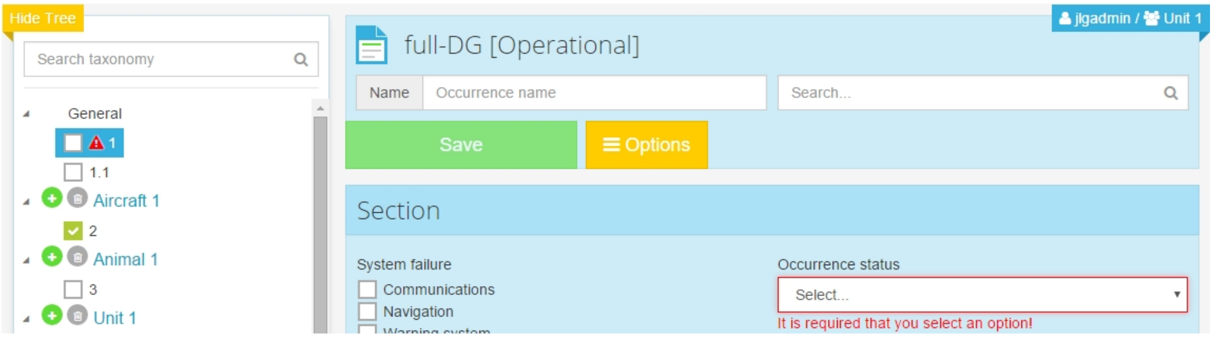


Figure 2.1-1 New Occurrence template

To create a new occurrence, follow the steps below:

1. Go to **main menu – Data Gathering – New Occurrence**
2. **Select** a template from the list depending on the type of occurrence you want to report
3. **Add** a name in the options panel
4. **Complete** all required fields as well as any other fields you need for your occurrence
5. Click **Save** to save the occurrence.

You have now successfully created a new occurrence. The green confirmation panel in the top right should tell you that.

Notice that as your occurrence was saved, new options popped up in the options panel.

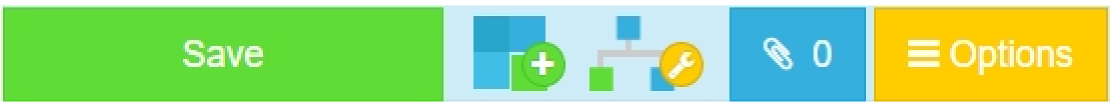


Figure 2.1-2 Save an occurrence

The new options are:

1. Create Risk Analysis

   The "**Create Risk Analysis**" button takes the user to the steps of creating a Risk Analysis for which you can read more in the RAT Chapter. When that risk analysis is saved there is a button linking the user back to the occurrence. When he returns to the "Create" page, he now has an edit and a delete Risk analysis button as illustrated by the icon badges.

2. Edit HERA error

The "**HERA error**" button simply informs the user that one or more HERA terms are available in the chosen template.

3. Attachments

The "***Attachments***" button links to a section where user can upload files like documents, images, or any other non-executable files.

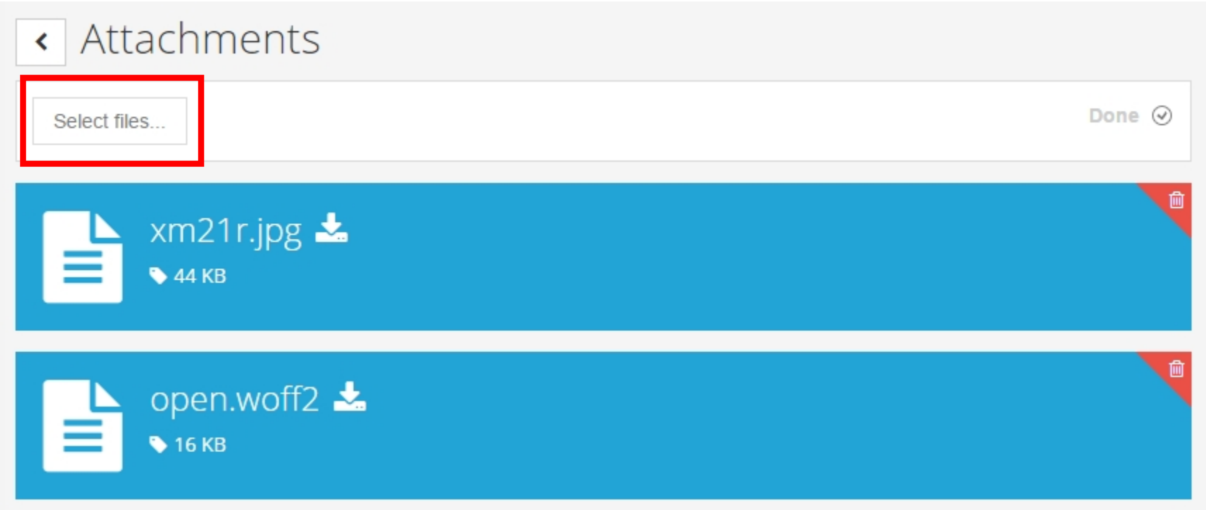


Figure 2.1-3 Occurrence Attachments

Simply click the "***select files***" button, select one or more files using the CTRL key on your keyboard and click *open*. The maximum size accepted for an attachment is 50 MB, while the sum of all attachments' sizes for an occurrence could not exceed 100 MB. The files are then displayed as tiles with title, file size and an option to delete them. Clicking the tile acts like a ***download*** button.

At the left of the title there is a ***back*** button to return to the occurrence. Notice that the attachments button shows a counter with the number of files uploaded to this occurrence.

All the risk analysis and the attachments feature have been saved automatically. You can now navigate to the inventory and notice your occurrence listed there.

4. Options (Open / close right panel options)

The "**Options**" button on top of the page gives the user a list of options for the Occurrence:

- Download Report – downloads a report in different templates depending on the number of templates saved in eTOKAI
- Email Report – Sends the report via e-mail to a chosen addressee
- Preview of exported occurrence template – preview of the PDF exported file.

- Linked ATS notifications – see the linked ATS Notifications with the current occurrence
- Check Annual Safety Template (AST) Compliance – checks compliance with AST template
- Export to Excel – Exports occurrence to excel in
- Export to AST – Exports occurrence to AST template
- View History of file – view creation, edited date, user, unit, actions taken during filling in information
- Related Occurrences – shows a list of linked occurrences, if any. If not, the user can add a link to an existing occurrence
- Reassign Occurrence – offers the possibility to search in the list of users a new one to assign the occurrence to
- Tags – add tags to the occurrence for easier identification
- Search for Duplicates – searches in the inventory for any duplicates of the current occurrence
- Stop/Overtake Occurrence

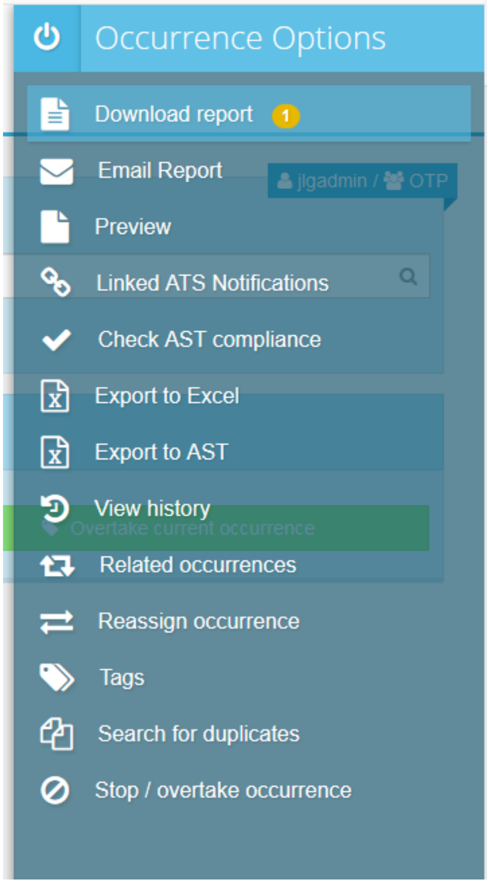


Figure 2.1-4 Options panel

More information about Occurrence Options Sidebar in 2.5.

2.2 Create an investigation from an existing notification

As notifications are created, investigators assigned to those units receive a push notification on the top right blue panel. Investigators can navigate to the push notifications page and choose an ATS notification to view. A user can view ATS notifications just as well by using the ATS Notification inventory. To start creating an occurrence from an existing notification you will require the following prerequisites:

1. At least one notification has been created and submitted in a certain unit, let's call it unit x;
2. At least one template for Data Gathering available in unit x;
3. A user with manage Occurrences permission in unit x;
4. Report submitted alert set up for that user's role (ex: investigator role)

If everything is set, follow the steps below to start creating your occurrence:

- Navigate to the main menu top right blue panel and click the "**Push Notification**" button

Figure 2.2-1 Push Notification Button

- In the Push Notifications list page, click on the unviewed notification to expand it and click on View Notification button to go to the ATS Notification

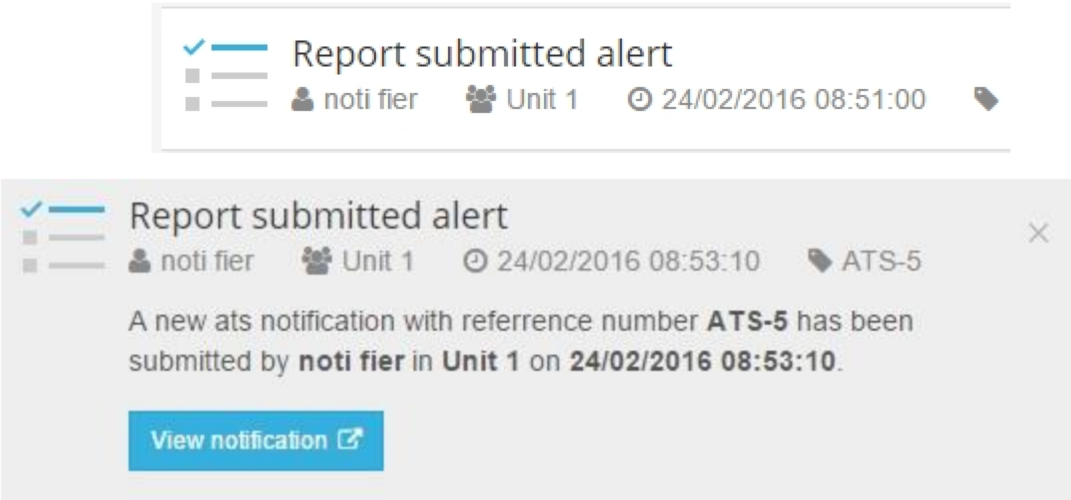


Figure 2.2-2 Report Submitted Alert

- Notice in the figure below that all input fields are locked so you cannot edit them, but in the options panel, you have a new button for creating an occurrence from this notification. This is available only if nobody else created an occurrence from this notification before. Clicking the "**Dismiss**" button marks this ATS Notification so that it could not be used to create an occurrence from it.

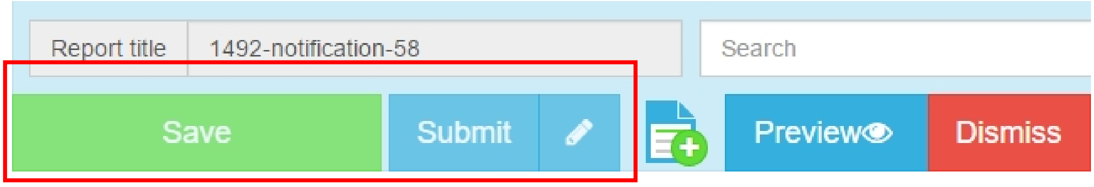


Figure 2.2-3 Locked input fields

- Select a data gathering template for your new occurrence. Know that if the data gathering template contains the input fields (HEIDI terms) as the Notification template and those input fields have been filled with data by the notifier, all that information will be transferred to your occurrence. This is the main reason why it is useful to create occurrences from ATS notifications.
- You are taken to an occurrence page where data from the notification has been ported here and you can add more data to complete your occurrence. Fill in your new required fields, these functions exactly like was presented in ATS Notification chapter, only these input fields could be different terms, and it all depends on what terms the data gathering template has been created with. Save the occurrence by clicking the “***Save***” button.

Now you have created your first occurrence from an ATS Notification. You know this because there is a linked notification to your occurrence. You can review what notification has been linked to an occurrence by navigating to main menu – **Data Gathering – Occurrence Inventory**, selecting an occurrence by its respective checkbox and clicking the button „***linked reports***” button.

2.3 Edit an existing investigation

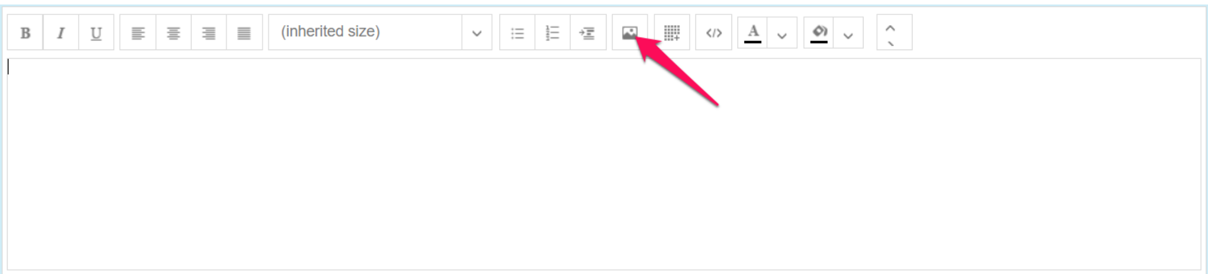
Investigators can edit an occurrence after saving it by following these steps:

1. Navigate to **main menu – Data Gathering – Occurrence Inventory**
2. Click on the occurrence name to **view / edit it**
3. In the occurrence page, **change your data** or add new attachments, etc., and click Save.

Now your occurrence is edited and saved. You might run into some trouble with permission limitations as user who does not have the ability to view/ edit / delete or any combination of the three, an occurrence that was not created by the same user.

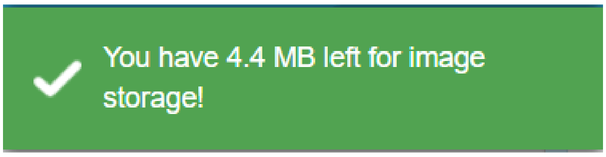
2.4 Adding images to fields

There are certain fields that offer the possibility to add images to their value. In order to do that, the user should click on the button indicated in the following screenshot.

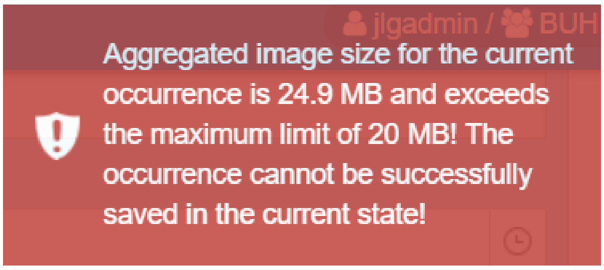


There is, however, one limitation regarding this process. One occurrence is not allowed to contain images whose aggregated size is higher than 20 MB. If so, the occurrence could not be saved and the system displays an error.

After adding an image, the system displays the image storage left for the current occurrence:



If the limit of image storage is exceeded, the user is prompted with the following message:



Even if the message shows an error, the image has been added, however, the occurrence cannot be saved in the current state (an error will be shown at save as well). In this case, the user should remove or modify some of the images so that the threshold to be met.

2.5 Occurrence options sidebar

Most of the functions from the Options sidebar will be visible after the occurrence is saved.

For improved usability, the functions from the Occurrence inventory sidebar were added in the Occurrence page, as well. They are displayed in a similar sidebar, on the right side of the page, which can be toggled by clicking the "***Options***" button.

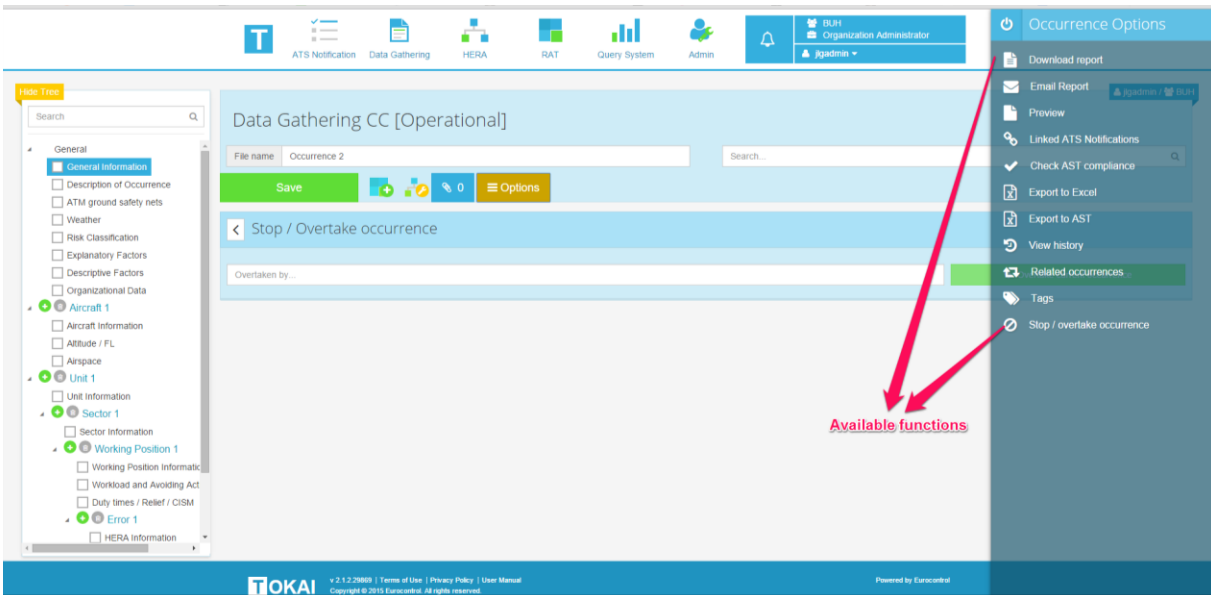


Figure 2.5-1 Occurrence Options

There are a couple of functions identical with the ones from the inventory sidebar, except they apply to the opened occurrence. For detailed description of this functions, please see the *Investigation inventory quick access toolbar* and *Options sidebar*.

In addition to those, there are some other functions only available here, at the occurrence level:

2.5.1 Tags

A saved occurrence can be tagged with one or more tags. This function can be useful for organizing occurrences. Tags are saved at the organization level.

To access the Tags section, click the ***Options*** button, then ***Tags*** button from the occurrence's ***Options sidebar***.

1. **Add a tag**

In order to add a tag, type the name of the tag or a part of it in the search box. The application will search the database for existing tags which match the search word and will display them in a dropdown list. Select a tag from the list or, if no tag is found with that name, click on the *Add tag* button, which will automatically create a new tag with the given name and append it to the occurrence. The new tag will be available on future searches; if that tag is not added to the occurrence already (you cannot tag an occurrence with the same tag twice). Newly added tags will be available instantly to other users from the same organization, as well.

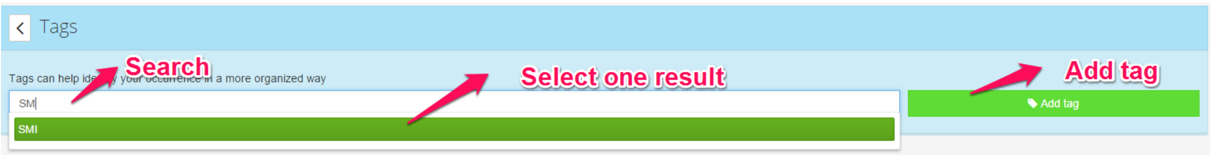


Figure 2.5-2 Search or Add a tag

Clicking a tag name will redirect the user to the *Occurrence Inventory*, where all occurrences having that tag are displayed.

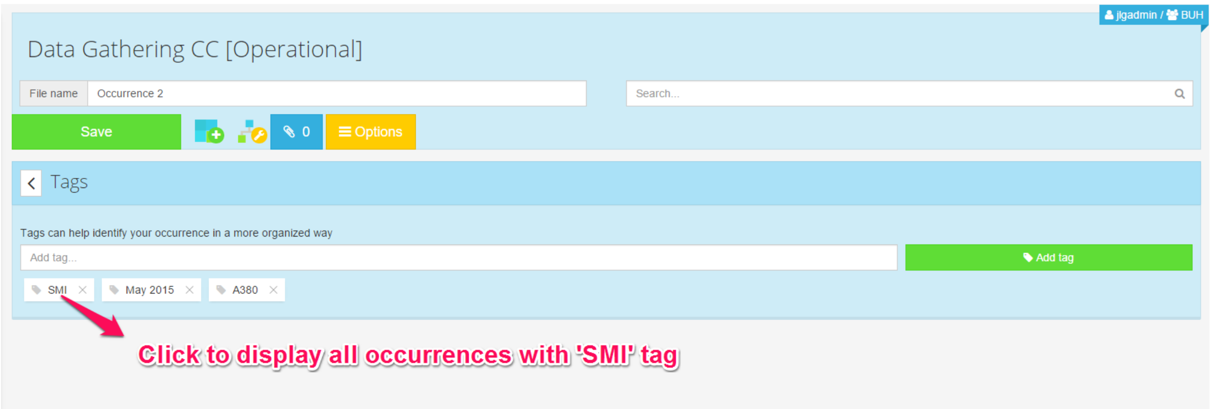


Figure 2.5-3 Display occurrences having the selected tag.

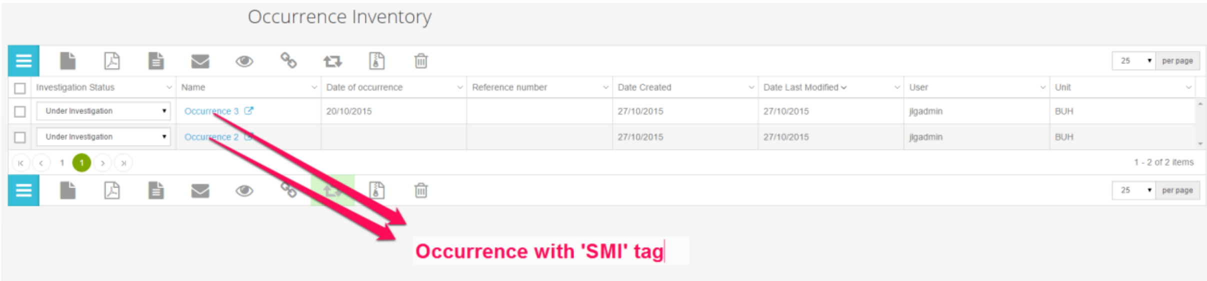


Figure 2.5-4 Click on tag is specified on top of the page-to display all linked occurrences

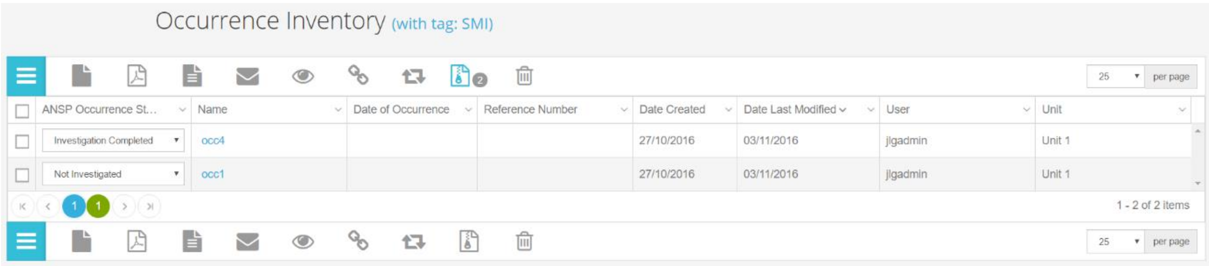


Figure 2.5-5 Display Linked occurrences after click on Tag

2. Remove a tag

Removing a tag from an occurrence is done by clicking the *small "**x**" **red*** button from the name of the tag. This will not delete the tag from the database or from other occurrences.

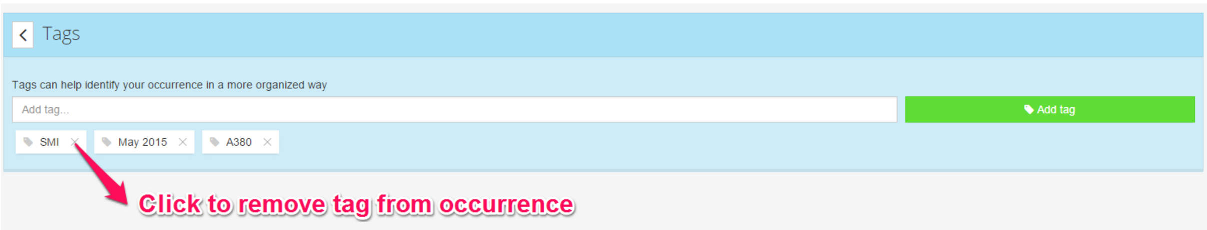


Figure 2.5-6 Remove tag

NOTE: There is also the possibility to query database for occurrences having a combination of tags. For this feature, please consult the Query System section.

2.5.2 Related occurrences

This feature allows to link one occurrence with several others. Click the "***Related occurrence***" button from the Options sidebar to display the *Related occurrences* section. This page will show a list with all occurrences linked with the current one.

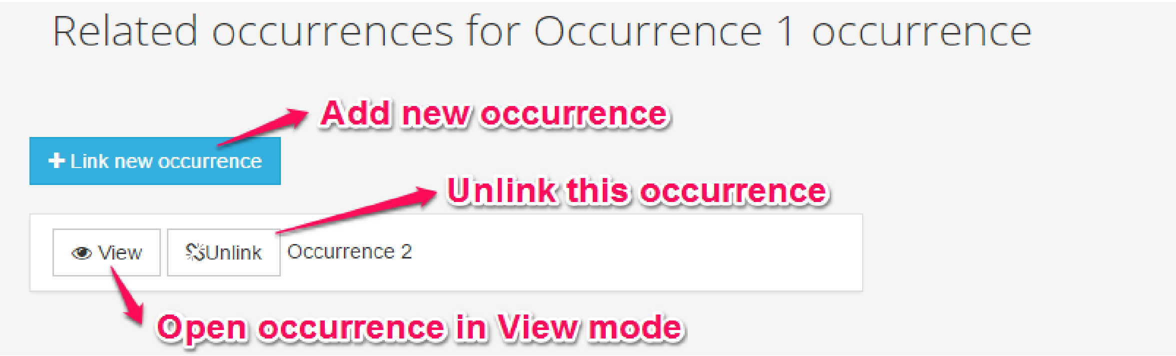


Figure 2.5-7 Related Occurrences

The user can view or unlink an occurrence by clicking the respective buttons.

To add a new occurrence, click the "***Link new occurrence"*** button. This will open the list of occurrences available to be linked.

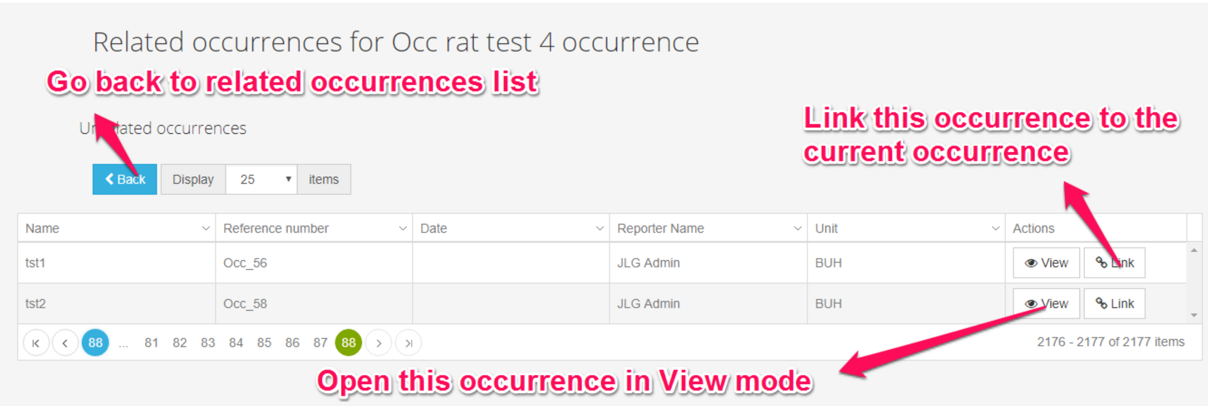


Figure 2.5-8 Link new Occurrence

The linking process is symmetrical, i.e. linking occurrence A to occurrence B will also link B to A.

2.5.3 Stop / Overtake occurrence

In some cases, two investigations are started in two different units for the same occurrence. One investigation (the secondary investigation) will be overtaken by another one (the main investigation), causing the secondary investigation to be stopped. Theoretically, stopped investigations shouldn't be reported to the Authority, or exported to AST.

Clicking the "***STOP / overtake occurrence***" button will display the corresponding section.

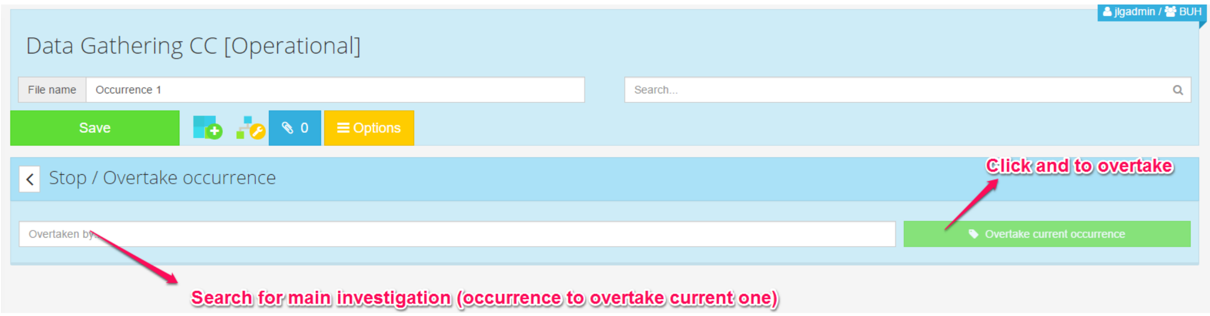


Figure 2.5-9 STOP/Overtake an occurrence

Type in the search box a part of the name or the reference number of the occurrence you wish to set as main investigation. This occurrence will overtake current one. After selecting a result from the list, click the "***Overtake current occurrence"*** button. Now, this occurrence has been stopped.

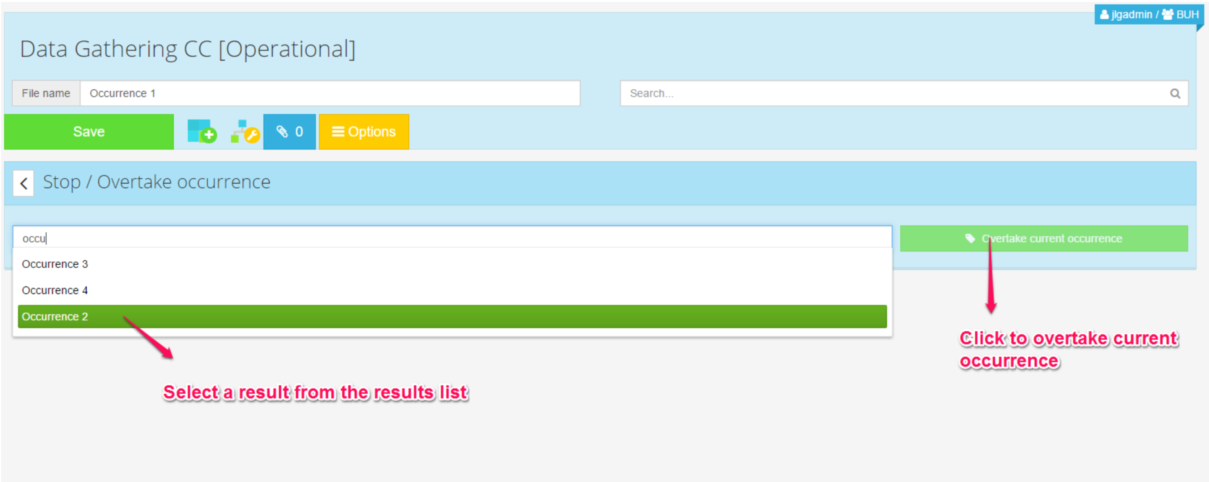


Figure 2.5-10 Search for the occurrence to overtake

You can navigate between the two occurrences by clicking the name / reference number.

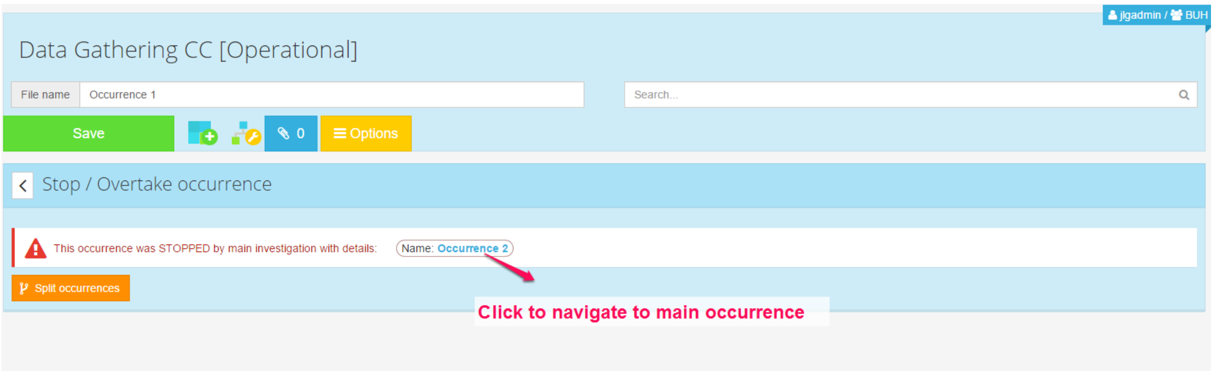


Figure 2.5-11 Navigate through occurrences

The *overtaken* connection can be broken at any time, by clicking the "***Split occurrence"*** button.

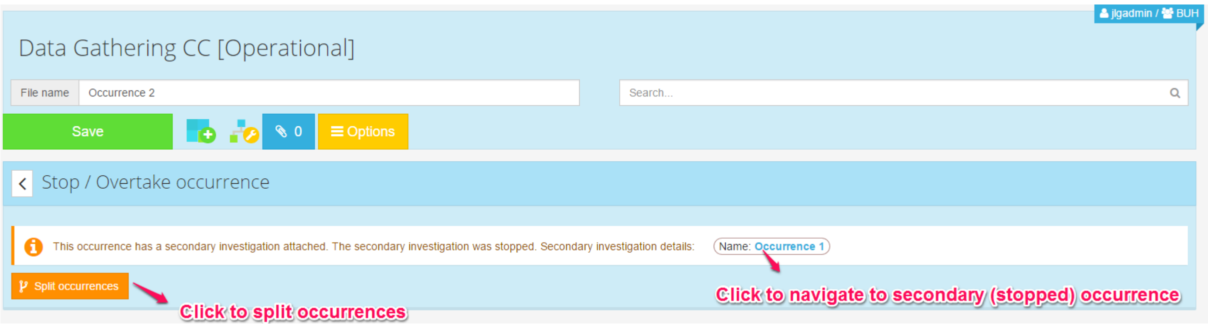


Figure 2.5-12 Breaking "Overtake" and Split occurrence

2.5.4 Manage duplicates

This **Manage Duplicates** module is providing the user the possibility to search for duplicates for a specific occurrence and manage the duplicate state for the occurrences. This is only possible if the user has **Edit Occurrence Permission**.

The query to find duplicates can be run both from the **Inventory Options** from the occurrence inventory page as well as from the **Occurrence Options** from the occurrence page.

The Occurrence state is displayed in the occurrence inventory in a new filterable and sortable column named **Duplicate state** with the following abbreviations:

- **U**: *Unchecked* - the query didn't run on this occurrence
- **ND**: *Not Duplicate* - the query found the occurrence as not duplicated
- **PD**: *Potential Duplicate* - the query found the occurrence as a potential duplicate
- **PDDC**: *Potential Duplicate* but the *Duplicates were Cleared* as separate occurrences - the query found it as a potential duplicate, but a user with manage occurrences permissions set the other occurrences as separate incidents
- **D**: *Duplicate* - a user with manage occurrences permissions set it as a duplicate
- **DDO**: *Duplicate*, but the duplicates were *Deleted / Overtaken* - a user deleted or overtook its duplicates

The query shall flag two or more occurrences as potential duplicates where at least 1 RTF call sign is similar (not necessarily identical, because the query will try to correct any mistype error; for example: RTF123 and RTF132 call signs will be found as similar) and the difference between the date and time of occurrences are within the predefined interval.

After the user runs a query, the specified occurrence will have one of the following states:

- **Not Duplicates** or
- **Potential Duplicated**.

If the occurrence will be set with the second state, the user will be able to edit it as it will be shown below.

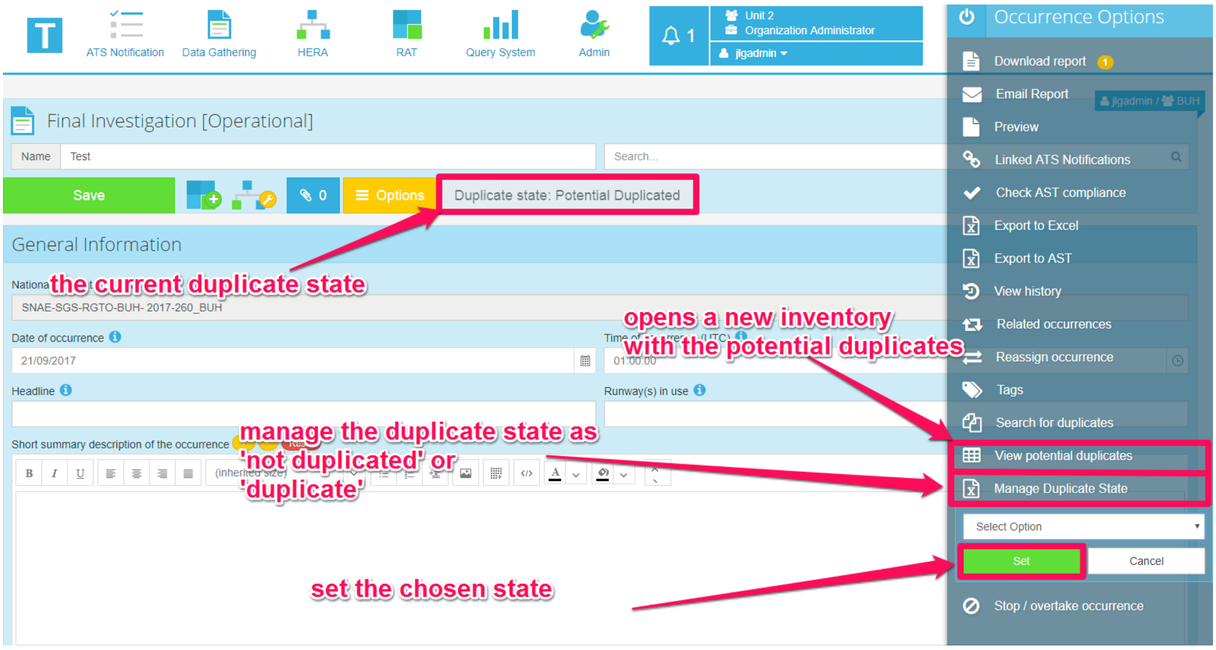


Figure 2.5-13 Occurrence Options regarding the duplicate state

In case that the user will set the occurrence as **Duplicate**, there are a few options to solve this problem.

The Tokai user will have the possibilities **to Clear Occurrence as a separate incident** as well as **Stop/Overtake** it. Both these options are available in the Occurrence Options.

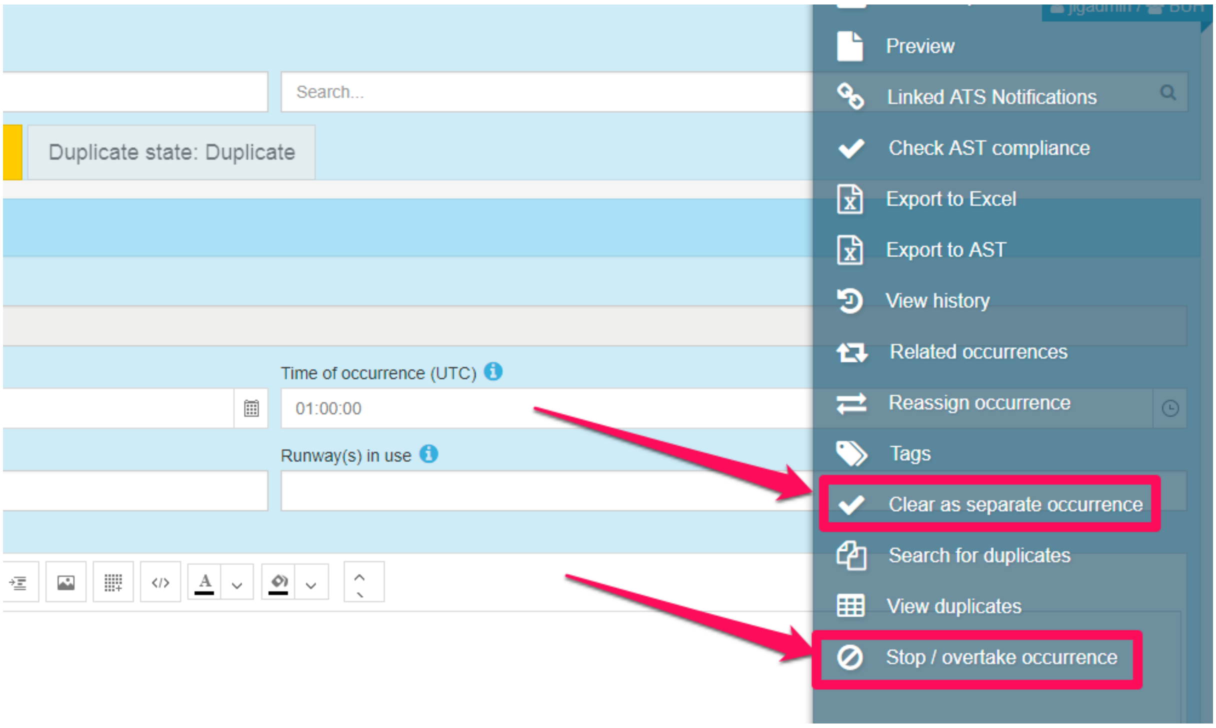


Figure 2.5-14 Clear and overtake occurrence options

In addition to these options, there is also the possibility to delete a duplicate from the **Occurrence Inventory**.

The *Duplicates/Potential Duplicates Inventory* will only display the occurrences that the user who requested this operation can view. To view occurrences reported in units a user doesn't have access to, he will need to have the **Manage Duplicates** permission over those units. This will still not give him the right to open/edit those occurrences.

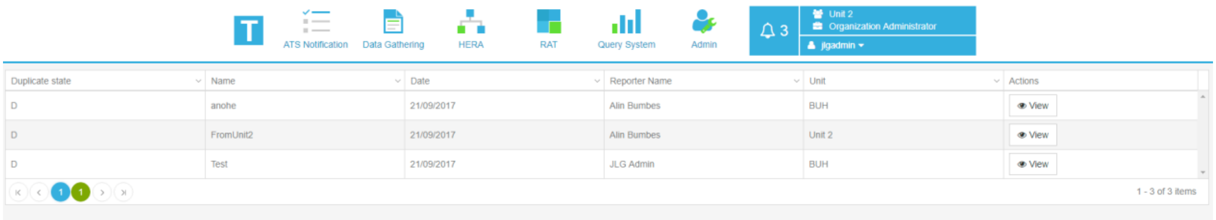


Figure 2.5-15 Duplicate/Potential Duplicate Occurrence Inventory

2.5.5 Feedback Module

The feedback function is a process configured inside Tokai. Feedback is initiated by the investigator in charge and can be sent to Tokai users (via e-mail and Tokai system notification) and to external users also (as e-mail only).

In order to enable the feedback function for a specific occurrence, that occurrence should be created from a submitted ATS Notification. The feedback can be sent only by the investigator who created the occurrence.

The function is available at occurrence level, by pressing the Feedback button as shown in the following picture.

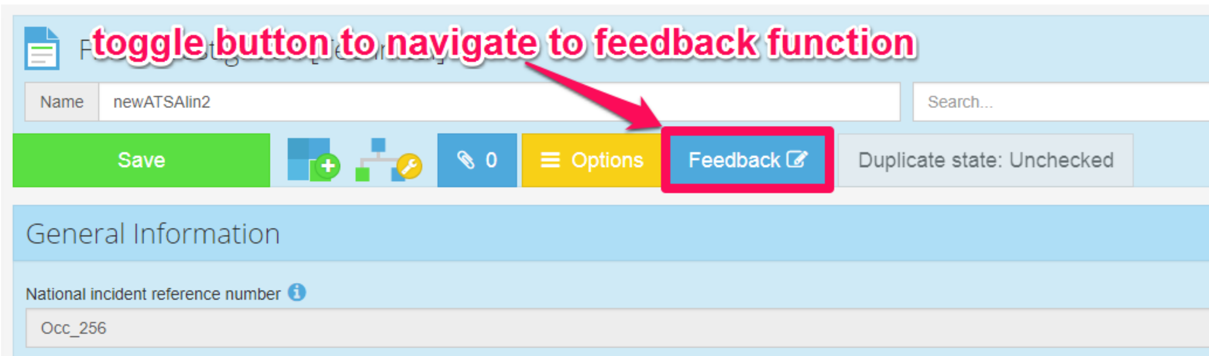


Figure 2.5-16 Feedback function button

After clicking the feedback button, the user will see a list of feedback threads that have already been sent.

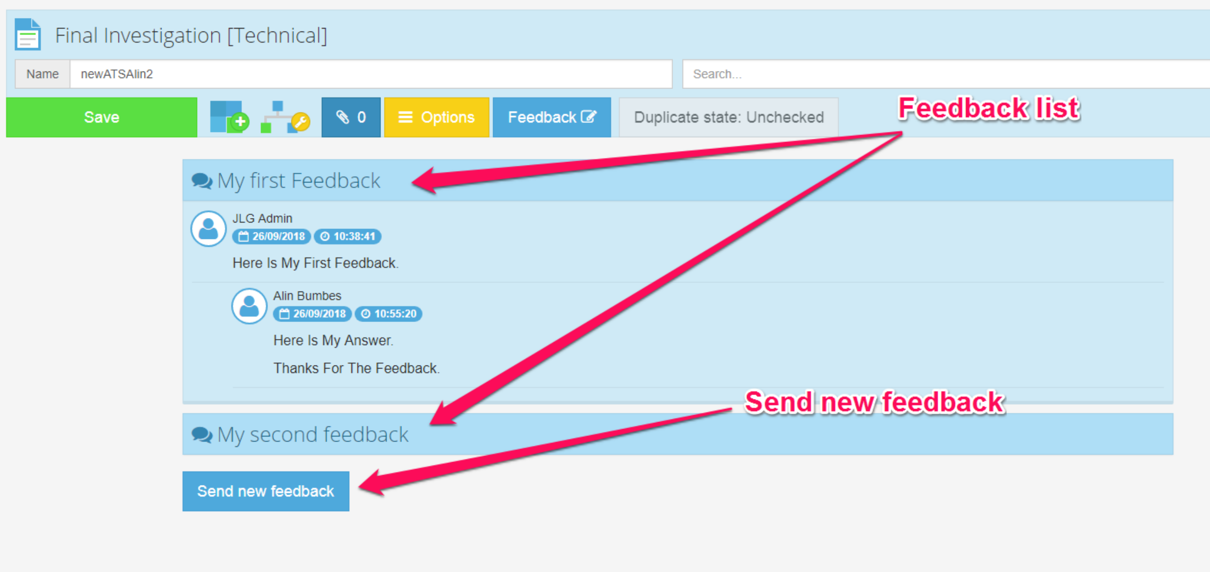


Figure 2.5-17 Feedback list

A click on the header will expand the specified feedback and show its content and possible answers. The **Send new feedback** button will provide a new form for the investigator to submit a new feedback. If the occurrence has no feedback sent, the **Feedback** button will redirect the user to the feedback form instead.

As displayed in the next picture, this form is divided in the next elements:

- **Select receivers section**
- **Subject section**
- **Content section**
- **Send feedback section**

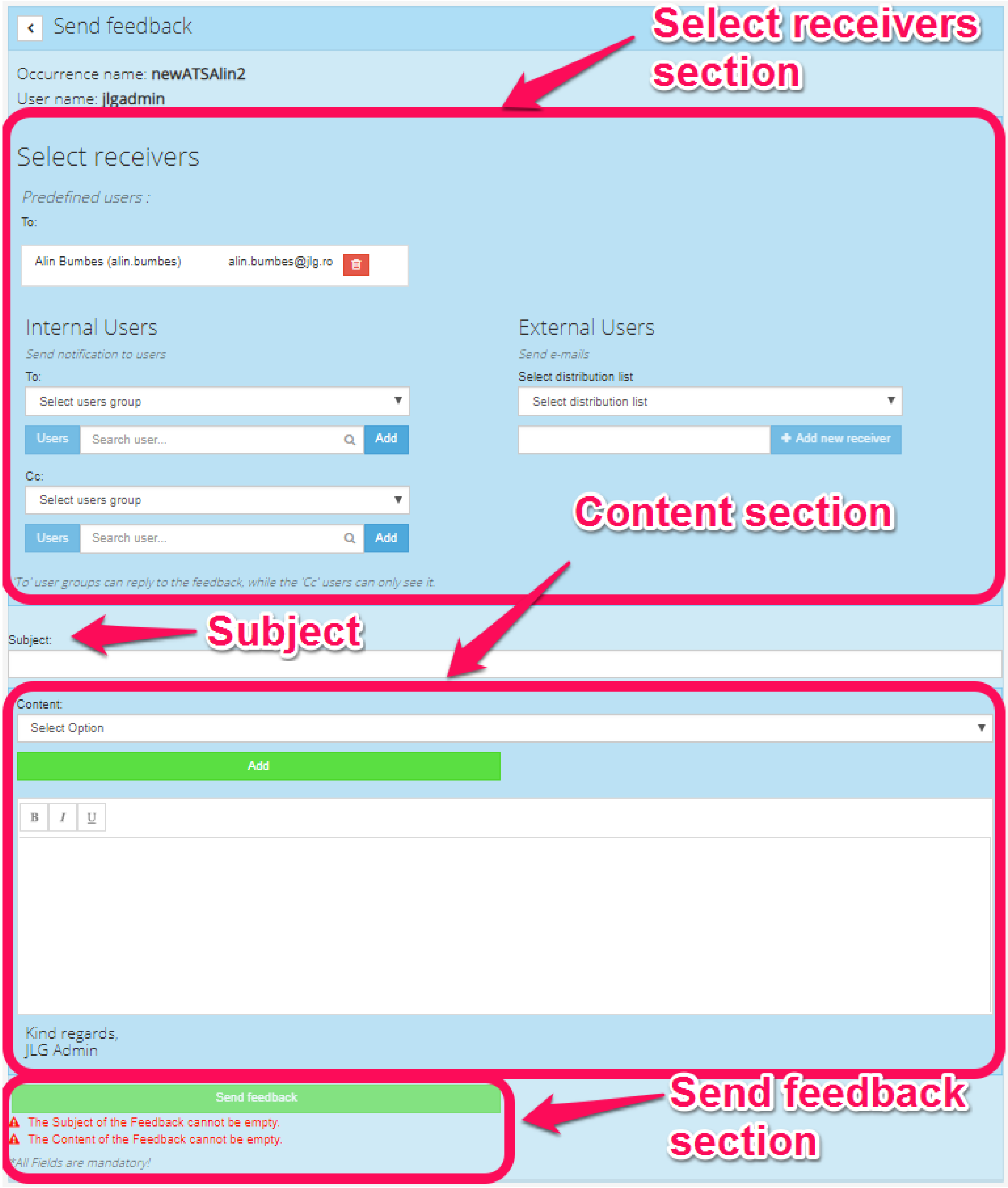


Figure 2.5-18 Feedback form

1. Select receivers section

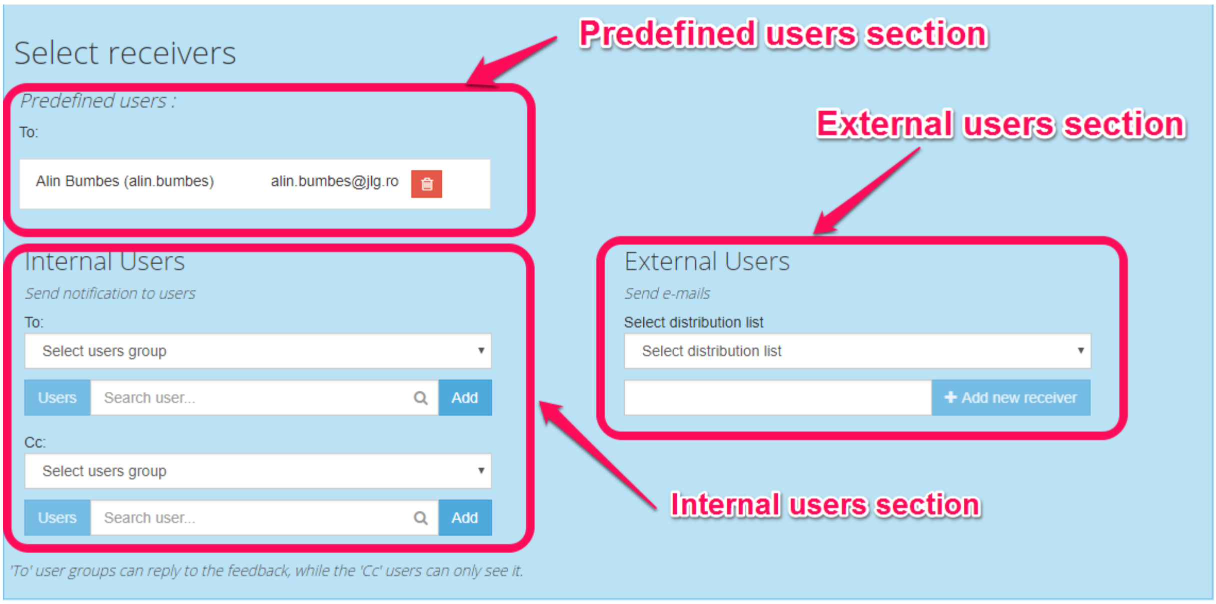


Figure 2.5-19 Select receivers section

The **Predefined users section** contains the users added by default when opening the feedback form. Those are the notifiers which submitted the ATS Notifications related to the occurrence. Most of the time, there will be only one user. The investigator in charge can delete manually those users if he wishes to, but beware of the fact that there needs to be at least one user in the Receivers section in order to be able to send a feedback.

The **Internal users section** is designed for the investigator in charge to manually add the addressee of the feedback. Those users will receive a notification via Tokai's Notification System and an e-mail as well.

As in the e-mail design, the receivers can be divided in 'To' or 'Cc' groups. The difference is that the 'To' user groups can reply to the feedback, while the 'Cc' users can only see the feedback (similar to the classic e-mail functionality).

The users can be added individually by using the '*Search user…*' input area or collectively by selecting a predefined user group. Those user groups are configurable by the Organization Admin.

To do that, in the **Organization Management** page, click on the **Configure feedback function** tile. Select the **Configure predefined users list** tab and configure the groups for the specific organization, as shown in the next picture.

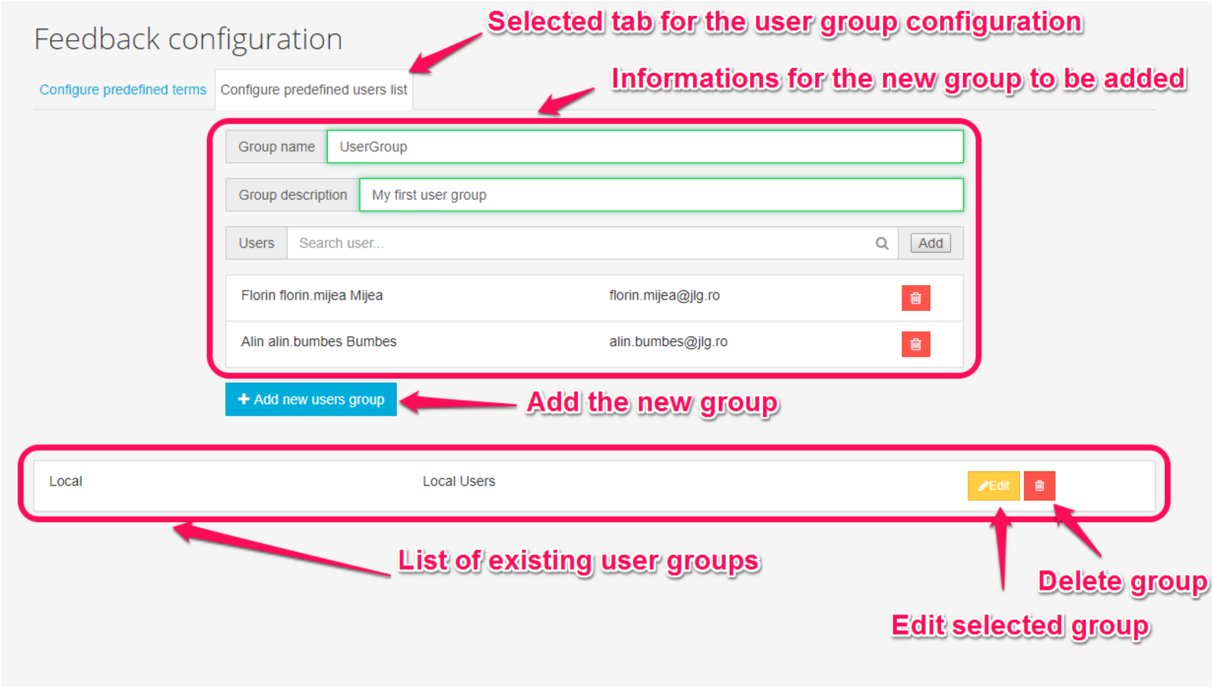


Figure 2.5-20 Configure predefined users groups

The **External users section** is designed for the investigator in charge to manually add e-mail addresses so the users outside Tokai can receive the feedback via e-mail.

The users can be added individually by the '*Add new receiver*' button or collectively by selecting a distribution list. Those distribution lists are configurable by the Organization Admin in the **Organization management** in the **Email distribution lists** tile.

2. Subject of the feedback

The subject of the feedback is a plain text field that will be the title of the report.

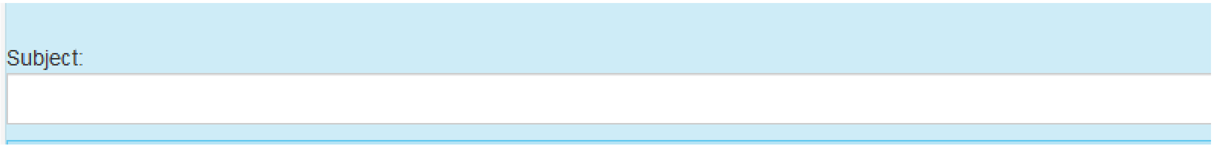


Figure 2.5-21 Subject of the Feedback

3. Content section

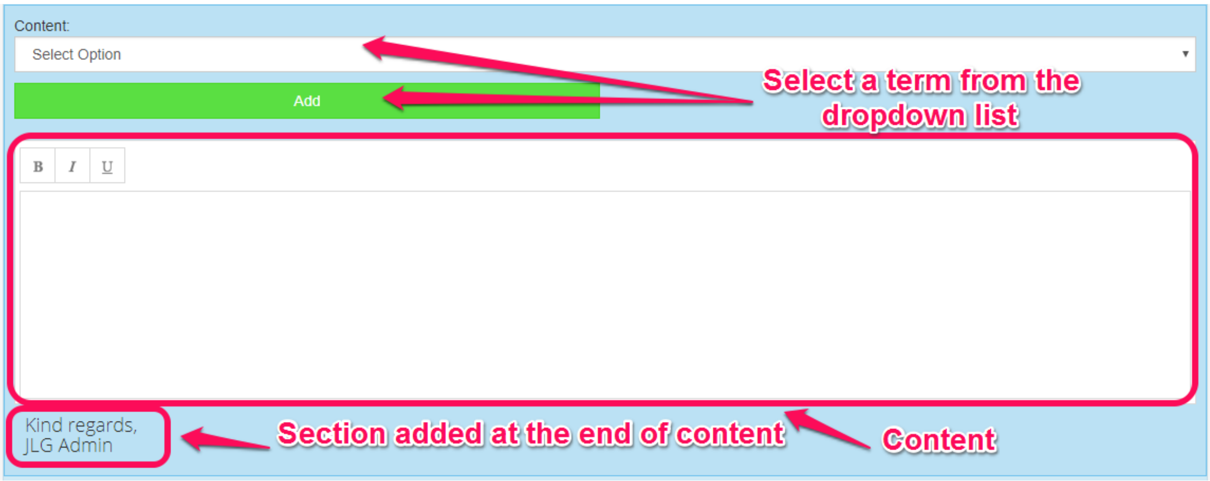


Figure 2.5-22 Content section

The content of the feedback is a large text area where the investigator can freely write his feedback and he can also add **tokens** using the dropdown list that will later be parsed and replaced with their specific term results.

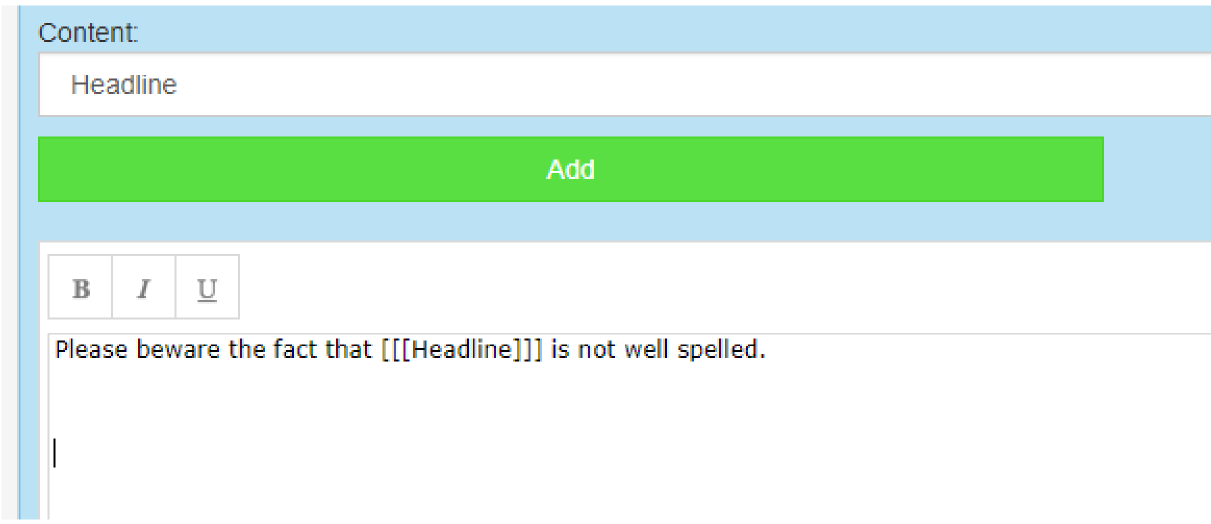


Figure 2.5-23 The content before parsing

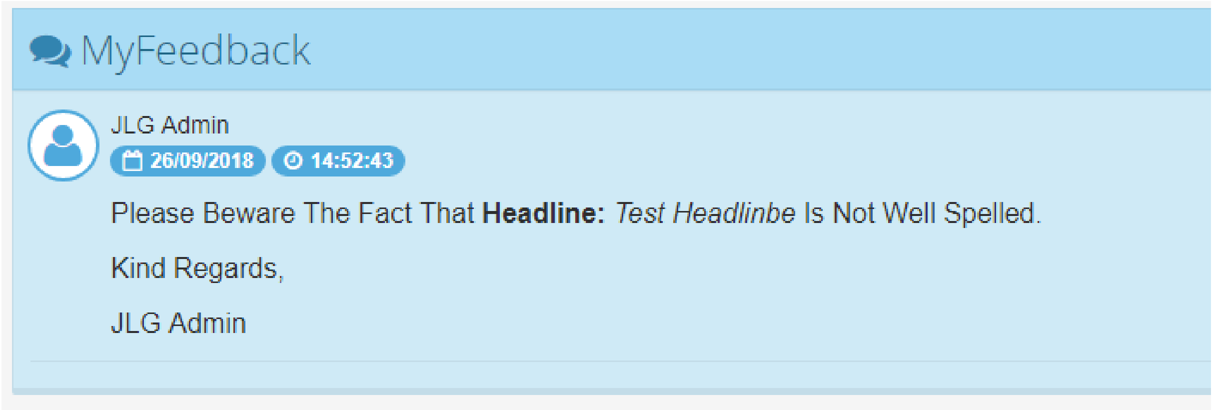


Figure 2.5-24 The content after parsing

The dropdown list contains a list of maximum 10 predefined HEIDI Terms that can be configured by the Organization Admin in the **Organization management** in the **Configure feedback function**, under **Configure predefined terms** tab.

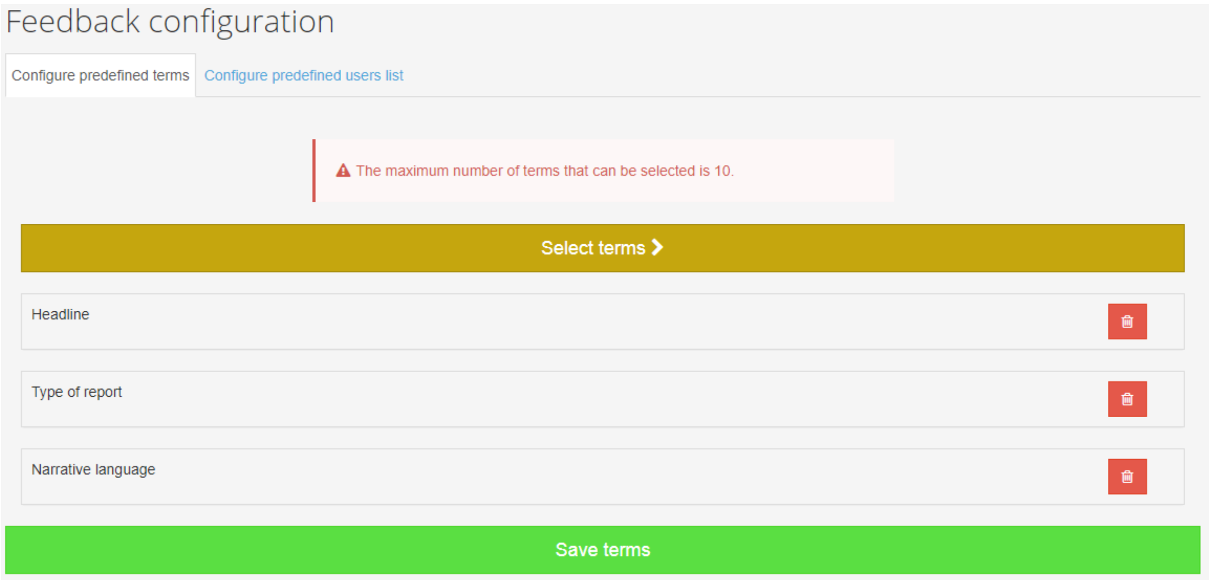


Figure 2.5-25 The configuration of the Dropdown list of HEIDI Terms

4. Send feedback section

The send feedback section contains the **Send feedback** button who will be disabled if the form is invalid. One of the following labels will be displayed:

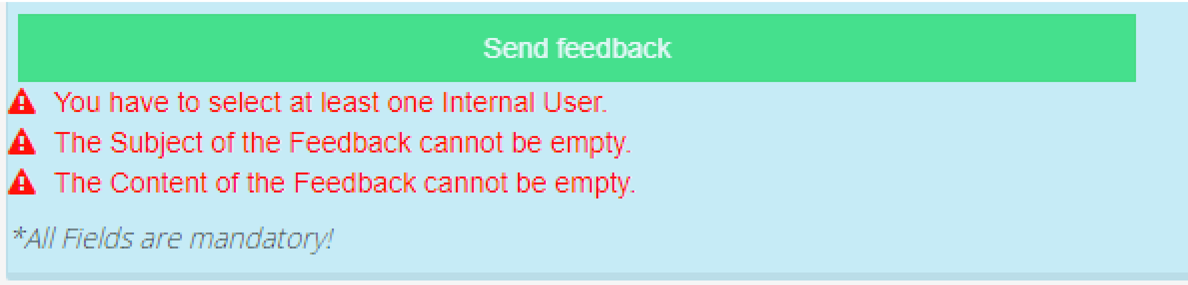


Figure 2.5-26 The possible warnings that disable **Send feedback** button

NOTE: The Feedback cannot have its Subject empty, its Content empty or no user selected in the **Select receivers section**.

The Notification System inside Tokai will provide information for users whenever a feedback is submitted.

As shown in the next figure, for the users added in the 'To' list (users that can reply to the feedback) the notification will contain a button allowing to navigate to their ATS Notification.

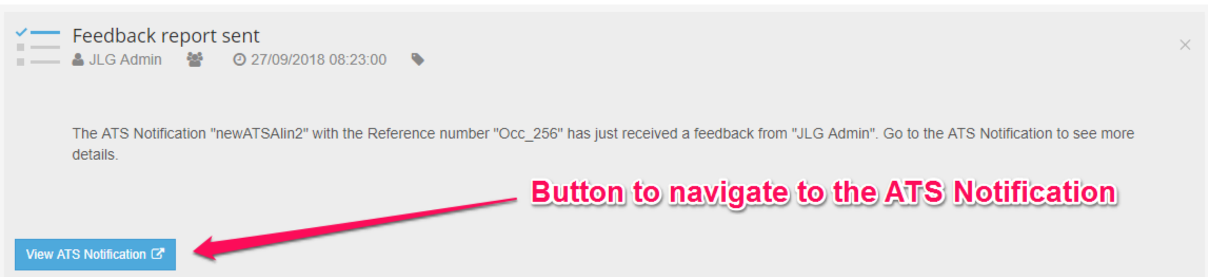


Figure 2.5-27 The notification for the 'To' user and Navigate to ATS Notification button

At the ATS Notification level, the users in the 'To' list can answer the feedback, by clicking the **Feedback button** and expanding the specified feedback topic.

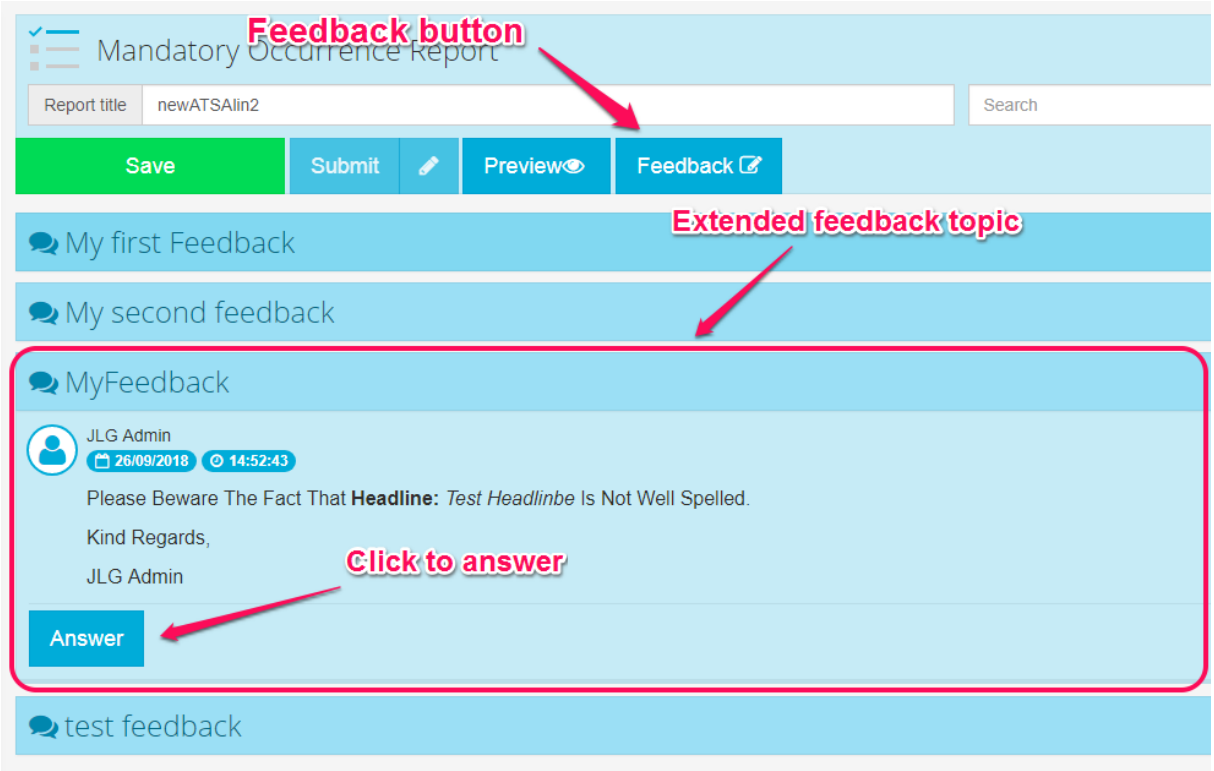


Figure 2.5-28 Answer a feedback

The users in the 'Cc' list don't have the right to answer the feedback but they can see it in their respective notification in Tokai or in their e-mail.

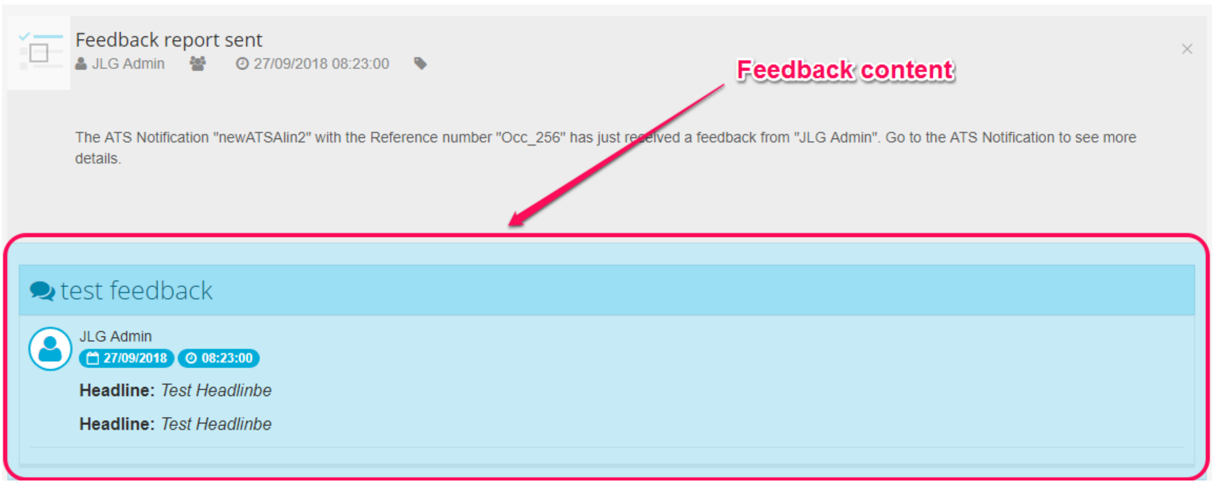


Figure 2.5-29 The notification for the 'Cc' user

The **Send Date** for each feedback is stored separately, so that it can be queried easily using the **Query System** inside Tokai. More detailed information in the **Statistics Module**.

2.6 Integration with other TOKAI modules

The occurrences are at the heart of the application. They integrate with more modules than any other feature. We discussed in the creation process how an occurrence can attach:

1. A Risk Analysis
2. A HERA (Human Error in ATM Occurrences) Analysis
3. File attachments like documents or images or other

There is another module that works with Occurrences, and that is the Statistics module. This is discussed in greater detail in the *Statistics Module– Chapter 5*, however it is important to point out the connection between these features and how they interact with each other.

2.7 Using the investigation inventory

Please see the *Chapter 6 – Using the TOKAI data inventory* for a complete overview of the inventory features and functionality.

2.7.1 Investigation inventory – quick access toolbar

The ***Quick access toolbar*** contains the buttons which are most frequently used. When the user selects one or more occurrences, the corresponding buttons are activated. The detailed description of their function is as follows:

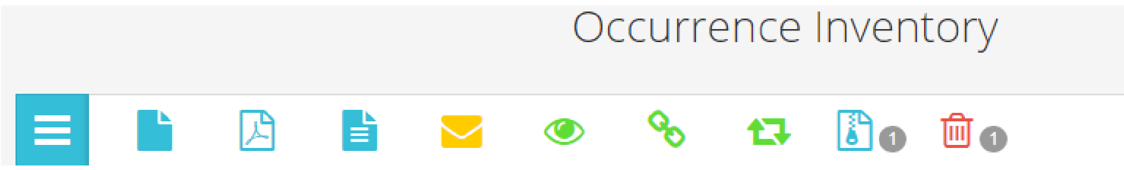


Figure 2.7-1 Occurrences Operations and Options Toolbar

	Options		Download Occurrence in View Mode
	Preview Occurrence		Linked Notifications
	Download occurrence PDF		Related Occurrences
	Download Report		Export in E5X Format
	E-mail Report	/ Hard	Delete Occurrence / Hard delete Occurrence

Figure 2.7-2 Operations and Options Toolbar explained

2.7.1.1 Preview occurrence

This function can be used to have a quick overview on the selected occurrence. The application will open an HTML page in a new browser tab, containing all the fields that were filled in by the user.

General Information	
Headline	**National incident reference number**
Occurrence_MFA_1_12/05/2015	OCC-BUH-12-05-2015-18
Date of occurrence	**Time of occurrence (UTC)**
12/05/2015	11:30:35
State/area of occurrence	**Location of occurrence**
AUSTRIA LO	Vienna
Occurrence status	**Location indicator**
Under Investigation	LOOO
Location on aerodrome	
Location on aerodrome	On runway / 3rd Part
Other	N/A

Type of Occurrence
Type of Occurrence
ATC clearance/instruction related items -> Aircraft Deviation from ATC clearance -> Landing -> Runway -> Wrong runway

Figure 2.7-3 Preview Occurrence

2.7.1.2 The Export and the import flow

To export or import different files in or from the system, Tokai uses a flow in which the request made by user from the User Interface is taken and processed by the server; following that, the user will receive a message informing him that when the request is ready, he will receive a notification with the needed details.

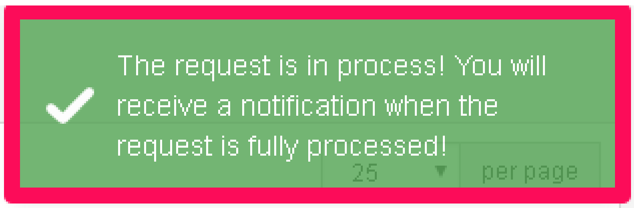


Figure 2.7-4 The request is in process message

There are two types of notifications:

1. **Export Occurrence Notification** – contains a button to download the requested file.

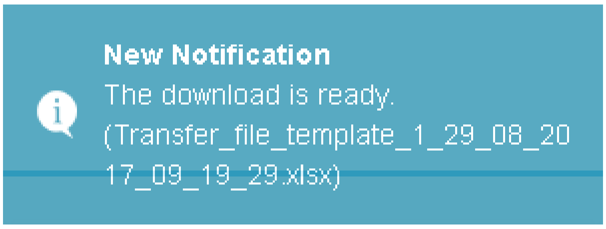


Figure 2.7-5 Exported Occurrence pop-up message

Figure 2.7-6 Export notification

2. Import Occurrence Notification

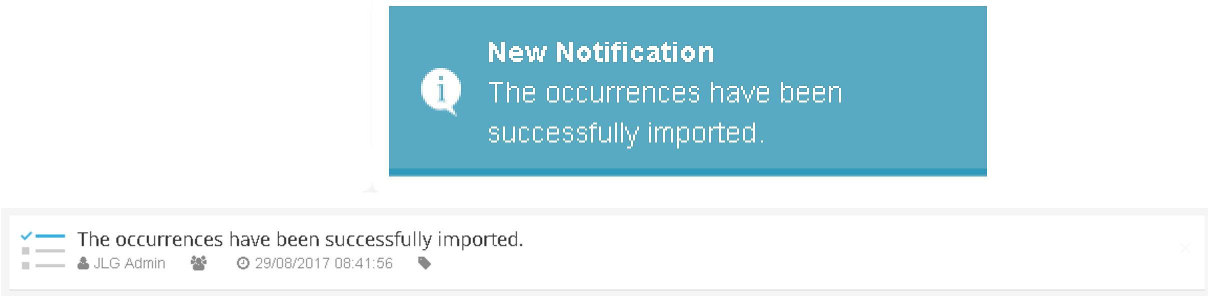


Figure 2-27 Import notification

During the processing of the request, the User Interface is enabled, and the user can freely execute other operations in the application.

2.7.1.3 Download occurrence PDF

This function is similar with the *Preview Occurrence* function, but instead of opening an HTML page, the application generates a PDF file with all the fields which have values in the selected occurrence.

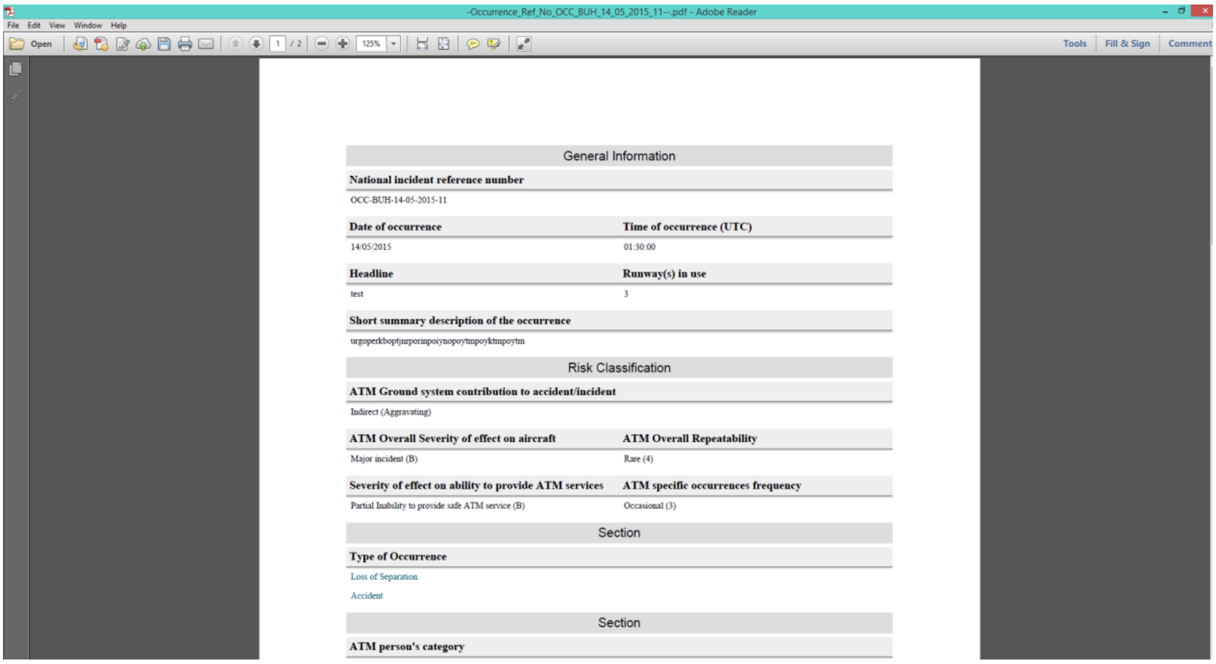


Figure 2.7-7 Download Occurrence

2.7.1.4 Download report

In order to download a PDF file with the report generated with the Report Builder, the ***Download report* function** can be used.

Clicking this button will open the ***Options sidebar***, prompting the user to select the ***Report Builder Template*** for generating the report. Detailed workflow is described in the Download report description from the *Options sidebar* section.

2.7.1.5 Email report

This function makes it possible for a user to directly email the report generated with the Report Builder to users outside TOKAI. Clicking the "***Email report***" button will display the Email design interface:

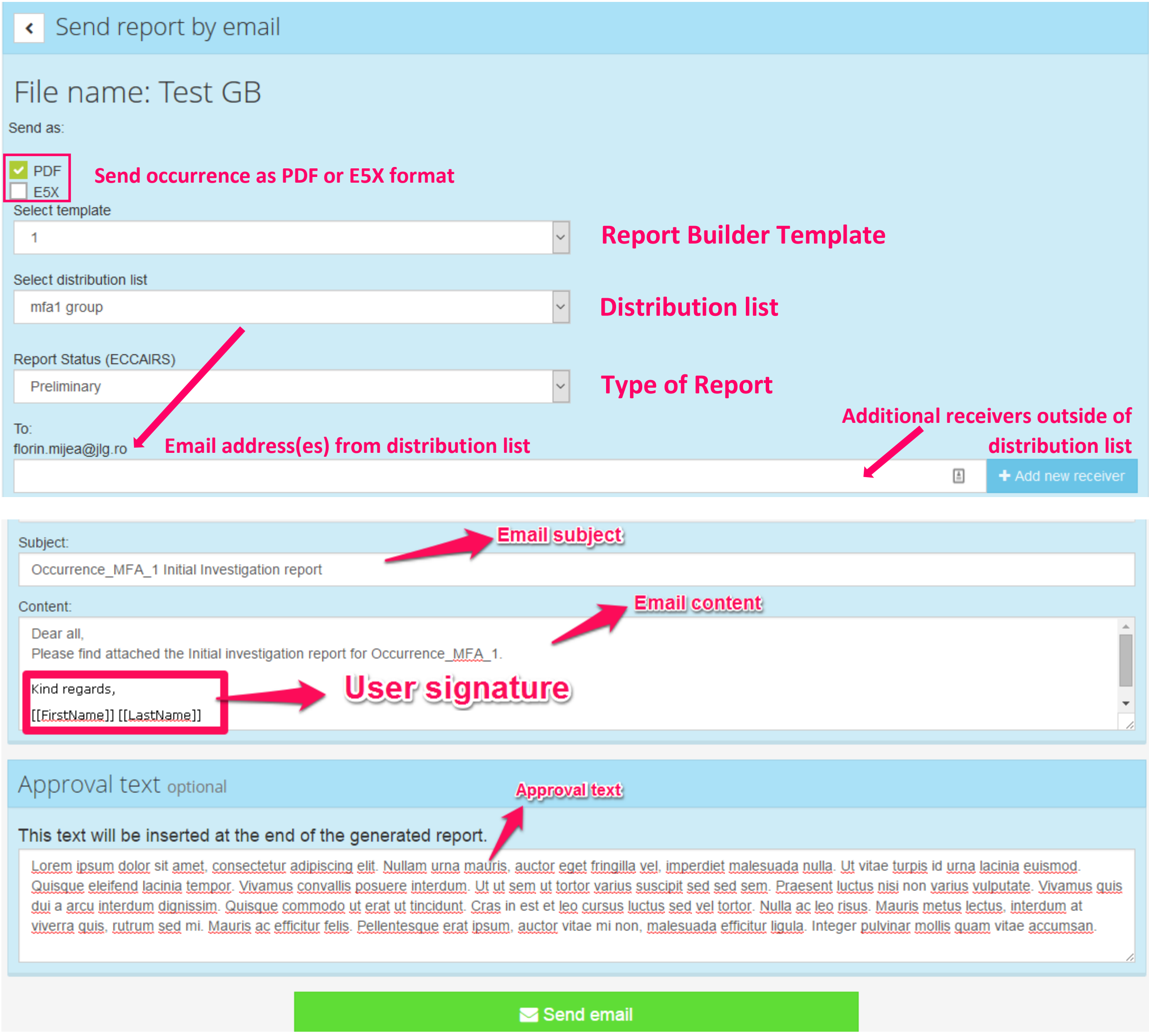


Figure 2.7-8 Send Report by Email

When the PDF is checked as the sent option, a new button will appear called **Attachments**. This button is used to toggle the attachments window where the user can select which attachments will be included in the PDF file.

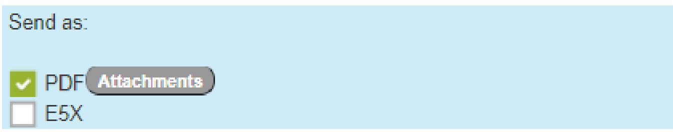


Figure 2.7-9.1 Select attachments

On the email design page, the user must fill in the following fields:

- **Report builder template**: the template which is used for generating the report.

- **Distribution list**: the user can select one from the predefined distribution lists, which can be enabled on the unit or at the organization level. These lists are groups of emails of users that not necessarily have a TOKAI account, but are concerned in receiving the reports – Safety Management, Safety Authority, etc.
- **Report type:** the user can select which type of report is going to send, either *Initial Investigation* report or *Final Investigation* report. Selecting one of these fields will cancel the alert for that corresponding kind of reminder. For detailed information, please consult the Notifications / Alerts sections.
- **To:** displays the list of emails where this report will be sent. The list of receivers is aggregated from the emails in the selected distribution list (if any) and the emails added separately.
- **Add new receiver**: allows the user to add another email address to where the report will be sent. At least one receiver (one email address) must be added in order for the ***Send email*** button to be enabled.
- **Subject**: the email subject field
- **Content**: the email content field. The user signature is added automatically, and the credentials will be implicitly replaced with the ones of the user who sends the e-mail.
- **Approval text**: additional text which can be dynamically added at the end of the generated report.

2.7.1.6 *Open occurrence in view mode*

This function displays a read-only version of the occurrence. Every field is grayed off, all buttons are disabled so that no accidental change can take place.

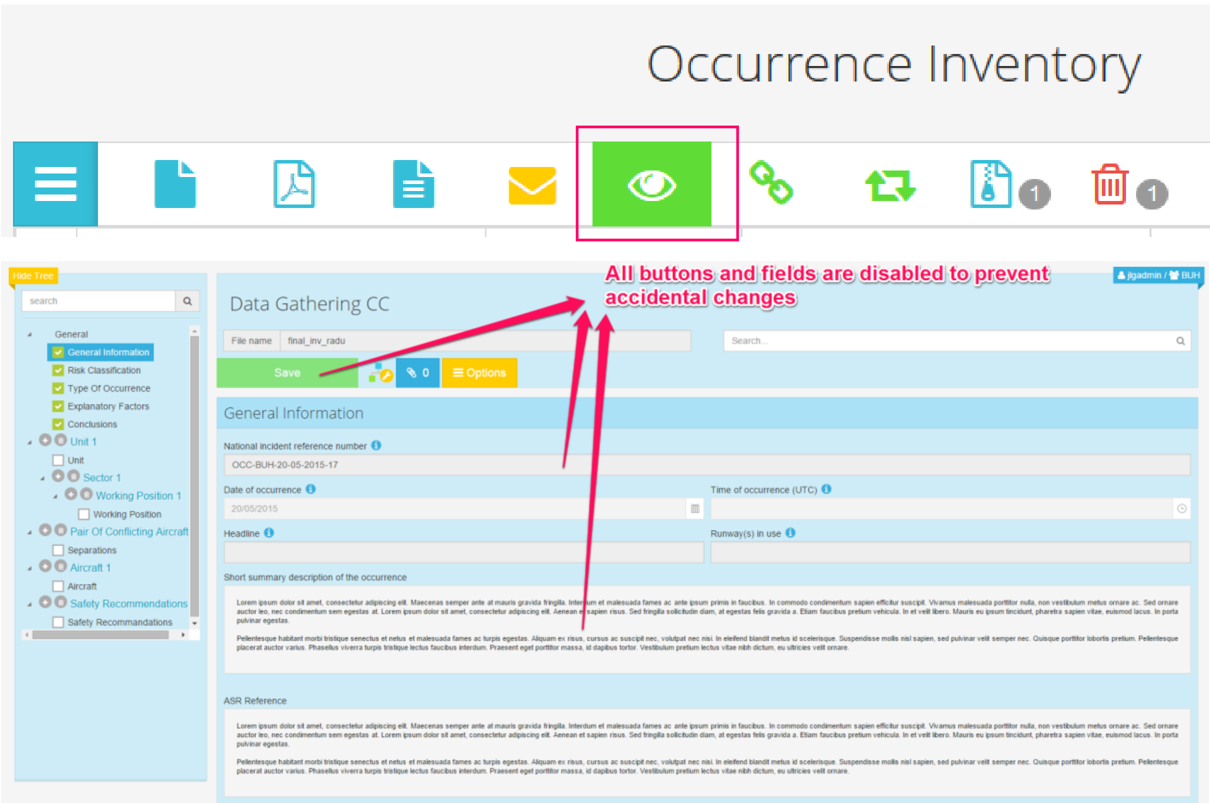


Figure 2.7-10 Occurrence View Mode

2.7.1.7 Linked reports

This option displays the list of the ATS Notification reports linked to this occurrence. The user can open the reports in *View mode*, can link other reports to this occurrence or unlink the existing ones.

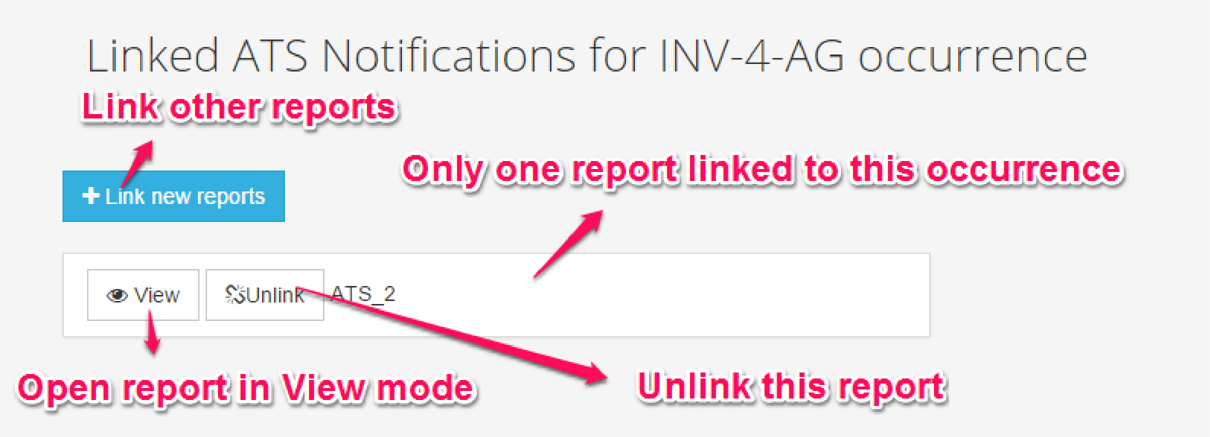


Figure 2.7-11 Linked reports (1)

If "***Link new reports***" button is clicked, a new list of available reports (submitted and unlinked to other occurrences) will be displayed.

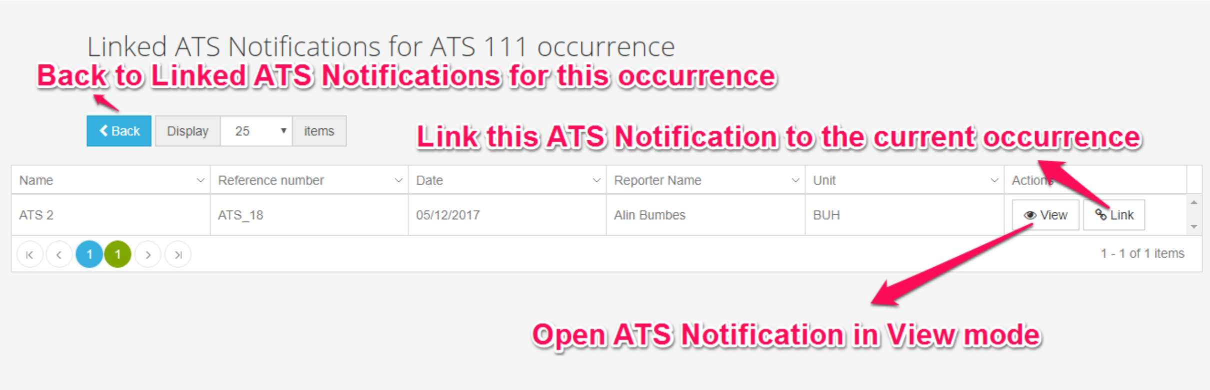


Figure 2.7-12 Linked reports (2)

2.7.1.8 Export in E5X format

One or more occurrences can be exported at once in the ECCAIRS Taxonomy format, as an E5X (.ZIP) archive.

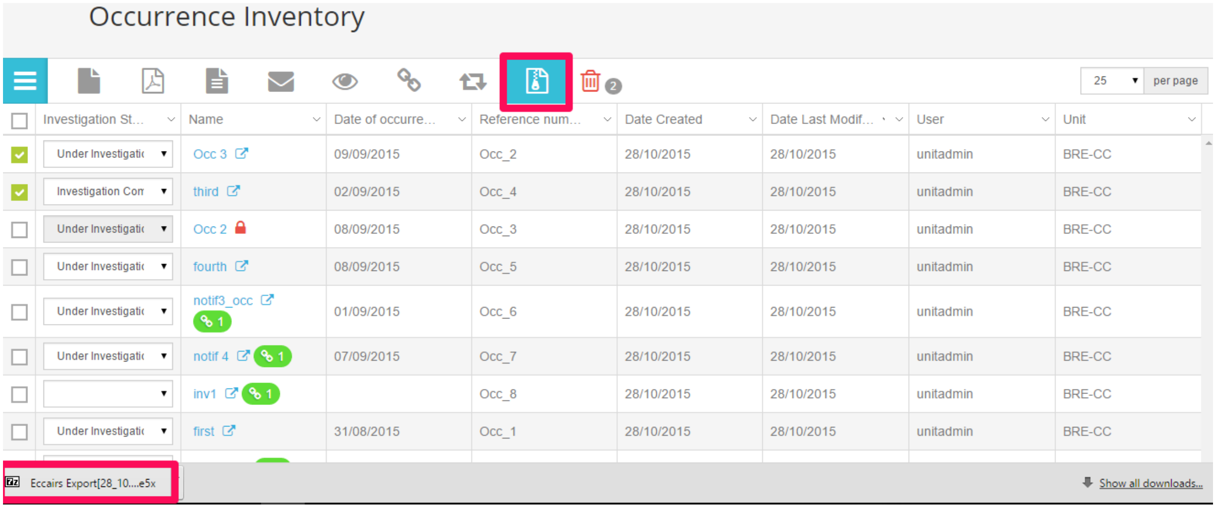


Figure 2.7-13 E5X - ECCAIRS Export

The archive contains an XML file generated for each occurrence, named using its Reference number.

Name	Size	Packed Size	Modified	Created	Accessed	Attributes
Occurrence_Occ_2.xml	2 002	548	2015-10-28 10:53	2015-10-28 10:53	2015-10-28 10:53	A
Occurrence_Occ_4.xml	5 660	1 212	2015-10-28 10:53	2015-10-28 10:53	2015-10-28 10:53	A

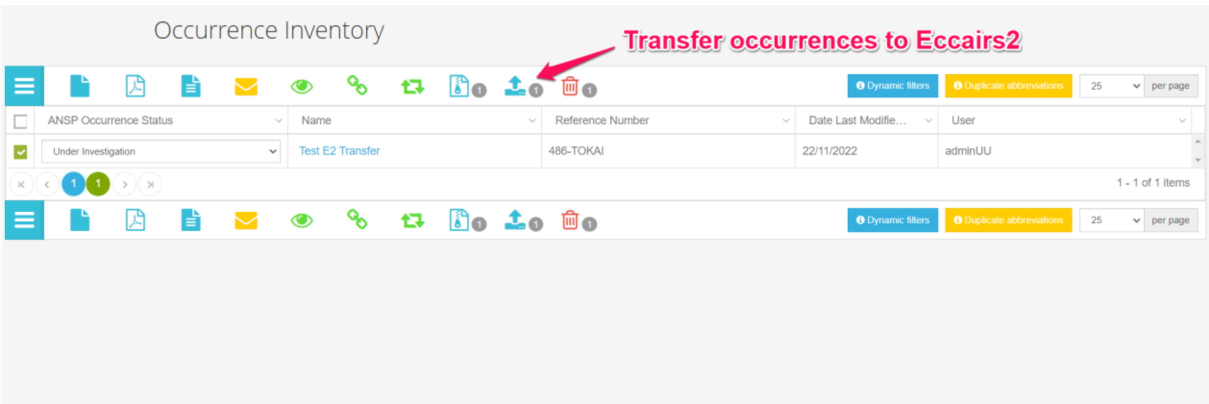
Figure 2.7-14 E5X Archive Contents

2.7.1.9 *Delete occurrences*

One or more occurrences can be deleted at once by using this function. All other entities connected to these occurrences will also be deleted – linked ATS Notification reports, attachments, risk analysis.

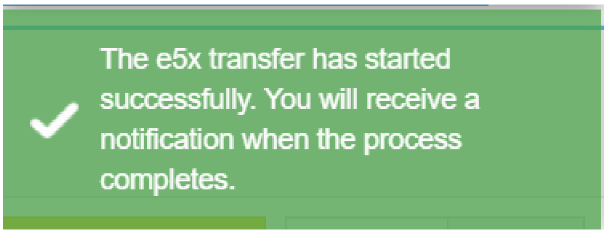
2.7.1.10 *Transfer e5x files to Eccairs2*

One or more occurrences can be transferred at once in the ECCAIRS Taxonomy format into Eccairs2 system. The action is similar with the one of exporting occurrences in E5x format.



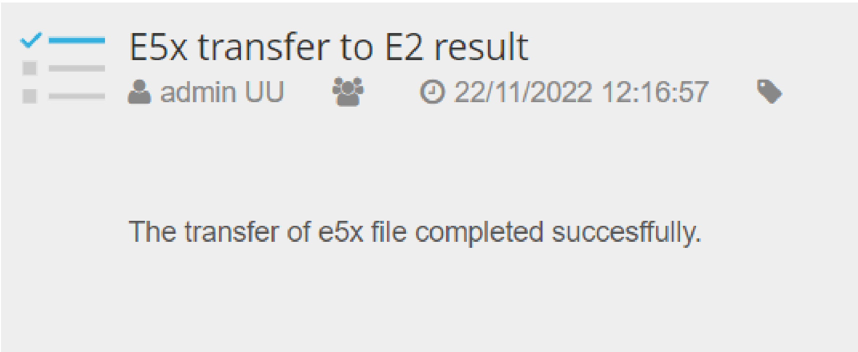
E5X Transfer from Inventory

The system informs the user that the process is launched and notifies the user afterwards with the result of the transfer.



E5X Transfer started successfully

If the transfer completes successfully, the user will be notified accordingly.



E5X Transfer completed successfully

2.7.2 Options sidebar

This left sidebar groups the functions of the occurrence inventory used less frequently, and it's toggled by clicking the little buttons in the left upper (and lower) corners of the grid. These functionalities are described in the following sections.

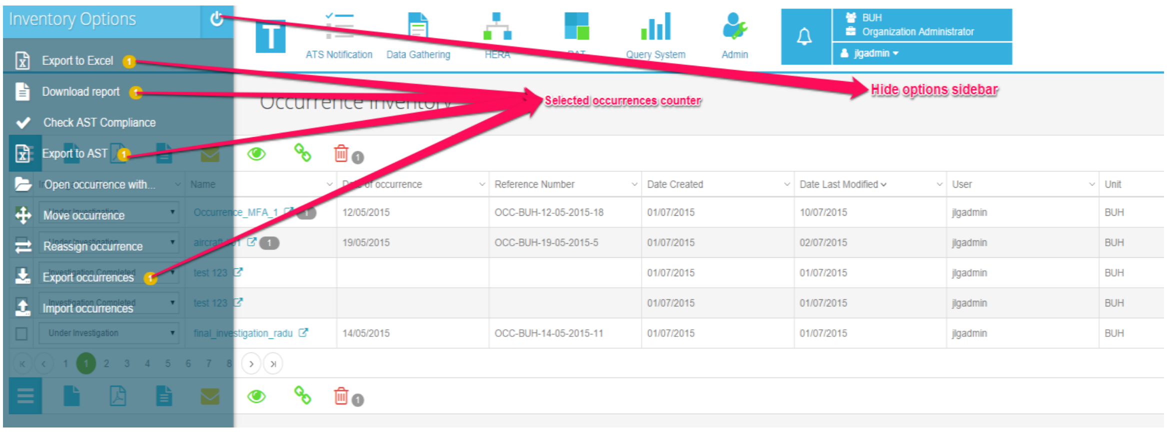


Figure 2.7-15 Occurrences inventory Options Sidebar

2.7.2.1 Export to Excel

The quickest way to retrieve data out of TOKAI database is by using the *export to Excel* function via a transfer file template. This can be done only by the organization manager. For detailed information about it, see also the *Transfer file template* section (Chapter 1.4 in Admin Manual).

When clicking this button, the user is asked to select the transfer file template to be used, and then click the "***Export***" button to generate the Excel file. This file will contain the fields from the transfer file template as columns, and all selected occurrences will be displayed in the Excel file, one per each line.

A1 | Occurrence Name

	Occurrence Name	National incident reference number	Time of occurrence (UTC)	Date of occurrence	Type of Occurrence
2					
3	dg_radu	OCC-BUH-01-05-2015-10	00:00:00	01/05/2015 00:00:00	Clearance limit
4					Runway crossing
5					Accident
6					AIRPROX
7					Deviation from operational procedures
8					Loss of Separation
9					Minimum Vectoring Altitude Deviation
10					Operational Procedures related factors
11					Holding
12					Approach
13					Take-off
14					Low approach
15					Push-back
16					Landing
17	INV-4-AG	OCC-BUH-19-05-2015-4		19/05/2015 00:00:00	
18	aircraft #01	OCC-BUH-19-05-2015-5	02:00:00	19/05/2015 00:00:00	
19	final_inv_radu	OCC-BUH-20-05-2015-17		20/05/2015 00:00:00	
20	INV-12-AG	OCC-BUH-12-05-2015-6	03:00:00	12/05/2015 00:00:00	
21	Inv_2_from_DZ_report	Occurrence_19/05/2015_2	16:30:00	19/05/2015 00:00:00	Loss of Separation
22					AIRPROX
23	Notification 1 Dubai	OCC-BUH-14-04-2015-30	02:00:00	14/04/2015 00:00:00	
24	aircraft #01	OCC-BUH-19-05-2015-5	02:00:00	19/05/2015 00:00:00	
25	final_inv_radu	OCC-BUH-20-05-2015-17		20/05/2015 00:00:00	
26	final_investigation_radu	OCC-BUH-14-05-2015-11	01:30:00	14/05/2015 00:00:00	Accident
27					Loss of Separation
28	Inv_2_from_DZ_report	Occurrence_19/05/2015_2	16:30:00	19/05/2015 00:00:00	Loss of Separation
29					AIRPROX
30	rat1				
31	rat2				
32	rat3		01:00:00	29/06/2015 00:00:00	
33	1	Occ_15.07.01		01/07/2015 00:00:00	

Figure 2.7-16 Taxonomy Export to Excel

2.7.2.2 Download report

This feature offers the Organization manager the possibility to extract just certain fields from the investigation and build a PDF file through a Report Builder template. The advanced tuning of this template is explained in the *Report Builder template* chapter in the Admin Manual.

To generate a report, click the "***Download report***" button in the Inventory Options sidebar menu, select the template to be used and hit the "***Export***" button. The generated PDF file is offered for download to the user.

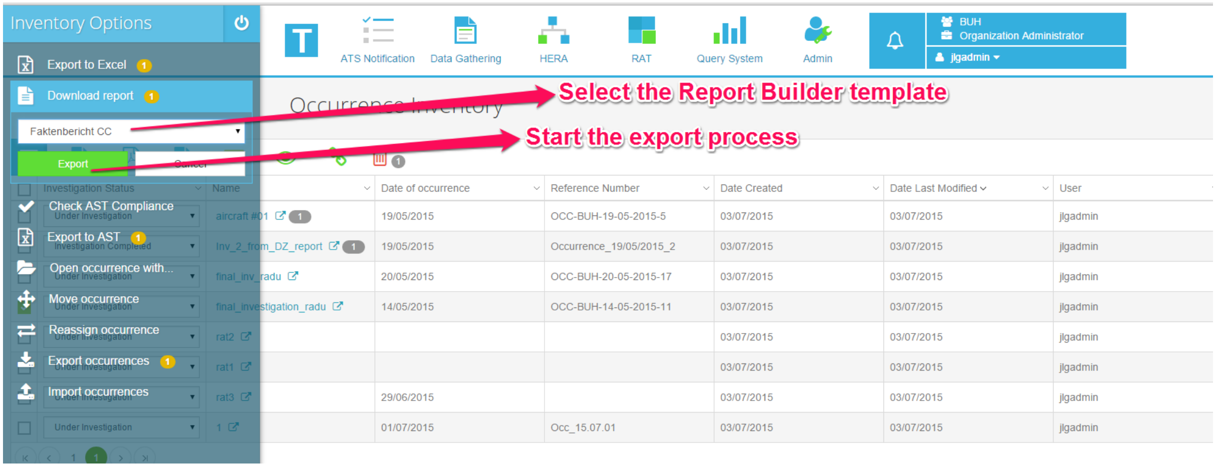
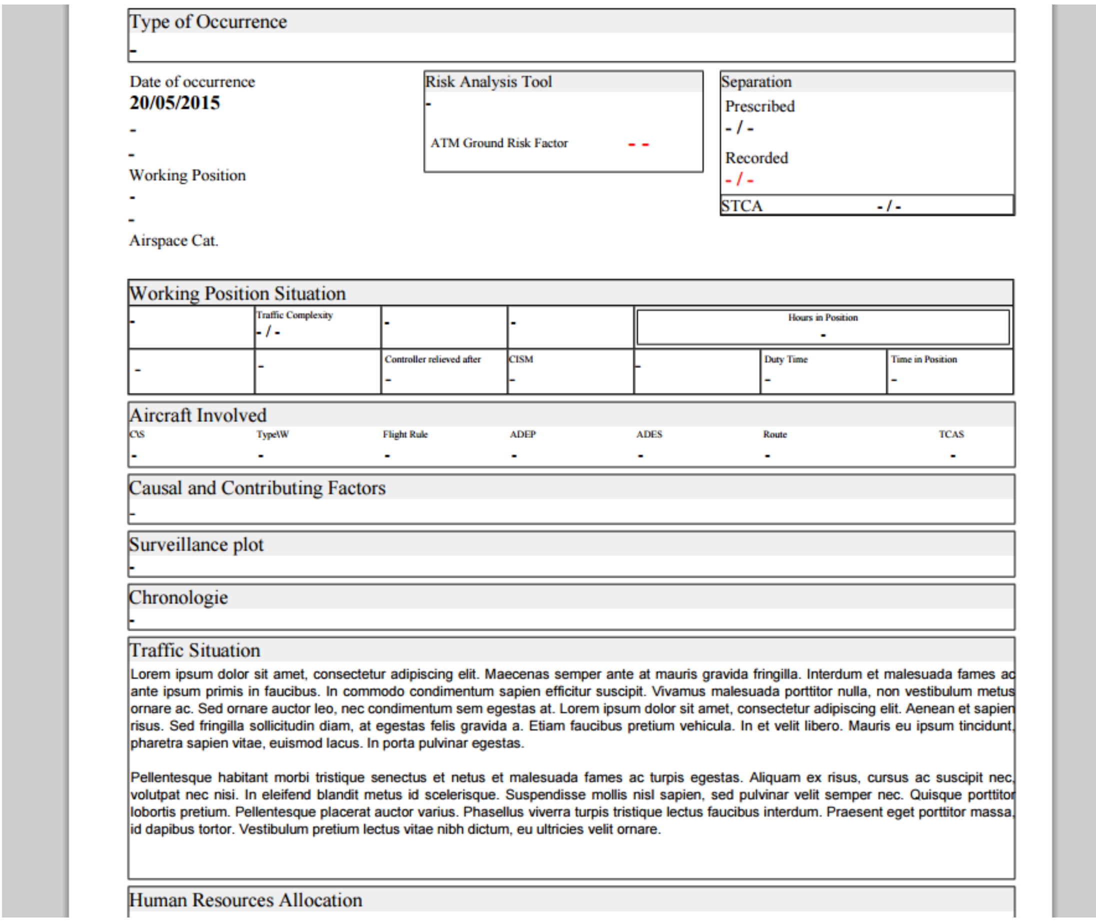


Figure 2.7-17 Choose type of report before download

A sample of a generated report is the following:


Type of Occurrence
-

Date of occurrence
20/05/2015
-
-
Working Position
-
-
Airspace Cat.

Risk Analysis Tool
-
ATM Ground Risk Factor - -

Separation
Prescribed
- / -
Recorded
- / -
STCA - / -

Working Position Situation
- | Traffic Complexity - / - | - | - | Hours in Position -
- | - | Controller relieved after - | CISM - | - | Duty Time - | Time in Position -

Aircraft Involved

C\S	Type\W	Flight Rule	ADEP	ADES	Route	TCAS
-	-	-	-	-	-	-

Causal and Contributing Factors
-

Surveillance plot
-

Chronologie
-

Traffic Situation
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas semper ante at mauris gravida fringilla. Interdum et malesuada fames ac ante ipsum primis in faucibus. In commodo condimentum sapien efficitur suscipit. Vivamus malesuada porttitor nulla, non vestibulum metus ornare ac. Sed ornare auctor leo, nec condimentum sem egestas at. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean et sapien risus. Sed fringilla sollicitudin diam, at egestas felis gravida a. Etiam faucibus pretium vehicula. In et velit libero. Mauris eu ipsum tincidunt, pharetra sapien vitae, euismod lacus. In porta pulvinar egestas.

Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Aliquam ex risus, cursus ac suscipit nec, volutpat nec nisi. In eleifend blandit metus id scelerisque. Suspendisse mollis nisl sapien, sed pulvinar velit semper nec. Quisque porttitor lobortis pretium. Pellentesque placerat auctor varius. Phasellus viverra turpis tristique lectus faucibus interdum. Praesent eget porttitor massa, id dapibus tortor. Vestibulum pretium lectus vitae nibh dictum, eu ultricies velit ornare.

Human Resources Allocation

Figure 2.7-18 Generated report preview

2.7.2.3 Check AST Compliance

This option verifies if the selected occurrence meets the rules for being AST compliant. If it's not, a list with all the missing fields will be displayed.

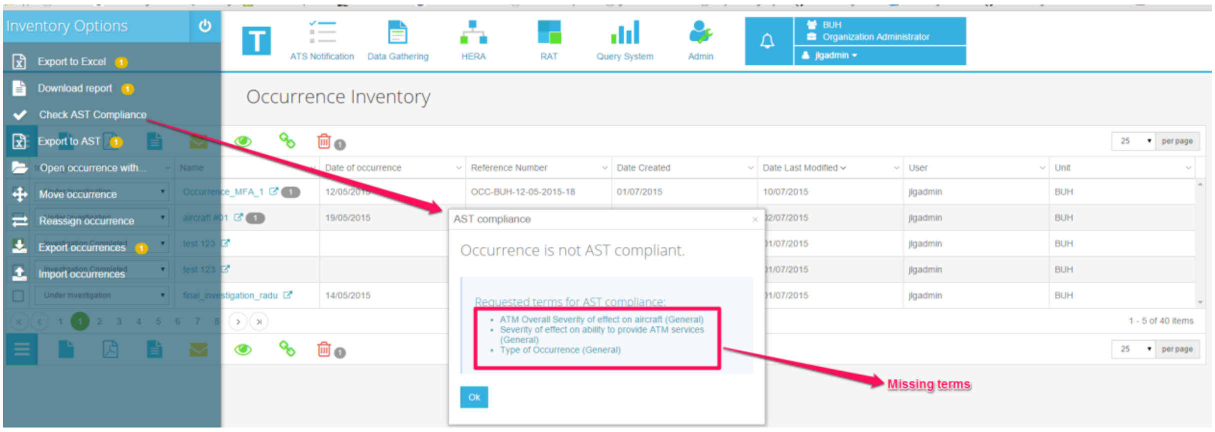


Figure 2.7-19 Check AST Compliance

2.7.2.4 Export to AST

This function exports the selected occurrences in the AST format, using the AST template selected by the user. The result is an AST compatible Excel file.

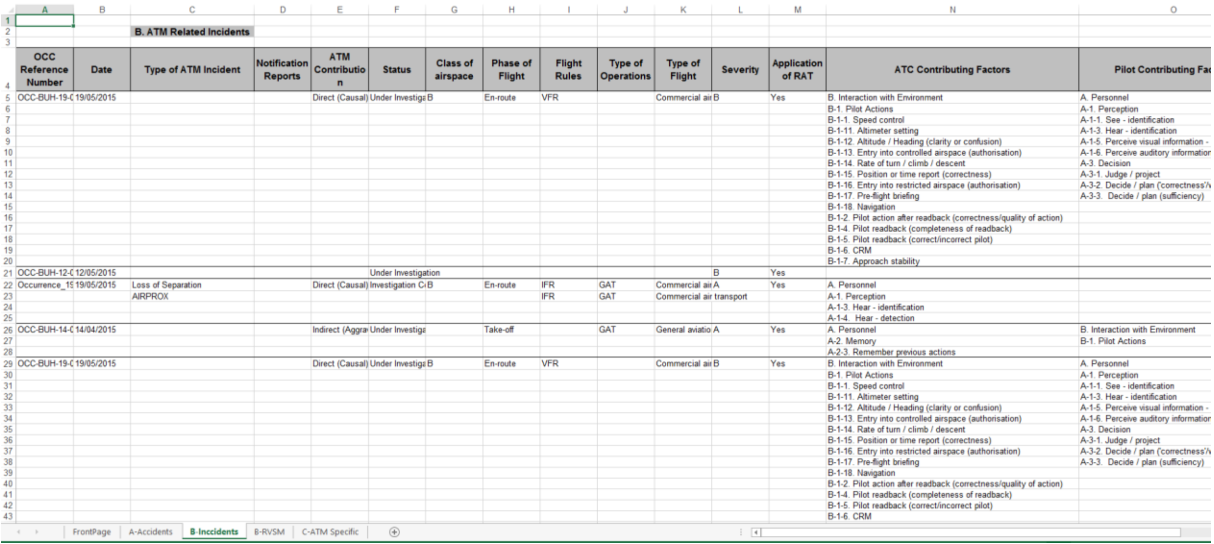


Figure 2.7-20 Exported AST Compatible Excel File

2.7.2.5 Open occurrence with

If there is sometime a need to open a certain occurrence with a different Data Gathering template, this function shows very useful. Later updates of the templates used for Data Gathering can lead to this kind of needs.

When clicking this button, the user is asked to select the new Data Gathering template to be used for opening the occurrence. The application then creates a new occurrence from this one, by mapping the existing occurrence on the selected template. The fields from the previous template which are not found in the new one, are lost. All entities linked to the original occurrence (ATS Notifications, attachments, risk analysis) are removed from the old occurrence and transferred to the newly created one when the ***Save*** button is clicked. The user will have to take care to manually delete original occurrence if this is the case.

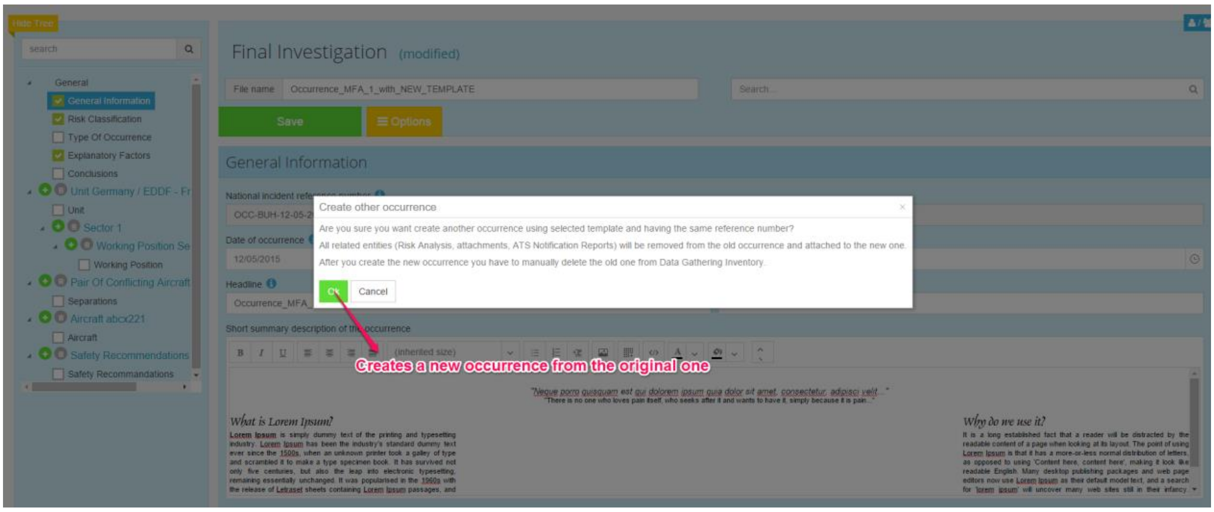


Figure 2.7-21 Create New occurrence from original one

2.7.2.6 Move occurrence

One or more occurrences can be moved to another unit using this function. The user must first select the occurrences to be moved, then search for the new unit in the search box and click the "***Move"*** button.

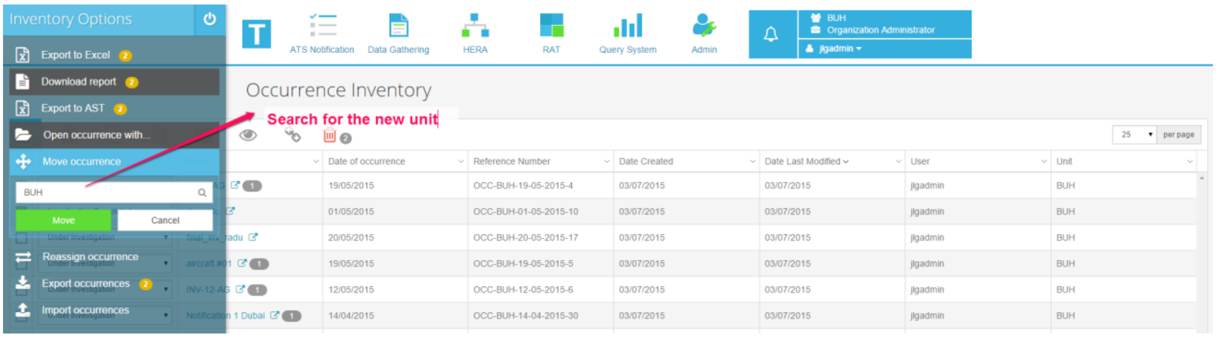


Figure 2.7-22 Moving an Occurrence

2.7.2.7 Reassign occurrence

If an occurrence needs to be assigned to another user, then this function is the proper way to do it. Simply search for the new user by typing his user name / first name / last name or parts of them and click the "***Reassign"*** button.

After this operation, the person the occurrence was reassigned to will receive a notification.

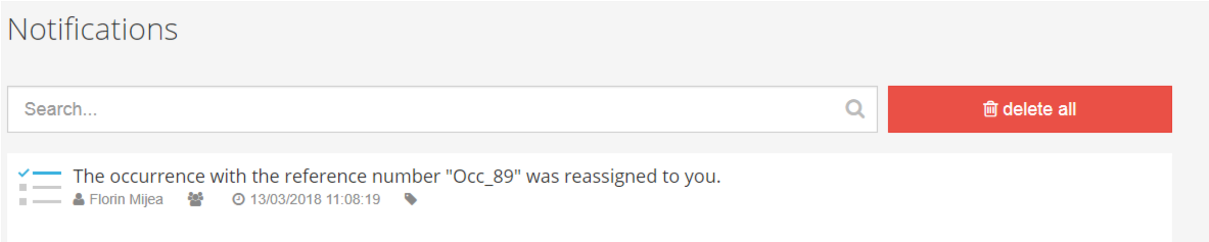


Figure 2.7-23 Reassign occurrence notification

The '**Reassign user'** event details will appear in the history of changes.

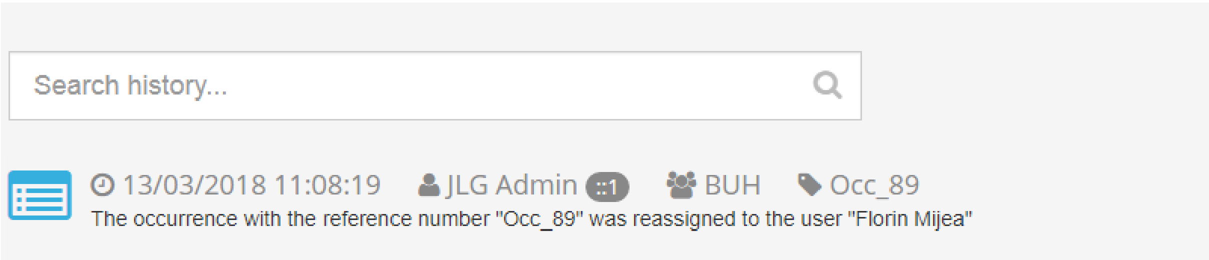


Figure 2.7-24 Reassign user event displayed in the history of the occurrence

2.7.2.8 Export occurrences

This Exports the selected occurrences to a JSON file which can be used as a backup measure or to exchange investigations with other TOKAI installations.

Please, keep in mind, that the maximum number of the occurrences that can be exported at a time is 100.

2.7.2.9 Import occurrences

The file generated with the ***Export occurrences*** function can be imported back into the application. This leads to new occurrences being created and automatically saved in the database if the system couldn't find the imported occurrences in the existing ones. If the system finds that the occurrences that are being imported already exist in the organization, the user will have the possibility to choose what happens to the import.

The Unit/User for the imported occurrence will be the same as it was when exported if the current organization have them. If it doesn't, the occurrence will have the Unit/User of the current context(the user who imported the occurrence in the first place).

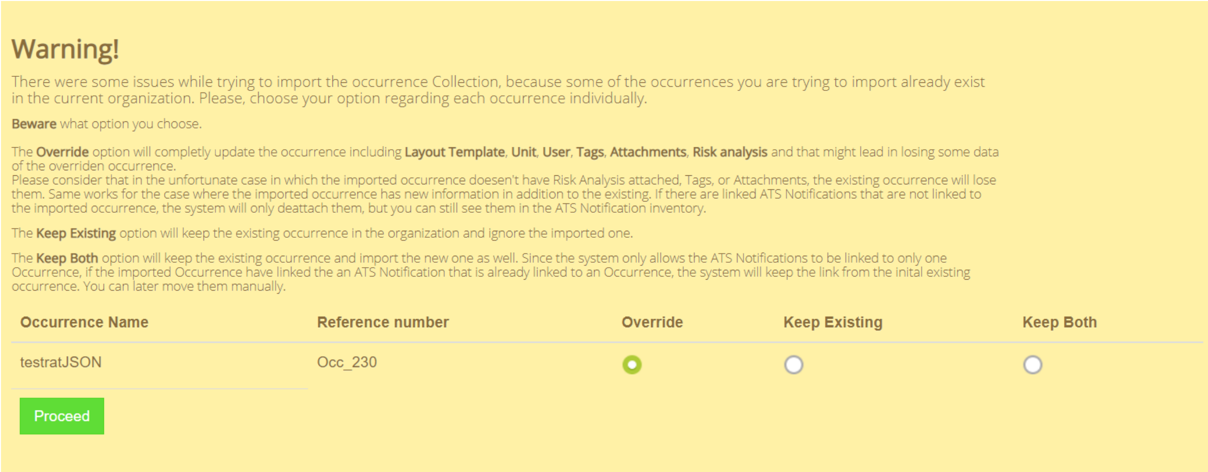


Figure 2.7-25b Warning while importing occurrences

The **Override** option will completely update the occurrence including **Layout Template**, **Unit**, **User**, **Tags**, **Attachments**, **Risk analysis** and that might lead in losing some data of the overridden occurrence.

Please consider that in the unfortunate case in which the imported occurrence doesn't have Risk Analysis attached, Tags, or Attachments, the existing occurrence will lose them. Same works for the case where the imported occurrence has new information in addition to the existing.

If there are linked ATS Notifications that are not linked to the imported occurrence, the system will only detach them, but you can still see them in the ATS Notification inventory.

The **Keep Existing** option will keep the existing occurrence in the organization and ignore the imported one.

The **Keep Both** option will keep the existing occurrence and import the new one as well. Since the system only allows the ATS Notifications to be linked to only one Occurrence, if the imported Occurrence have linked an ATS Notification that is already linked to an Occurrence, the system will keep the link from the existing occurrence. You can later move them manually.

2.7.2.10 Active filters

Each user has the possibility to save different configurations of grid filters to database and use them anytime. Filter configurations can be created, applied, set as default, reset or deleted directly from the inventory options sidebar.

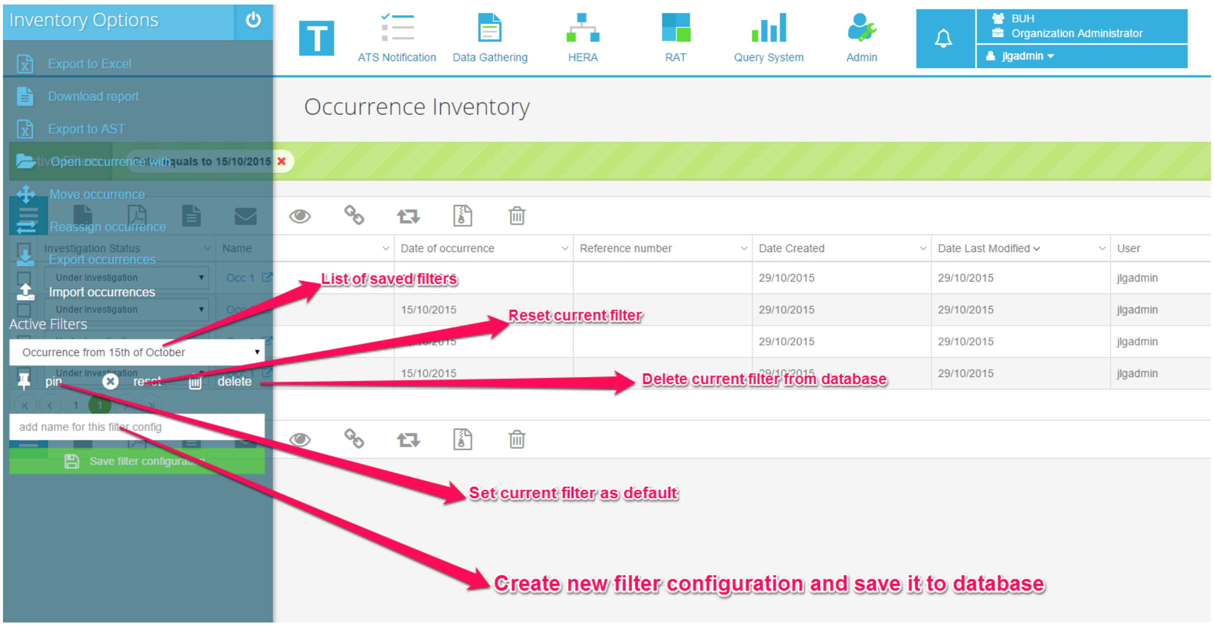


Figure 2.7-26 Filtering occurrences

2.7.2.10.1 Create a new filter configuration

First, use the built-in filtering system of the inventory to create a combination of filters. This filters configuration can be saved by typing a name for it and clicking the “***Save filter configuration”*** button.

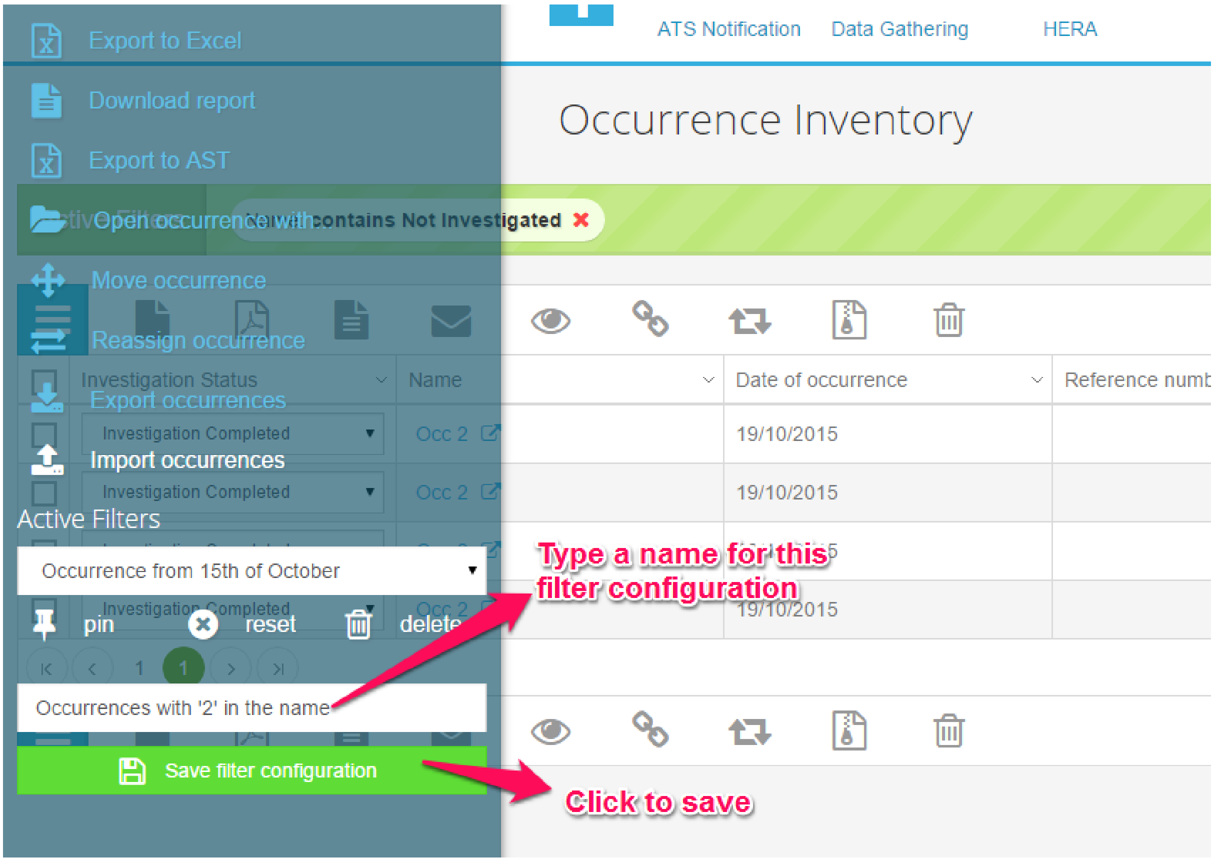


Figure 2.7-27 Creating filter configuration

2.7.2.10.2 Apply and set as default a saved filter configuration

To apply a certain filter configuration, just select it from the *Active filters* list. The filter configuration is automatically applied when selected.

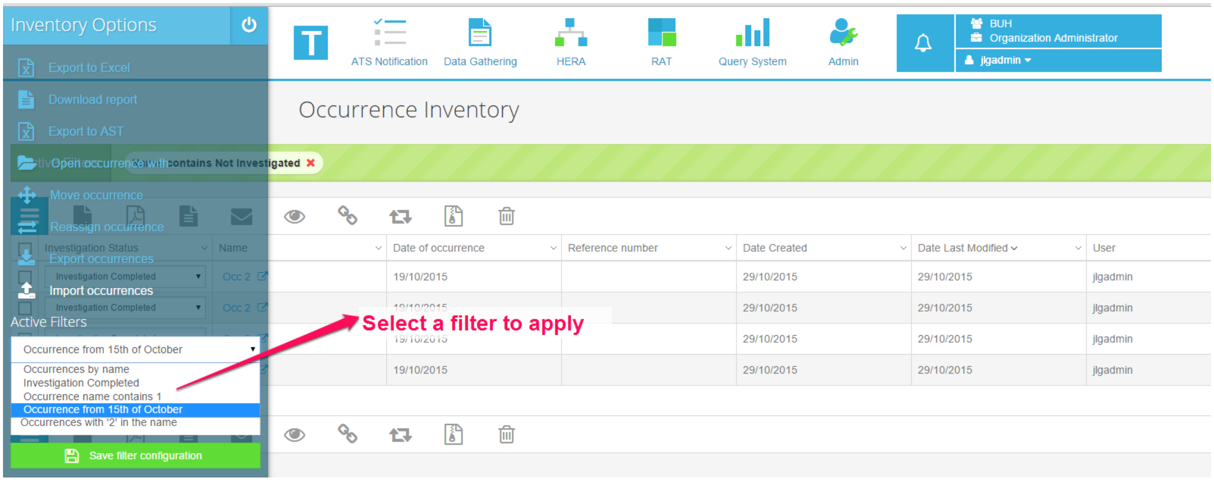


Figure 2.7-28 Apply Filter Configurations

After a filter configuration is applied, you can choose to set it as default by clicking the "***Pin"*** button – i.e. this filter configuration will be applied automatically when accessing the Occurrence Inventory page, even after you log out and log in again.

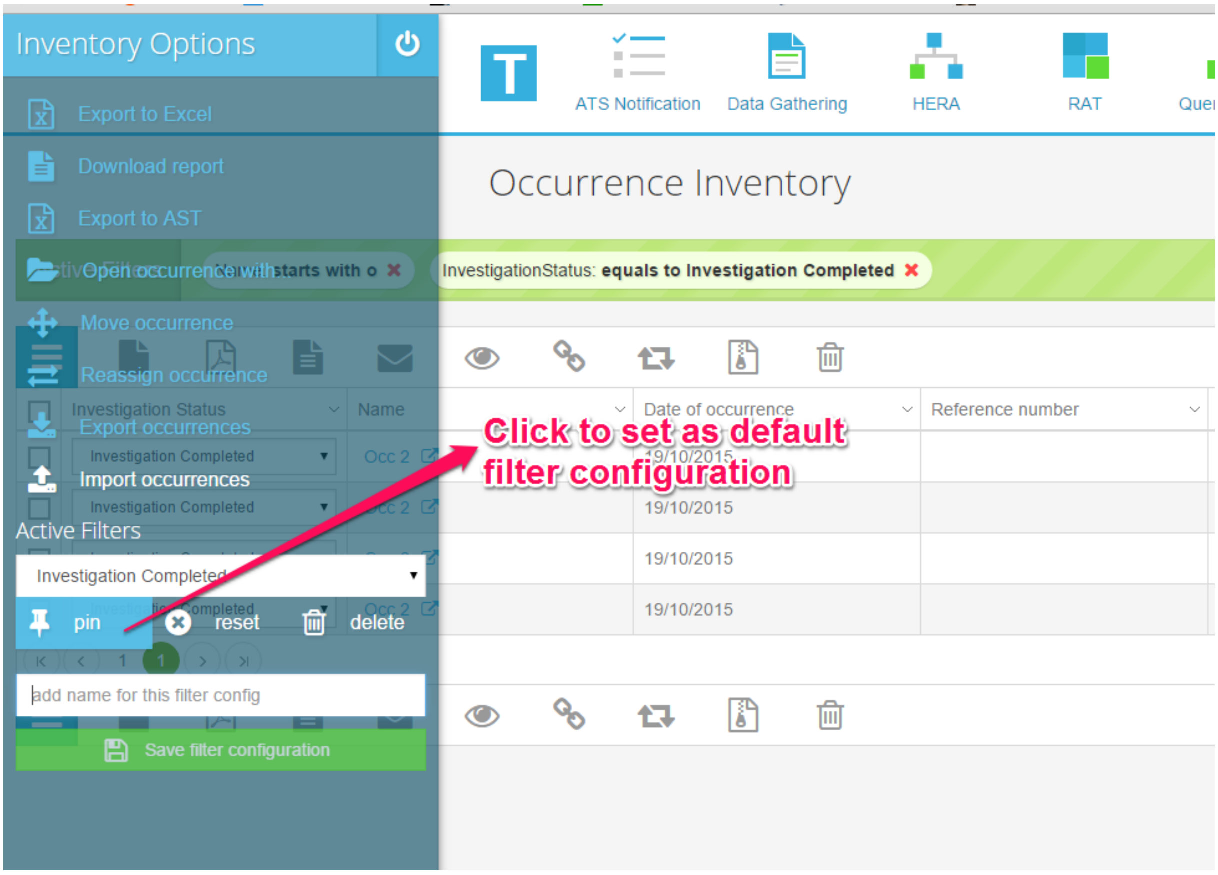


Figure 2.7-29 Default filter configuration

2.7.2.10.3 Reset a filter configuration

To reset a filter configuration from being default click the "***Reset"*** button.

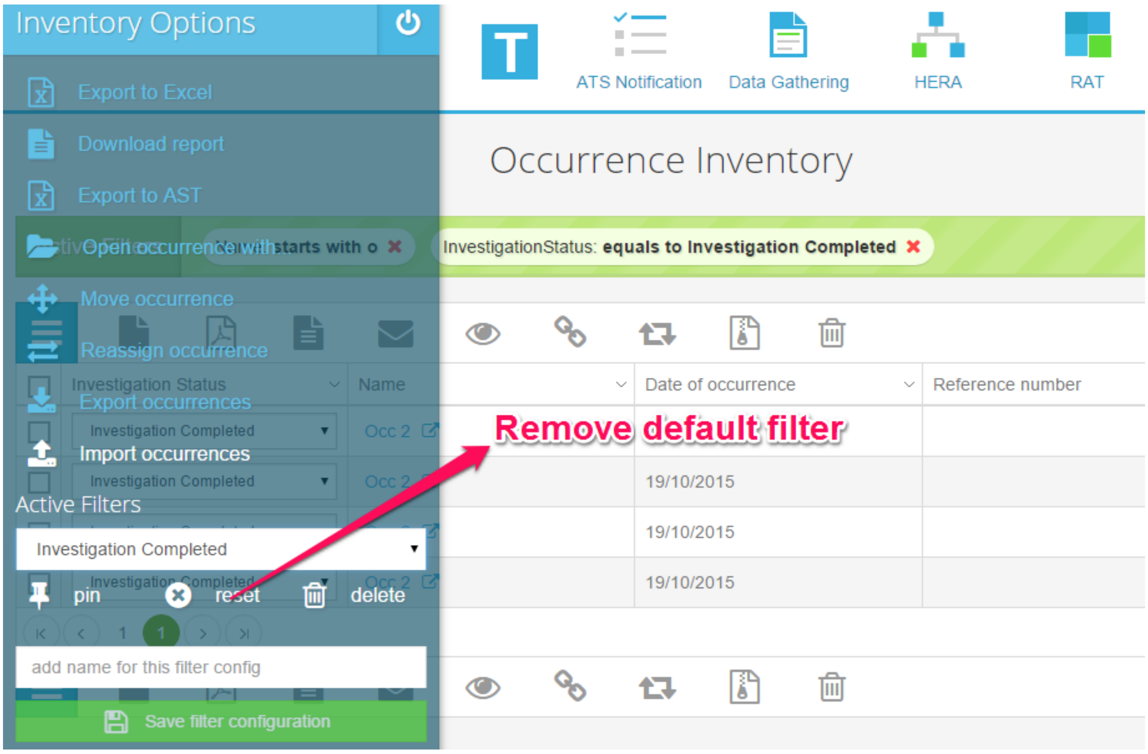


Figure 2.7-30 Reset Filter Configuration

2.7.2.10.4 Delete filter configuration

To delete the selected filter configuration, click the "***Delete"*** button.

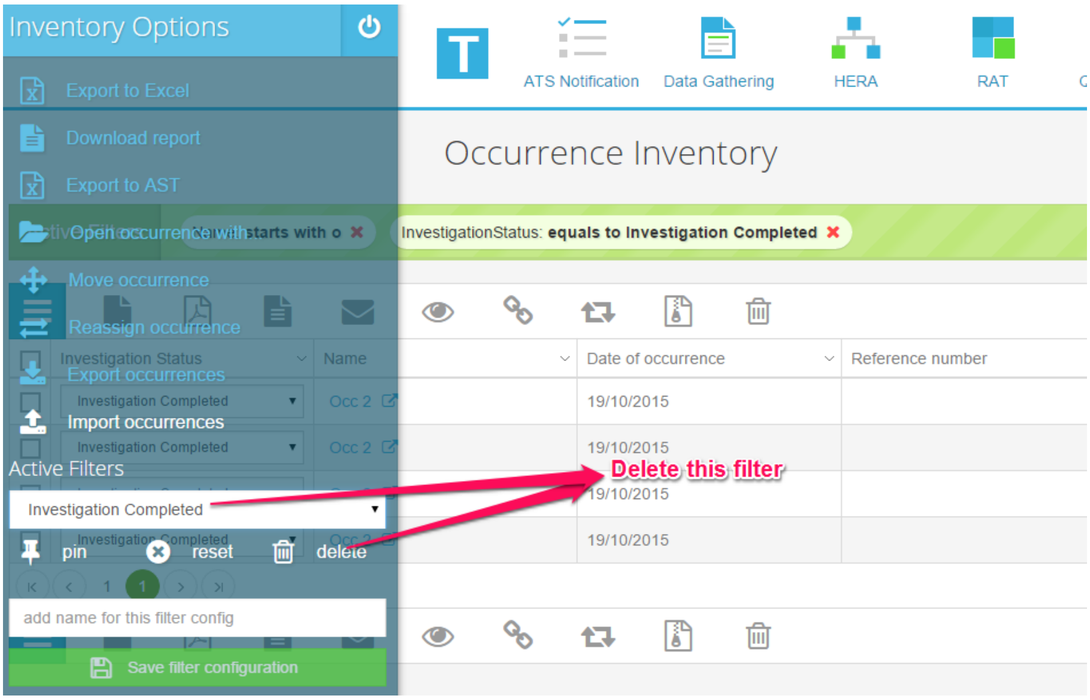


Figure 2.7-31 Delete Filter Configuration

2.8 Tags management

To access the tags management page, go to **Data Gathering -> Manage Tags**. Tags can be created, edited and deleted at the organization level, i.e. each user who is part of the organization and has at least one of the following permissions can create a new tag, edit and delete an existing one:

- Manage operational occurrences
- Manage technical occurrences
- Edit operational occurrences
- Edit technical occurrences

Tags are displayed as clickable tiles. Each tile shows the name of the tag and the number of occurrences tagged with it. Clicking a tile will display these occurrences.

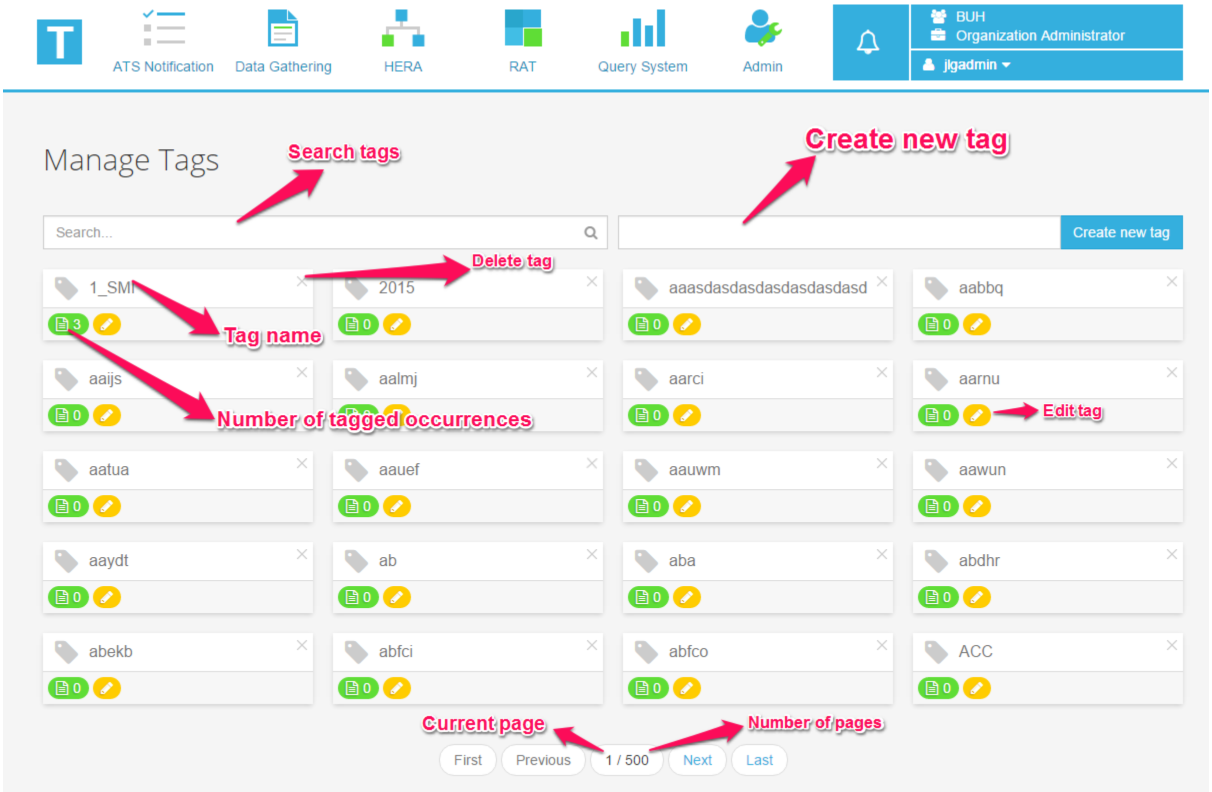


Figure 2.8-1 Managing Tags

Search tags

The tags management page is enhanced with an instant search function, which filters tags from your organization based on the input string in the search box. The search results are paginated.

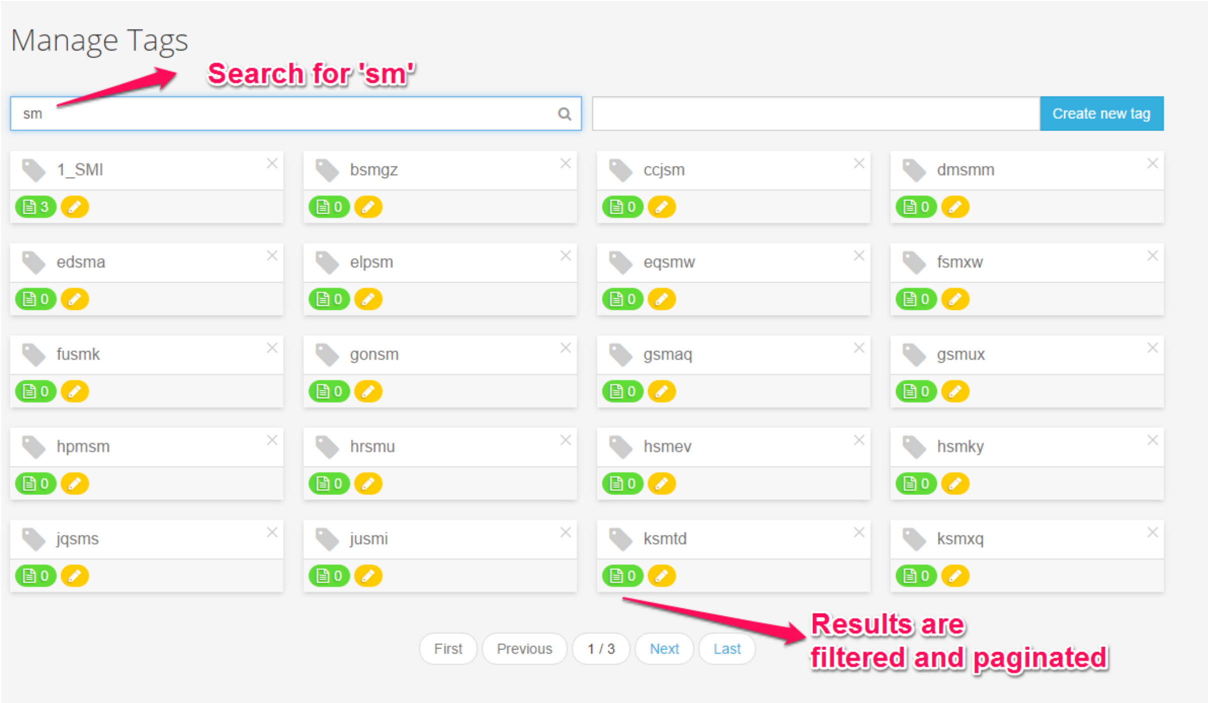


Figure 2.8-2 Search and filter tags

2.8.1 Create new tag

Fill in the new tag name and click the "***Create new tag***" button to save a new tag.
Tag names have to be unique at organization level.

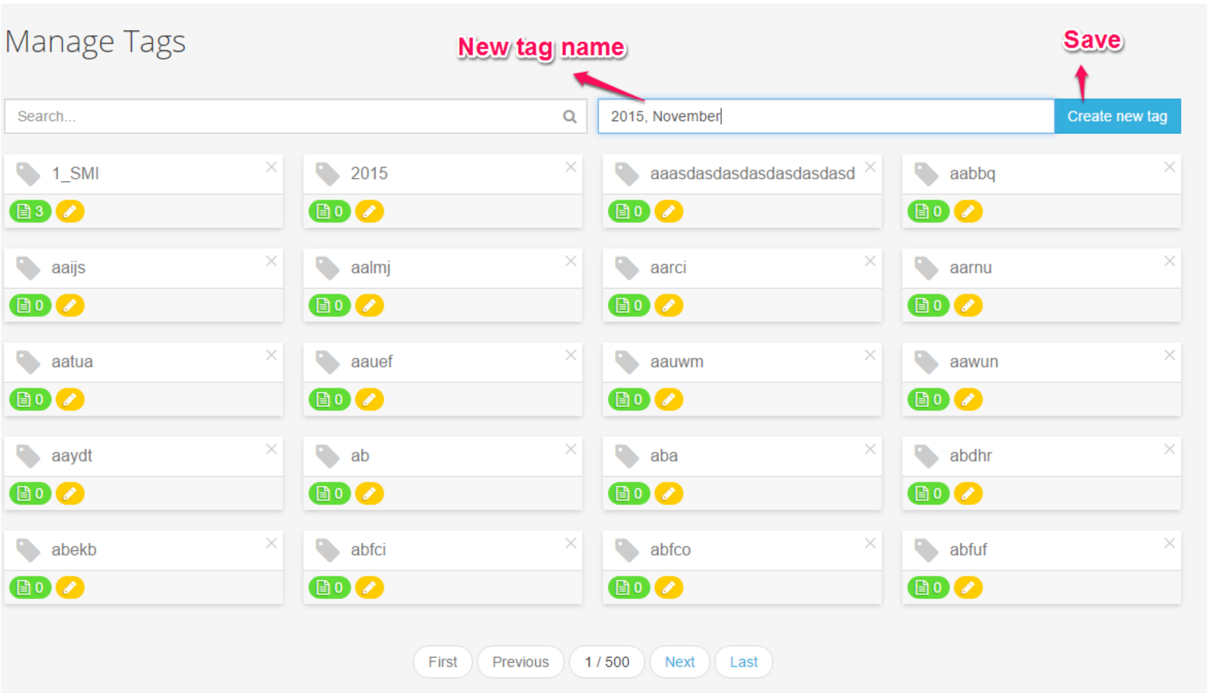


Figure 2.8-3 Create new tag

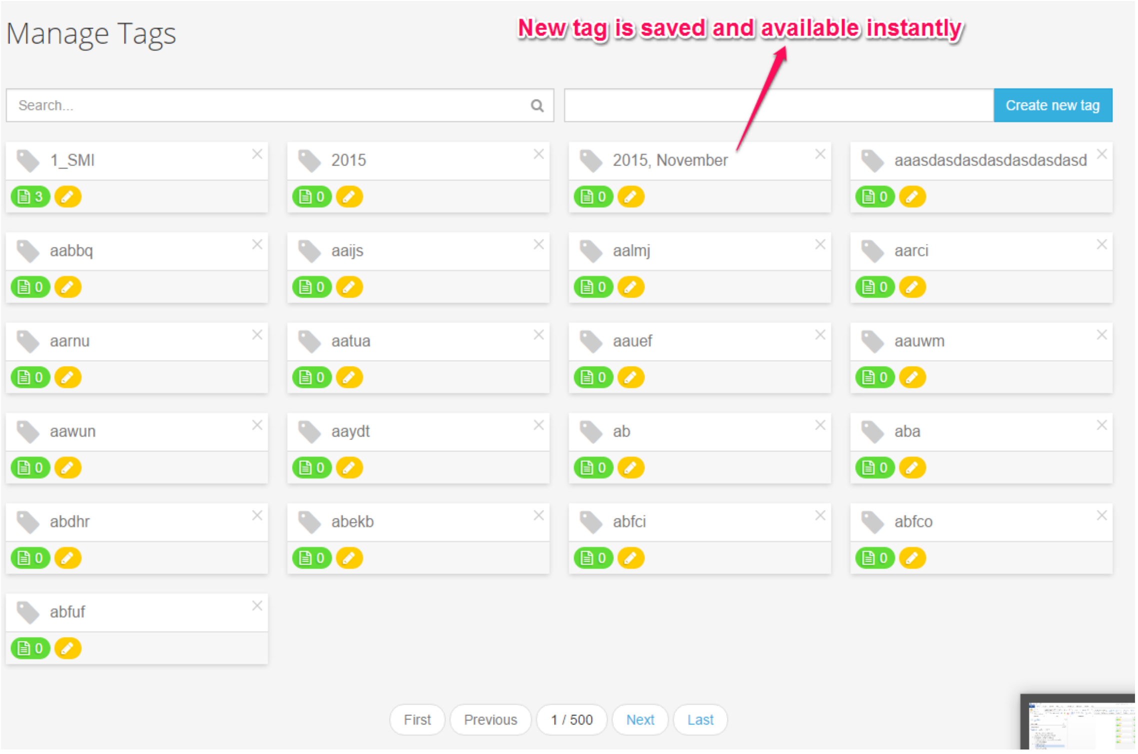


Figure 2.8-4 Add new tag

2.8.2 Edit existing tag

Click the small "***Edit***" button on a tag's tile to edit the tile's name, and then click the green button to save it.

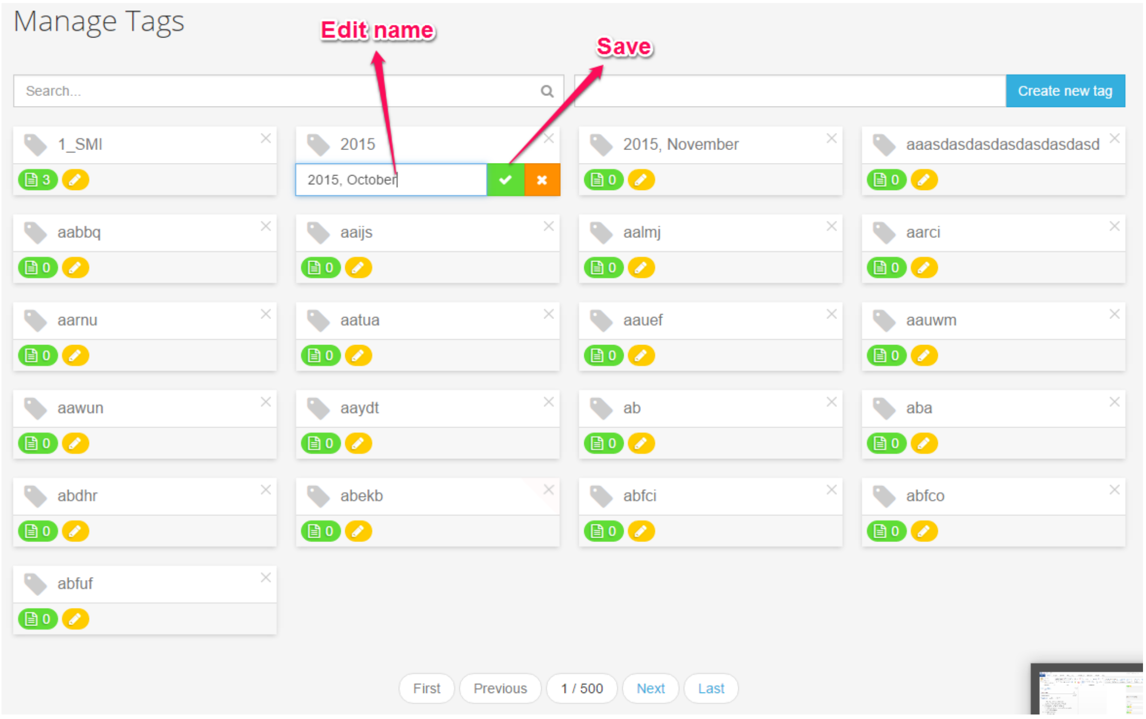


Figure 2.8-5 Edit existing tag

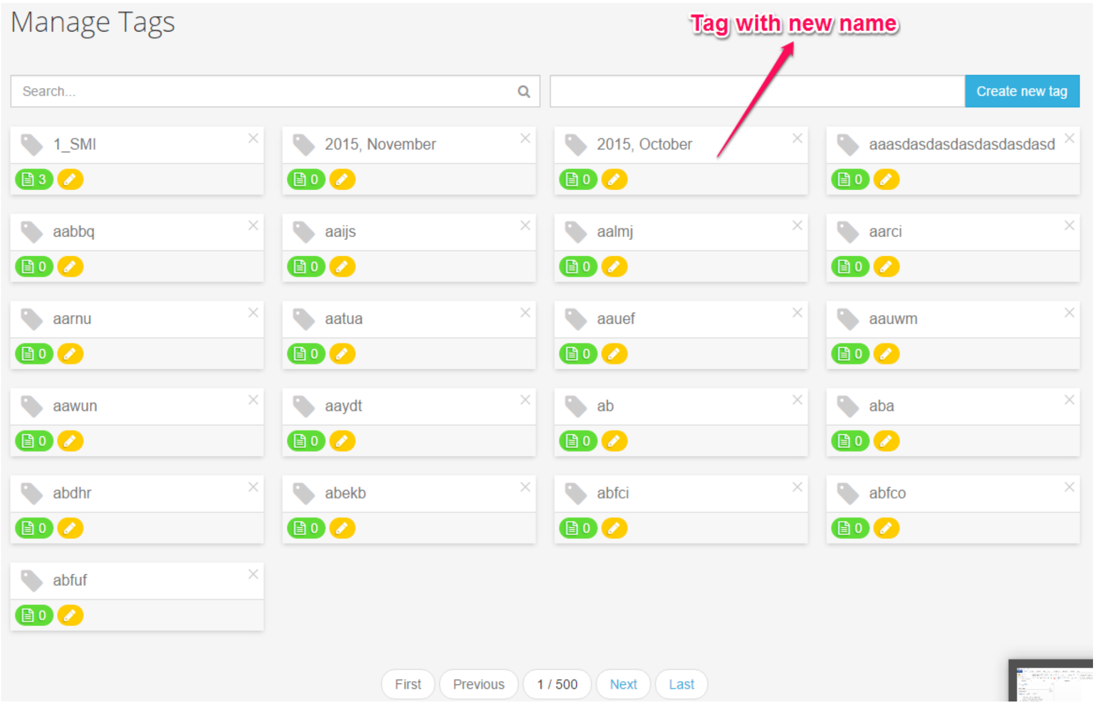


Figure 2.8-6 Instant update of tags modifications

2.8.3 Delete existing tag

Click the **X** in the upper right corner to delete a tag. The tag will be removed from all occurrences and then deleted from the database.

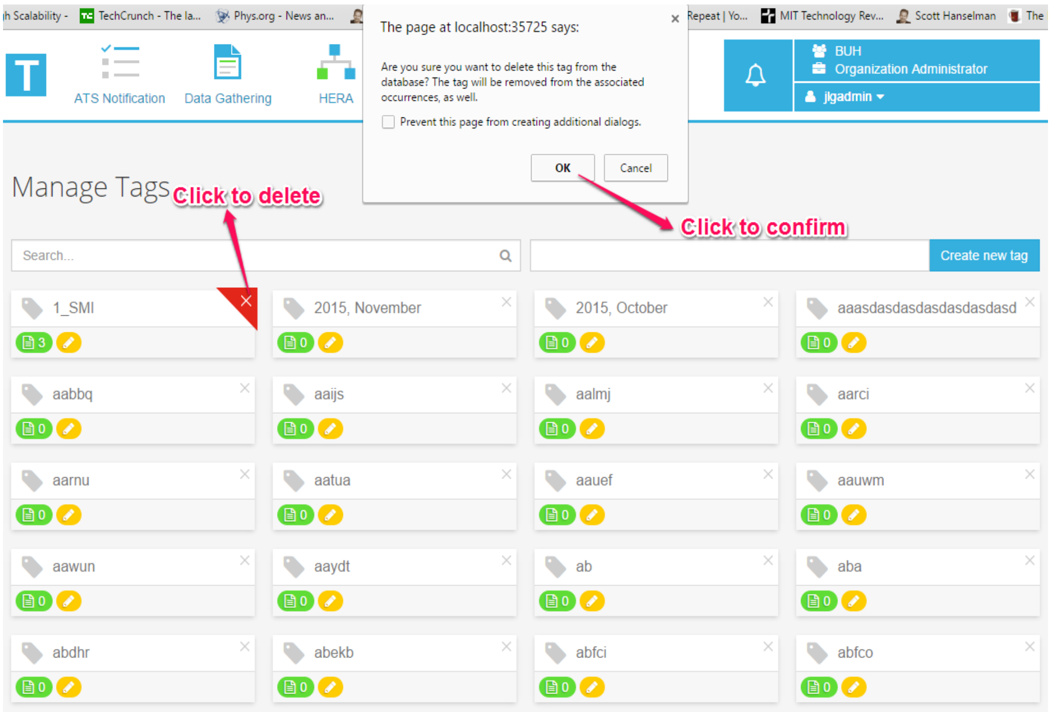


Figure 2.8-7 Delete existing tag

2.9 Location picker

A location picker tool using Google Maps is available for 'Geographical Coordinates' Term in the Taxonomy to allow the user to visualize on the Google Maps the actual position of the incident. The coordinates can be both in decimal degrees format as well as in Degrees, Minutes, Seconds format.

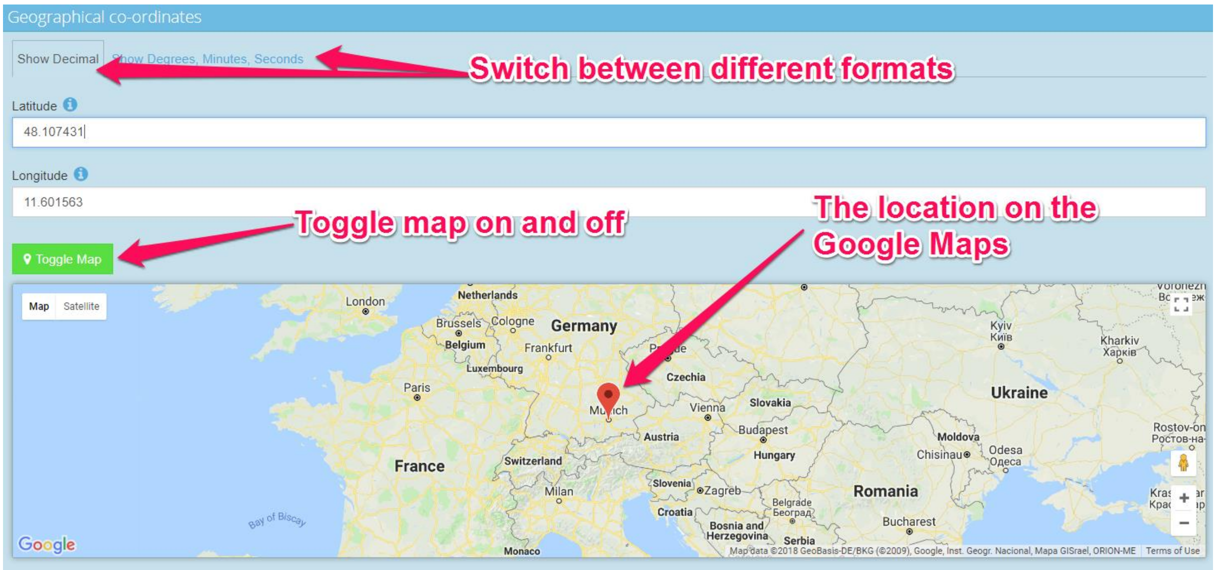


Figure 2.9-1 Geographical co-ordinates term using Google Maps

To change the location, click on the location symbol and move it where desired, then release the click.

3 Risk Analysis Tool Module

NOTE: Please see the separate RAT user guide document on the e-TOKAI website (click here for the document. In the final version of this manual, the two documents should be integrated).

In addition to that document this chapter is written with the purpose of keeping the User Manual updated with the new changes in the RAT module.

1. **Multiple RAT evaluations** for ATM Specific Occurrence that have multiple failures by adding different Severity sheets in the Risk creation page are allowed. There can be more Severity sheets filled in individually, however only one Severity can be set as main and that one will be the one computed in the Risk Analysis.

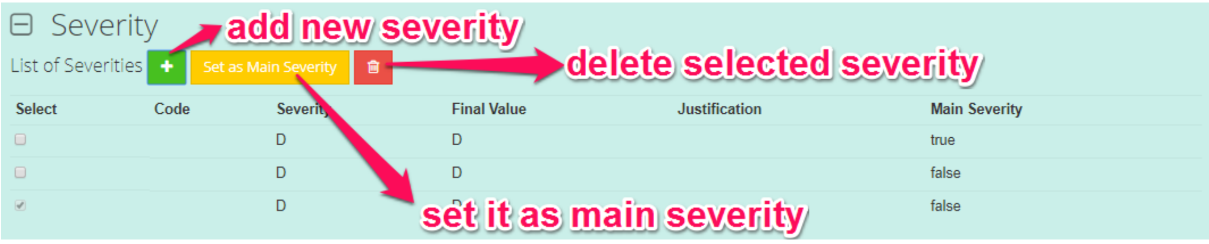


Figure 2.9-1 Managing multiple severities

2. **The new redesigned Severity Criteria** for ATM Specific Occurrence works in cascade. To enable a criterion for selection, the user needs to select all the criteria involved first. To access this new redesigned severity criteria, go to RAT > New Risk Analysis > Expand Severity panel and find what is illustrated in the figure below.

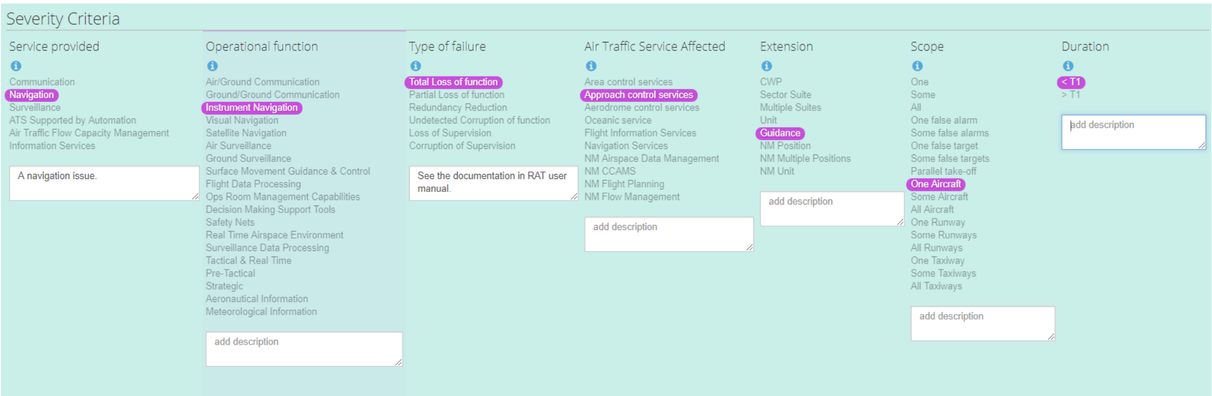


Figure 2.9-2 The new severity design for ATM Specific Occurrence

3. **New Criterion** under Repeatability appended to the RAT template – **ATM Specific Occurrence** to provide a new way of scoring the repeatability for ATM Specific Occurrence. It is named ***Non-systemic / Technical Failures issue*** and it is mutually exclusive with ***Non-systemic / Human Involvement issue*** criterion, so populating one will disable the other.

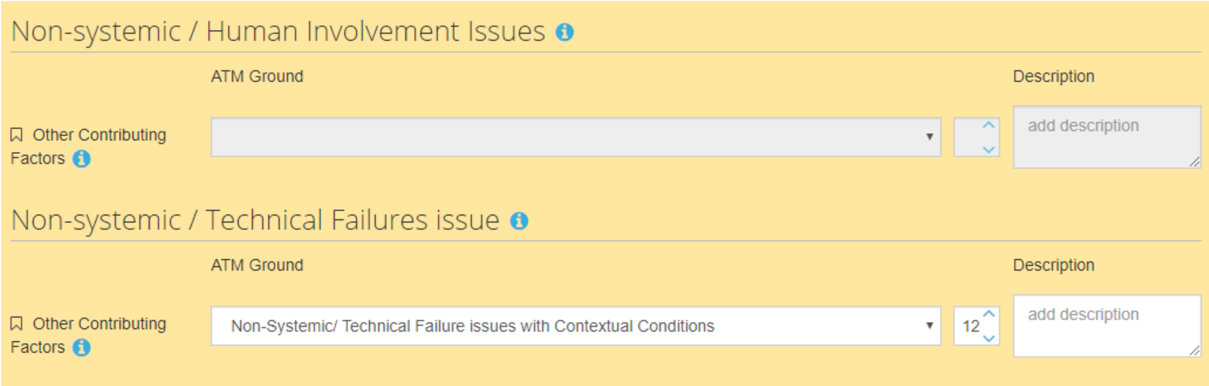


Figure 2.9-3 The new mutually exclusive criterion

4. The **Reset Button** is available for all the RAT templates, both for **Severity** as well as for **Repeatability**. It will automatically reset all the input fields in order to streamline the whole RAT evaluation workflow.

Figure 2.9-4 Reset Severity

5. For the RAT module, definitions are available for the Topics, Criterions and Answers used, which can be accessed from the User Interface. They are available for both **Severity** and **Repeatability** for every RAT mark-sheet.

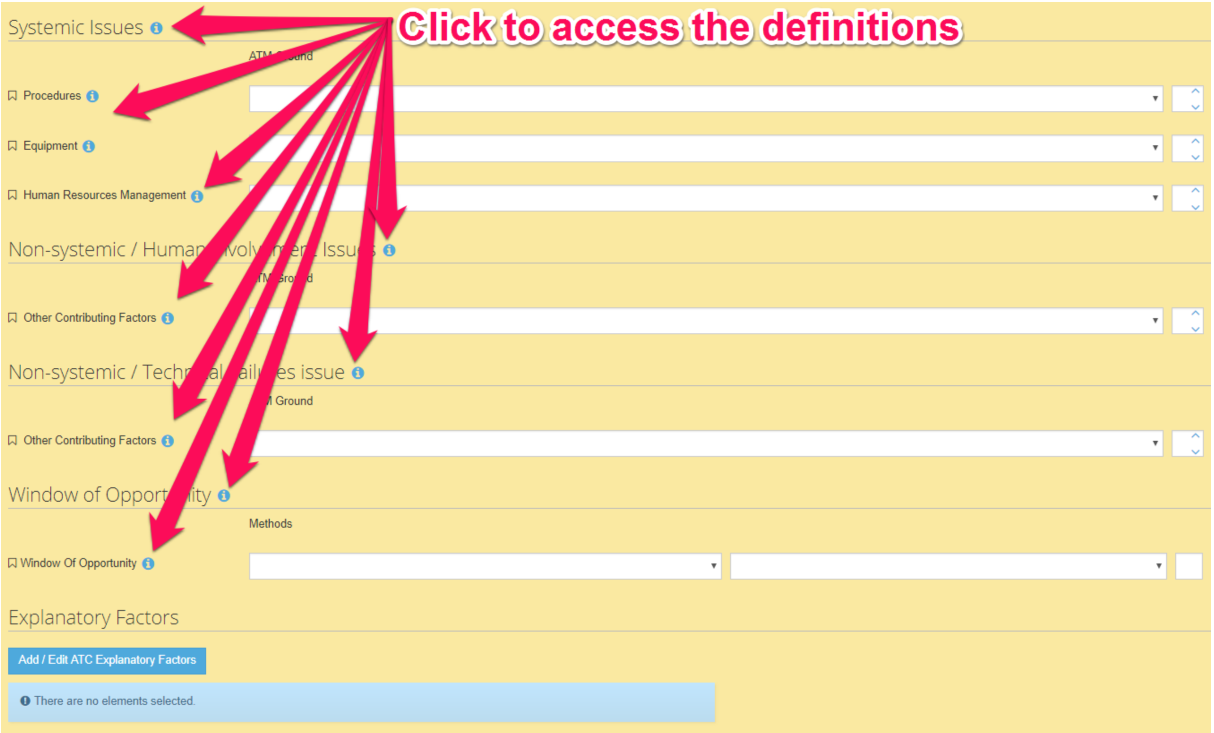


Figure 2.9-5 The definitions

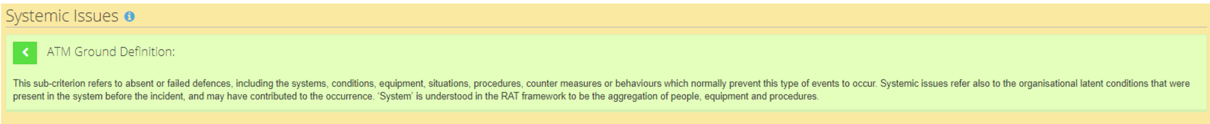


Figure 2.9-6 The definitions expanded

6. **Implemented** a new possibility to **indicate whether the Repeatability** part **was scored** or not, for all the RAT marksheets. To be able to indicate if the Repeatability was not scored, a new row was added under severity matrix.

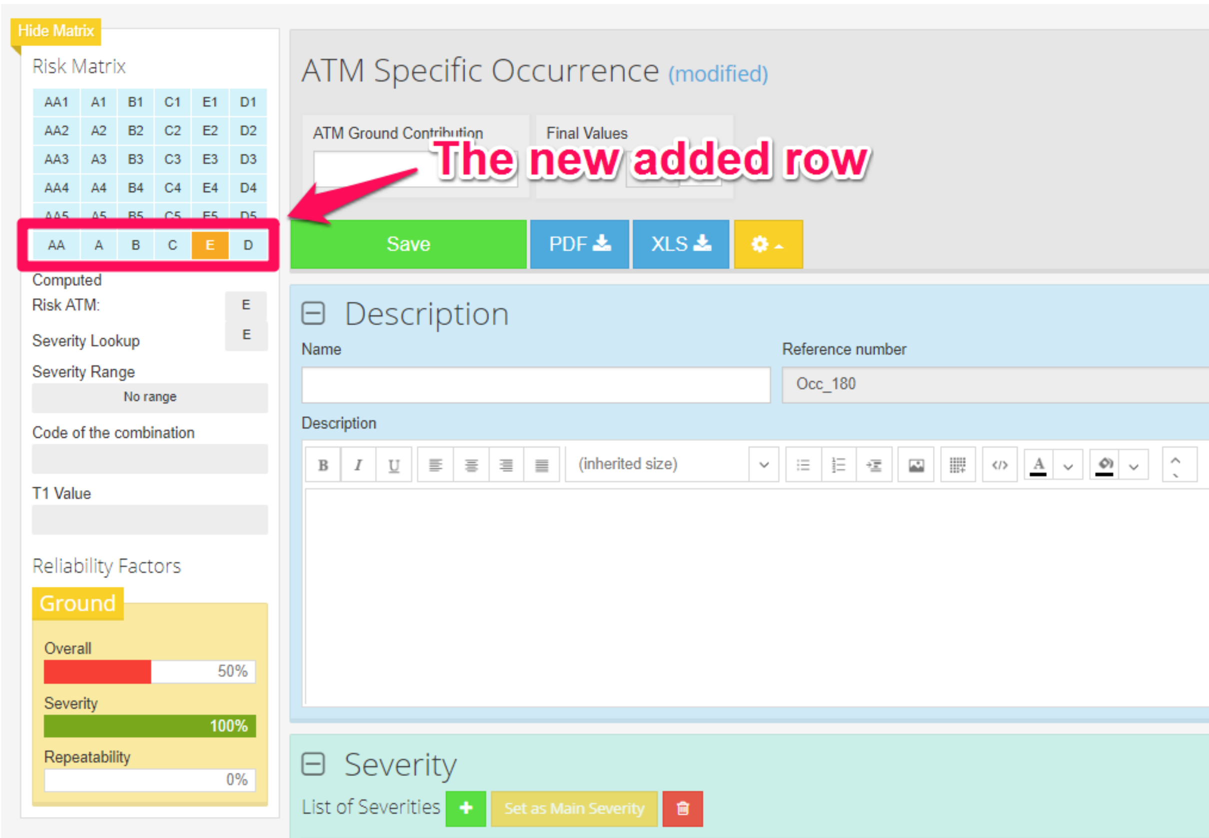


Figure 2.9-7 The new added row in the risk matrix

The new added row will be scored if the Repeatability remains empty.

7. A **new tab** named ***Not-determined*** with the same factors was added among ***Contributing*** and ***Mitigating***.

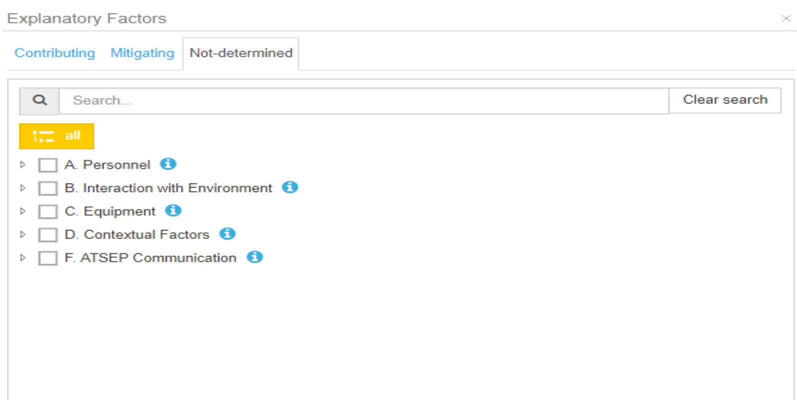


Figure 2.9-8 The new added row in the risk matrix

8. Enhanced link between Explanatory Factors and barriers for the Operational RAT mark-sheets. For each explanatory factor, barriers can be selected. The link can be made when selecting the factors as well as after the factors were selected.

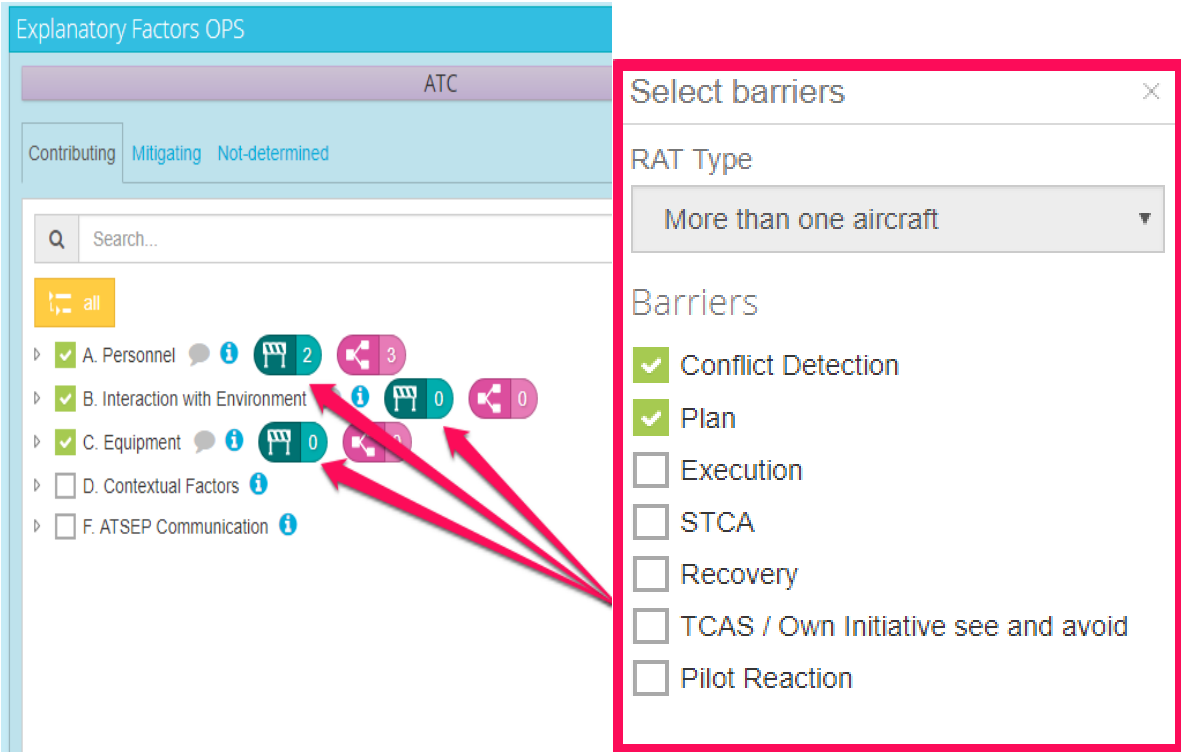


Figure 2.9-9 Click on the 'Barriers' and then select the barriers

9. Enhanced coupling between Explanatory Factors. For each explanatory factor, other explanatory factors can be selected. The coupling can be made when selecting the factors as well as after the factors were selected.

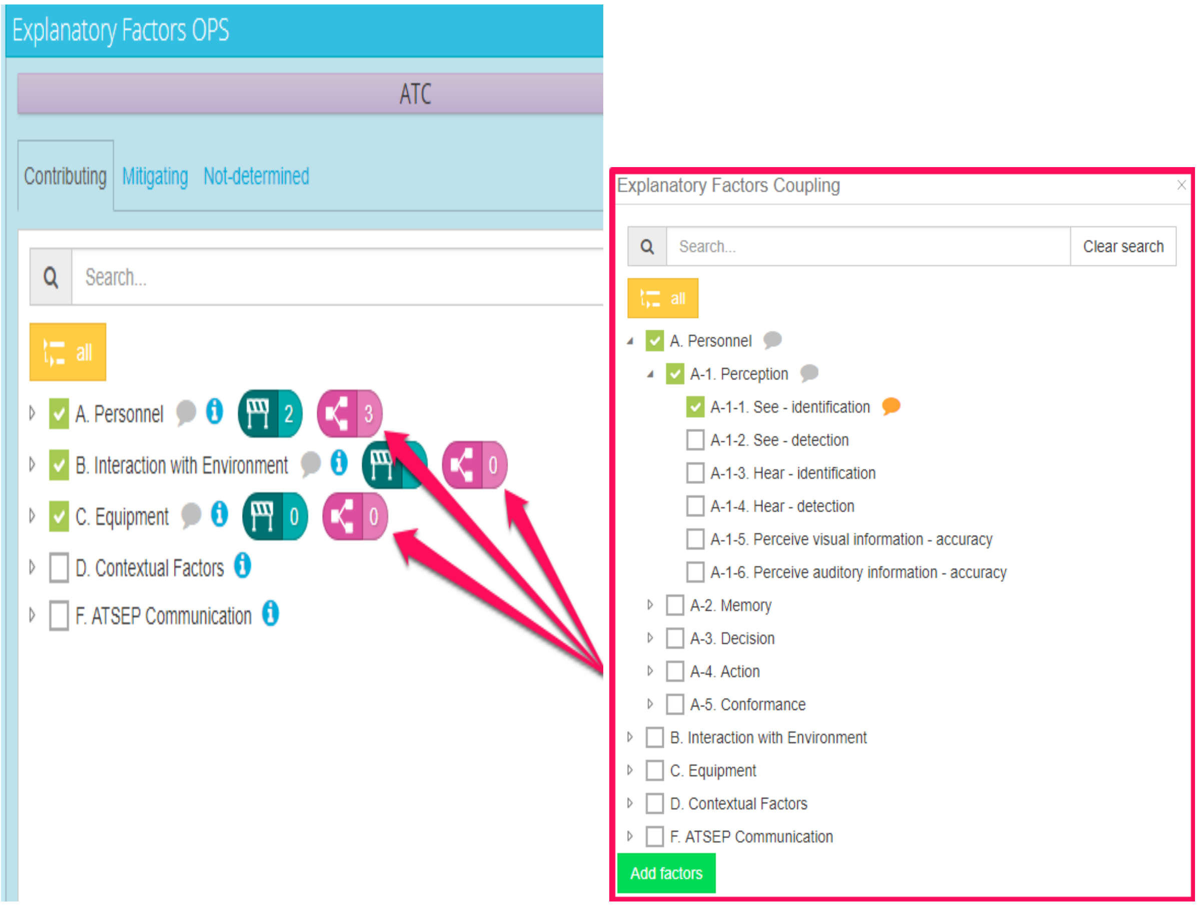
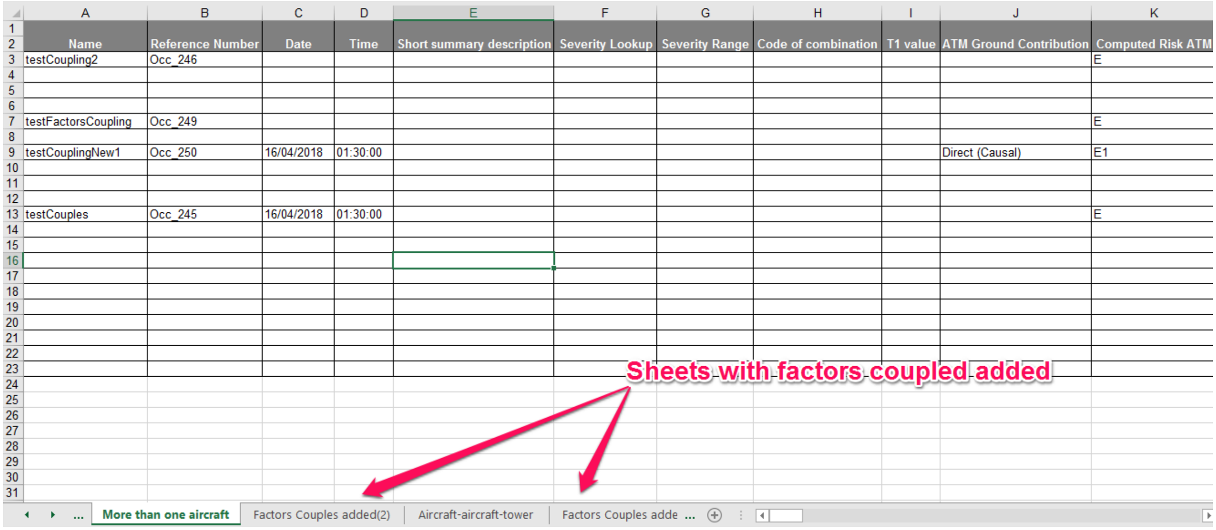


Figure 3-10 Click on the 'Select explanatory factors' and then select the factors

10. The **bulk export of RAT to Excel** is a function developed to give the user the possibility to export more than one Risk Analysis in a predefined template in Excel. This functionality is available from the RAT occurrence inventory as well as from the RAT Specific Statistics.

Figure 3-11 The bulk export to Excel button

The excel file will export automatically all the information about the selected Risk Analyses, divided in separate sheets by their occurrence template type. After each sheet, there will be another one with the **Factors Coupled** added to the **Explanatory Factors**.



Name	Reference Number	Date	Time	Short summary description	Severity Lookup	Severity Range	Code of combination	T1 value	ATM Ground Contribution	Computed Risk ATM
testCoupling2	Occ_246									E
testFactorsCoupling	Occ_249									E
testCouplingNew1	Occ_250	16/04/2018	01:30:00						Direct (Causal)	E1
testCouples	Occ_245	16/04/2018	01:30:00							E

Figure 3-12 The exported excel file

4 HERA Module

4.1 Create a new HERA record

Step 1: Login as an **Investigator**, click on the **Data Gathering >New Occurrence.**

Figure 4.1-1 STEP 1: Create a New Occurrence before HERA

Step 2: Choose the template created in the Admin section and select it.

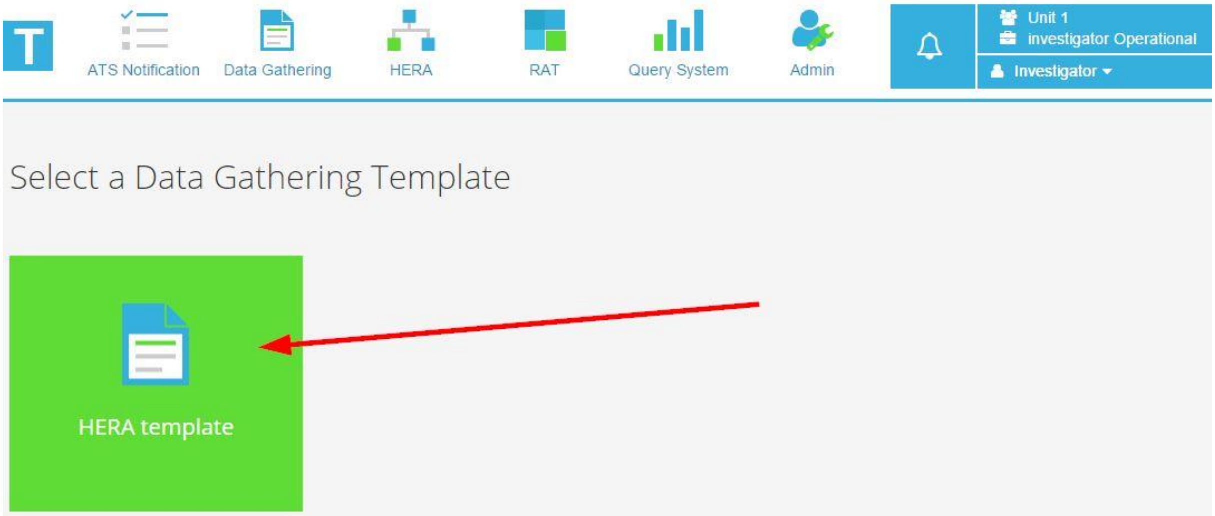


Figure 4.1-2 Select a template created in Admin section

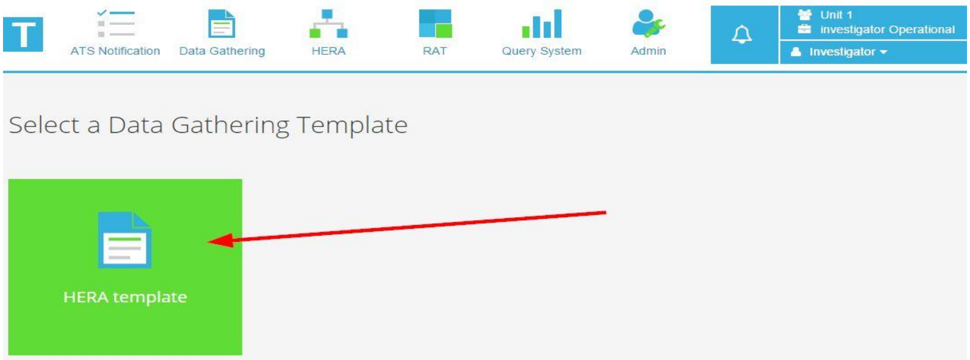


Figure 4.1-3 STEP 2: Choose template for the Occurrence

Step 3: Under "**Error**" tree node you will see "**HERA**" layout. Select it and you will see on the right side "**Error Detail**", "**Error Mechanism**" and "**Information Processing**" flowcharts navigation buttons after the HERA Information section.

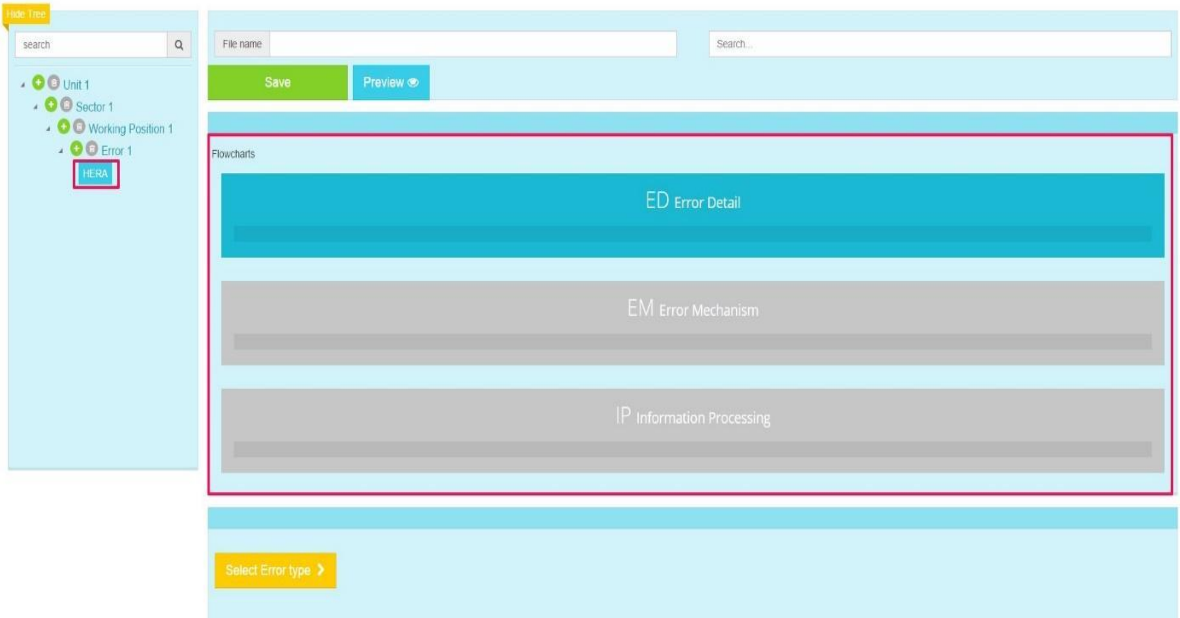


Figure 4.1-4 STEP 3: Flowcharts Navigation Panel

Step 4: Click on "**Error Detail**" button and ED flowchart will be opened.

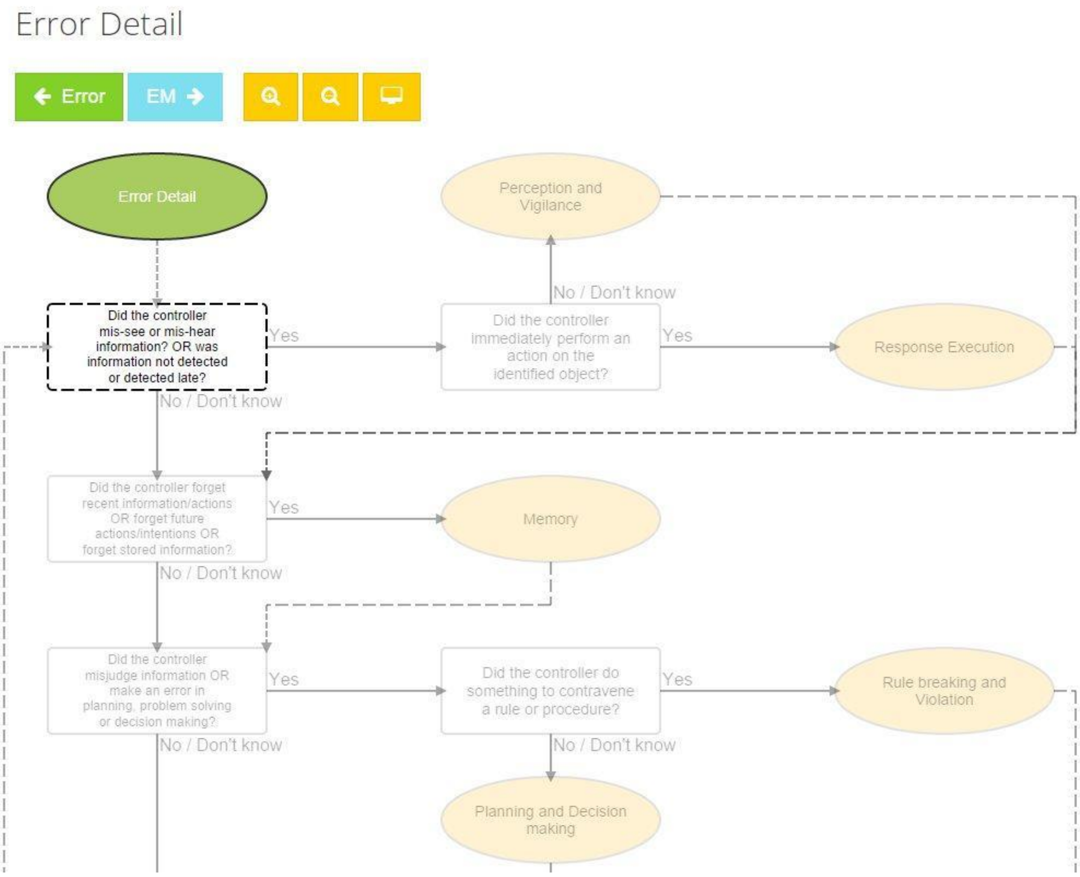


Figure 4.1-5 STEP 4: Error Detail Flowchart

Step 5: Click on the shapes with dotted line (rectangles and ellipses) and answer to the questions until you reach one of the orange ellipse node. When you click this node a popup will appear that asks you if you are sure you want to navigate to Error Mechanism flowchart. The selected path will be colored with green. You can return whenever you want back in the path by clicking one of the green marked shapes.

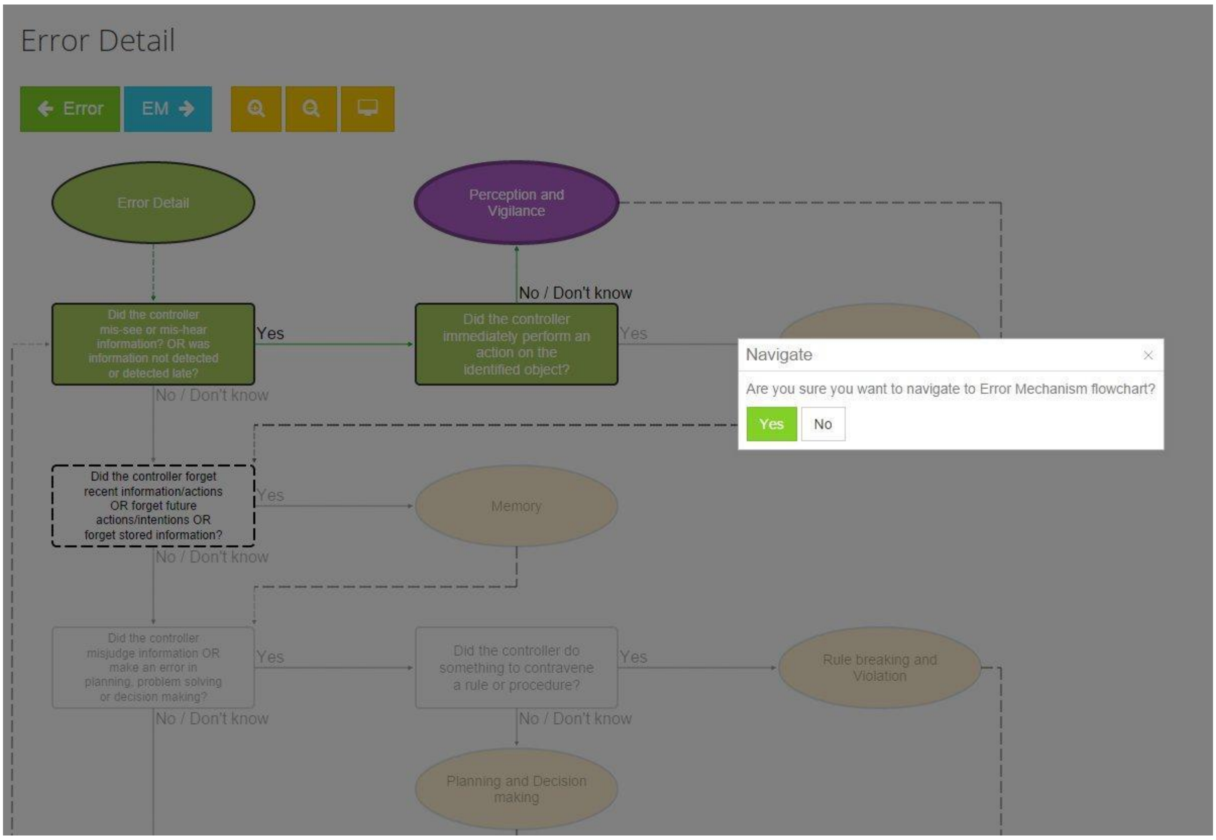


Figure 4.1-6 STEP 5: Answering questions

Step 6: After clicking "**Yes**" on the dialog window, "**Error Mechanism**" flowchart will appear. Here you have to do the same you did before in order to navigate to "**Information Processing**" flowchart.

Figure 4.1-7 STEP 6: Error Mechanism Flowchart

Step 7: Same behavior for "**Information processing**" flowchart.

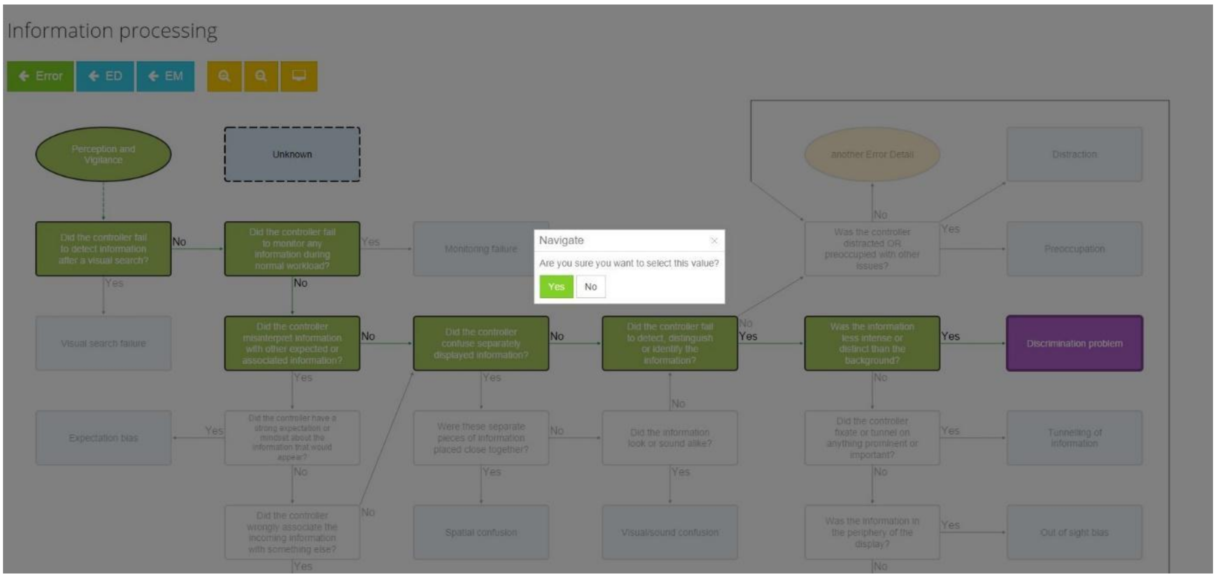


Figure 4.1-8 STEP 7: Information Processing Flowchart

Step 8: An important feature that you can use is *zoom feature*. Click on plus magnifier to zoom in and on minus magnifier to zoom out. There is a third button for initial state.

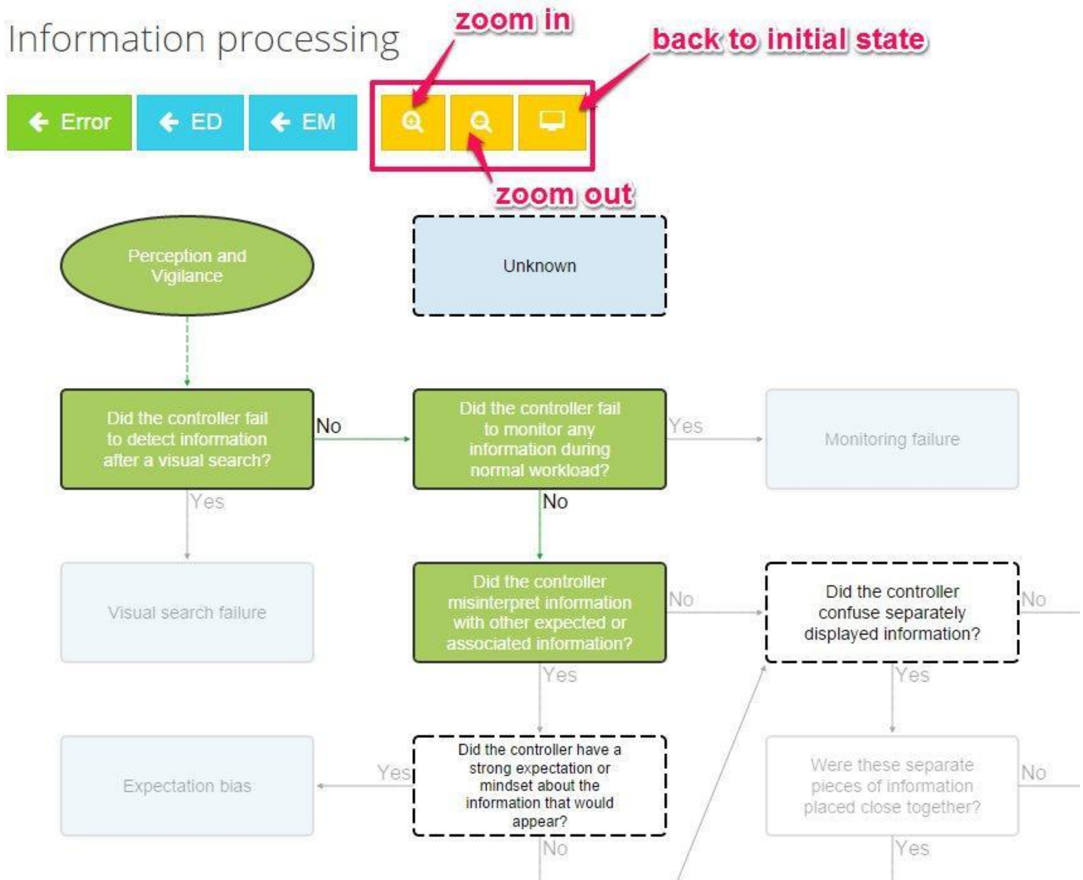


Figure 4.1-9 STEP 8: Zoom feature

Step 9: To navigate between flowcharts you can also use the navigation buttons.

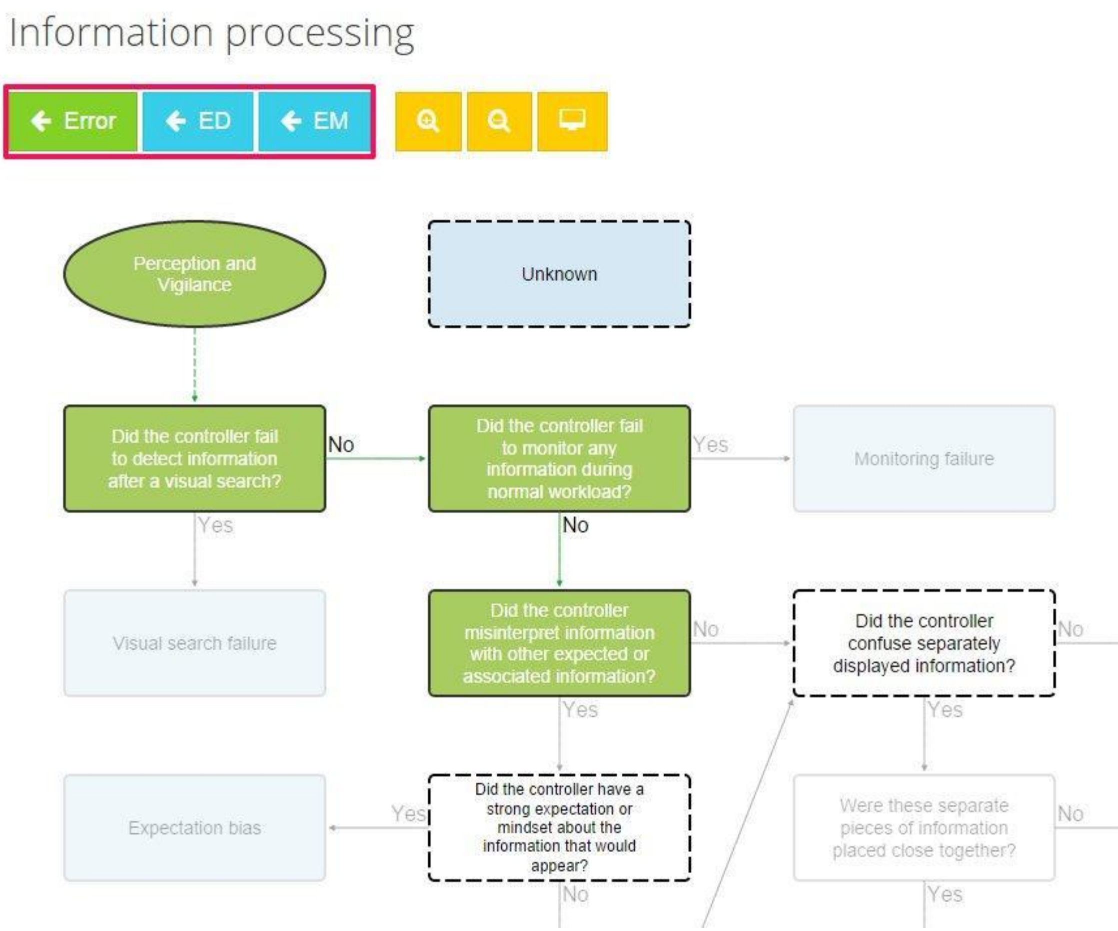


Figure 4.1-10 STEP 9: Navigate Back

Step 10: ED, EM, and IP selected values will be displayed on the flowcharts buttons in Data Gathering screen.

4.2 Using the HERA inventory

The HERA inventory is the centralized place for managing all HERA records: create, edit, delete.

For more information on the functionality and capabilities of the inventory, please see the dedicated Chapter 8. Using the TOKAI data inventory.

5 Statistics Module

5.1 Taxonomy Query System

The query system enables the users to create powerful query rules on any available taxonomy terms and also to create different combinations of taxonomy terms.

To be able to use *Query System and Statistics module*, you must be a user assigned in a role with the "**Perform Statistics"** permission over one or more units.

5.1.1 The Query System inventory

The Query System Inventory is the central place of management for your queries. To access the Inventory page click the **Query System** from the main menu.

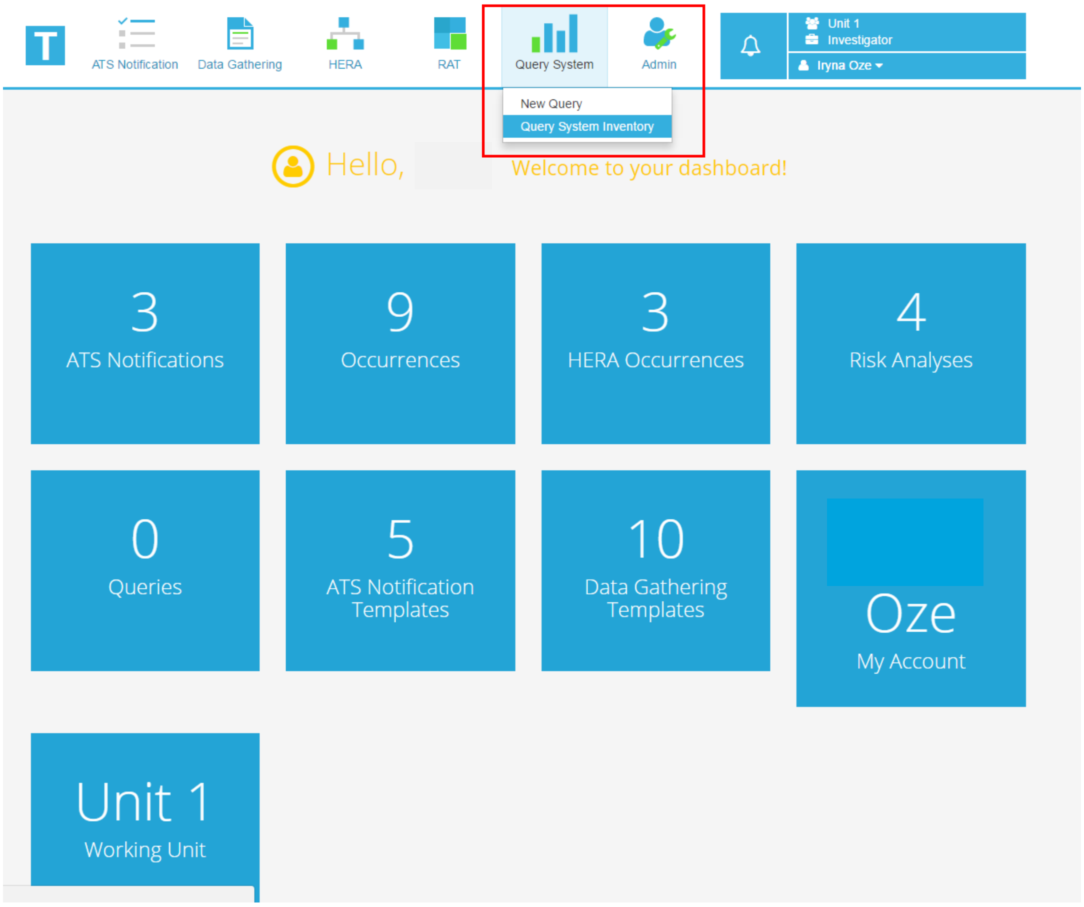


Figure 5.1-1 Accessing the query system

The queries which you have access to are displayed in a grid. The grid allows user to filter queries using the grid's built-in filtering functions.

In the Inventory you have access to functions for **creating** a new query, **editing** an existing one, **delete** and **run** a query. For more information on the functionality and capabilities of the inventory, please see the dedicated Chapter 6. Using the TOKAI data inventory.

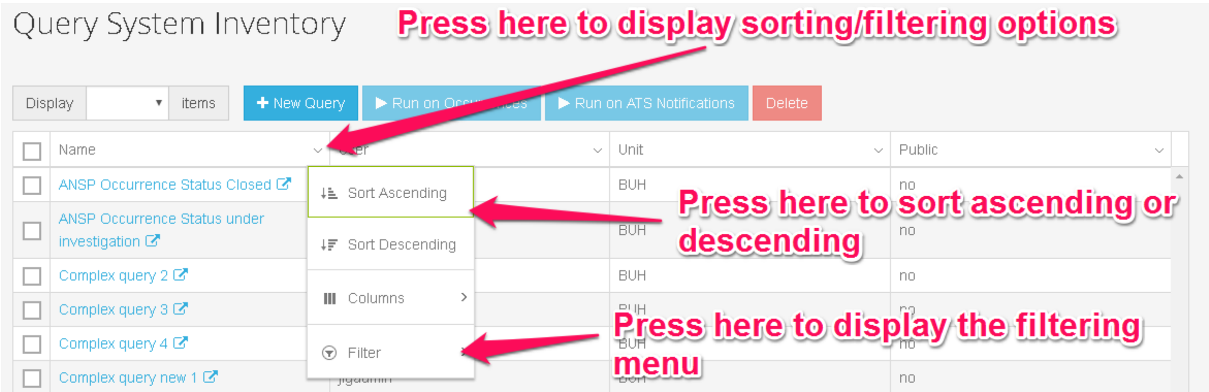


Figure 5.1-2 The query system inventory

5.1.2 Create a new query

To create a new query, press the "***New Query***" button from the Query System Inventory page. The page helping to create a query is displayed.

On this page you can find the following 3 main sections:

1. **Query Information section**: contains the Query Name and Query Description fields.
2. **Filters** – all query able fields from the taxonomy (fields which collect at least a value) can be used to create a filter.
3. **Tree-like filters**: for querying by Type of Occurrence, Event Types, Descriptive Factors, Explanatory Factors, ATM Services.

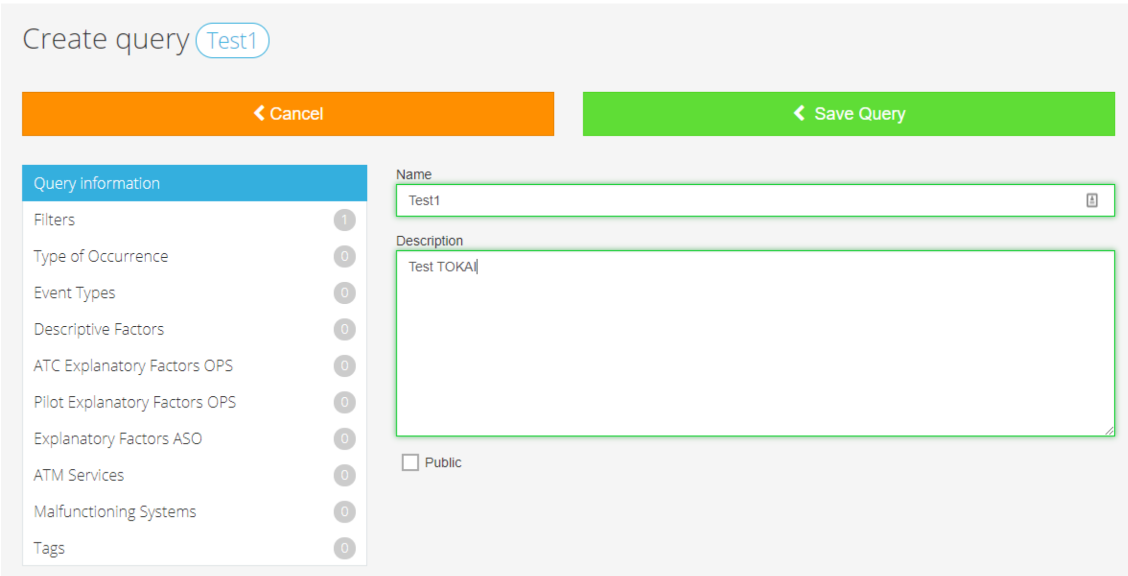


Figure 5.1-3 New Query

In order to ***save*** a valid query, the user must fill in the Name of the query and add at least one filter.

To ***make a query public*** for other users in the organization, check the "**Public**" option beneath the query description.

NOTE: Other users from the organization will be able only to view and run the query and will be UNABLE to edit it.

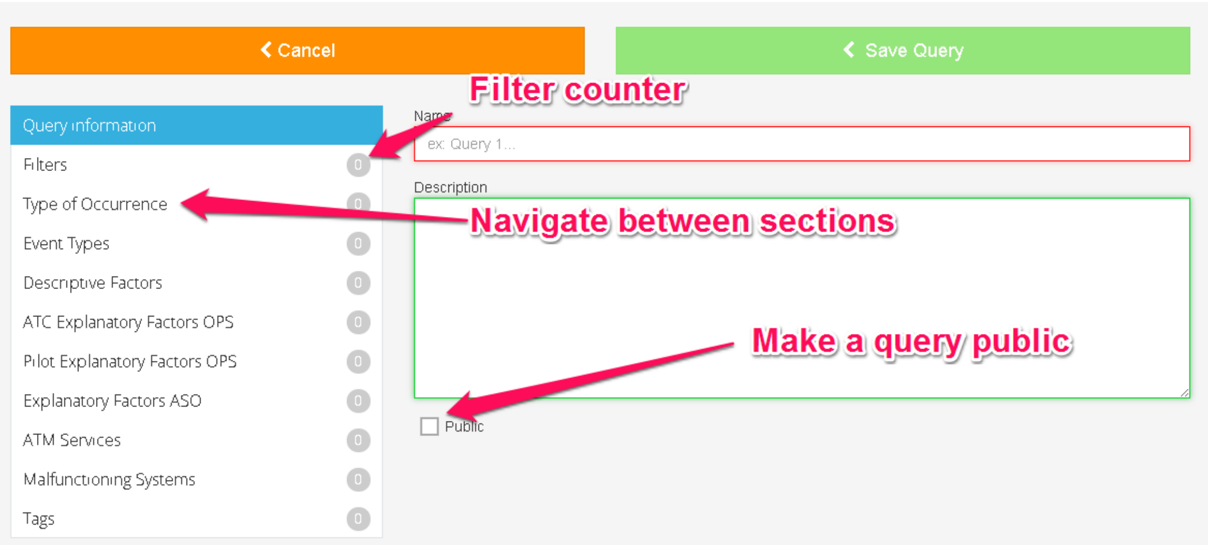


Figure 5.1-4 Create a new query

5.1.3 Add a new filter to a query

To add filters, click the Filters tab in the left menu. *(See* Figure 5.1-4 *above)*

When adding a filter, there are two options for the user to choose, as shown below.

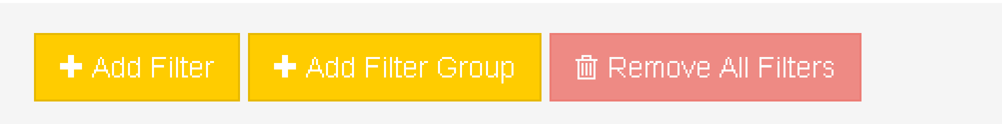


Figure 5.1-5 Filter menu

- **Add Filter**
- **Add Filter Group**
- **Remove All Filters**

A filter is composed of the following parts:

- **Input**: the field from the taxonomy which you want to query – i.e. Aircraft Type, Type of Form, National Incident Reference Number, etc.
- **Boolean operator**: is / is not – to confirm or negate the filter condition.
- **Query Operator**: Equals, Starts with, Ends with, Contains, Less than or equals, Less than, Greater than or equals, Greater than. This operators list adapts to the data type of the selected input to be queried.
- **Value**: the value for the input to be queried.

- To add a new filter, click the "***Add Filter***" button again. A new filter placeholder is displayed.

To select the input, click in the "***Term***" textbox.

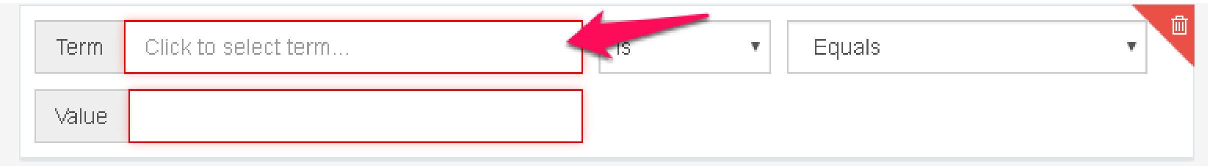


Figure 5.1-6 Accessing the taxonomy

A window with all the fields from the taxonomy is displayed. Use the search function to locate the desired field. If a term with more than one input is selected, a new smaller window is displayed, asking you the select the input.

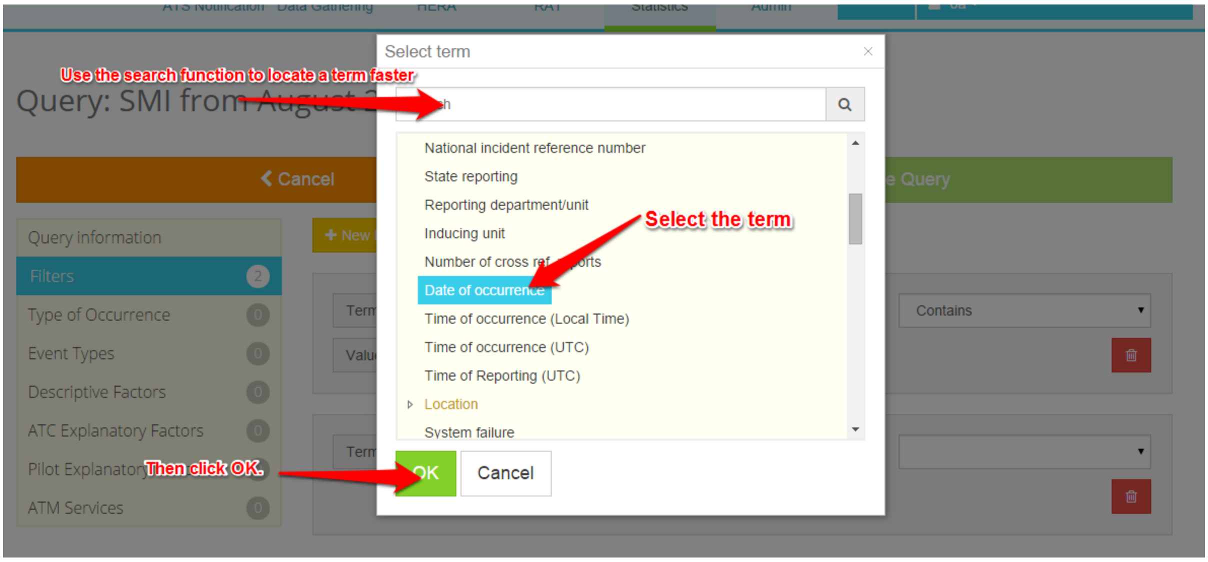


Figure 5.1-7 Selecting a taxonomy term

Select the Boolean Operator and the Query Operator from the two Dropdown Lists.

Select the value from the widget provided by the control (date picker, time picker, dropdown list, checkbox list, checkbox) or input the value manually (if you selected a field of type text or number).

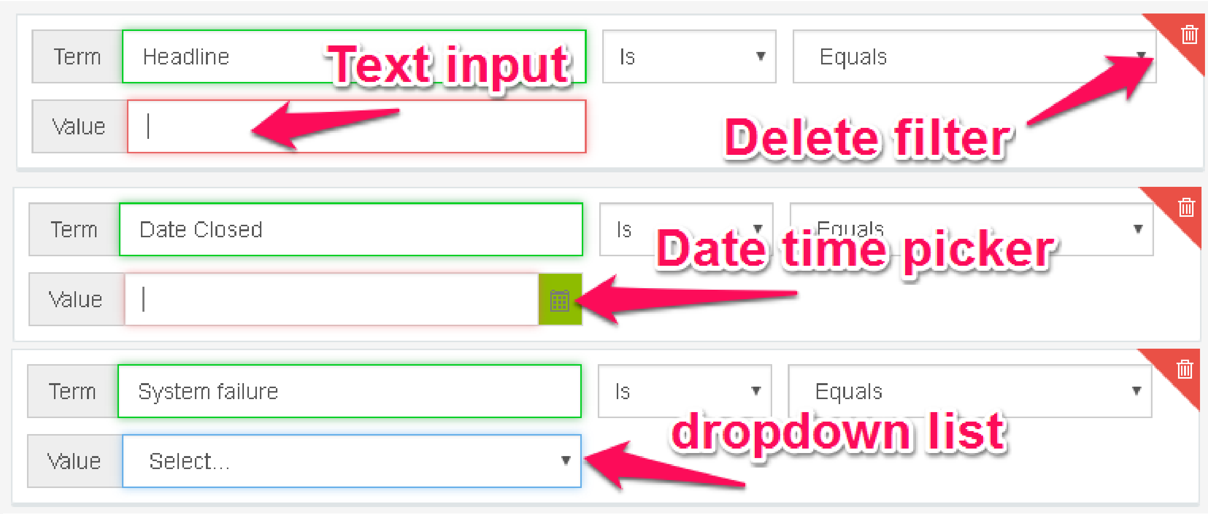


Figure 5.1-8 The query options

- **Create range queries** by selecting the same field twice and inverting the Query Operator (greater than and less than).

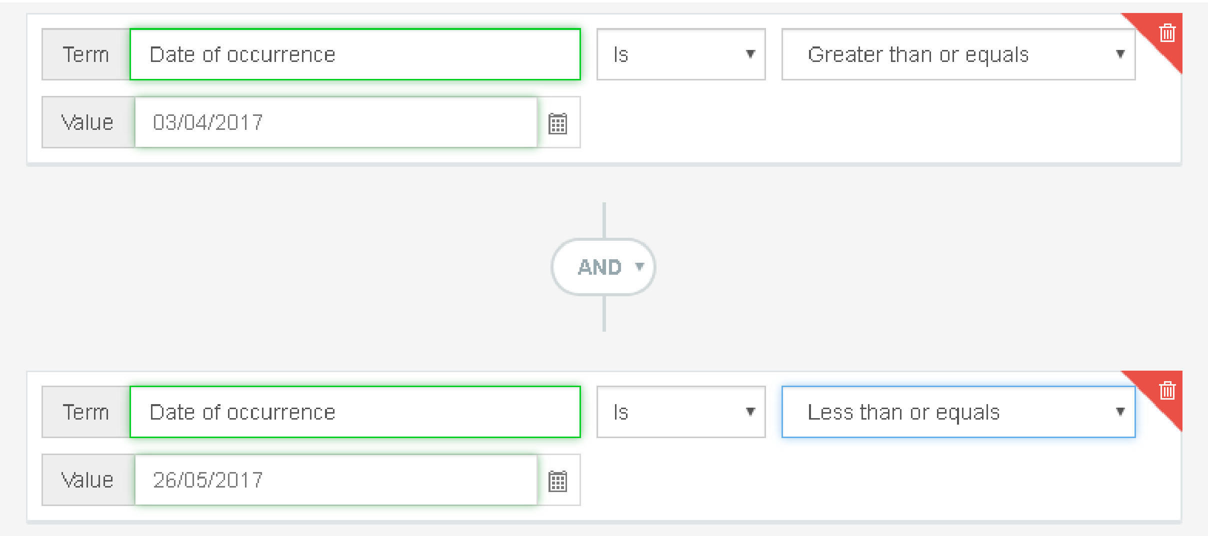


Figure 5.1-9 Creating a ranged query

There are multiple data filters with operators like: **Between**, **The month of**, **The year of**. In addition to those, the user has the possibility to use a dynamic date filter: **Within**.

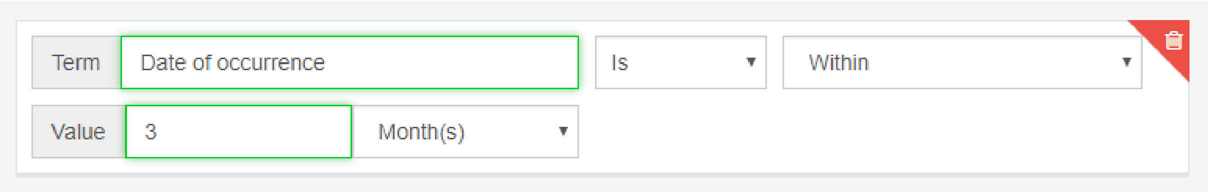


Figure 5.1-10 The query will search for the Date of occurrence within the last 3 months

- To **add a Filter Group**, click on the ***"Add Filter Group"*** button. A filter group is composed of two Filters and a Logical Operator.

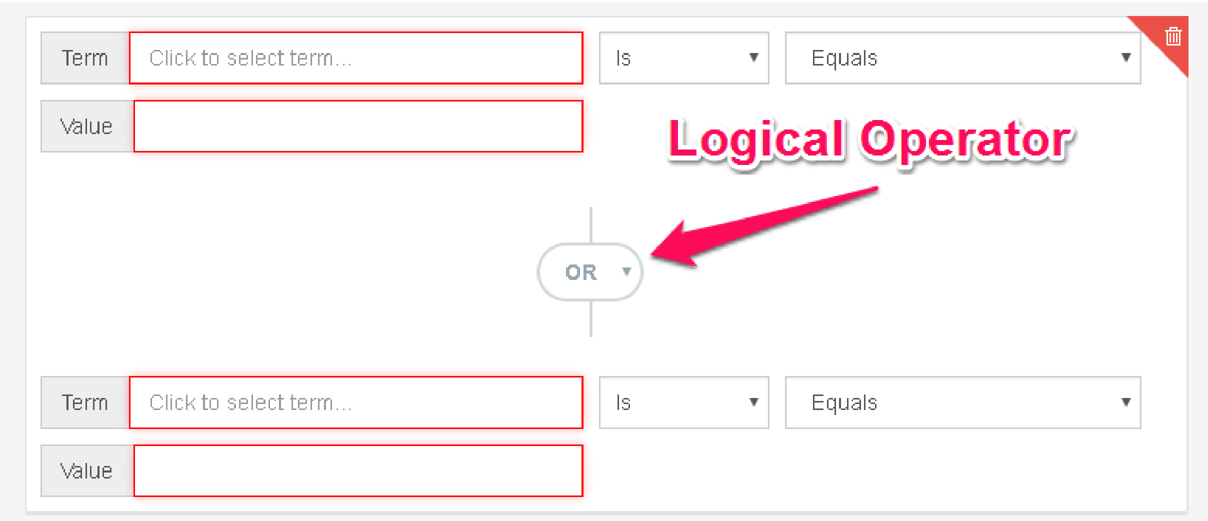


Figure 5.1-11 Logical operators between Filters

Both types of filters are bounded by Logical Operators to make the user able to form a powerful Query rule.

- To ***delete*** a filter, click the red ***Delete* button** on the right side.
- To ***create*** a filter by Type of Occurrence, Event Types, Descriptive Factors, Explanatory Factors, ATM Services or Malfunctioning Systems, **click the corresponding tab** in the menu on the left side.

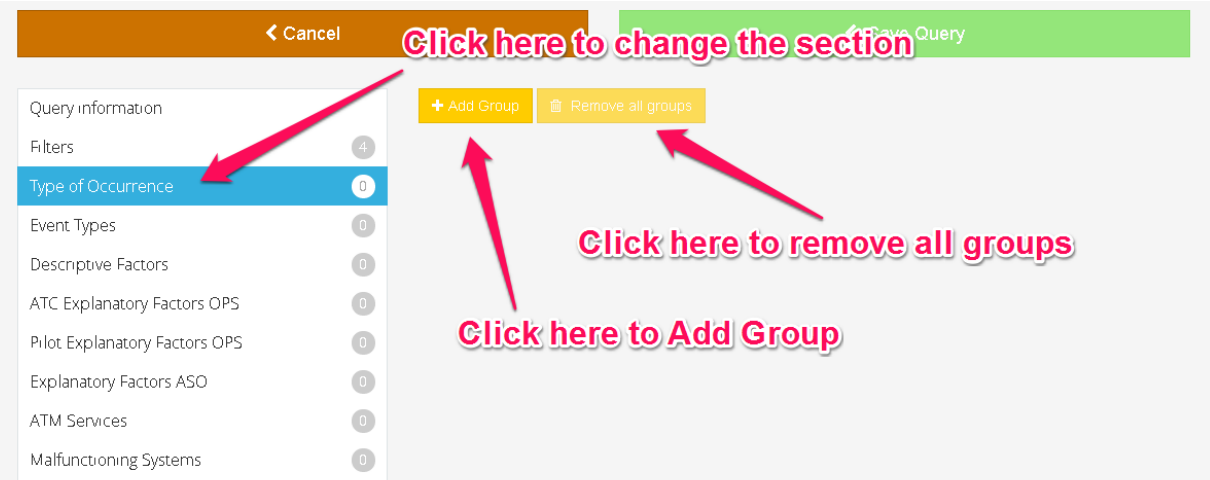


Figure 5.1-12 Other query options

Click the "***Add Group***" button to open a new group and be able to select the desired ones.

Click on the ***"Select Types of Occurrence"*** to open the window with the available terms.

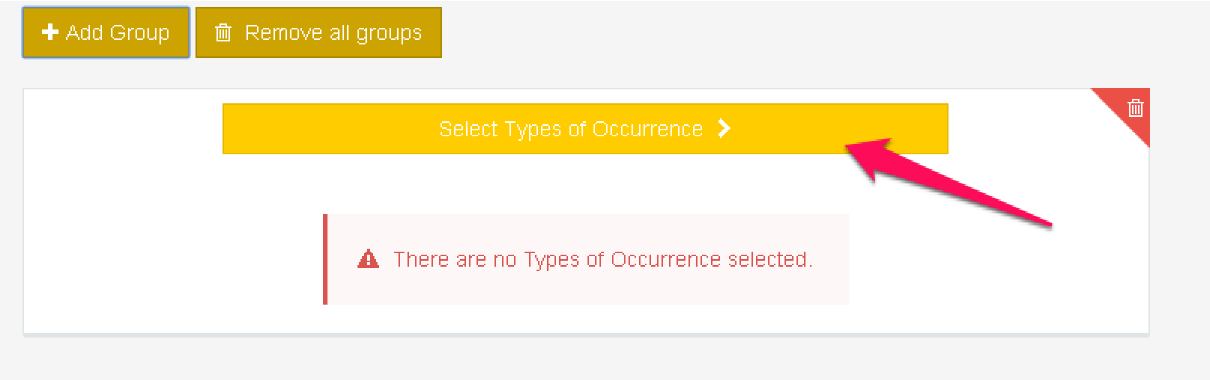


Figure 5.1-13 Select the desired Tree terms

Use the search function to locate the desired factors. Select them in the tree and then click the "**Add"** button (when selecting a child factor, all parent factors are automatically selected).

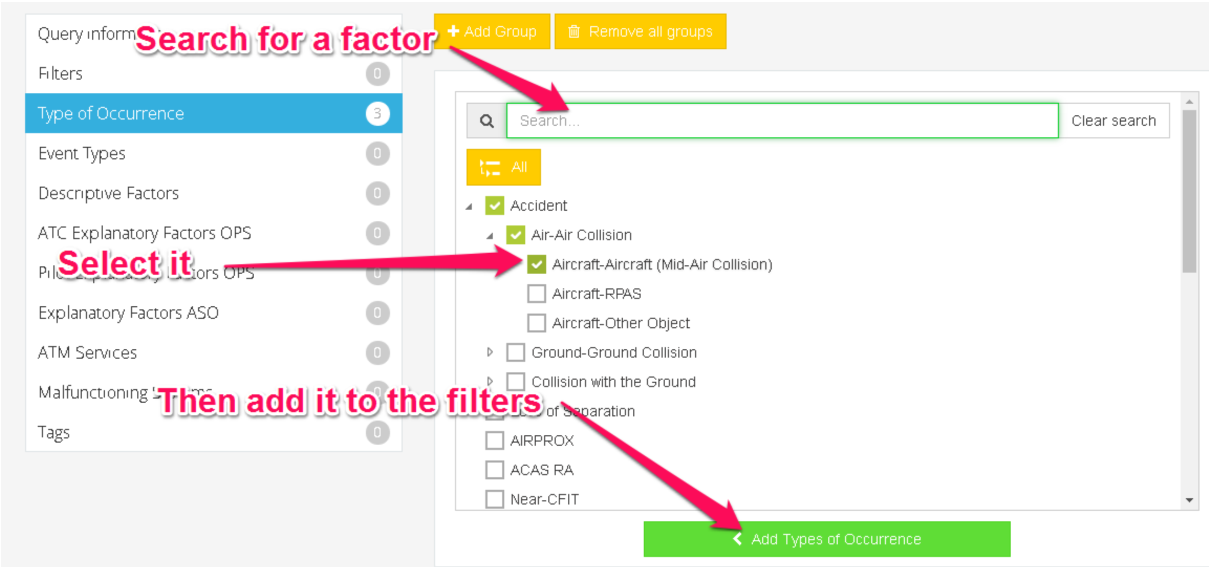


Figure 5.1-14 Selecting from a tree control in query system

The factors are then displayed in the page.

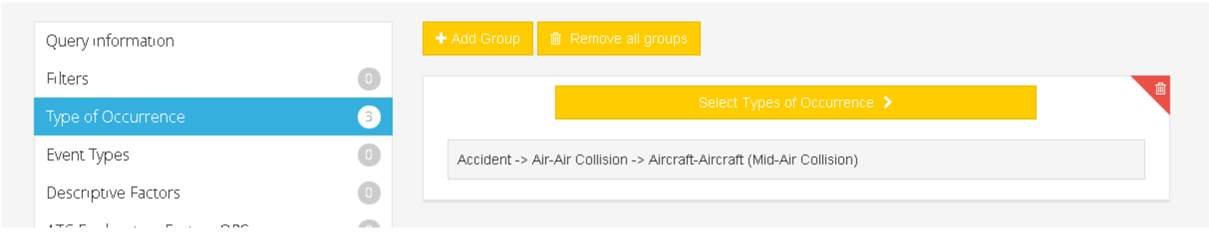


Figure 5.1-15 Tree control result in a query

The Groups are separated by the Logical Operator ***"OR"***, as shown below.

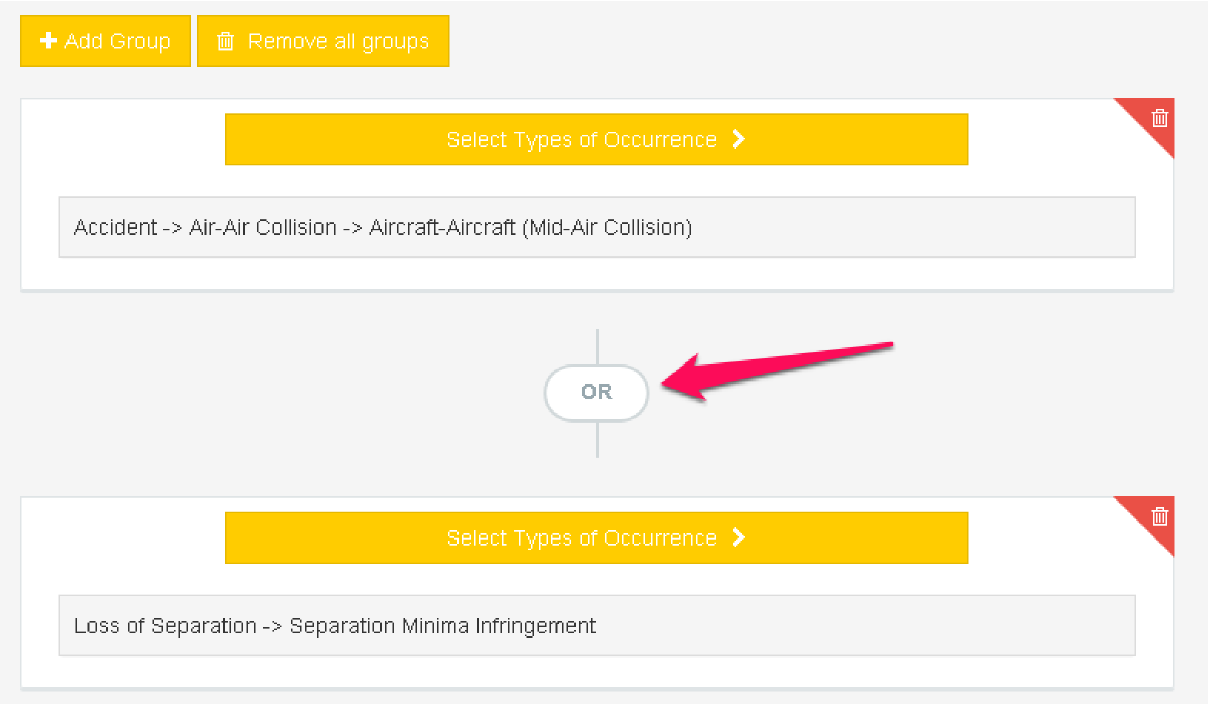


Figure 5.1-16 Tree control logical operator

- To **remove a factor from the tree**, click the "***Select***" button to open the window again and deselect the factor from the tree.

The operations for adding other types of tree-like factors are similar to the one described above.

5.1.3.1 Query by tags

This functionality allows creating a filter by a combination of tags. Click on the "***Tags***" button to display the corresponding section and then simply search and add the tags you want to query for.

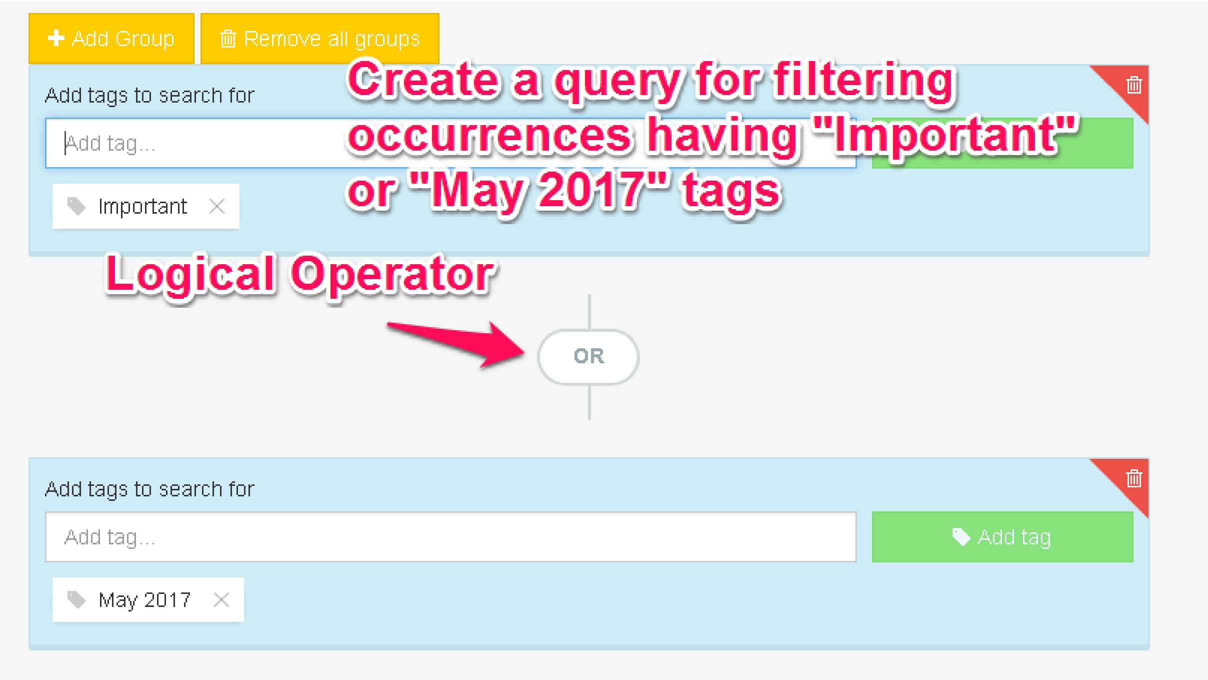


Figure 5.1-17 Create a Query by Tags

When the query is finalized, you can click the "***Save Query"*** button. The query is saved and it's displayed in the Inventory page.

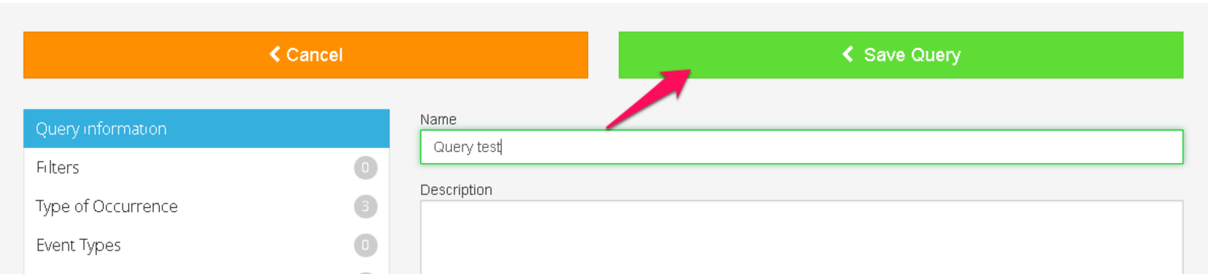


Figure 5.1-18 Saving a query

5.1.3.2 Query by feedback

This functionality allows creating a filter by feedback date. Click on the "***Feedback****"* button to display the corresponding section and then add *Filters* or *Filter groups* just like the **Filters** section.

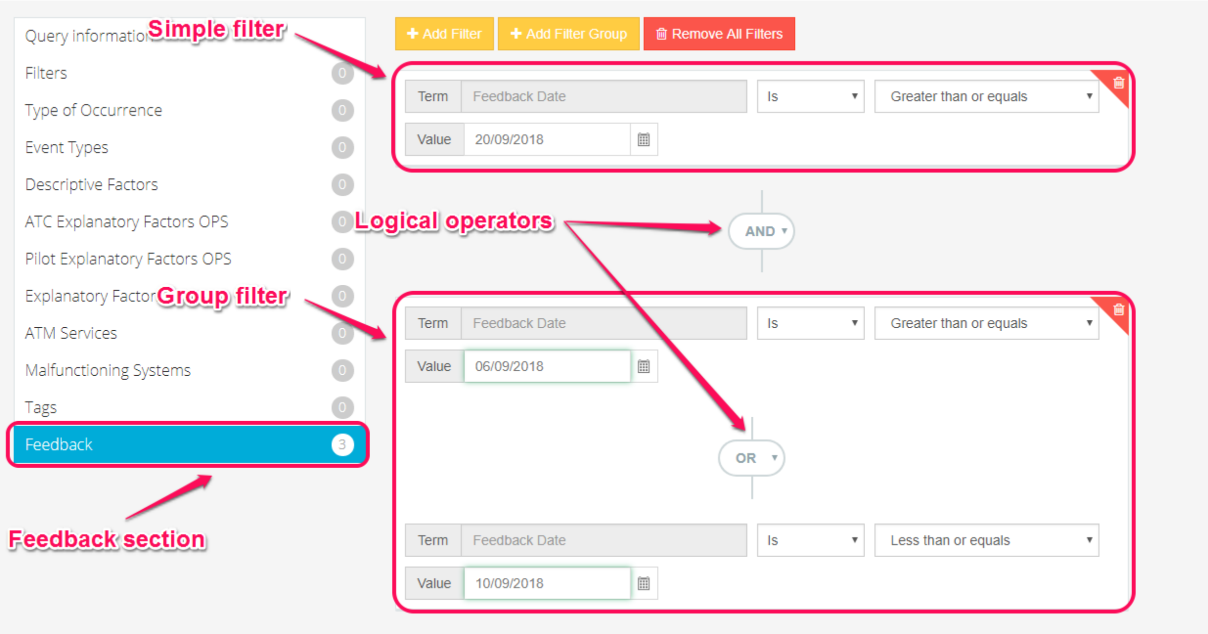


Figure 5.1.3.2 - 1 Saving a query

5.1.4 Query logic explanation

Running a query would result in a number of Records displayed in the Data Gathering / ATS Notification Inventory. Those Records are chosen according to the logic formed by the user behind the query.

The Query sections can be divided into three main sections:

1. **Filters**
   The logic behind the **Filters** section is developed to provide a very complex and powerful way to interrogate the database. The ***"Filter Groups"*** have priority over the simple ones, such that they are executed first. The Records resulted from executing the Filters are *intersected (AND)* or *united (OR)*, depending the Logical Operator chosen. The ***"AND"*** operators have priority over the ***"OR"*** ones.

2. **Tree-like filters**: for querying by Type of Occurrence, Event Types, Descriptive Factors, Explanatory Factors, ATM Services.

The **Tree-like filters** are developed to interrogate the database in the way presented below. The result of a group is the *intersection* of the chosen ***"Tree Controls"*** in that group, which then are united with the other results of the remaining groups. For that, the Logical Operator between the Groups can only be the ***"OR"*** operator.

3. Tags

The **Tags** are working the same as the Tree-like filters presented above. The intersection of the Tags found in a ***"Group"*** is united with the intersection of the Tags of each one of the remaining groups.

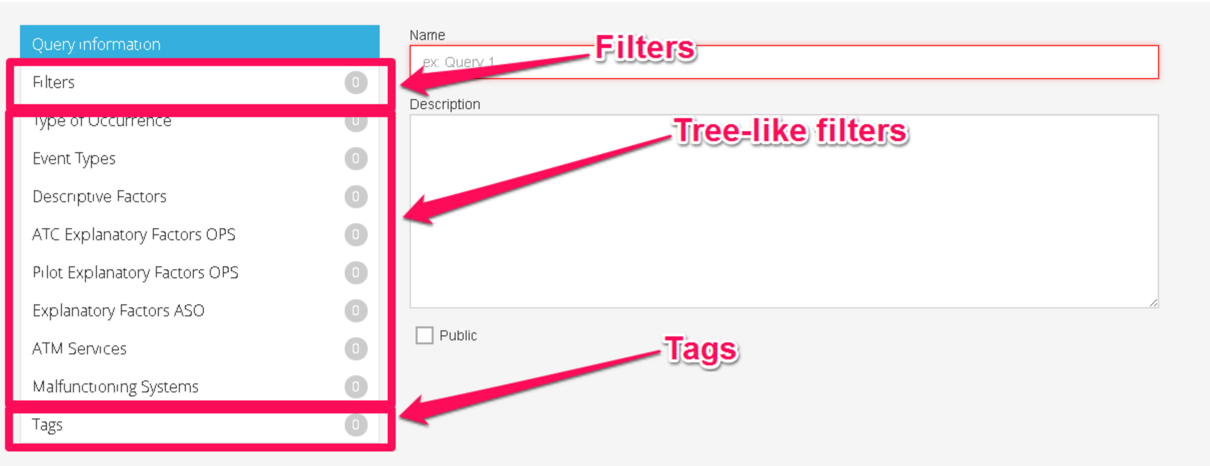


Figure 5.1-19 Query sections

The outcome of the query is the result of meeting all the conditions implemented in all these sections above, exactly like having an ***"AND"*** operator between all of them.

When generating the query, the Records which pass the conditions set on all the Tabs (Filters, Type of Occurrence, Event Types, Descriptive Factors, ATC Explanatory Factors, Pilot Explanatory Factors, Explanatory Factors ASO, ATM Services, Malfunctioning Systems, Tags) will be contained in the results set of the query.

5.1.5 Editing a query

To modify an existing query from the Inventory page, locate it using the search functions and then click its name. The query will be opened for editing.

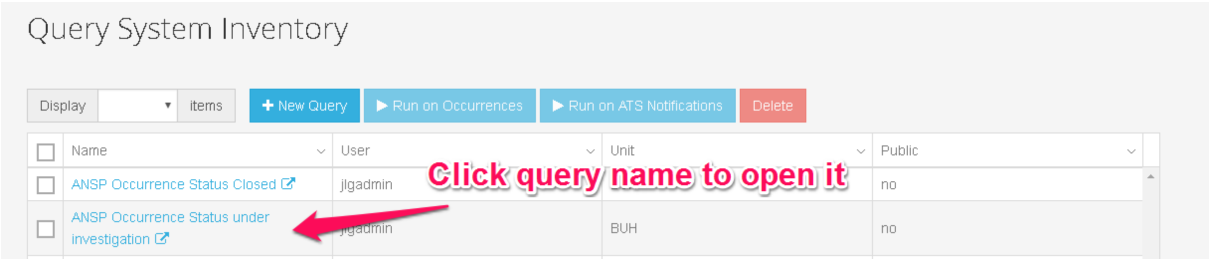


Figure 5.1-20 Edit a query

5.1.6 Running a query

To run a query, select it by clicking its checkbox in the left, and the click the “***Run Query***” button.

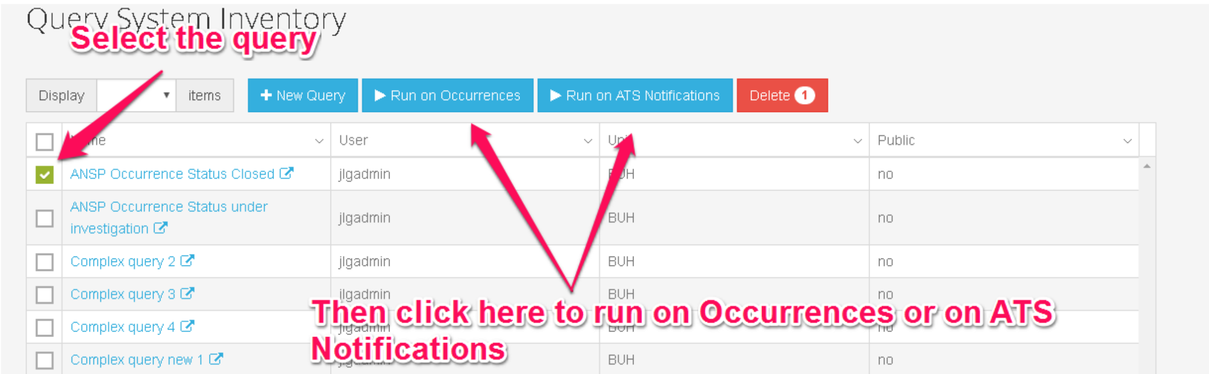


Figure 5.1-21 Running queries

The query is executed, and its results are displayed in the Data Gathering/ATS Notification Inventory page. From here you have access to all operations regarding an occurrence/ATS notification (export, generate report, edit, delete, etc.). The name of the query run is also displayed on top of the page.

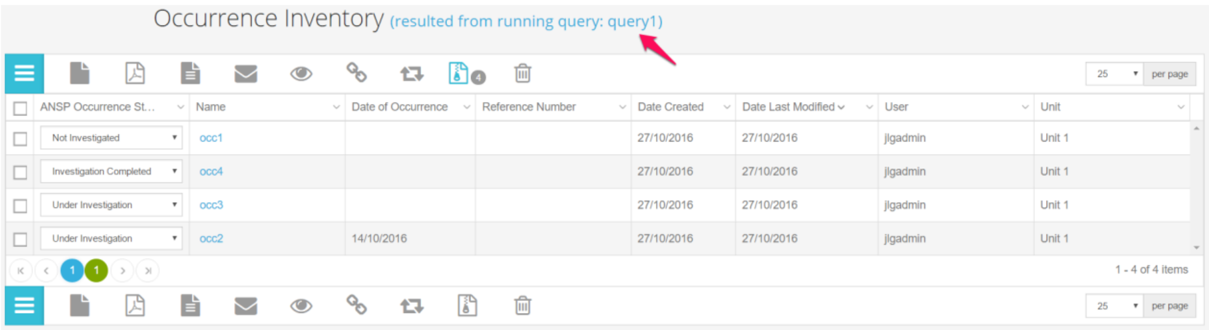


Figure 5.1-22 Query Results

5.1.7 Delete a query

To delete a query select it and then click the “***Delete***” button.

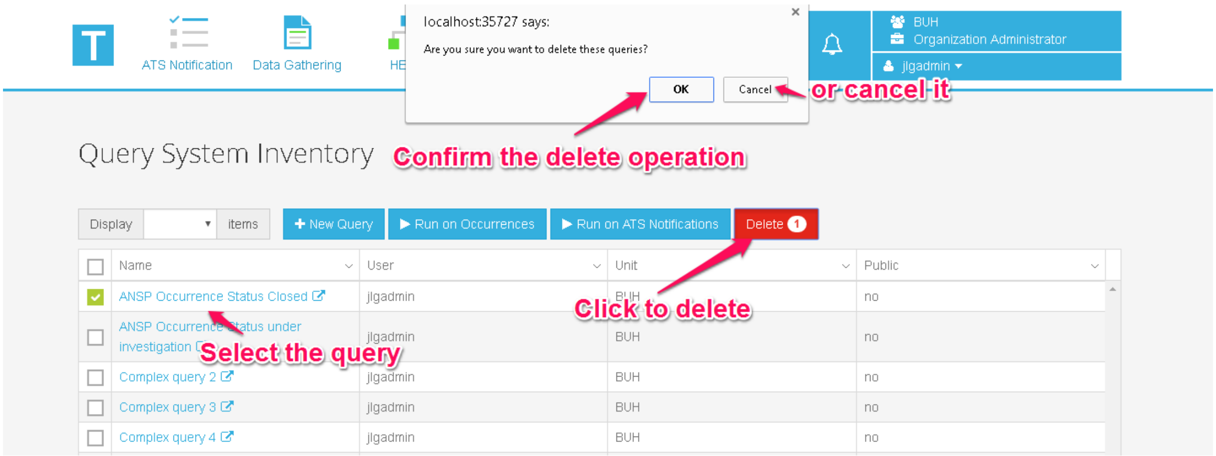


Figure 5.1-23 Deleting a query

5.2 RAT specific statistics

The Statistical module of RAT can be accessed by clicking ***RAT -> Operational Occurrences Statistics*** **or** ***RAT -> ATM Specific Occurrences Statistics***. The difference between Operational and ATM Specific occurrences statistics is the structure of the risk matrix.

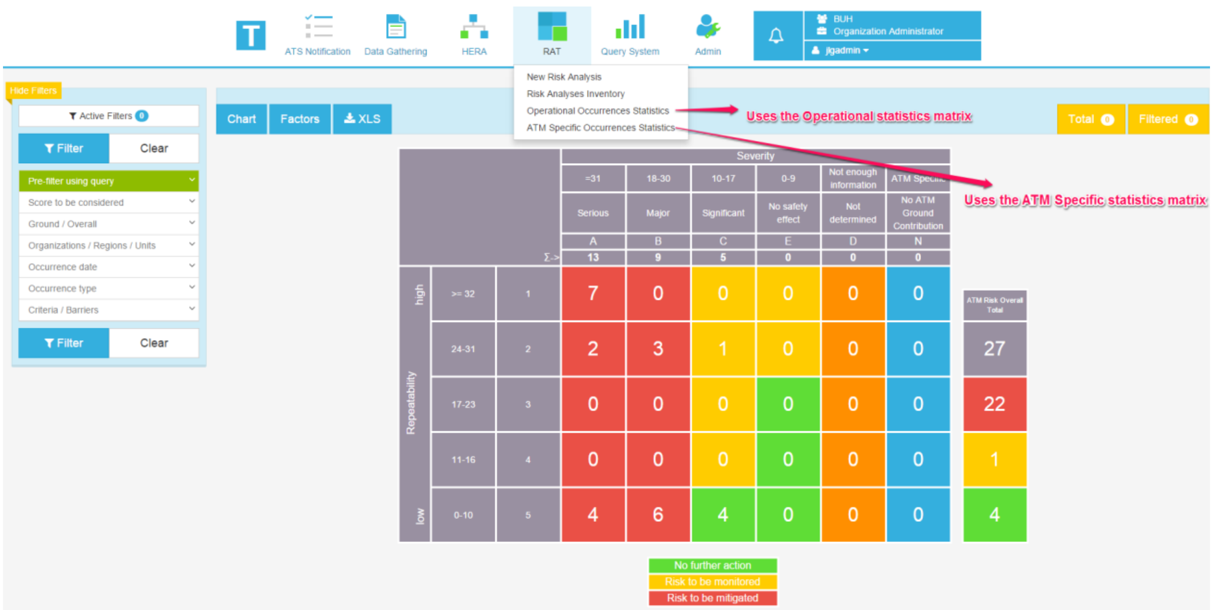


Figure 5.2-1 Accessing RAT statistics

5.2.1 Statistics page structure

The Statistics page has three main sections:

1. The **risk matrix**, in the center of the page;

2. The **toolbar** containing buttons for risk chart, causal factors distribution and export to Excel;
3. The **filters** section, on the left side of the page.

Please see the figure below

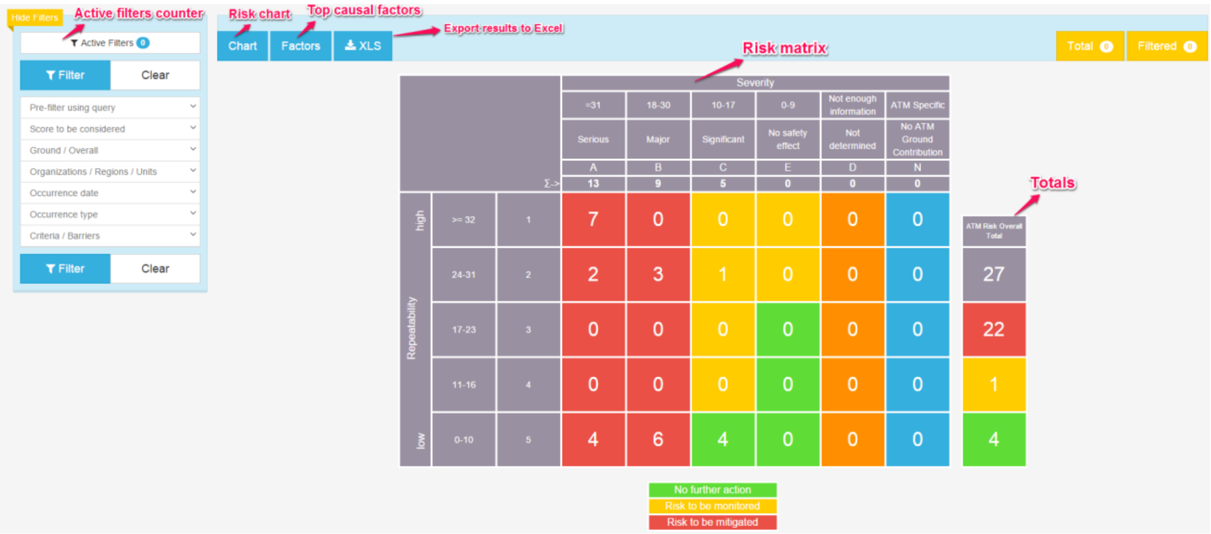


Figure 5.2-2 Statistics overview in RAT

5.2.2 Filtering System

The following filter types can be applied in RAT Statistics:

5.2.2.1 Filter by computed risk

You can select which *Score to be considered* when filtering:

- ***All***: take all risk analysis into consideration
- ***Modified manually***: take into consideration only risk analysis that have a manually modified score by the investigators.

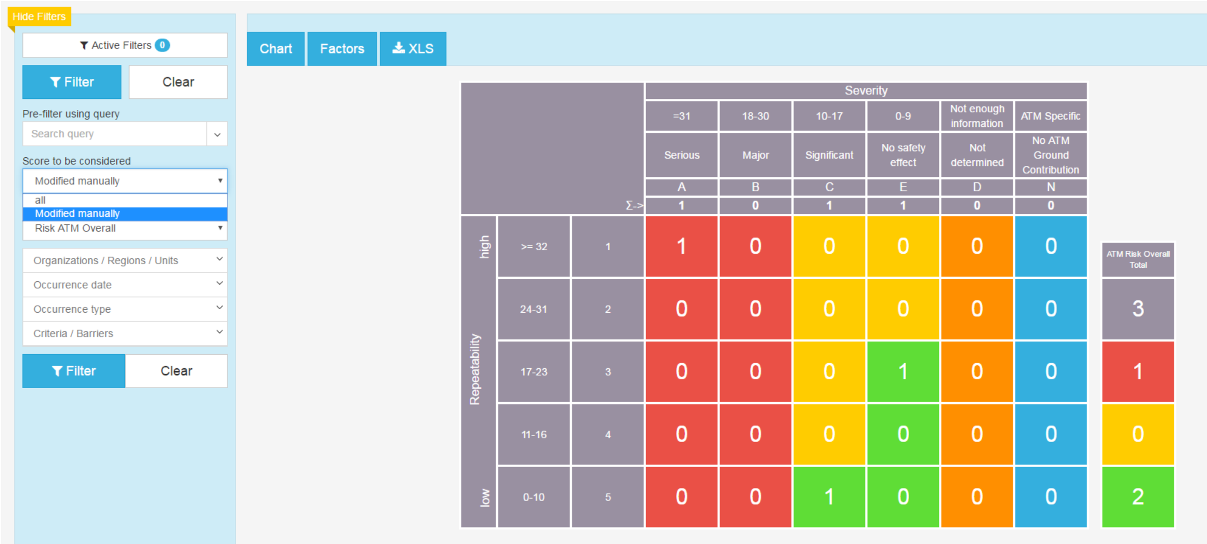


Figure 5.2-3 Filter by computed risk

5.2.2.2 Risk Discrimination – Ground/Overall

Each Risk Analysis has two risk components. This filter enables you to select the target risk component for the statistics: *Risk ATM Ground or Risk ATM Overall*.

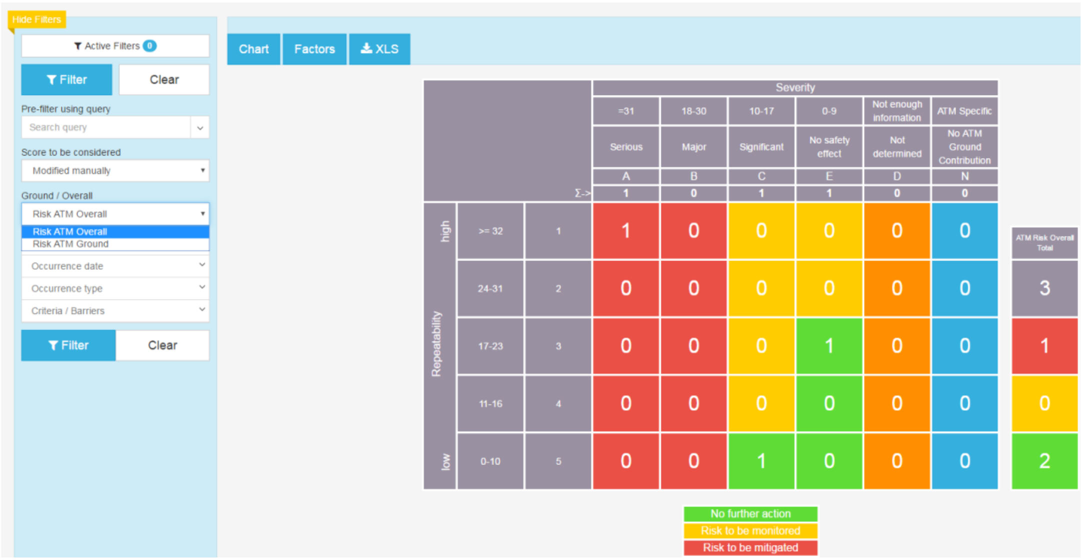


Figure 5.2-4 Filter by Risk discrimination

5.2.2.3 Organization / Region / Unit

This filter will allow a user with specific management rights to see the statistic at organization, region or unit level.

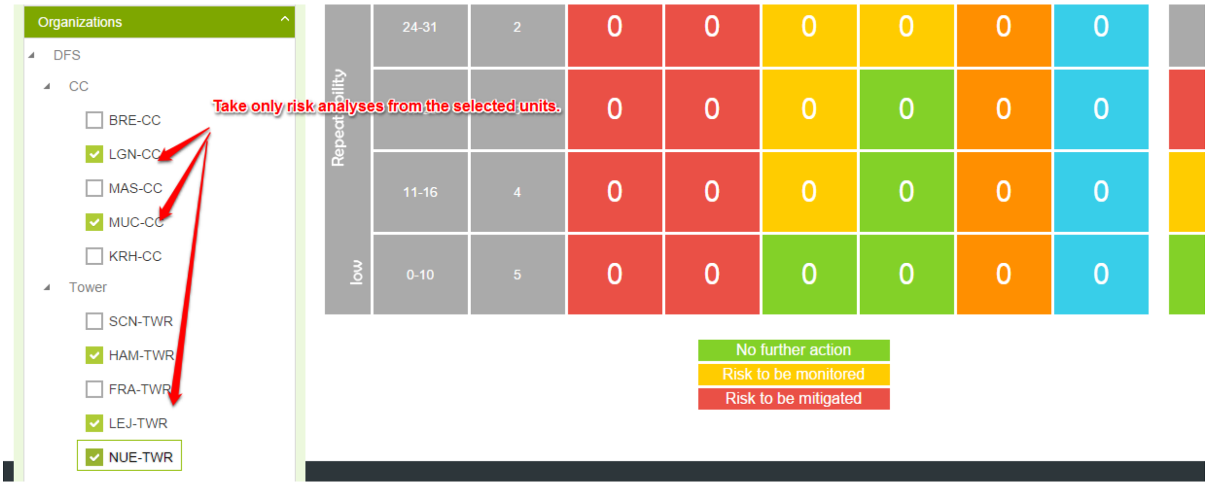


Figure 5.2-5 The organization filter

5.2.2.4 Occurrence Date

To occurrence date filter can be used for retrieving risk analyses from a specified time interval. An option for selecting or rejecting the ones with empty occurrence date is available.

Figure 5.2-6 The date filter

5.2.2.5 Occurrence Type

This filter can be set for discriminating between different types of risk analyses available (in fact, the RAT sheet used).

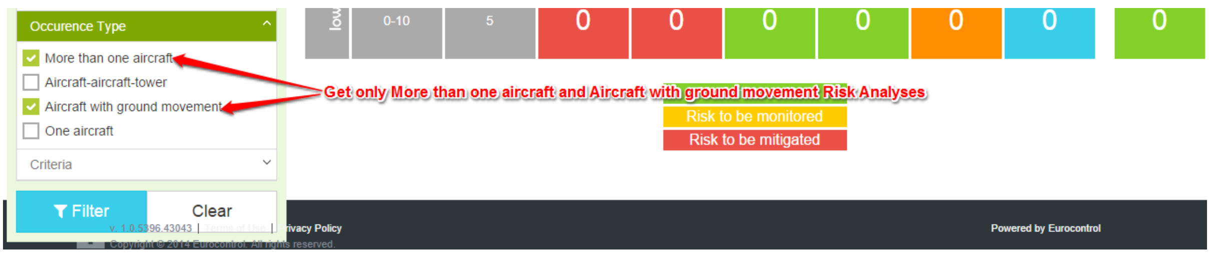


Figure 5.2-7 The occurrence type filter

5.2.2.6 Criteria Filter

This option can be used for adding filters by the answers to the criteria in the risk analyses

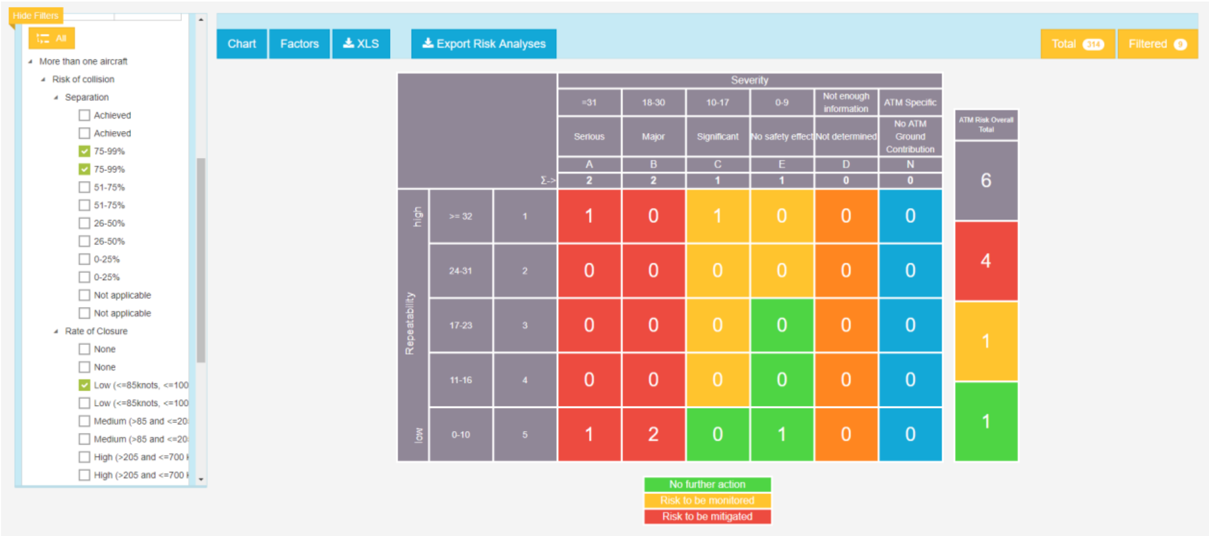


Figure 5.2-8 Criteria filter

ATTN:

In the new version of the Look-up table, added in v2.7, some new Criteria options are added and others we're removed.

Look-up table v1

	Service provided	Service provided		Operational function	Type of Failure	Service affected	Extension	Scope	Duratio
S1	Communication	Communications	S1	Air/Ground Communication	Total Loss of function	Area control services	CWP	One	< T1
S2	Navigation		S1	Ground/Ground Communication	Partial Loss of function	Approach control services	Sector Suite	Some	> T1
S3	Surveillance	Navigation	S2	Navigation	Redundancy Reduction	Aerodrome control services	Multiple Suites	All	
S4	Air Traffic Services	Surveillance	S3	Air Surveillance	Undetected Corruption of function	Oceanic service	Unit		
S5	Airspace management		S3	Ground Surveillance	Loss of Supervision	Flight Information Services			
S6	Air Traffic Flow Capacity Management		S3	Surface Movement Guidance & Control	Corruption of Supervision				
S7	Information Services	Air Traffic Services	S4	Flight Plan Information					
			S4	Flight Information & Alert					
			S4	Ops Room Management					
			S4	Decision Making Support					
			S4	Safety Nets					
		Airspace management	S5	Real Time Airspace Environment					
		Air Traffic Flow and Capacity Managemer	S6	Tactical & Real Time					
		Information Services	S7	Aeronautical Information					
			S7	Meteorological Information					

Look-up table v2

	Service provided New Look-up	Service provided for subcategories		Operational function New Look-up	Type of Failure RAT & New Look-up	Service affected RAT & New Look-up	Extension New Look-up	Scope New Look-up	Duration
S1	Communication	Communications	S1	Air/Ground Communication	Total Loss of function	Area control services	CWP	One	< T1
S2	Navigation		S1	Ground/Ground Communication	Partial Loss of function	Approach control services	Sector Suite	Some	> T1
S3	Surveillance	Navigation	S2	Instrument Navigation	Redundancy Reduction	Aerodrome control services	Multiple Suites	All	
S4	ATS Supported by Automation			Visual Navigation	Undetected Corruption of function	Oceanic service	Unit	One False Alarm	
				Satellite Navigation	Loss of Supervision	Flight Information Services	Guidance	Some False Alarms	
S6	Air Traffic Flow Capacity Management	Surveillance	S3	Air Surveillance	Corruption of Supervision	Navigation Services	NM Position	One False Target	
S7	Information Services	ATS Supported by Automation	S3	Ground Surveillance		NM Airspace Data Management	NM Multiple Positions	Some False Targets	
			S4	Surface Movement Guidance & Control		NM CCAMS	NM Unit	Parallel Take-off	
			S4	Flight data processing		NM Flight Planning		One Aicraft	
			S4	Ops Room Management Capabilities		NM Flow Management		Some Aircraft	
			S4	Decision Making Support Tools				All Aircraft	
			S4	Safety Nets				One Runway	
			S4	Real Time Airspace Environment				Some Runways	
			S4	Surveillance Data Processing				All Runways	
								One Taxiway	
		Air Traffic Flow and Capacity Management	S6	Tactical & Real Time				Some Taxiways	
				Pre-Tactical					
				Strategic					
		Air Traffic Flow and Capacity Management	S7	Aeronautical Information				All Taxiways	
		Information Services	S7	Meteorological Information					

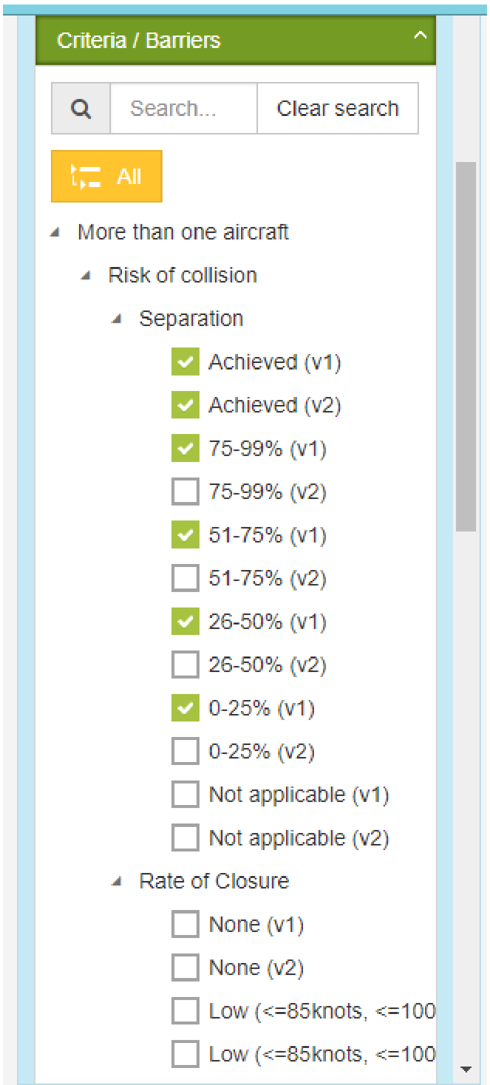
In v2.7, a new criterion was added – "Non-systemic / Technical Failures issue", as well.

To maintain the backwards compatibility with existing RAT's (created prior to v2.7), the technical solution adopted was to assign a LookupVersion to all Criteria options prior to v2.7, LookupVersion

= 1. All existing RAT's will be assigned with LookupVersion = 1, as well. When a RAT created prior to v2.7 is opened, the tool will load the list of options for LookupVersion = 1.

When v2.7 is installed, all Criteria options are cloned, updated accordingly to modifications above and assigned LookupVersion = 2. When new RAT's are created, they will be assigned with LookupVersion = 2 and they will be loaded with the list of options for LookupVersion = 2.

Another issue we had to overcome was to enable RAT statistics to be performed for all RAT's, pre and post v2.7, combined. This is the reason why the Criteria / Barriers filter in RAT Statistics loads both LookupVersion = 1 and LookupVersion = 2 options.



To keep the interface as simple as possible, the version is displayed for each option. They can be selected individually or combined to make statistics on RAT's with different LookupVersion.

5.2.3 RAT Statistics drilldown function

This function offers the possibility to open the risk investigations which are "behind" the risk matrix cells counters. To accomplish this, the user simply needs to click the cell he wants to see the occurrences for. In case the user wants to see all the occurrences of a specific risk, the drilldown can be performed on the panel containing the sum of the occurrences of *Risk to be mitigated, Risk to be monitored, No further Action* and *ATM Risk Total.*

Figure 5.2-9 Display the occurrences with the risk value equal to the one in the cell

The application will display these occurrences in the Inventory page, where all the specific functions are available to be used. The risk value is also displayed.

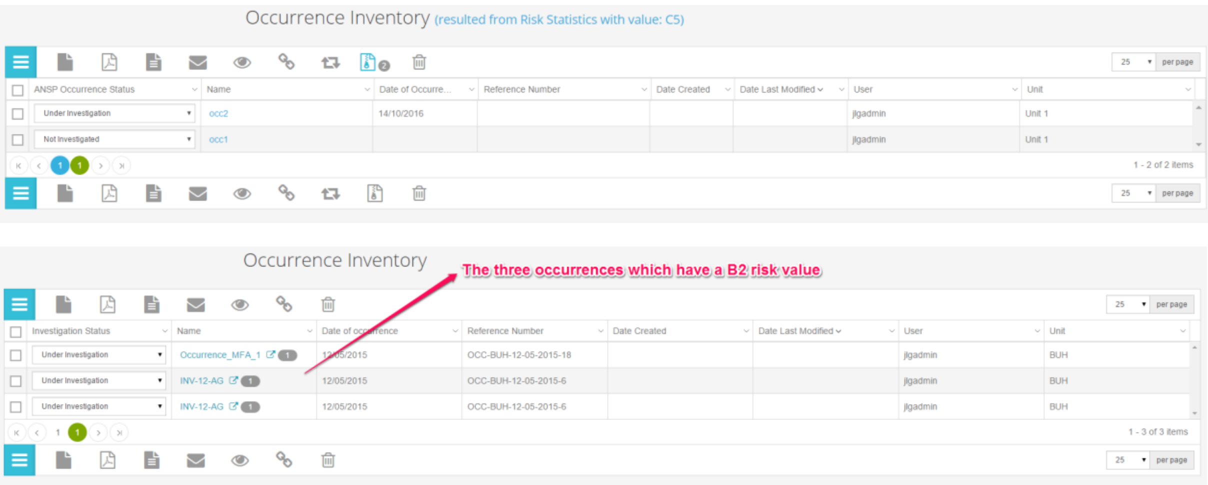


Figure 5.2-10 Selected risk displayed occurrences

5.2.4 Risk Chart

To display the risk chart generated from the values in the Risk Matrix, click the "***Risk Chart"*** button. A section containing the chart will be displayed.

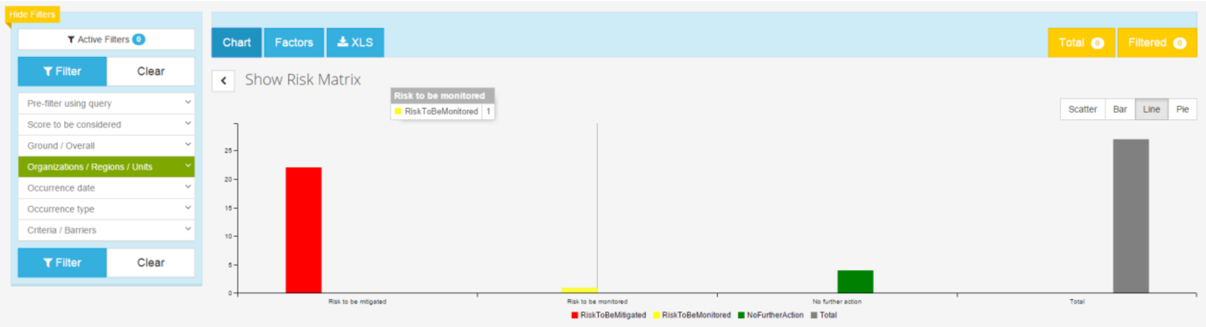


Figure 5.2-11 The risk Chart

5.2.5 Explanatory factors distribution

This function computes the top ten distributions of the causal factors for the filtered set of risk analyses.

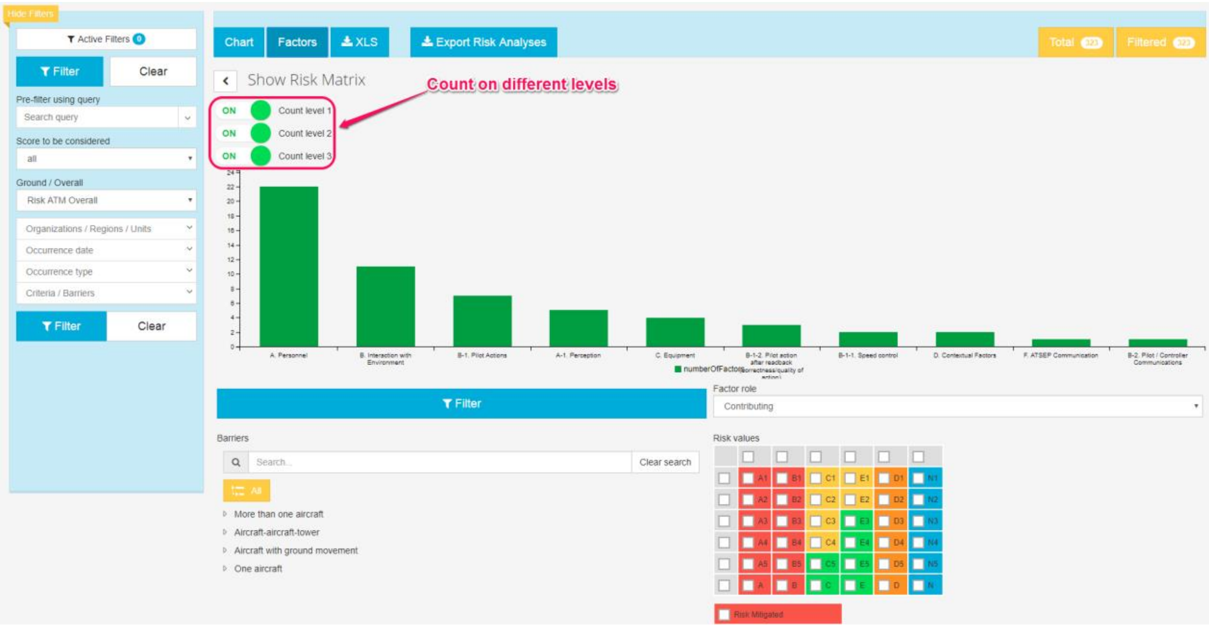


Figure 5.2-12 Explanatory Factors Distribution

The user can choose the count level of the **Explanatory Factors** he wishes to count.

The Causal Factors Distribution offers some additional filters that can be applied:

Filter by factor role

The factors can be filtered by their role: mitigating, contributing or not determined. To change this filter, select the desired option from the Role filter.

Filter by risk value

You can use this filter to restrict the risk values of the risk analyses containing these factors.

Filter by barriers

This filter can be used to get only the factors which were correlated with the selected barriers.

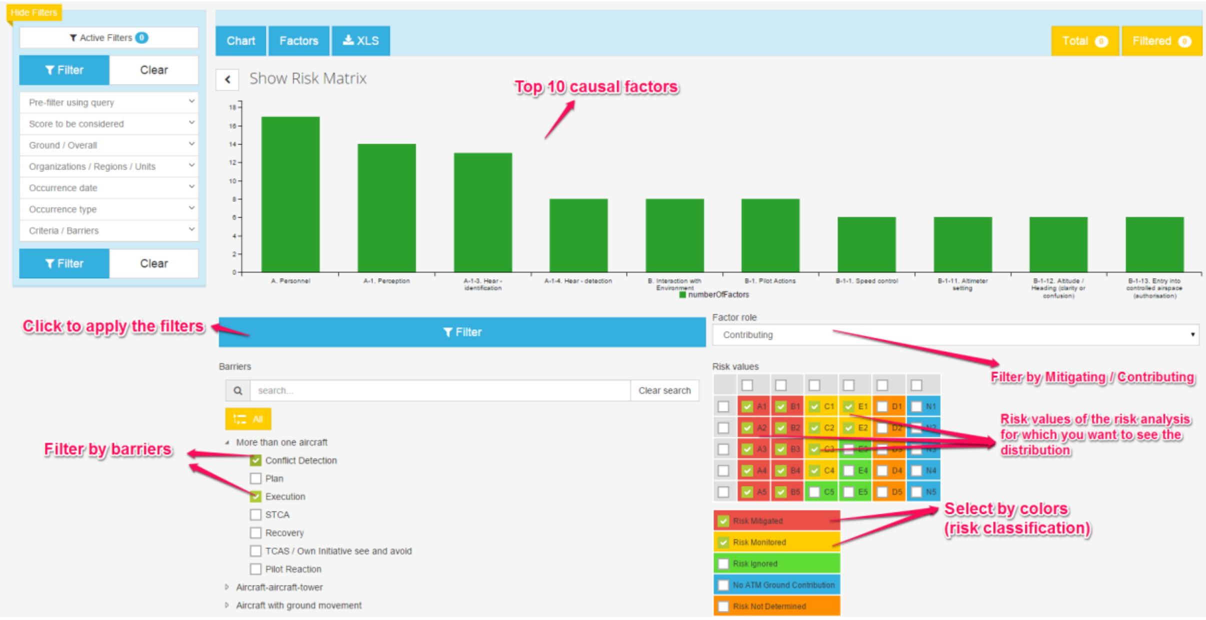


Figure 5.2-13 Additional explanatory factors statistics

5.2.6 Export to excel

To export the statistics results to Excel, click the "***Export to Excel***" button. An Excel file is generated with three sheets.

(See the following screen shots in order to get an idea about how data is exported to Excel)

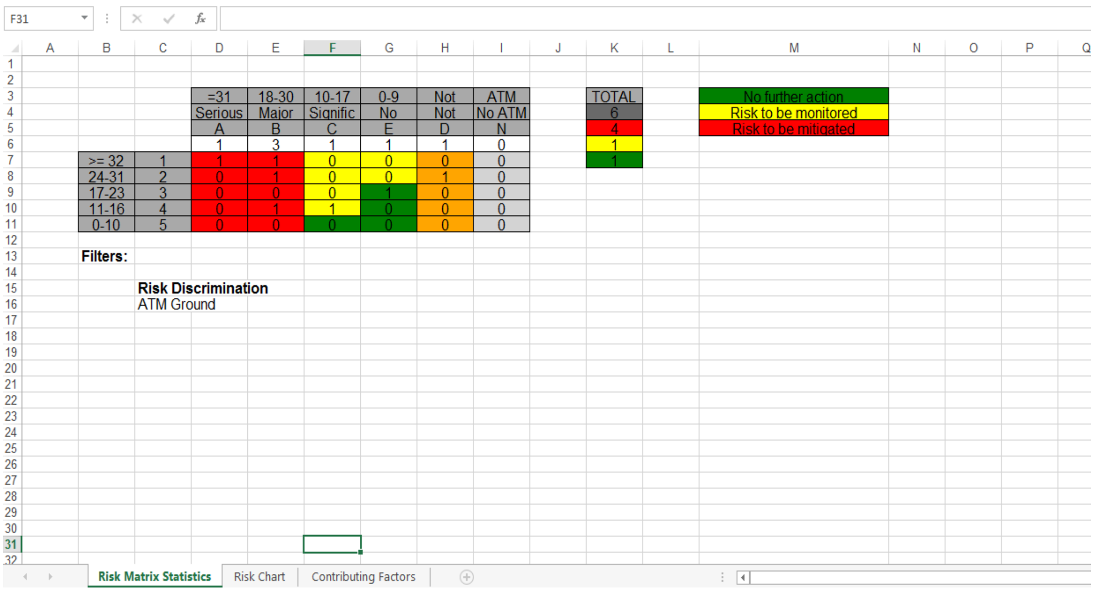


Figure 5.2-14 Risk Matrix exported in Excel

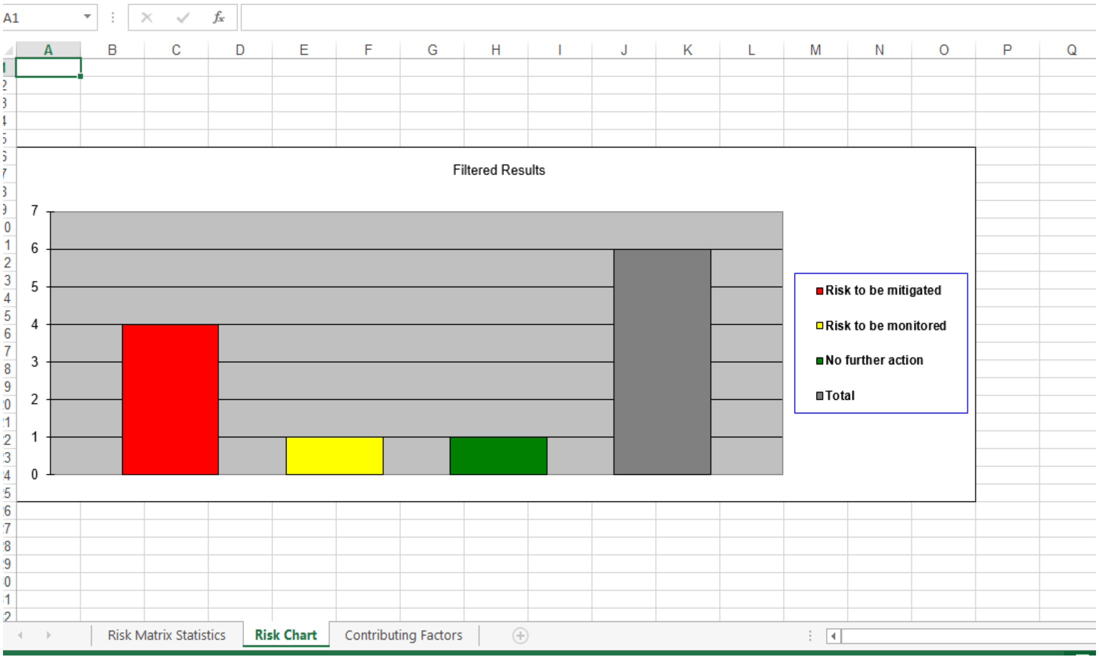


Figure 5.2-15 Risk Chart exported in Excel

Contributing Factors

Factor	Count
A. Personnel - Mitigating	4
A-1. Perception - Mitigating	2
A-2. Memory - Mitigating	2
A-3. Decision - Mitigating	2
B. Interaction with Environment - Mitigating	1
C. Equipment - Mitigating	1
D. Contextual Factors - Mitigating	1
A-1-1. See - identification - Mitigating	1
A-1-2. See - detection - Mitigating	1
A-1-3. Hear - identification - Mitigating	1
A. Personnel - Contributing	3
A-1. Perception - Contributing	2
A-1-1. See - identification - Contributing	2
A-1-3. Hear - identification - Contributing	2
B. Interaction with Environment - Contributing	2
C. Equipment - Contributing	1
D. Contextual Factors - Contributing	1
A-1-5. Perceive visual information - accuracy - Contributing	1
A-2. Memory - Contributing	1

Risk Matrix Statistics | Risk Chart | **Contributing Factors**

Figure 5.2-16 Top factors distribution in Excel

6 Using the TOKAI data inventory

6.1 Summary

The inventory represents a central repository for holding multiple-record information in TOKAI. Although there are a couple of particular capabilities for different modules, the same core functionality is shared amongst all TOKAI modules that use the inventory: ATS Notifications, Data Gathering, Hera and Risk Analysis.

With the description of the core functionality, we are looking to highlight the differences between different modules where there is the case.

6.2 Pagination, sorting and filtering

6.2.1 Pagination

The pagination feature is very useful, especially when handling large volumes of data. The inventory pagination is done on the server side in order to ensure the same optimum performance no matter how many records are in the database.

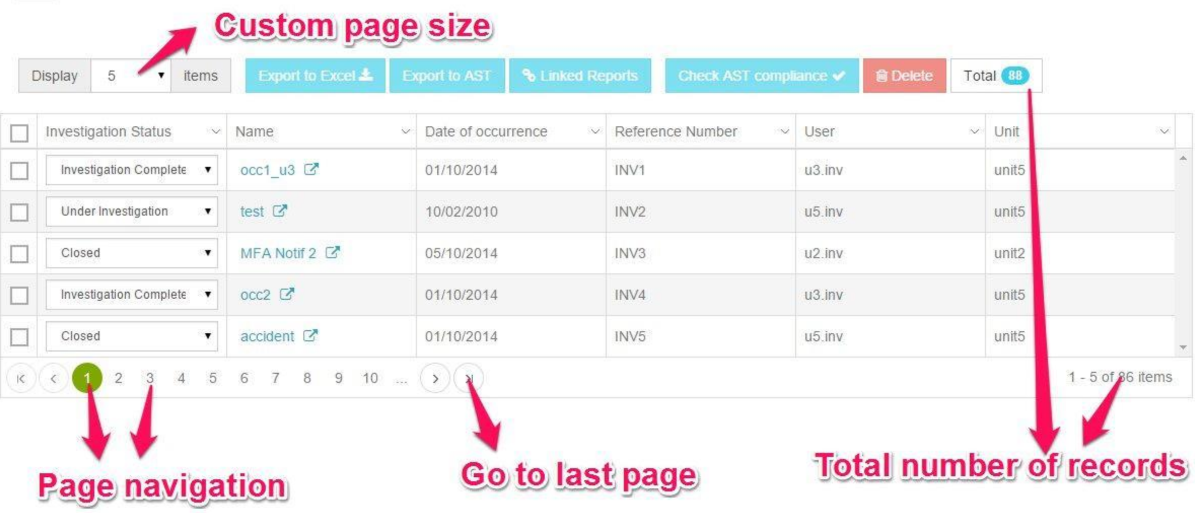


Figure 6.2-1 Inventory Pagination

Looking at the above screenshot, we can see the main functionality that the TOKAI inventory exposes for navigating through large data sets:

- *Easy page navigation*
- *Custom page size settings*
- *Overall number of records*

6.2.2 Sorting

The TOKAI inventory is able to provide ascending and descending sorting on columns that are part of the inventory table.

Figure 6.2-2 Inventory Sorting

When you want to sort on some kind of different criteria, let's say *Date of occurrence*, you need to click on the column header. A direction arrow will appear next to the name of the column depicting the sorting order: ascending or descending.

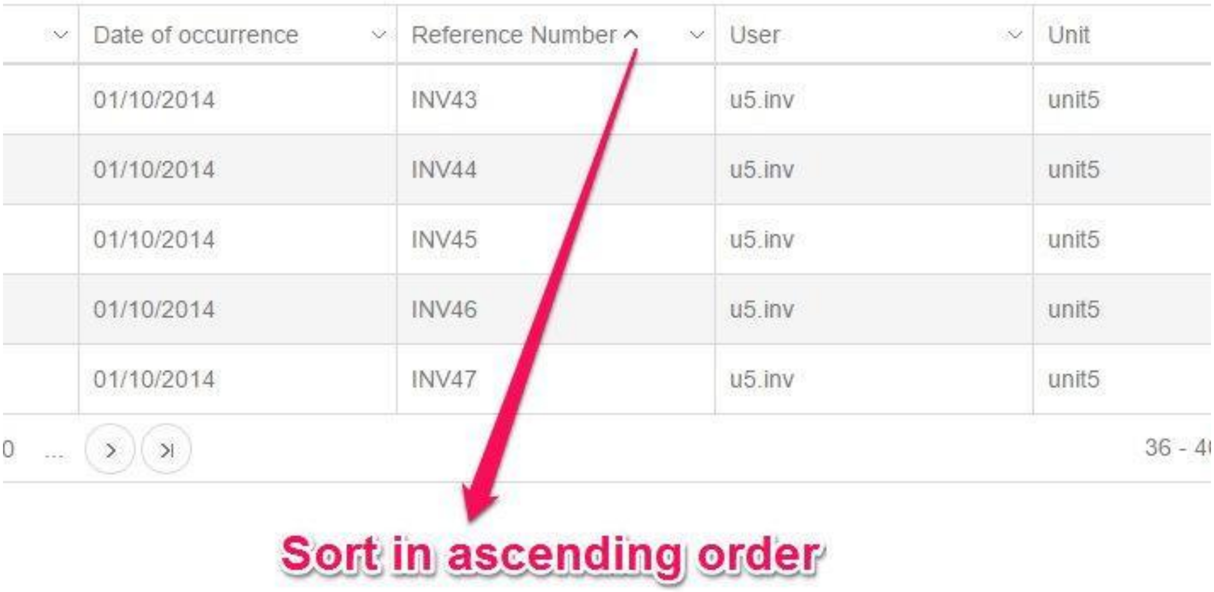


Figure 6.2-3 Sorting Options

6.2.3 Filtering

The TOKAI inventory allows filtering the displayed data for almost each individual column.

By clicking the filter icon, a dropdown menu appears with the filter tools. All filters contain two elements: *the operator and the value*. The filtering system is aware of its data type and will present different filtering options based on the underlying data type: numeric, text, date, etc.

The following table lists all available filter options based on the columns data type:

Operator	Data type
Is Equal to	Text columns, numeric columns
Is Not equal to	Text columns, numeric columns
Contains	Text columns
Starts with	Text columns
Ends with	Text columns

Does Not Contain	Text columns

Table 6-1 Filtering by data type

You can also see the filtering system in action in the following screen shot:

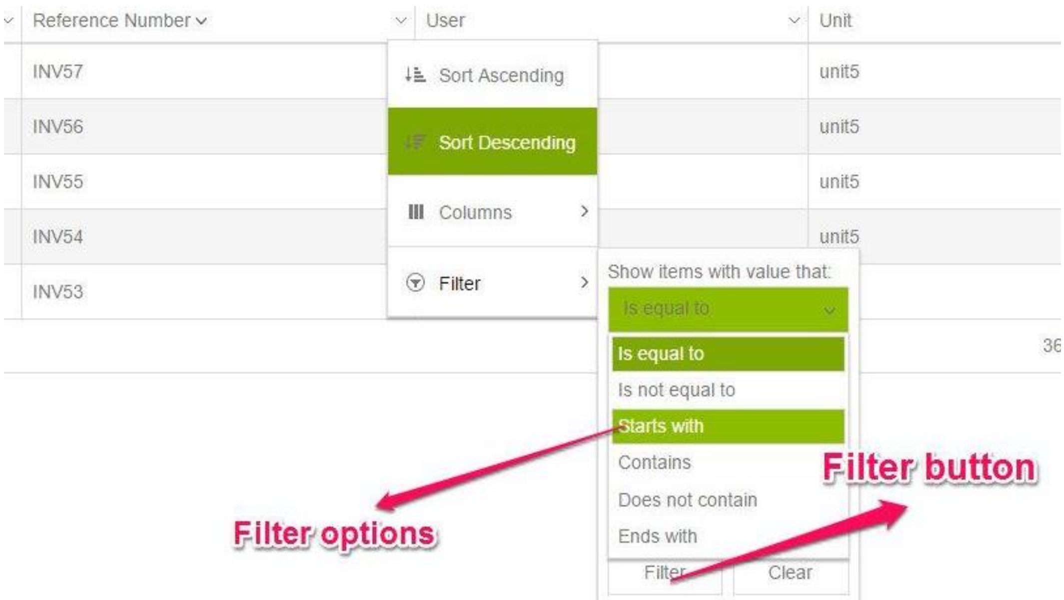


Figure 6.2-4 Filter in action

NOTE: The filtering system is cumulative, meaning that one can filter on different columns with different options and get the cumulative results of all the filters.

Example: Filter all records within a certain date interval, created by a specific user in a specific unit.

6.2.4 Dynamic filters

Similar to the dynamic filters from the Query System. The system allows users to be able to filter the inventory using dynamic filters for the date fields. This section can be accessed from the Data Gathering inventory following the above button.

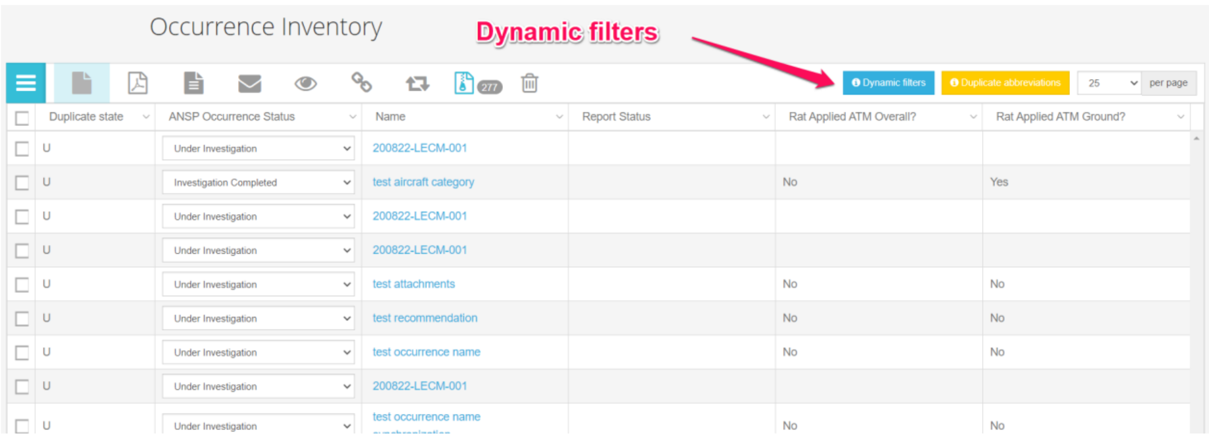


Figure 6.2-4-1 Dynamic filters access

Once the user clicks the 'Dynamic filters' button, a window appears allowing the possibility to configure the date filters as desired.

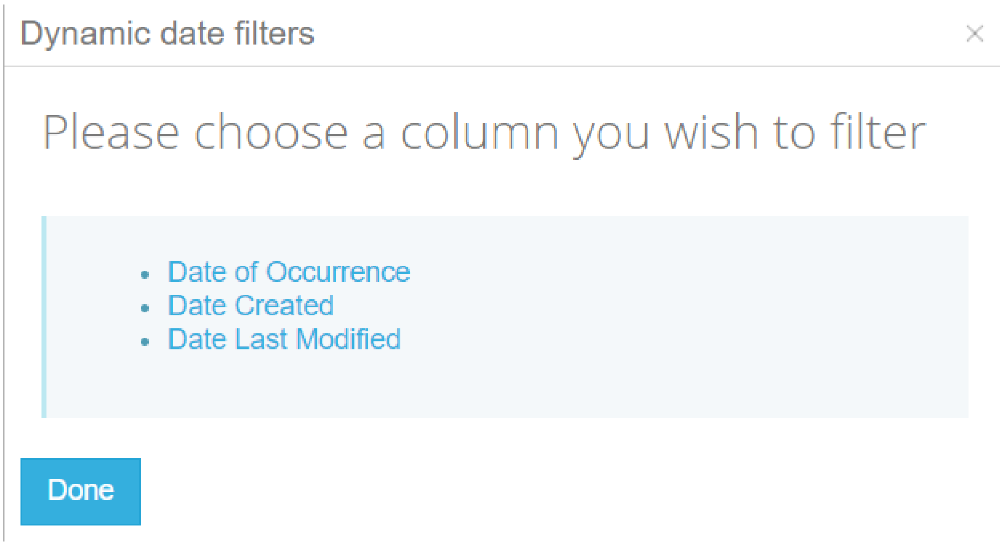


Figure 6.2-4-2 Dynamic date filters window

In this window, the user can choose the date columns he desires to use in his filters. All those columns are already listed in the window and additional information is displayed once the user chooses one.

For each date field there are 2 possible operators:

- Is within
- Is not within

After the value itself, the user can choose between 3 options

- Day(s)
- Month(s)
- Year(s)

This kind of composition allows the user a lot of flexibility in creating the desired dynamic date filter.

For example, in the Figure 6.2-4-3, they filter will return all the occurrences that were created in the last 3 days.

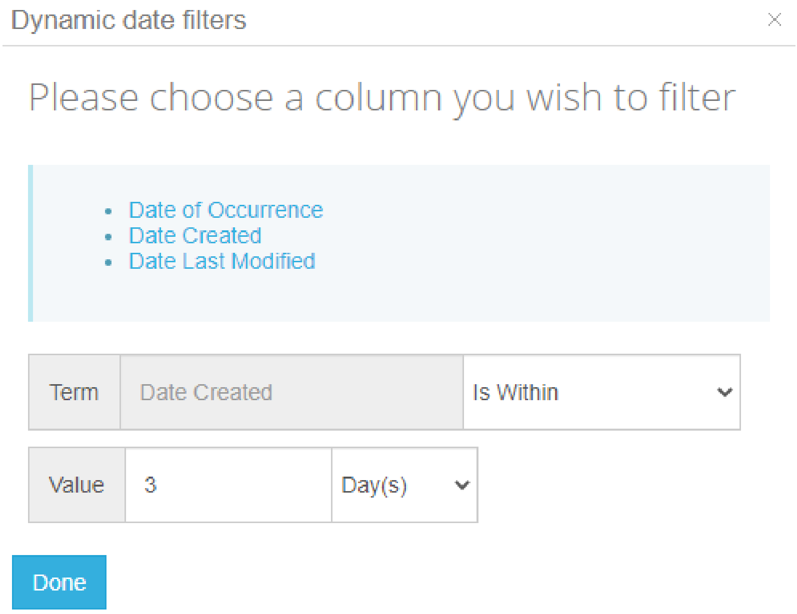


Figure 6.2-4-3 Dynamic filter demo

Once the desired filter is configured, click the 'Done' button in order to apply the filter to the inventory.

6.2.5 Inventory configuration

They inventory can be configured at the user level by each user regarding of the permissions. This can be done from the **Inventory configuration** page.

This particular page is accessible by clicking the **My Account** tile from the **User Dashboard**. From there, choose the **Inventory configuration** button that leads to the page with the same name.

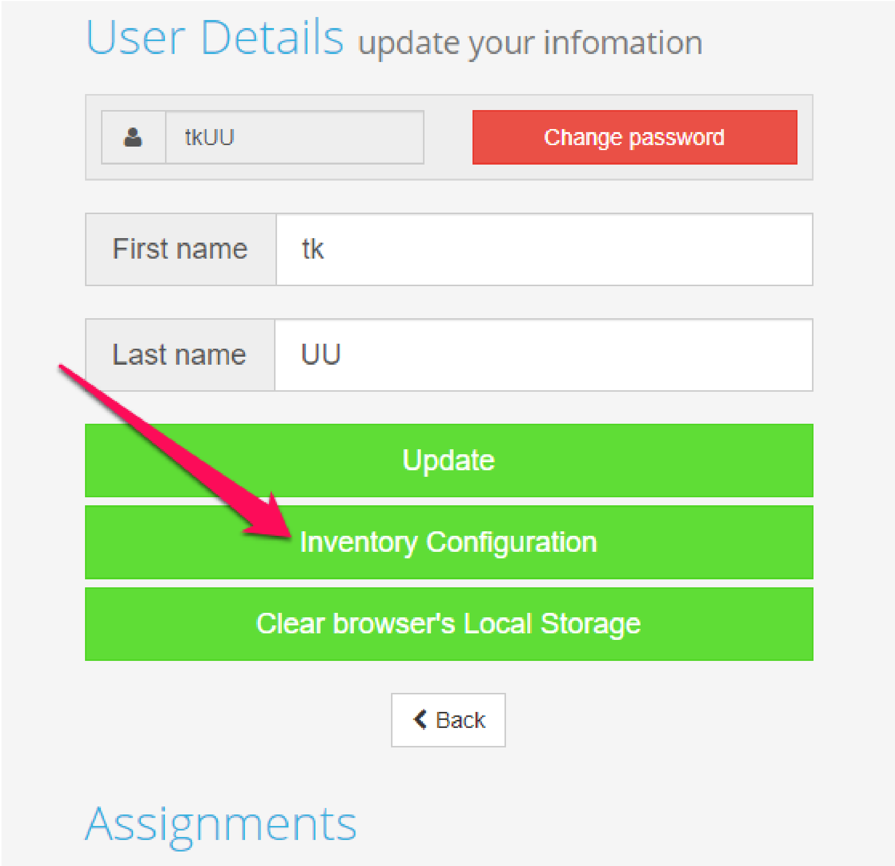


Figure 6.2-5-1 How to access the inventory configuration

In the Inventory configuration page, the user can design its inventories as he pleases. There are a lot of options like:

- Enable/disable particular columns
- Change the order of the columns displayed in the inventory

Note! The organization admin also has the possibility to choose the way the inventory is displayed. The changes that the admin makes are propagated to other users and they can not override those.

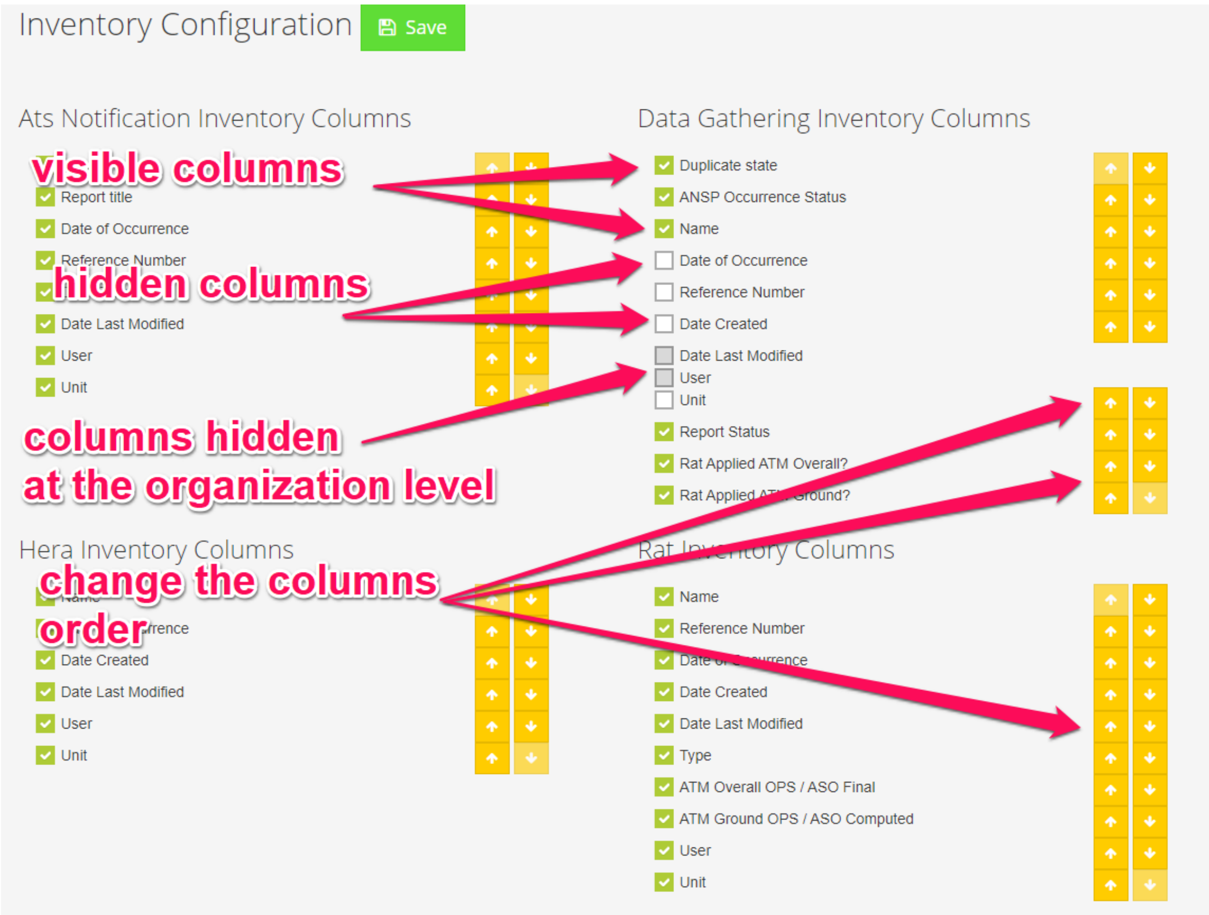


Figure 6.2-5-2 Inventory configuration page

6.3 Data columns organization

The TOKAI inventory has the capability of *showing/hiding* different columns that are part of the data table, based on the user preferences. This could be very helpful when you are interested only in a couple of columns and do not want to see all the default columns of the inventory.

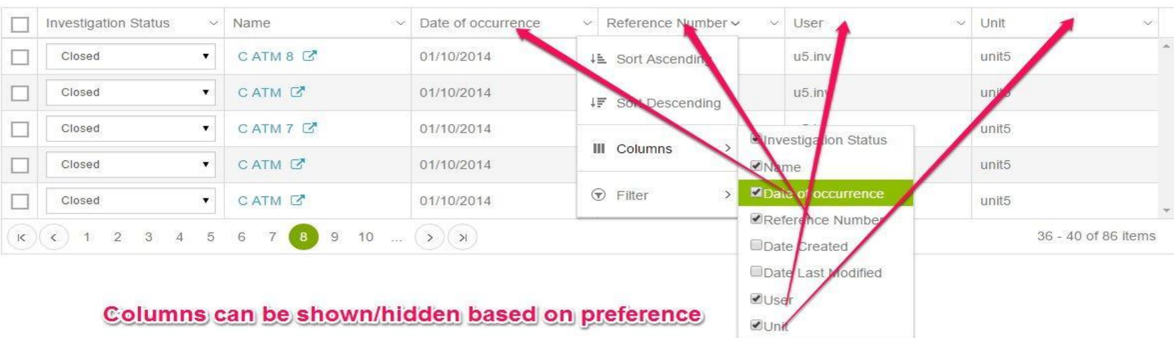


Figure 6.3-1 Data columns organization

By checking/unchecking the columns name in the column options menu, you can hide/show those particular columns in the inventory data table.

6.4 Integration with the roles and permission system

The TOKAI inventory is completely integrated with the access rights management system, meaning that it will only display record that you have the right to access. More than that, if the current user has only the view permission on a certain record it will only allow opening the record in read only mode.

Figure 6.4-1 Integration with roles and permissions

Looking at the above screenshot, one can see that if the user has edit permission for the *test* investigation, when you click on the link, it will open the record in edit mode. If not and you only have the view permission it will open it in read only mode.

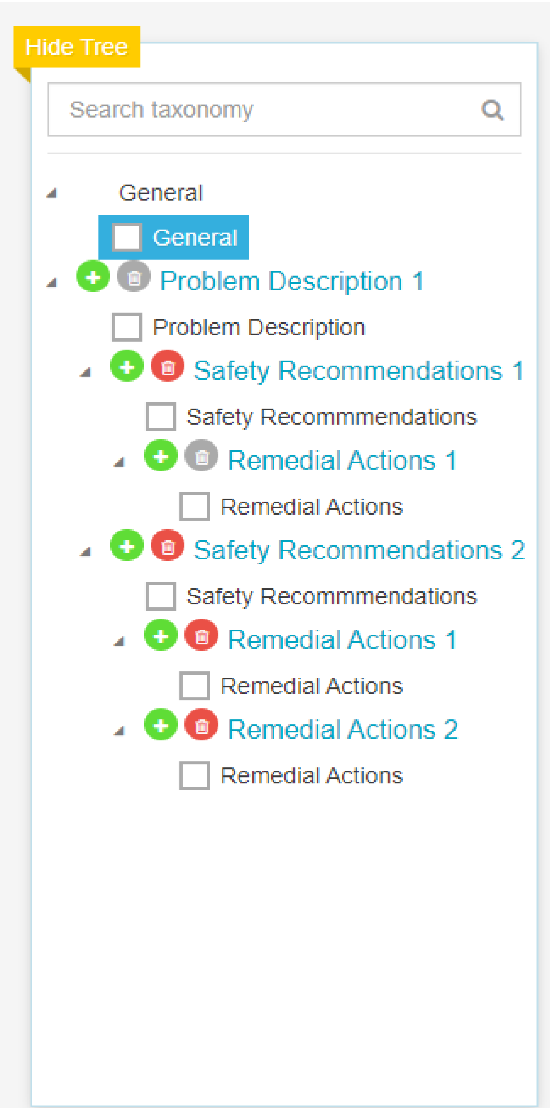
7 Recommendation module

The **Recommendation module** is a stand-alone, separate and independent module with similar features to the Notification Module (template design and independent workflows) and RAT (both-way communication and common fields with Occurrences).

The **Recommendation module** allows additional benefits and customization as well as specific viewing/editing rights for the users.

Specifications

Here are the original specifications in order to provide the Business Logic behind the Recommendation module.



The Recommendation module must contain the full tree, starting with the Problem description (PD). User with access only to the Recommendations module should be able to create a new Recommendation starting with a PD.

Once a PD was created, a Recommendation can be created within this PD. More than one Recommendations can be created for a single PD. Likewise, more than one Remedial Action (RA) can be created within one Recommendation. The mechanism should be like that of multipliable layouts within the DG module. Finally, the PD must also be multipliable within the module.

To navigate between the DG template and the Recommendation module, the user will click on a button in the DG template to jump to the Recommendation module, then a button in the Recommendation module to return to the DG template.

Each PD must have a unique ID number. The Recommendation will inherit the PD's ID as a prefix, then each Recommendation within one PD will be numbered, the counter being started from 1 for each PD.

Each Recommendation needs a unique personality, such that it can be accessed, printed, or sent individually.

7.1 Permissions

There are a few permissions specifically designed for this module.

- **Manage recommendations** - The user can create / edit / delete own Recommendations and save them in the units to which he is assigned.
- **View recommendations** - The user can read all Recommendations from the units to which he is assigned.
- **Edit recommendations** - The user can edit all Recommendations from the units to which he is assigned.
- **Delete recommendations** - The user can delete all Recommendations from the units to which he is assigned.

With these new types of permissions, there is the possibility to have a Specific Role that only has rights on the Recommendation Module so the users that are assigned that role will not have the permission to access the full Occurrence.

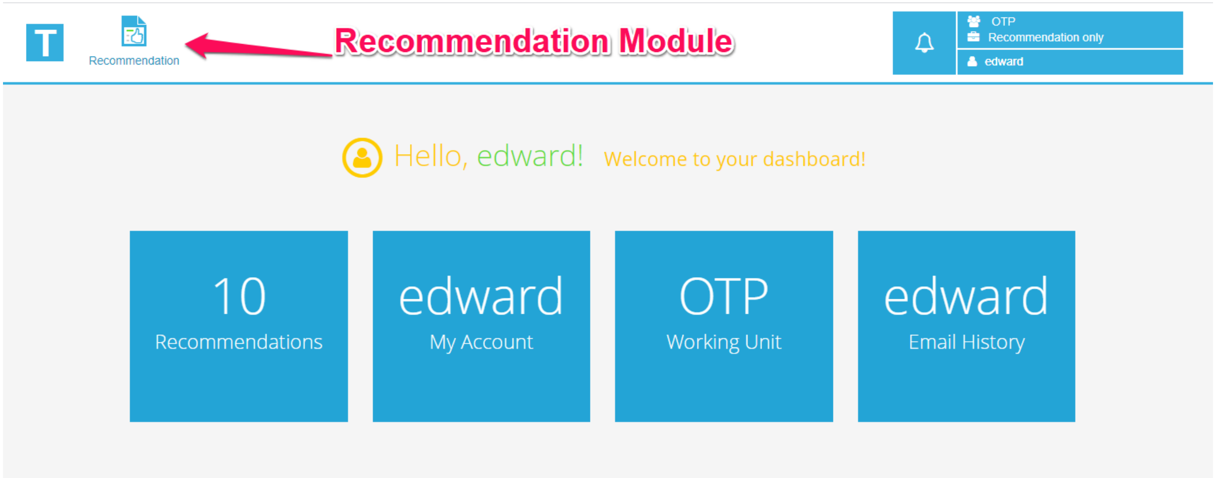


Figure 7.1-1 User with only Recommendation permissions

7.2 Create and manage the recommendations

It is possible to create a recommendation from a Data Gathering Investigation as well as to create one from scratch without starting from the Occurrence. This will automatically create an empty occurrence that is linked to the Recommendation (similar to how the RAT works).

Create a Recommendation from an Occurrence

In order to create a Recommendation from an Occurrence, the user needs to open the desired occurrence from the Data Gathering Inventory and click the **Create Recommendation** button as shown in the figure below.

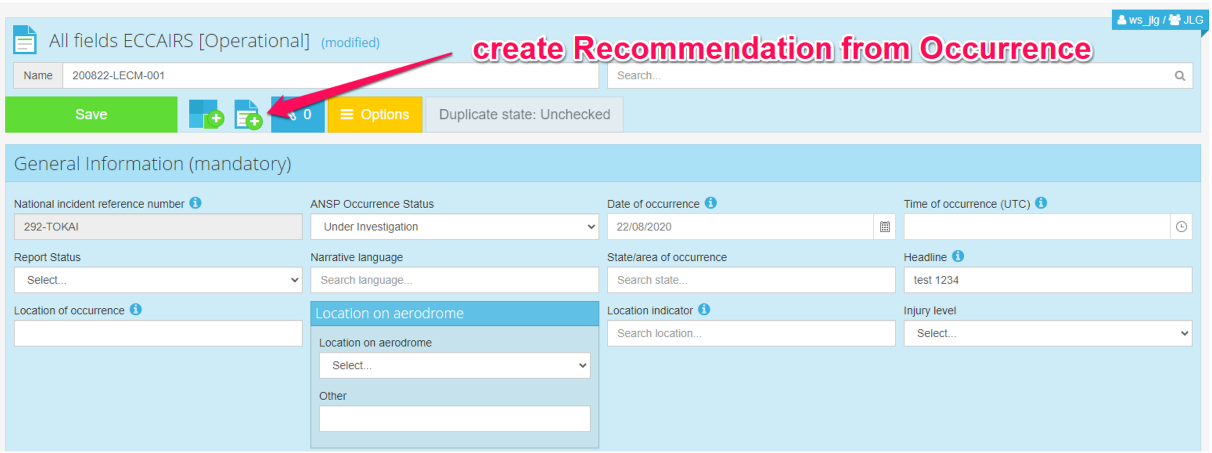


Figure 7.2-1 create Recommendation from Occurrence

Since the Recommendation is linked to the Problem Description from the Occurrence, the system will redirect the user to a page where he can choose the one he desires to attach his Recommendation to.

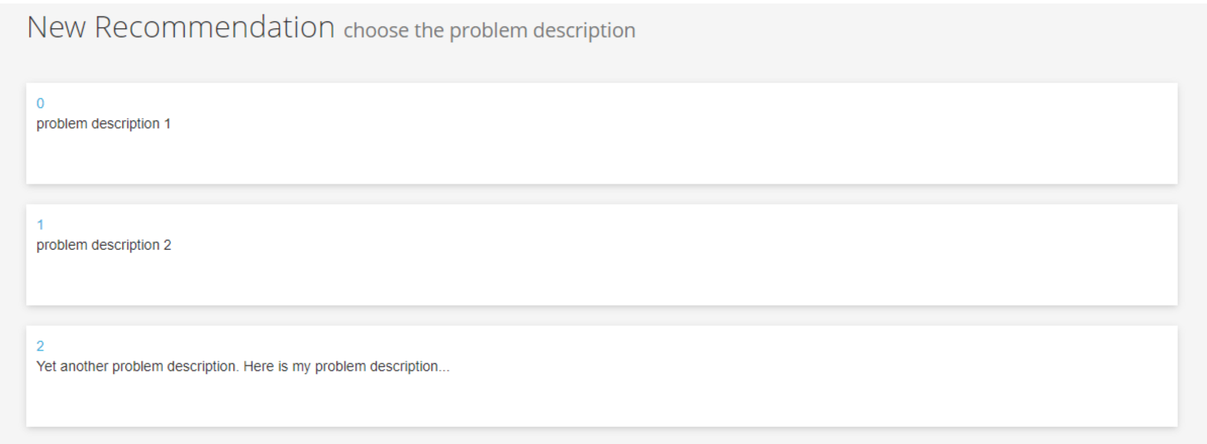


Figure 7.2-2 choose the Problem Description

After that, the user will be redirected to the actual creation page with the full layout. The users have the possibility to change the layout as they desire since the Template used is the default one for the **Processes and procedures**.

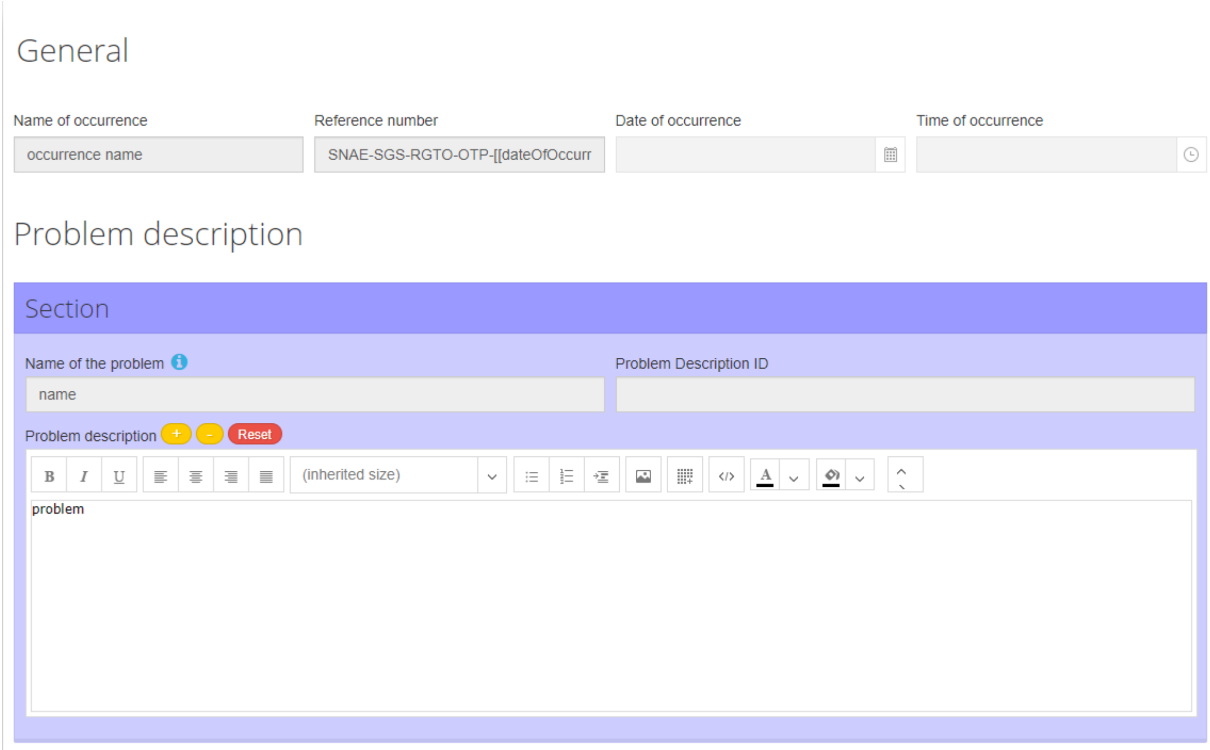


Figure 7.2-3 General layout

The **General** page contains general information about the Occurrence. The fields are blocked so they cannot be filled by the user.

Next, there is the **Problem Description** layout of the Occurrence itself and its fields cannot be modified. (They are automatically inherited when the Recommendation is created from a Data Gathering Investigation)

Next is the **Safety Recommendation** layout. Those fields layout can be modified as desired when creating the default template using all the Taxonomy fields under the Safety Recommendations category. This section can be filled as desired in order to compute a relevant and complete Recommendation for the chosen Problem.

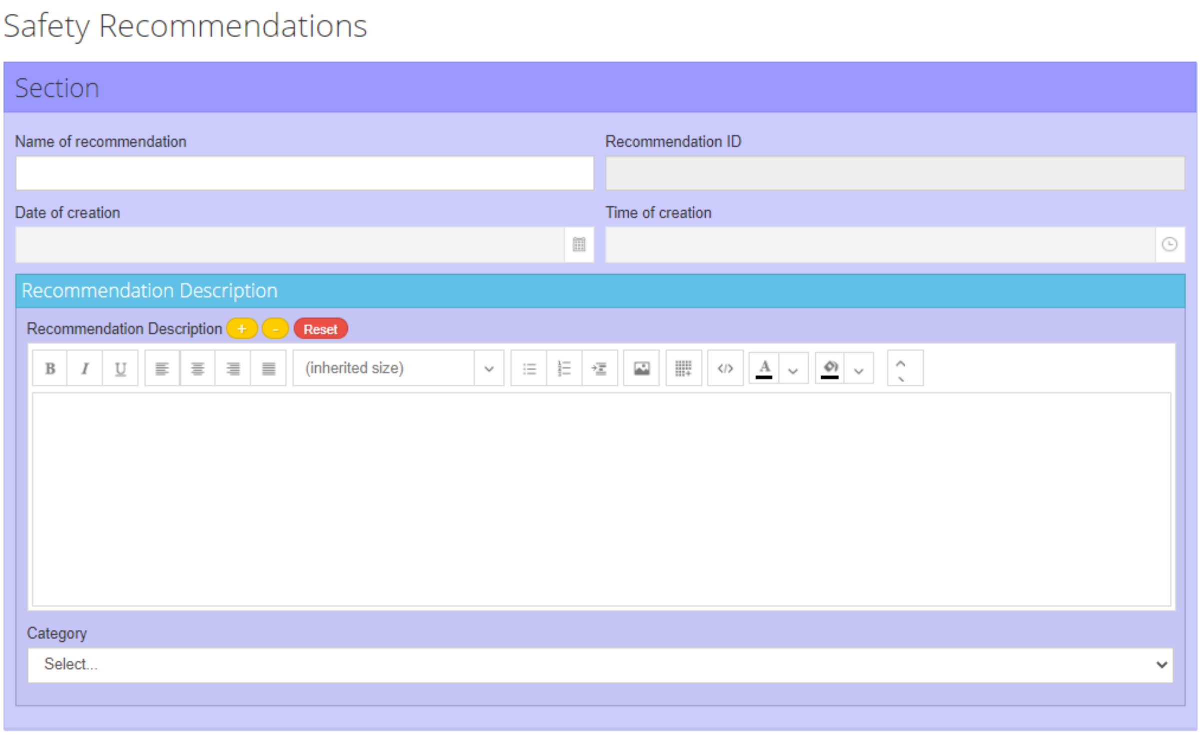


Figure 7.2-4 Safety Recommendation Layout

Next is the **Remedial Actions** layout which is also editable at the default Template level. (Please check the Admin Manual - Chapter 4: **Using the TOKAI layout engine** for more information about the templates distribution and management)

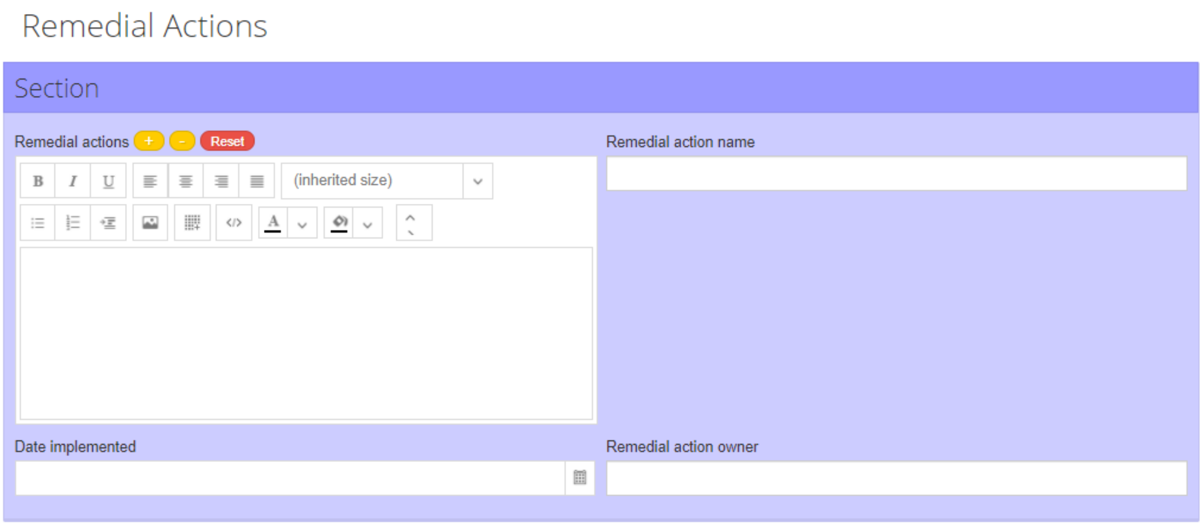


Figure 7.2-5 Remedial Actions Layout

Create a Recommendation from scratch

In almost similar manner, the Recommendation can be created from scratch by following the instructions from the figure below.

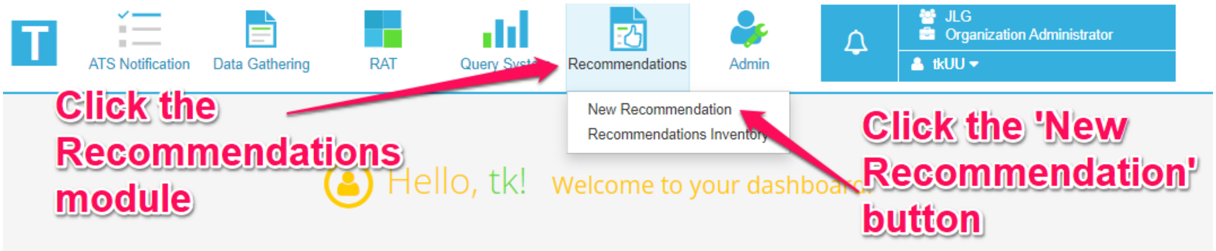


Figure 7.2-6 create a new Recommendation from scratch

Next, the user will have to choose the desired template similar to the Occurrence and ATS Notification creation process.

Note: In order to make sure that everything is configured for the organization and the Layout Templates are created and distributed in the Working Unit, please check the Admin Manual. (Chapter 4: **Using the TOKAI layout engine**)

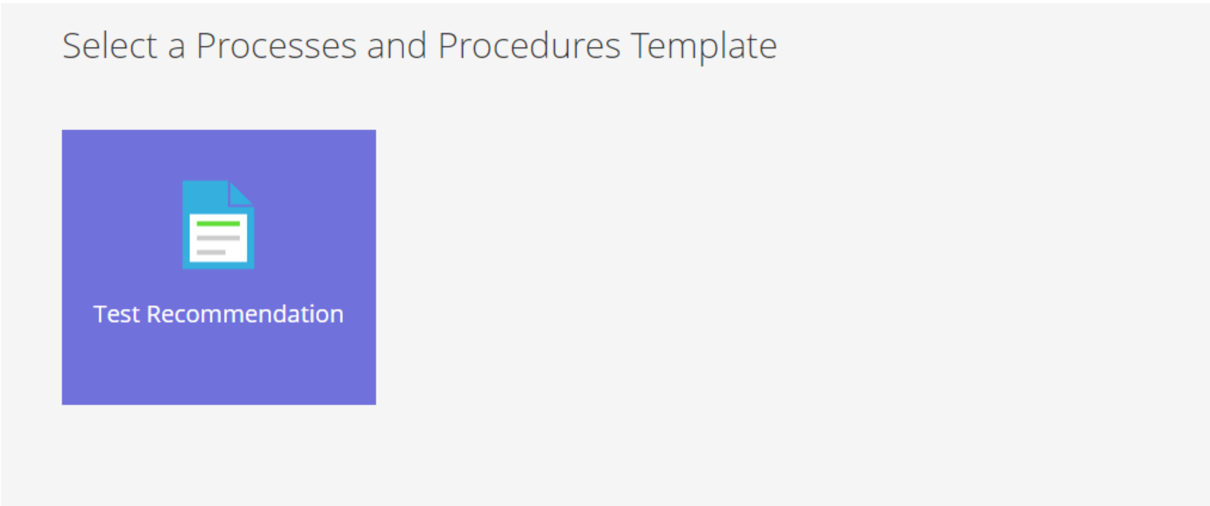


Figure 7.2-7 create Recommendation from Occurrence

This will automatically direct the user to the creation page where he can fill the layouts as he desires.

The only difference is that there is no Occurrence linked in this case (Similar to RAT, it will be automatically created). This time the user has to input the Occurrence information (such as **Name of occurrence**, **Date of occurrence** and **Time of occurrence**).

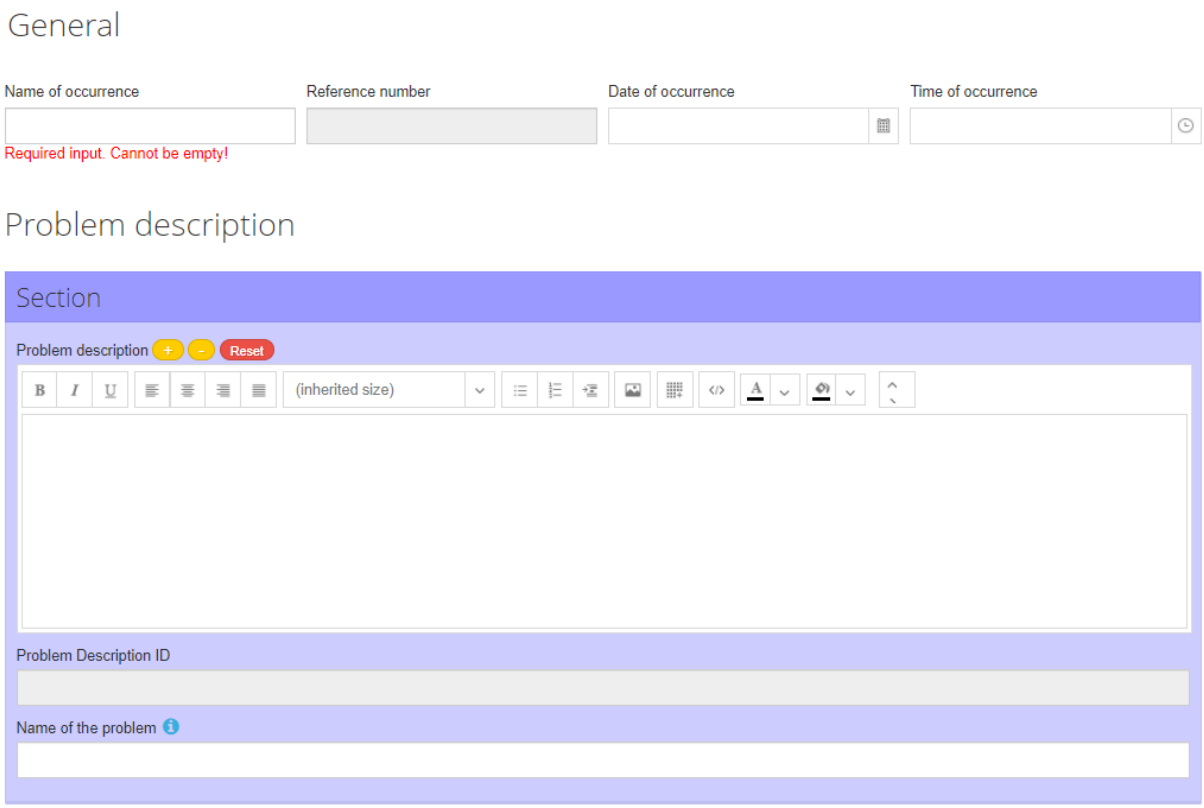


Figure 7.2-8 General layout from the Recommendation creation from scratch

In addition to that, the **Problem Description** section can be filled by the user since the system will automatically create a new Occurrence and implicitly a new Problem Description that this Recommendation is attached to.

The Navigation Bar

The Navigation bar offers the possibility to navigate between the different Layout sections: **Problem Description**, **Safety Recommendations** and **Remedial Actions**. The user can also multiply the Remedial Actions section and obviously Save the current Recommendation.

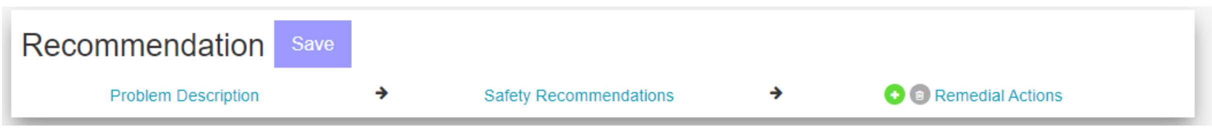


Figure 7.2-9 The Navigation bar

7.3 Recommendation inventory

In order to access the **Recommendation inventory**, the user should follow the instructions from the figure below.

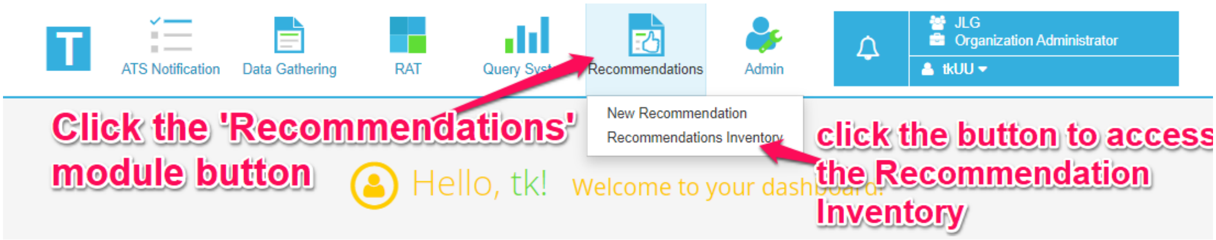


Figure 7.3-1 access the Recommendation Inventory

The Inventory page allows the user to perform some actions that are described in the following figure.

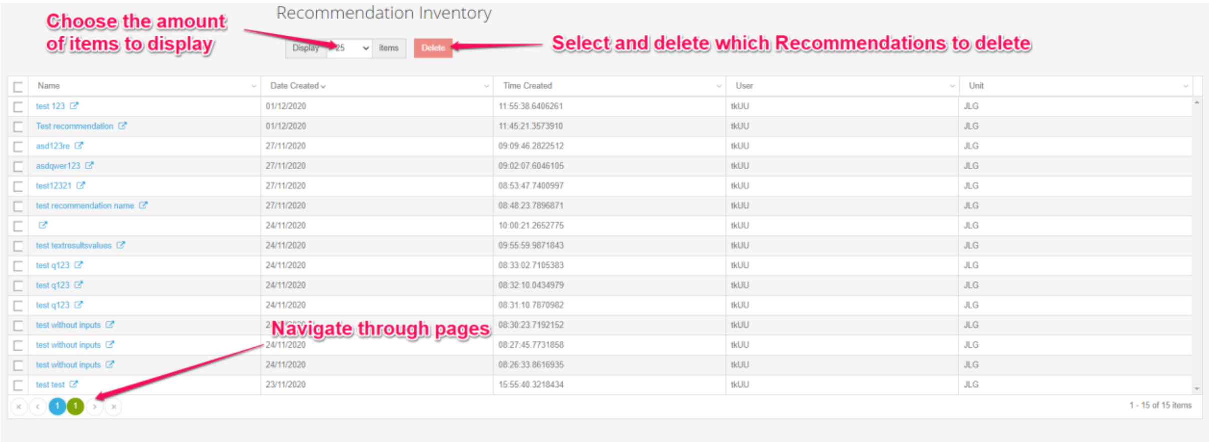


Figure 7.3-2 Recommendation Inventory

In order to edit an existing **Recommendation**, the user can click on the specific Recommendation Name from the inventory and that will open it in Edit mode. Similar to other Records in Tokai, the Recommendation fields can be modified as desired and finish the update by clicking the save button in the upper part of the page.

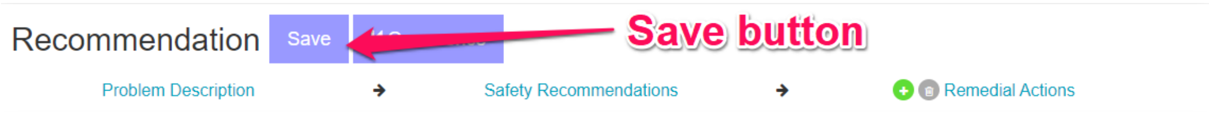


Figure 7.3-3 Save button used to create/ update

The user will receive his confirmation message and will be redirected to the Inventory page where the new Recommendation is available.

7.4 Navigation and traceability

A user with full permissions over both Data Gathering and Recommendation modules will have the possibility to easily navigate through those two modules following a specific Recommendation.

Starting from Data Gathering, the user is able to navigate to the Recommendation Inventory and see only the Recommendations that are linked to the specific Occurrence. The option is available by clicking the **Go to Recommendations** button from the Occurrence Options.

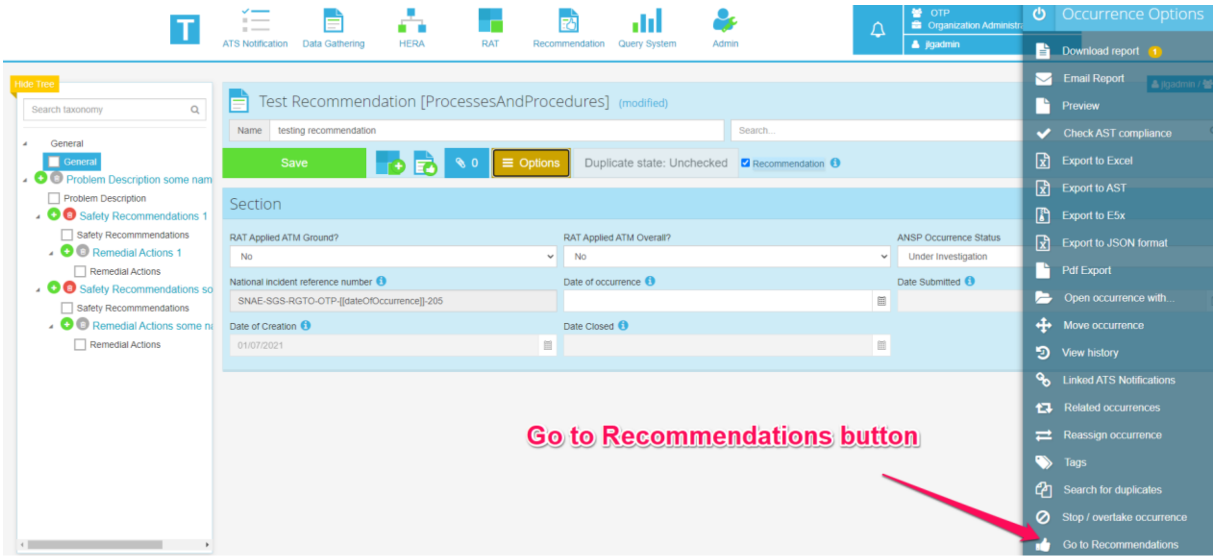


Figure 7.4-1 Go to Recommendations.

Here the user can see all the Recommendations linked to that occurrence. In this case, there is only one.

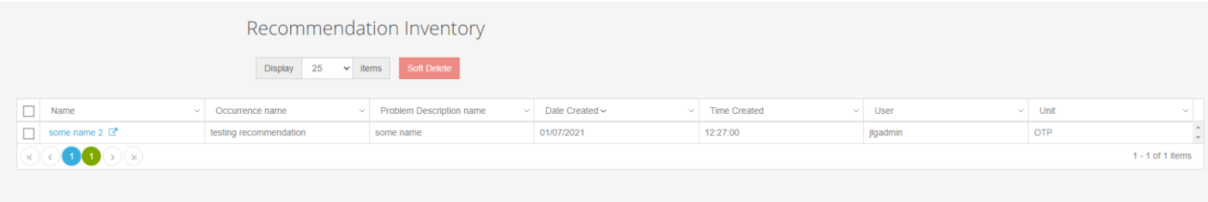


Figure 7.4-2 Recommendation Inventory

If he wants to navigate back to that specific occurrence, the user can simply open the Recommendation in edit mode and click on the **Back to Occurrence** button.

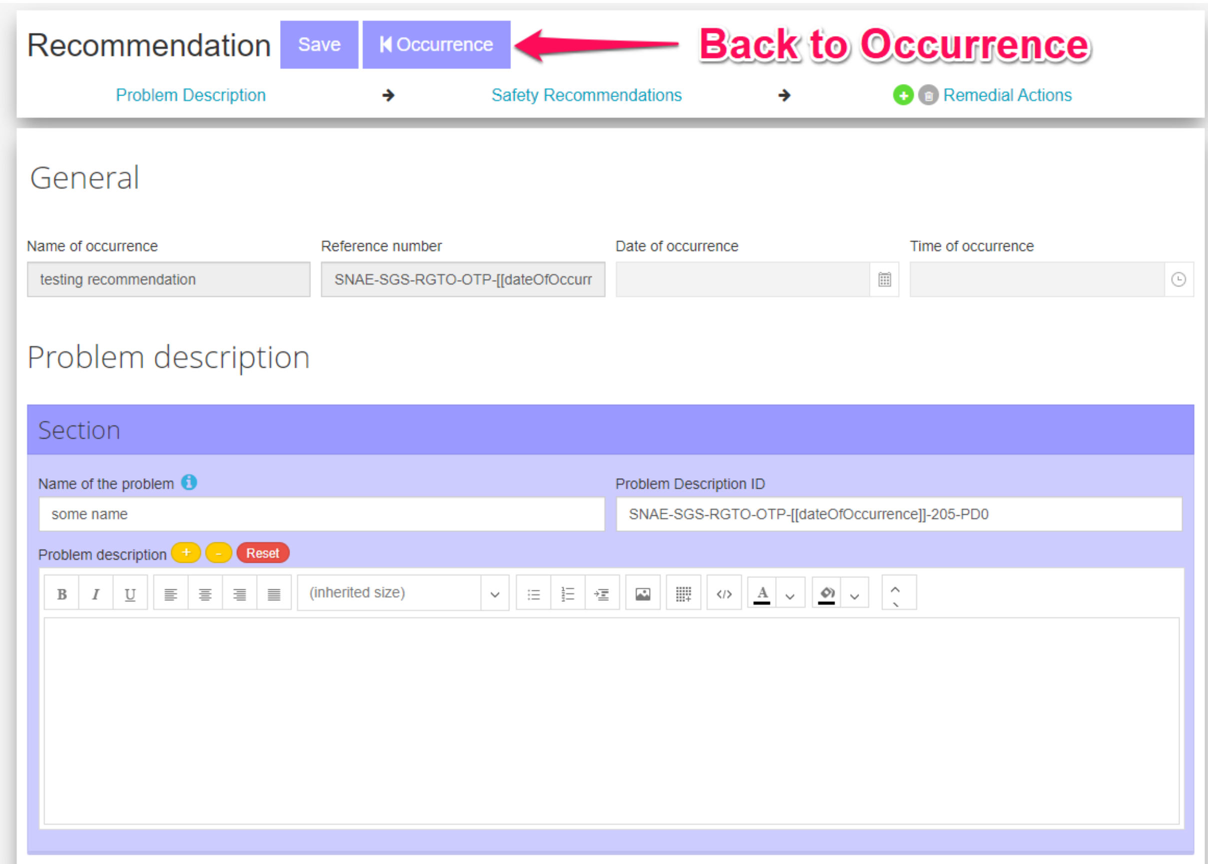


Figure 7.4-3 Back to Occurrence button

7.5 Query

It is also possible to run queries on the Recommendation Inventory, similar to running on ATS Notification or Data Gathering Inventories.

To create a special Query that can only be run on Recommendations, the user has to click on the **New R Query** button.

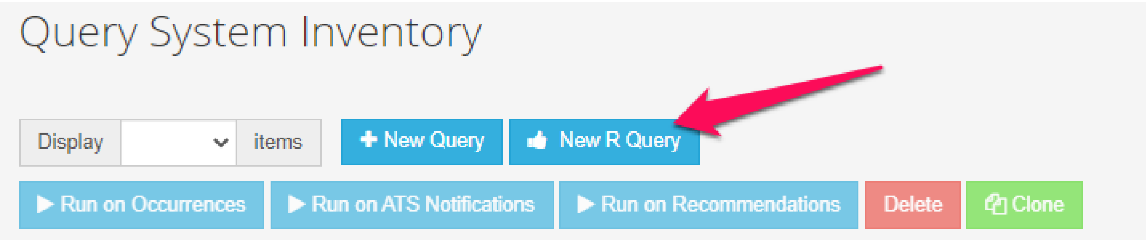


Figure 7.5-1 Create a Query for Recommendations

Here, there is the possibility to only add Filters to the Query since the Recommendations do not have the other types of information. The terms are already filtered so there can only be found the ones from the next Categories: **Problem Description**, **Safety Recommendation** and **Remedial Actions**.

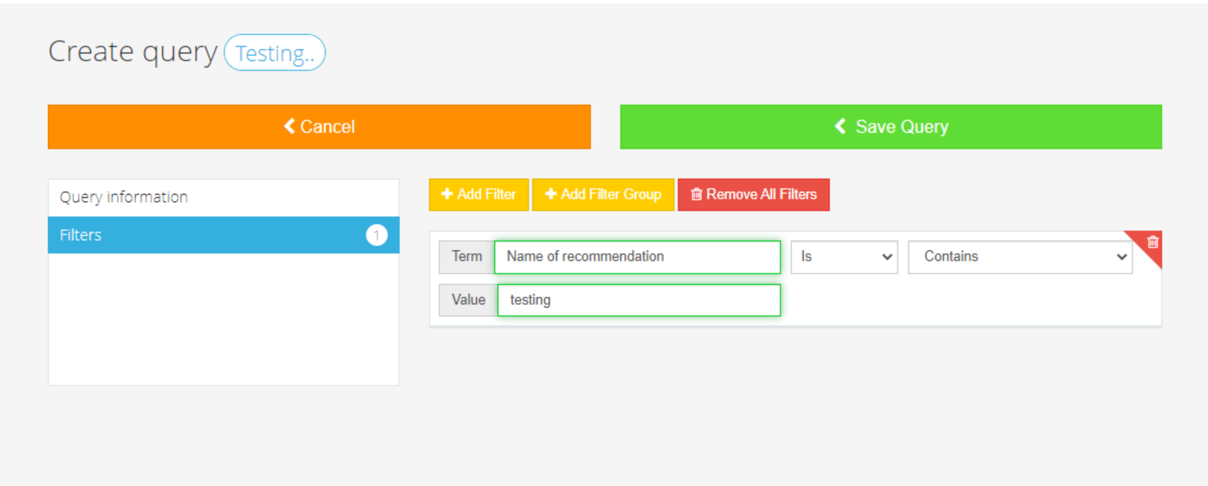


Figure 7.5-2 Recommendation Query

To run a query on Recommendations, the user has to select the desired one and click on the **Run on Recommendations** button similar to the existing functionality for ATS Notifications and Occurrences.

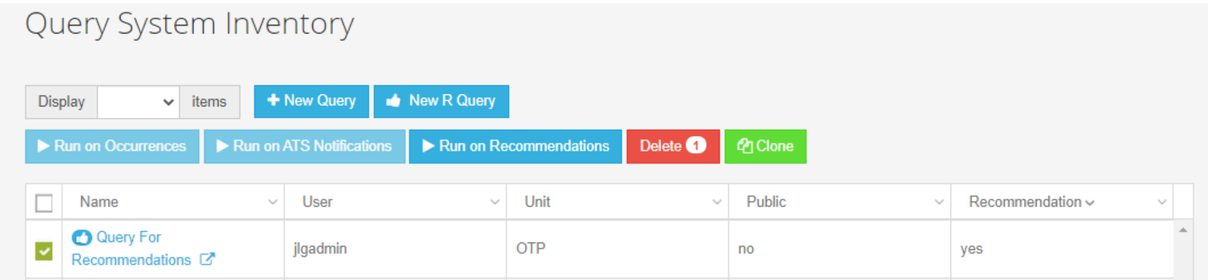


Figure 7.5-3 Run a Query on Recommendations

In the next figure, there is the Recommendation Inventory page with the results from running the previous Query.

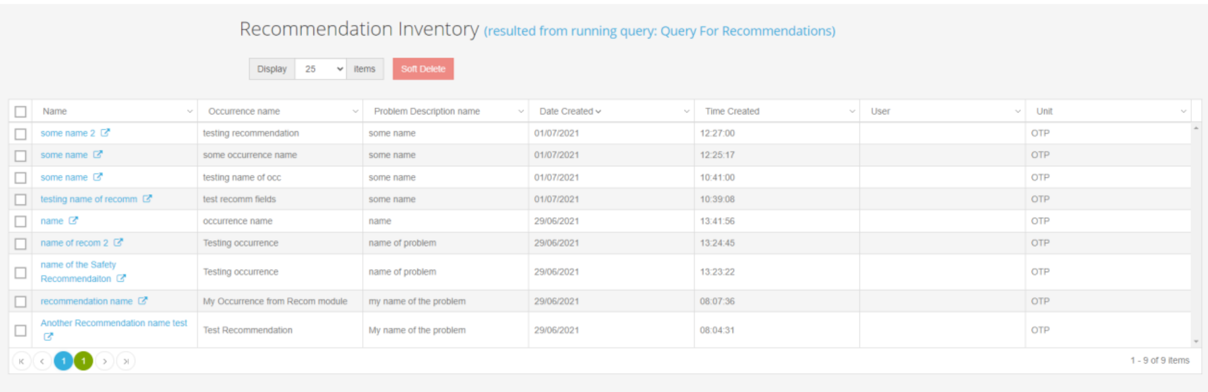


Figure 7.5-4 The Result from running the Query

END OF DOCUMENT

Network Manager
nominated by
the European Commission

EUROCONTROL