



IAEA

International Atomic Energy Agency

RAIS+ User Manual

Regulatory Authority Information System

Interim version

Division of Radiation, Transport and Waste Safety

12-01-2023

Introduction.....	3
Logging in.....	3
Internal.....	3
External.....	4
Application layout and navigation	4
Dashboard.....	6
Inventory.....	7
Browsing the records of an entity	7
Entity details screen.....	7
Related entities	8
Regulatory Processes	11
Reports and Statistics	14
Regulatory System Settings.....	16

Introduction

The Regulatory Authority Information System (RAIS+) is a software application developed by the IAEA to assist Member States in managing their regulatory control programmes in accordance with IAEA Safety Standards, as well as the [IAEA Code of Conduct on the Safety and Security of Radioactive Sources](#) and its supplementary [Guidance on the Import and Export of Radioactive Sources](#) and [Guidance on the Management of Disused Radioactive Sources](#).

The tool helps countries implement regulatory processes for the control of radiation sources using an integrated management system, and to maintain a national register of radiation sources and other safety and security related records. It promotes a consistent and common approach to the control of radiation sources both nationally and worldwide, and facilitates the exchange of information among regulatory bodies, in particular for the import and export of radioactive sources.

RAIS+ can be customized depending on a Member State's needs, accounting for the national legislative framework, administrative structure (e.g. federal, national, states/provinces, districts), and institutional and regulatory frameworks (e.g. single or multiple regulatory authority, department).

Countries can adapt the system to cover the whole lifecycle of radioactive sources and ensure cradle-to-grave regulatory control, with modules on: facilities; radiation sources and associated equipment; authorization, inspection and enforcement processes; radiological incidents and accidents; occupationally exposed persons and technical services (e.g. accreditation); and manufacturers and models of sources. Users can also run data consistency and data protection checks.

RAIS+ contains a translation tool and complies with all current computer security standards.

RAIS+, launched in 2023, has been developed based on user experiences and feedback on the previous versions of RAIS system, starting from the original first made available in the 1990s, as well as current requirements for managing regulatory control programmes, and categorization and security requirements for radioactive sources.

At the end of 2022, more than 100 countries were either using RAIS or assessing RAIS with a view to creating or managing their national register of radiation sources. The IAEA aims for all current and prospective RAIS users to switch to RAIS+ by the end of 2025.

The IAEA assists countries to implement and optimize their use of RAIS+ through remote assistance, expert missions and regional workshops, including presentations and training exercises, provided upon the Member State's request.

Logging in

Logging in into the system can happen in two ways, depending on how the system was set up by your system administrator:

Internal

This is the "classic" login method with a username and password, potentially enhanced with a Multi Factor Authentication (MFA) method by the means of an authenticator app on your smartphone.

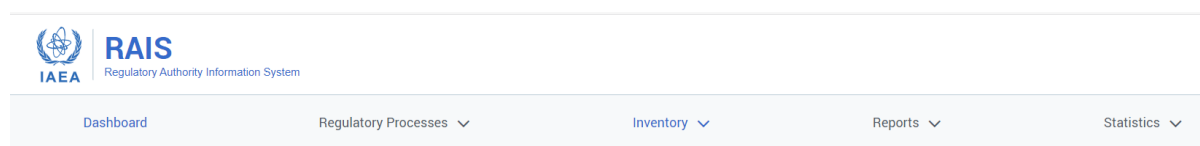
External

This is used in more advanced scenarios where the system administrator will have connected the RAIS+ system to your internal network Active Directory, meaning that you can log in into RAIS+ with the same user account you are using to log in into Windows on your work computer.

Application layout and navigation

Navigating into the various sections of the application is very intuitive and similar to other web applications you might use.

On the top you will find the main navigation bar containing the main sections of the application. The sections you see will depend on the permissions you have.



Clicking on a section title with a little downwards pointing arrow will open a submenu where you can view related items to this section. Clicking on one of these items will take you to it.

RAIS+ contains the following sections:

Dashboard	Contains an overview of important messages directly of your concern, depending on the role and permissions you have in the system. E.g. as a staff member of the authorization department, you might see notifications about a new authorization application that needs to be reviewed.
Regulatory Processes	Contains all the processes that are commonly implemented by a regulatory body: <ul style="list-style-type: none">- Authorizations- Inspections- Enforcements- ...
Inventory	This section groups the entities typically related to the record keeping responsibilities of a regulatory body such as facilities, sources, generators, workers, dose records, etc
Reports	Contains reports that can be generated on the data contained in the system. These can be reports about processes or inventory.
Statistics	Is similar to reports, but will focus more on statistical data like aggregations or average calculations on the data contained in the system.
Regulatory System Settings	This contains the common regulatory entities which are used by the processes and inventory entities. Typically, only privileged users will be able to modify the data contained in these entities.

Administration	This section is reserved for system administrators to configure the system technically, or to modify or create new processes or entities
----------------	--

On the top right of your screen you can click on your username to consult and modify your profile information if you wish.

Dashboard

Like many modern applications, RAIS+ welcomes the connecting user with a dashboard, showing a quick overview of the messages and tasks (called notifications) addressed to him/her.

On top of the dashboard page, there is the possibility to filter the notifications by read/unread status, and by a preselected time range.

Furthermore, to keep the dashboard concise, only a portion of the text is shown for each notification. The user can click on the “Show More” link of the notification to expand the full text.

Hovering on a notification will display an action button on its top right corner. This can be a “Dismiss” button to mark the notification as read, or another button like “Review” in case of the notification being a workflow assignment. Clicking on “Review” will bring you to the workflow in question (see section Processes of this document).

The screenshot displays the RAIS+ dashboard interface. At the top left is the IAEA logo and the text "RAIS Regulatory Authority Information System". At the top right, there is a "File Library" link and a user profile for "Administrator". A navigation bar below contains links for "Dashboard", "Regulatory Processes", "Inventory", "Reports", "Statistics", "Regulatory System Settings", and "Administration".

The main content area is titled "Dashboard" and shows a list of notification categories on the left, such as "All Notification(15)", "Amendment notifications (0)", "Access requests (0)", "Inspection alerts (0)", "Notifications and updates (0)", "Regulatory notifications (0)", "Renewal requests (0)", "Data approval/validation decision notifications (0)", "Data approval/validation requests (0)", "Withdrawal notifications (0)", "Workflow assignments (15)", "Practice Authorization (0)", "Simple Import Authorization (0)", and "Use Authorization (0)".

The central part of the dashboard shows "All Notification (15)" with filters for "Status" (set to "All") and "Duration" (set to "All"). Below this, there are three notification items:

- Authorization Certificate data form assigned**: "Authorization Certificate data form of AUTH/USE/0001 Test Facility process has been assigned to you. Please fill in the required information and submit for further processing." A "+ Show More" button is visible.
- Certificates data form assigned**: "Certificates data form of PRAC-000001 Bio Lab process has been assigned to you. Please fill in the required information and submit for further processing." A "+ Show More" button and a "Review" button are visible.
- Import Authorization data form assigned**: "Import Authorization data form of AUTH/IMP/0003 Import & Export Services process has been assigned to you. Please fill in the required information and submit for further processing." A "+ Show More" button is visible.

Inventory

The inventory entities make up the core functionality of RAIS+ as they allow the users to enter and consult the data regarding to their day-to-day regulatory activities. The user interface experience follows the same flow and logic for all entities.

Browsing the records of an entity

- When selecting an entity from the main menu (e.g. Inventory → Facility), the user is presented with a list of existing records of that entity. The list is presented as a grid, with columns representing the most important properties of a record.
 - o Clicking on the column names allows the user to sort the records by this column.
 - o Clicking on the funnel icon next to a column name, allows for filtering the records.
- Clicking on an entity record will take you to the details of that record.
- Clicking on the Add New button at the top right of the grid, will allow you to enter a new record of that entity.

Regulatory Authority Number	Name	Facility Status	Region	District
FAC/0007	Second Test Facility	In Operation		
FAC/0006	Test Facility	In Operation	Central Region	District 1

Entity details screen

Editing an existing record, or adding a new record, will be performed through the entity details screen. The different properties of the entity are presented by input fields whose appearance will depend of the type of data of the property (i.e. regular text field, date picker, dropdown, etc...).

When finished editing or adding an entity, the data is persisted by clicking on Save in the top right corner. Clicking on Cancel will discard any data entry.

Edit Facility (Test Facility)

Cancel Delete Save

Facility

- ↳ Accreditations
- ↳ AssociatedEquipment Hi...
- ↳ Department
- ↳ Inspection Schedules
- ↳ Inspection Scheduler
- ↳ RadiationGenerator Hist...
- ↳ SealedSource History
- ↳ UnsealedSource History
- ↳ Worker History

Regulatory Authority Number *
FAC/0006

Facility Name *
Test Facility

Facility Status*
In Operation
Add New Facility Status

Legal Person

Practices
Industrial Radiography
Add New Practices

Region
Central Region
Add New Regions

Facility Image
Allowed types -png, jpg, jpeg, PNG (Max. file size - 4000 KB)

RAN

One special type of attribute is the RAN (Regulatory Authority Number). This is usually the first attribute on a form, and is most likely read-only. Every entity in the “business domain” of a regulatory body (such as Facility, Department, Authorization, Inspection, ...) should have a RAN. It is in most cases a structured number allowing the identification of an entity record. RANs should be unique for an entity (i.e. no two facilities should have the same RAN). Sometimes the RAN can easily be derived from already existing unique identifiers from the country infrastructure (e.g. a National Registry Number for a Worker, or a Chamber of Commerce Number for a Facility), but often the Regulatory Body needs to have its own numbering system (e.g. an Authorization Number or an Inspection Number). Luckily, RAIS+ provides a mechanism that can automatically generate a unique RAN for these entities, and this mechanism can be customized. This customization process is explained more in detail in the Administrators manual.

Related entities

Whenever you are editing an existing entity record, the left part of the screen will show the entities that are in some way related to the current entity. See the example screenshot for the facility entity below:

Edit Facility (Test Facility)

Facility

↳ Accreditations

↳ AssociatedEquipment History

↳ Department

↳ Inspection Schedules

↳ Inspection Scheduler

↳ RadiationGenerator History

↳ SealedSource History

↳ UnsealedSource History

↳ Worker History

Clicking on any of these associations will allow you to view the records of that type that are directly linked to the current entity record (Test Facility in our example case). From there, you can also add a new associated record, or edit/delete an existing one.

Entities with History

Inventory entities can be of two types:

- Regular Inventory entities
- Inventory entities with History

When an entity is “with History”, it means that for each record of this entity, one or more History Records are associated with it. These history records contain status information about the main record. Status information is information that can change over time. A typical example is the Sealed Source entity. Lets examine the data entry form when adding a new sealed source.

The data entry form is composed of two subforms. The main form, like in the screenshot below, contains general information about this specific sealed source, that is most likely not changing over time. For example the serial number, the activity at a certain activity date, the manufacturer, the nuclide, etc... If at any time you change this information, the previous information will be overwritten.



Add New Sealed Source

The screenshot shows a web-based form for adding a new sealed source. At the top right, there are 'Cancel' and 'Next' buttons. The form is divided into two main sections. The left section contains several input fields: 'Regulatory Authority Source No *' with a sub-field 'SS/SequenceNumber/'; 'Serial Number' with the value '12345'; 'Activity' with the value '1' and a dropdown menu showing 'TBq'; 'ActivityDate' with the value '16/11/2023' and a calendar icon; and 'Nuclide' with a dropdown menu showing 'Co-60' and an 'Add New Nuclide' link below it. The right section contains a 'Sealed Source Image' upload field with a file icon, a dropdown menu for 'Current Activity' showing 'Select', a dropdown menu for 'Current Sealed Category', and a dropdown menu for 'Current Security Level'. Each field has an information icon (i) to its right.

The second subform is the history subform (see screenshot below). This contains status data that allows users to track the status information about the entity (sealed source in this case) over time. For example, at one point in time the source was “In Use” at a certain facility, but at a later point in time the source might have been “Exported” to another facility. These status changes represent two different history records. So a History Record always has a Status Value (dropdown) and a Status Date.



Add New SealedSource History

Cancel Save

Facility*
 ▼ ▶
[Add New Facility](#)

Department
 ▼ ⓘ
[Add New Department](#)

Status Date *
 📅 ⓘ

Sealed Source Status*
 ▼ ▶
[Add New Source Statuses](#)

So it is important to understand that an entity of type “Entity with History” always contains some general information, along with at least one history record. Consequently, if the status of the entity changes (e.g. the source is changed from “In Use” to “Exported”) you should **add a new history record** instead of editing the existing history record.

This can be achieved by opening the main entity record you wish to add a status to, and on the left in the related entities column, click on “entityname” history (in our example case, Sealed Source History). This will show all the existing history records of this entity. You can view one by clicking “Show Details”. You could potentially edit it from here, but this should only be done if you made a mistake in this history record. Instead, if you wish to add a new status record as described in the concept above, you should click the “Add New” button.

Edit Sealed Source (SS/0007)

SealedSource History

Sealed Source

- ↳ Sealed Asso History
- ↳ SealedSource History

Add New ⋮

Regulatory Auth...	Status Date	Source Status	Facility	Action
SS/0007	16/11/2023	In Use	Test Facility	Show Details

⏪ ⏩

Regulatory Processes

One of the shortcomings of the previous version of RAIS (RAIS 3) was that it was not a process driven system. Some of the entities like authorization and inspections contained some fields and logic to try to emulate the real regulatory processes, but this was very basic.

RAIS+ introduces a completely new concept for this, as it now contains a sophisticated workflow engine. This allows for the complete integration of all the regulatory processes, with automated assignment of tasks to different actors in a process during the different stages. RAIS+ ships by default with a simple and a complex implementation of the regulatory processes, but they can be completely customized to fit the specific needs of the regulatory body.

Regulatory bodies should think in advance before implementing RAIS+ if they will be using the simple or complex default processes (configurable by the administrator). The simple processes involve much less steps than their complex counterpart, and usually only the regulator users will be interacting with them. The complex processes on the other hand are much more extensive as they contain more steps, and also typically involve the Licensee to log in into the system and enter data in some steps (e.g. online license application). In any case, whatever choice is made, it is always possible to customize the existing processes (i.e. adding or removing steps), or add new ones. This is covered in the “Administrator Manual”.

Note: the terms “process” and “workflow” are used interchangeably throughout this document. In the context of RAIS+, they are synonyms.

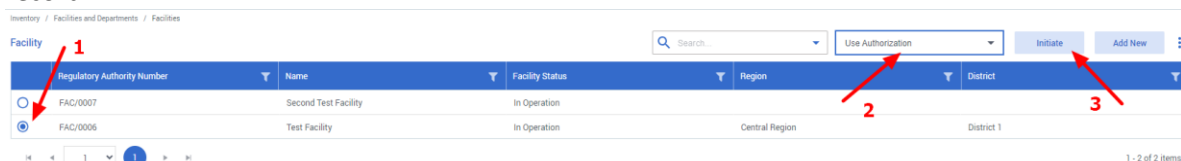
Processes are always associated with a workflow enabled entity (typically Facility) and can be started in two ways:

- From the chosen process in the Regulatory Processes menu with the Initiate Workflow button on the top right of the screen.



After clicking this button, a popup will appear where you are asked to choose the record of the workflow enabled entity you wish to link this workflow instance to.

- From the workflow enabled entity itself. E.g. to initiate a workflow from a “Test Facility” record



The screenshot shows a web interface for managing facilities. At the top, there is a breadcrumb trail: "Inventory / Facilities and Departments / Facilities". Below this is a search bar and a dropdown menu currently set to "Use Authorization". To the right of the dropdown are two buttons: "Initiate" and "Add New". A table below lists two facilities. Red arrows point to the "Initiate" button (labeled 1), the "Use Authorization" dropdown (labeled 2), and the "Initiate" button in the table's action column (labeled 3).

Regulatory Authority Number	Name	Facility Status	Region	District	
FAC/0007	Second Test Facility	In Operation			
FAC/0006	Test Facility	In Operation	Central Region	District 1	

As an example, we can trigger a “Use Authorization” process for one of the facilities in our system. After you initiate a workflow, the details page will open. At the top of the process details page, you can see information about the process itself on the left side. This give us the name of the current process instance we are working with, and to which facility it is connected.

Facility : Test Facility (FAC/0006)
 Current Process : Use Authorization (AUTH/USE/0001)

On the right side, we can see how the process instance was triggered, and which status it has:

Trigger : Initiated Manually
 Status : Draft

A workflow typically consists of multiple steps. You can see an overview of the steps by inspecting the progress bar. In the example screenshot below, we can see the different steps of a “Use Authorization” workflow that was started for a particular facility:



The currently active step is marked with a blue bullet and green text:



Each step usually involves interaction from a user with the system, typically by having to enter or review data on the form of the step. Depending on the step and the process configuration, this user can either be an internal user of the regulatory body, an external user representing a facility, or an external expert. The user in question can be notified by email and/or through the RAIS+ dashboard that a process step has been assigned to him/her and that an action from his/her side is required.

At the bottom of the page of a process, there are some extra tabs with information about this workflow. The sections you see will depend on your permissions.

Linked Processes	History	Generated Documents	Documents	Workflow Assignments
------------------	---------	---------------------	-----------	----------------------

Clicking on them will slide up a popup from below which will allow you to examine these details.

Section	Description
Linked processes	In some conditions, processes can be interrelated. When the current process is linked to any other process, for instance a child payment process, it will show up here, from where you can click it to open.
History	This section will contain a list of all steps and the data that was entered on each step, allowing you to review the whole history of a workflow.
Generated Documents	This section will contain links to any PDF/Word documents that were automatically generated by the workflow. A typical example is the generated authorization certificate at the end of the process.

Documents	This section will contain links to PDF/Word documents that were manually attached by a user to the workflow at some point. E.g. A schematics document uploaded by the licensee.
Workflow assignments	This will give you an overview of role or user assignments for each step of the workflow. I.e. who is allowed to execute this particular step of the process. Users with enough privileges (typically administrators) can override the default workflow assignment here if desired.

Whenever the execution of a workflow is waiting for completion of another (child) workflow, like a payment process or a review and assessment process, this will be indicated in the workflow header like so:

Facility : Test Facility (FAC/0006)
 Current Process : Use Authorization (AUTH/USE/0001)

Execution of current instance is waiting for the completion of dependent process. Please check for more details. [Click Here](#)

Trigger : Initiated Manually

Status : Waiting for Review and Assessment to complete

Clicking on the “Click Here” link will bring up the Linked Processes screen, from which you can see the details of the child processes. Clicking on a child process there will take you to it.

In the screenshot below, you can see that our current sample “Use Authorization” process has triggered two child processes:

- One “Payment for Authorization” process. Its state is already “Completed”
- One “Review and Assessment” process which is still “In Progress”

AUTH/USE/0001 - FAC/0006 - Waiting

Workflow Name	Name	Created On	Waiting On	Started By	State
Payment for Authorization	AUTH/PAY/0001 Test Facility	023			Completed
Review and Assessment	RA/0001 Test Facility				In Progress

Once the “Review and Assessment” process is completed, the main “Use Authorization” process can also continue.

Reports and Statistics

Reports and statistics about the data in the system are accessed through their respective menu-item. As their concept is very similar and because they are only different in the type of their contents, they are covered in the same section of this document.

- Reports will provide you with the detailed data of the chosen entity or process. Most reports are probably for internal regulatory body use only.
- Statistics on the other hand provide more of a general, numerical overview of the chosen data, which can be represented as tables or different types of charts. A regulatory body might decide to publish some of their statistical reports to the greater public.

The system comes by default with a substantial amount of predefined reports and statistics, which are categorized in their respective submenus:

Authorizations	Workers	History
Authorization Process Overview	Dose Distribution in a Practice	Calibration History of a Radiation Generator
Authorizations Expiring	Doses exceeding Dose Limits	History of a Radiation Generator
Authorizations Issued	Doses received by a Worker	History of a Sealed Source
Authorizations Pending	Report Worker	History of a Worker
Authorized Facilities in a Practice	Total Doses received by a Worker	History of an Associated Equipment
Inspection	Training Occasions of a Worker	History of an Unsealed Source
Non-authorized Facilities in a Practice	Workers in a Facility	History of Equipment associated to a Sealed Source
Registration		History of Equipment associated to an Unsealed Source
Regulatory Notification		History of Sealed Sources to associated Equipment
Valid Authorization For A Facility		History of Unsealed Sources to associated Equipment
Inventory		Events
Active Departments by Practice		Facilities involved in Radiation Events
Active Facilities by Practice		Radiation Events in which a Facility was involved
Associated Equipment Authorized to, But Not Yet Exported		Radiation Events involving Persons
Associated Equipment Authorized to, but not yet Imported		Radiation Events involving Persons Details
Associated Equipment Authorized to, but not yet Transferred to the recipient		Radiation Events of a given Type
Closed Enforcements		Radiation Generators involved in an Radiation Event
Current Associated Equipment of a Facility		Report - Radiation Events - Associated Equipment

Clicking on any report title will bring you the report preview page. Depending on the configuration of the report, you will be able to filter the data in the report by using the controls on the left hand side. On the top bar, you have options to navigate the report pages as well as download or print the report.

Authorizations Issued

1 / 1

Filters

Download

Authorization Type	Facility	Authorization Process Number	Department	Authorization Start Date
Use Authorization	FAC/0006 (Test Facility)	AUTH/USE/0001		23/10/2023

Start Date:

End Date:

Authorization: clear selection

Facility: clear selection

Authorization Type: clear selection

Regulatory System Settings

The Regulatory System Settings section contains various “core” entities (called master entities in RAIS+) that are needed for the rest of the system to work correctly. These are typically entities whose data rarely changes over time, and are used as a reference by other entities in the “Inventory” or “Regulatory Processes” section.

The master entities are logically grouped into the different subsections of the Regulatory System Settings menu bar.

Some examples of these “core” entities are:

- Country infrastructure entities like “Regions”, “Districts” and “Authorities”



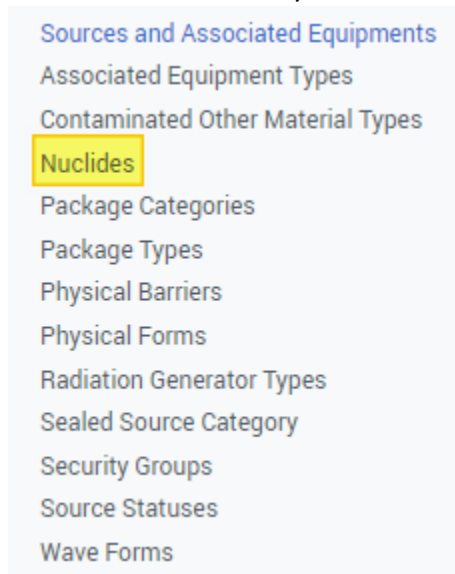
- “Officers” and their related “Officer Tasks” of a regulatory body



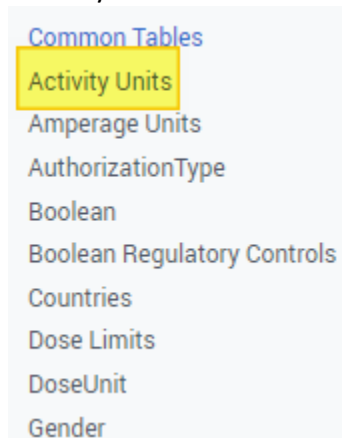
- “Non-Compliances” and their related “Non-Compliance Categories” referenced by inspection processes



- “Nuclides” referenced by sources



- “Activity Units”



- Etc

The default RAIS+ system comes with a lot of these master entities pre-created and populated with adequate data. The regulatory body may however choose to customize these entities by either adding or editing the data they contain, editing the structure of existing entities, or even by creating totally new entities.

As the adequate configuration of these entities is essential to the correct functioning of the system, only system administrators or privileged users are typically allowed to alter the data or edit the entities of the Regulatory System Settings.