



# **ECCAIRS 5 Reporting System**

## **ECCAIRS 5 Common Framework Data Bridge Configuration**

White Paper

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## 1 Abstract

The ECCAIRS Data Bridge is an XML based and XSD compliant way to feed data into an ECCAIRS system. The RIT/E5X data format is a file format implementing the Reduced Information Taxonomy (RIT) defined by the aviation community in Europe. RIT/E5X is based on a subset of the ECCAIRS Aviation Taxonomy, the so-called RIT domain, and uses the Data Bridge to process data from industry towards an ECCAIRS environment. RIT Data Bridge is available starting release 5.4.1.16 of the ECCAIRS Common Framework (ECF).

This document explains how to configure the ECCAIRS Data Bridge Profile using the ECCAIRS Repository Manager. The actions should be carried out by qualified staff.

## 2 Introduction

The ECCAIRS Reporting System software stores the occurrence data records in the database associated to the repository. The format used is based on a proprietary ECCAIRS 5 Data File format called E5F<sup>1</sup>. This native storage format is supported in the database associated to the repository and in the E5F files and obviously read as well as written by the various applications of the ECCAIRS Reporting System software suite.

A so-called *Reduced Interface Taxonomy* (RIT) has been defined in the Aviation Taxonomy extension for ECCAIRS, which consists of a reduced set of attributes (data fields) of the ECCAIRS Aviation Taxonomy. To implement Regulation 376/2014 of the European Union<sup>2</sup> it was agreed to use this subset of attributes to allow organisations (i.e. the industry) to report occurrences to the National Point of Contact (NPC). In general, such organisations do not have an instance of ECCAIRS, which they could have used to report, but their own. It was agreed that organisations report electronically to the NPC, using an open, XML-based and W3C compliant data format. This format is named ECCAIRS 5 eXchange format, in short E5X.

In this document the term RIT is used to refer to the data contents and the term E5X for the physical format of these files. The combination RIT/E5X is used to indicate an E5X of a determined RIT.

Starting with version 5.4.1.16 of the ECCAIRS 5 Reporting System, the application able to open and convert the E5X files is the Data Manager. Starting with version 5.5.1.5, this same functionality was added to the Browser, albeit limited to conversion of E5X to E5F files.

Though the E5X format is universal — its definition is identical for any taxonomy used — the domain part, RIT in this case, is specific for each deployment of a taxonomy extension. This implies that the ECCAIRS system must be configured properly otherwise it is unable to process any particular E5X for that RIT.

## 3 Implementation

The conversion of E5X files into the native E5F format is performed with a *Data Bridge*. This Data Bridge validates the contents of the E5X and generates an equivalent E5F file. The taxonomy version of the input E5X file and the resulting E5F file are identical. For example, an E5X produced for Aviation Taxonomy version ‘1.2.3.4’ will result in an E5F for the same taxonomy and the same version ‘1.2.3.4’.

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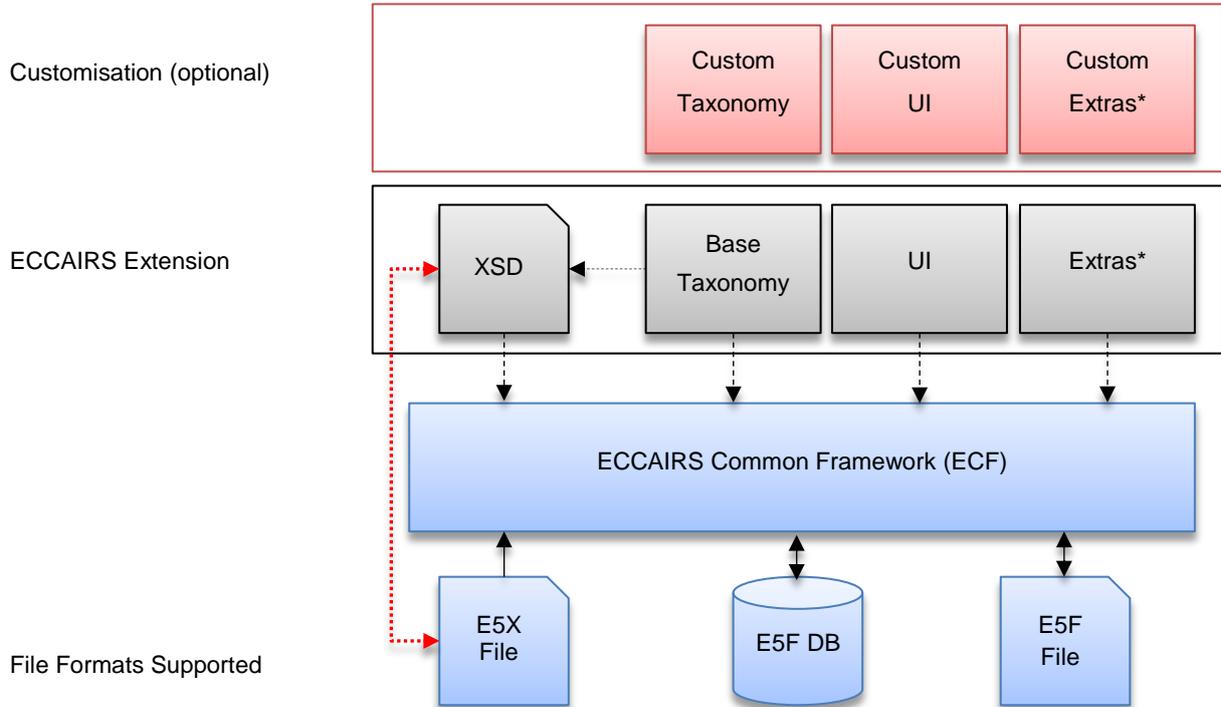
<sup>1</sup> See White Paper *ECFE5F FILE FORMAT* (Version 2.0 February 2013)

<sup>2</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1447326759604&uri=CELEX:32014R0376>



A full description of the ECCAIRS Data Bridge is given in a separate White Paper<sup>3</sup>. Though the configuration of a repository as described in this document does not require a detailed knowledge of the ECCAIRS Data Bridge, we recommend reading the mentioned White Paper in order to get an idea of how it works.

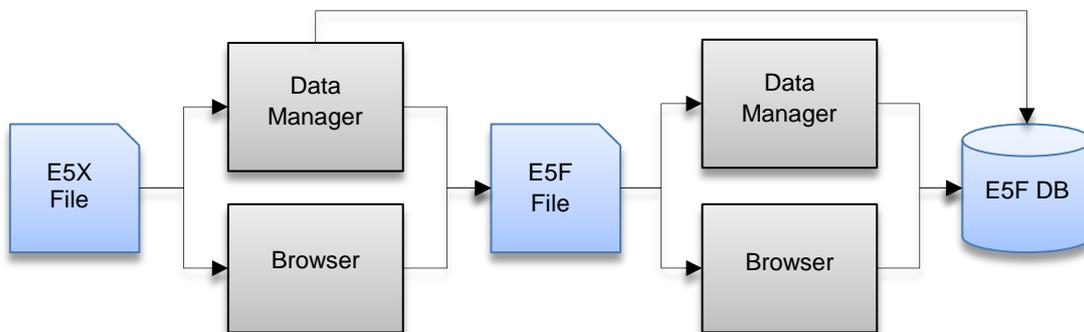
In the next figure the ECCAIRS architecture is depicted. The ECCAIRS Common Framework (ECF) is the standard software used in any ECCAIRS instance.



**Figure 1 – ECCAIRS 5 Architecture**

A standard ECCAIRS Extension normally provides 3 fixed items: the [base] taxonomy, the user interfaces (UI) and the XSD schema derived from the taxonomy. Depending on the taxonomy, optional extras may be supplied, for instance a special data entry wizard or vessel registry interface.

Below is the conversion workflow that illustrates the conversion workflow of E5X into E5F, as well as the applications being able to perform the conversion:



**Figure 2 – E5X to E5F/DB conversion workflow**

<sup>3</sup> See White Paper *ECCAIRS RIT/E5X DATA BRIDGE* (Version 3.0 April 2018)



The Data Manager is able to convert to E5F file but also to save the converted occurrence directly in the repository database. The Browser can only convert to E5F file. The second phase of importing the obtained E5F file into repository database is carried out using standard configuration. Some remarks about this phase will be addressed later in this document.

This White Paper will describe how a proper configuration is done. It has been chosen to base some of the peculiar settings on the Aviation Extension but the principle and overall guidelines are valid for any taxonomy extension. The configuration consists in the following items:

- Configuration of a Number Generator Tunnel profile
- Configuration of a Data Bridge profile
- Configuration of a Data Manager profile
- Configuration of a Browser profile
- Assigning the configured profiles to roles and users (not described)

## 4 Occurrence Identification

### 4.1 In E5F Format

In any ECCAIRS ecosystem there are attributes that allow marking uniquely any record that is stored in one of the data containers supported by the system: the proprietary E5F data file and the database attached to the repository. The attributes are the *File Number* and the *Responsible Entity*, both attributes are mandatory so at all times they contain sound values. In the Aviation Taxonomy the attributes have ID 452 and ID 453, respectively.

Together they form the unique key to each occurrence so that one and only one occurrence can have a particular combination of values in the same data container (individual E5F file or repository database). If a new occurrence is added with the same combination of values for these attributes, the system will trigger a warning and ask for adequate response (discard, overwrite or merge).

In this way each Responsible Entity is able to register its own occurrences with a sequence of unique file numbers. The same file number may appear in an occurrence for another Reporting Entity, but since the system stores the information in pairs, there is no risk that identifications overlap when integrating occurrences from different Responsible Entities in the same repository.

### 4.2 In E5X Format

Contrary to the E5F files and repository databases, in the E5X format there is no protection against using the same values for the above attributes inside multiple records. In fact, there are formally no identifying attributes but also no mechanisms, except those implemented in the procedure that generates E5X files, which defend from creating duplicates within the same E5X file.

When a RIT/E5X is converted into an ECCAIRS 5 occurrence, this apparent unruliness is guided into path by an occurrence matching procedure that uses the data in the RIT/E5X and blocks any attempt to create duplicates.

In practical terms:

1. RIT/E5X does not implement mandatoriness
2. RIT/E5X is based on a subset of the attributes from the corresponding full taxonomy



3. This subset *always* includes the File Number and Responsible Entity attributes, containing the unique occurrence identifier of the NPC (see above) *receiving* the occurrence from the organisation *reporting* the occurrence in RIT/E5X format to the NPC
4. It is not required for an organisation *reporting* the occurrence in RIT/E5X format to set values for File Number or Responsible Entity
5. This subset *may* include attributes which refer to the organisation *reporting* the occurrence in RIT/E5X format and they represent normally the unique identification of the occurrence *inside this reporting organisation*.

The Aviation Taxonomy contains 2 attributes that can be used for this purpose: Report Identification (with attribute ID 438) and Reporting Entity (attribute ID 447)

Please mind that to enable an organisation to perform follow-up of occurrences, that is, submit updates of reports submitted in the past, either of the attributes above should be provided in the RIT/E5X, as it will allow the receiving NPC to correctly identify which E5F should be updated from the incoming E5X.

It is the responsibility of the originator of the report to assign values to these attributes, and the responsibility of the NPC to determine which attributes the originator shall assign. Originator and NPC can agree on whatever numbering system to use.

### 4.3 Matching IDs in RIT/E5X

The behaviour of the ECCAIRS system with respect to the above attributes in the RIT/E5X input file is as follows:

- When *both* File Number and Responsible Entity are present in the input file then these are used for matching with a single occurrence in the repository database
  - If File Number or Responsible Entity or even both values are *missing* in the input file then these are *discarded*. In this case, a mechanism shall be implemented for finding the matching occurrence in the repository database
  - It is permitted to *ignore* the File Number and Responsible Entity from the input file; these are then *discarded*. Like for the point above, a mechanism shall be implemented for finding the matching occurrence in the repository database
  - A *query* can be defined that uses values from the input file and locates the matching occurrence in the repository database. If a match is found then the File Number and Responsible Entity are taken over from this occurrence and used for further processing (update, merge...).
- This query will not run when the File Number and Responsible Entity are already available in the input file and it is chosen to use these
- If the system fails to find a single matching occurrence in the repository database then it will consider the input file as being a totally new report and create an occurrence
  - In the case that that the query returns 2 or more matching occurrences, then:
    - ECF up to v5.5.1.14 – The information in the input file will update the *first* occurrence only; the second or additional occurrences that are found will not be modified<sup>4</sup>. The

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<sup>4</sup> The RIT/E5X can only update 1 occurrence at a time



term *first* refers to the record in position 1 after interrogating the repository database; since the query does not perform any sort before returning the result, for instance the most recent on top, the record in position 1 may not always be the same

- ECF after v5.5.1.14 – In order to preserve existing data, the input file will be treated as a totally new report and a new occurrence will be created instead of updating the *first* of existing occurrences (see previous point)

**NOTE:** When using a *query* for finding a matching occurrence in the repository, select and combine the *query criteria* in such way that only one occurrence will result. This is to assure that you are indeed updating the right occurrence.

- If a new occurrence shall be created and a File Number and Responsible Entity could not be obtained, then a new set of values will be computed from an established default value setting ('presets')
- The default value for File Number is computed using a *Number Generator*; the default value for Responsible Entity is set to a static value, usually corresponding to that of the receiving NPC

To avoid that information in the RIT/E5X is not updating an occurrence from another provider, it should be ensured that input from different sources is properly separated, for instance by agreeing on the data to embed in the RIT/E5X (e.g. special identifiers, see for instance point 5 on page 8) or by using bespoke repository profiles and roles.

## 5 Configuration

In this chapter the configuration required for processing RIT/E5X files is described. This configuration exists of the configuration of three profiles, in this order:

1. Number Generator Tunnel Service profile
2. Data Bridge profile
3. Data Manager profile, in particular the *Data Bridge to DB* and the *Data Bridge to File* section
4. Browser profile, in particular the *Data Bridge to File* section

### 5.1 Number Generator Tunnel Service Profile

In the previous paragraphs the term *Number Generator* has been used regularly. This is a standard feature of the ECCAIRS system that generates 'numbers' which can be used for computing automatically a new and unique value for the File Number attribute.

The Number Generator functionality is based on a server-side *Tunnel Service* profile and a client-side *Add-In*. The Number Generator Tunnel Service listens and executes requests coming from the corresponding Add-In in the client applications. See the *ECCAIRS 5 SERVER INSTALLATION MANUAL* for more details.

You will need to set up a Tunnel Service profile before configuring the Data Manager profile. If you already have a profile with the correct parameters, then you can skip directly to paragraph §5.2 DATA BRIDGE. The Tunnel Service for the Number Generator must be added in the Repository Manager:

- Select the **Tunnel Service** node of the target repository's **Profiles** node



- Add a new Tunnel Service profile
- On the **Profile identification** tab enter a unique identifier, e.g. 'RIT/E5X NUMBER GENERATOR', set the **Version** and optionally provide a **Description**
- Select the **Tunnel service** tab and click the **Edit...** button
- Give the Tunnel service a name, e.g. 'RIT/E5X Number Generator'
- Set **Activation type** to **'.NET activation'**
- Set **Assembly/class** to **'Number Generator Service'** and **'Number Generator Service'**, respectively
- Click on the  button right to **Configuration**, set, and confirm the database connection
- Before saving the Tunnel Service profile, check that the **Enabled** flag is correctly set

The Tunnel Service can now be assigned to one or more roles in the repository.

### 5.2 Data Bridge Profile

The Data Bridge profile is required because it contains the elements for the XSD validation (Figure 1 on page 6). Since RIT/E5X is associated to a single version of the taxonomy, each Data Bridge profile can support only one version of RIT/E5X, too. Hence, if you need to support multiple versions of RIT/E5X (v1, v2, v3...) then you need configure an equivalent number of Data Bridge profiles, one for each version you want to support.

Setting multiple Data Bridge profiles allows an NPC to broaden the versions supported and accept E5X files from various organisations without obliging the same organisation to upgrade their internal reporting system which generates the E5X files as soon as a new taxonomy version is released and implemented at the NPC.

**Note** — Though the E5X files is transformed into an E5F for the same taxonomy version (v1→v1, v2→v2, v3→v3...), the *Conversion Library* in the Repository Manager will make sure that the obtained E5F is properly converted and aligned to the current version of the taxonomy that is in use in the repository (e.g. v1→v3, v2→v3).

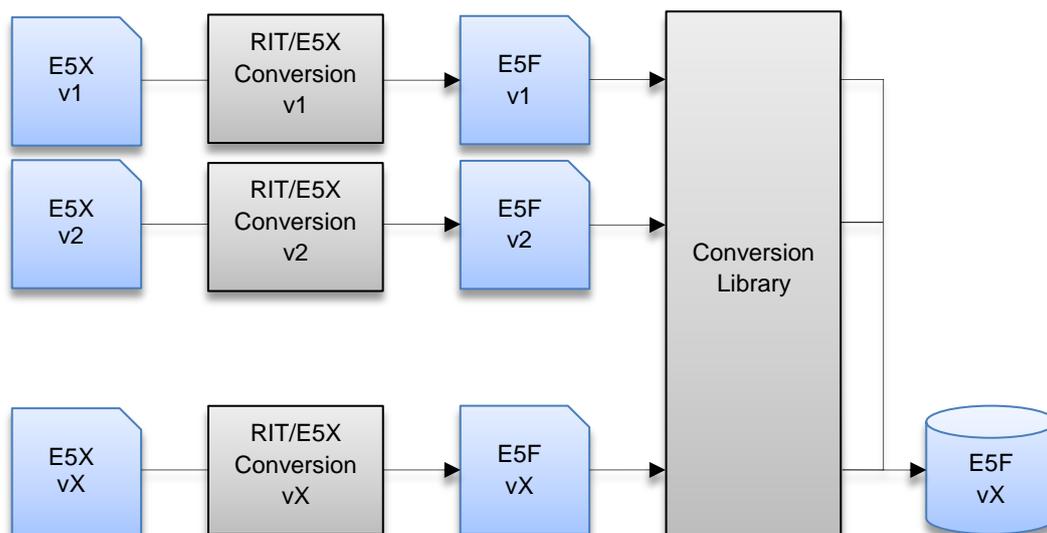


Figure 3 – E5X to E5F conversion version management



The Data Bridge profile must be added in the Repository Manager:

- Select the **Data Bridge** node of the target repository's **Profiles** node
- Add a new Data Bridge profile
  - Tip* — Use the option **Add Data Bridge profile from file....** Each Taxonomy Extension brings a configured profile template. This profile template is available in folder *C:\Program Files\Eccairs5\Extensions\AVIATION<sup>5</sup>*, subfolder *Profiles\Data Bridge*.
  - Note* — If you use this mode you can skip to the last step
- Select the **Data Bridge file** tab and click the **Import** button
- Select the **ECCAIRS 5 Data Bridge definition file (\*.edb)** from the folder mentioned in the second step
- Make sure the **Data Bridge** field results '*Configured.*' and save the profile
- Repeat the above steps for every version of RIT/E5X you want to support

The Data Bridge profile(s) can now be assigned to one or more roles in the repository. It is recommended to assign all Data Bridge profiles to a role in order to be sure that the account used to upload E5X files can handle any taxonomy version for which the E5X files was produced against.

### 5.2.1 XSD schema

The Data Bridge profile embeds the XSD schema used for the validation of the E5X file contents. Such diagram can be exported for analysis and for performing data validation outside of an ECCAIRS instance. To obtain the XSD schema:

- Select the **Data Bridge** node of the target repository's **Profiles** node
- Select the Data Bridge profile and open in edit mode
- Select the **Data Bridge file** tab
- Click the **Export schema** button for exporting only the XSD schema
- Click the **Export all** button for exporting the XSD schema and the other files required

## 5.3 Data Manager Profile

The Data Manager application is designed for the conversion of occurrences submitted via RIT/E5X and storage in the repository database. The Data Manager is also capable of converting occurrences and storing them in E5F data files. The necessary configuration for the Data Manager to operate successfully is performed in the Repository Manager, and precisely within a Data Manager profile.

You will need to set up a Tunnel Service profile before configuring the Data Manager profile. If you do not have such profile with the correct parameters, go to paragraph §5.1 NUMBER GENERATOR TUNNEL SERVICE PROFILE first.

### 5.3.1 Data Bridge to DB

A *Data Bridge Add-In* to support conversion from RIT/E5X to the repository database must be configured in the Data Manager Profile. This is achieved by setting up a *processor*. A processor carries

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<sup>5</sup> C:\Program Files (x86)\Eccairs5\Extensions\AVIATION on 64-bit systems



out operations on every individual occurrence contained in a set of records handled by the Data Manager.

- Select the **Data Manager** node of the target repository's **Profiles** node
- Add a new Data Manager profile or edit an existing Data Manager profile
- Select the **Data Bridge to DB** tab
- Add a new processor by clicking on the  button
- Enter a name for this processor, e.g. 'RIT/E5X Data Bridge processor'
- Set **Activation type** to **'.NET activation'**
- Set **Assembly/class** to **'Data Bridge AddIn'** and **'DataBridge AddIn'**, respectively
- Click on the  button right to **Configuration**
- On the **Data Bridge AddIn Configuration** form, enter a **Description**, , e.g. 'RIT/E5X Data Bridge configuration'
- Set up the **Occurrence Identification** presets:
  1. Configure the **Number Generator** according your system rules. You need the Number Generator Tunnel Service configured in §5.1 on page 9.
  2. Select the **Responsible Entity** from the available values
- Select how the above presets are being managed
  1. **Use always** – Ignore whatever identification specific fields from the input file and assign the computed presets to File Number and Responsible Entity for further processing → if you use this mode you can skip to the last step
  2. **Use only if identification cannot be derived** – Use the identification specific fields from the input file for obtaining to correct File Number and Responsible Entity, and revert to using the presets when no identification can be obtained
- In the **Derive occurrence identification from** section, specify what the processor shall do with the data contained in the input file. At least one of the first 2 options shall be ticked:
  1. Tick **If 'File Number'-'Responsible Entity' provided use these first** when you want to use these attributes.  
Untick if you want to ignore them.  
If no values are in the input file then one of the following options is used
  2. Tick **Find 'File Number'-'Responsible Entity' from a query in the database** when you want to use a query to locate an occurrence in the repository database from which you take the File Number and Responsible Entity. See §5.3.1.1 for more details.  
Untick if you do not want to use a query.  
If no occurrence or when multiple occurrences are located, then the following option is used
  3. Use of presets. This option is used when both the above 2 items are unable to deliver usable File Number and Responsible Entity
- Save the configuration. Make sure the **Description** field on the Processor dialogue form results *'Configured.'* and save the processor



Before you can use the Data Manager application for converting RIT/E5X and saving directly to the repository database, you need to enable the dedicated menu item in the Data Manager profile:

- Select the **Data Manager Configuration** tab
- Make sure the **Data Exchanger** option is ticked
- Tick the **Load from Data Bridge file** option
- Save the Data Manager profile

The Data Manager profile can now be assigned to one or more roles in the repository.

**NOTE:** The dedicated menu option for the Data Bridge function must be enabled in the Data Manager. Otherwise, the configured functionality is not available at run-time.

### 5.3.1.1 Defining the Query

The query shall contain the appropriate number of criteria that allows the Data Bridge Add-In to locate, in a precise manner, the occurrence that matches the report submitted by an organisation. As mentioned in §4.2 IN E5X FORMAT at point 5, attributes exist in the RIT/E5X that an organisation reporting the occurrence can use to establish its unique key. In the Aviation Taxonomy these are the *Report Identification* (ID 438) and *Reporting Entity* (ID 447). The remainder of this paragraph will be centred on discussing these attributes, and the sample query below is based on them:

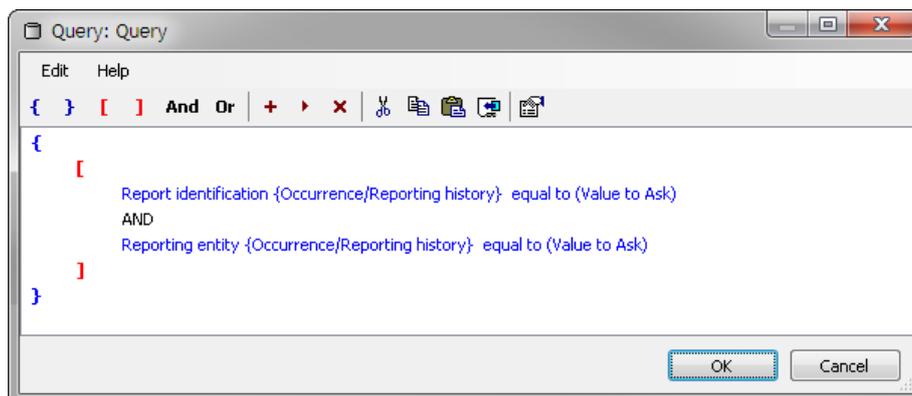


Figure 4 – Sample Query

The criteria in query both use the **‘Value to Ask’** setting (note: in the criterion definition dialogue this is indicated as ‘Ask Later’). This setting enables the ECCAIRS system to dynamically import the value of the matching attribute from the input file — there is a 1-to-1 correspondence between the RIT and the full taxonomy — and to use this value in the query.

One can add other criteria or use attributes different from the above, either static or using ‘Value to Ask’. The main objective here is to build a query that allows locating with high precision an occurrence in the repository database, without being too restrictive and thus hampering the identification of a matching occurrence (provided such occurrence exists, of course).

The query also contains a pair of nested square brackets (in red in the above figure) that encompass Report Identification and Reporting Entity. The square brackets are needed because the **Reporting History** entity which is the *parent* of these attributes, or, in other words, the branch in the occurrence



structure under which both attributes are positioned, is an entity of type ‘*multiple instance*’ in ECCAIRS, meaning that the occurrence can contain multiple entries for this entity.

The internal query mechanism will catch an occurrence when every individual criterion evaluates ‘true’. In the presence of multiple instance entities, only one of the criteria but not the other criteria may evaluate ‘true’ for one instance, while the other criteria evaluate ‘true’ for a different instance. In this situation, the occurrence found might not be the one being sought. The square brackets force a full match for the same entity.

**NOTE:** Be aware that if using attributes from ‘multiple instance’ entities there are logically also multiple instances of such attributes from that entity. In this situation, the ECCAIRS system will discard all except the FIRST instance of this entity for determining which attribute to use from the RIT/E5X.

Under normal circumstances, e.g. industry reporting to their NPC, only one instance of this entity should exist. Proper instructions shared with organisations reporting can minimise or even prevent finding yourself in an ambiguous situation.

### 5.3.2 Data Bridge to File

The *Data Bridge to File* is a variation of the *Data Bridge to DB* and the difference consists in the destination data container. While *Data Bridge to DB* converts and stores the RIT/E5X occurrence directly into the repository database, *Data Bridge to File* stores the converted occurrence into an E5F file.

- Select the **Data Manager** node of the target repository’s **Profiles** node
- Add a new Data Manager profile or edit an existing Data Manager profile
- Select the **Data Bridge to File** tab
- In the **File number** section, set the **Generation type** to one of the following options:
  1. **Use GUID** – Generate a universally unique code (see also §6 on page 16)
  2. **Use Number Generator** – Use a configured Number Generator. If selected, set up the Number Generator according your system rules, by clicking on the  button. You need the Number Generator Tunnel Service configured in §5.1 on page 9
- In the same **File number** section, set one of the following options:
  1. **Always overwrite** – Always use the File Number computed under **Generation type**
  2. **Only if missing** – Use the File Number computed under **Generation type** only if the input RIT/E5X file does not contain this value
- In the **Responsible entity** section, select a **Default value** from the available values
- In the same **Responsible entity** section, set one of the following options:
  1. **Always overwrite** – Always use the default Responsible Entity
  2. **Only if missing** – Use the default Responsible Entity only if the input RIT/E5X file does not contain this value



**NOTE:** Be aware that the ‘Only if missing’ setting for the File Number and for the Responsible Entity are treated separately. So if in the RIT/E5X input file one of these attributes is missing but the other is evaluated then only that one missing will be assigned the default; the other preserves the value from the RIT/E5X input file.

Before you can use the Data Manager application for converting RIT/E5X and saving to E5F file, you need to enable the dedicated menu item in the Data Manager profile:

- Select the **Data Manager Configuration** tab
- Make sure the **Data Exchanger** option is ticked
- Tick the **Load from Data Bridge file** option
- Save the Data Manager profile

The Data Manager profile can now be assigned to one or more roles in the repository. Make sure then when ticking the **Number Generator** option in the **File number** section, a *Tunnel Service* profile is also included in the same role or roles.

**NOTE:** The dedicated menu option for the Data Bridge function must be enabled in the Data Manager. Otherwise, the configured functionality is not available at run-time.

### 5.4 Browser Profile

The Browser profile can be used for configuring the conversion of occurrences submitted via RIT/E5X and storing them in E5F data files. The necessary configuration for the Browser to operate successfully is performed in the Repository Manager, and precisely within a Browser profile.

You may want to set up a Tunnel Service profile before configuring the Browser profile. If you do not have such profile with the correct parameters, go to paragraph §5.1 NUMBER GENERATOR TUNNEL SERVICE PROFILE first.

For the Browser profile the steps are:

- Select the **Browser** node of the target repository’s **Profiles** node
- Add a new Browser profile or edit an existing Browser profile
- Select the **Data Bridge to File** tab
- In the **File number** section, set the **Generation type** to one of the following options:
  1. **Use GUID** – Generate a universally unique code (see also §6 on page 16)
  2. **Use Number Generator** – Use a configured Number Generator. If selected, set up the Number Generator according your system rules. Click on the  button. You need the Number Generator Tunnel Service configured in §5.1 on page 9
- In the same **File number** section, set one of the following options:
  1. **Always overwrite** – Always use the File Number computed under **Generation type**
  2. **Only if missing** – Use the File Number computed under **Generation type** only if the input RIT/E5X file does not contain this value



- In the **Responsible entity** section, select a **Default value** from the available values
- In the same **Responsible entity** section, set one of the following options:
  1. **Always overwrite** – Always use the default Responsible Entity
  2. **Only if missing** – Use the default Responsible Entity only if the input RIT/E5X file does not contain this value
- In the **Configuration type** section, set one of the following options:
  1. **Silent** – Use the settings for File Number and Responsible Entity without user interaction
  2. **Prompt User** – Show a dialogue form at run-time allowing the user to establish the behaviour for calculating File Number and Responsible Entity

**NOTE:** When selecting ‘Prompt User’, the system discards the configuration of the File Number and Reporting Entity, delegating to the end-user the actual choice and configuration, to be performed at run-time.

Before you can use the Browser application for converting RIT/E5X and saving to E5F file, you need to enable the dedicated menu item in the Browser profile:

- Select the **Menus and toolbars** tab
- Make sure the **File** option is ticked
- Tick the **Open Data Bridge** option
- Save the Browser profile

The Browser profile can now be assigned to one or more roles in the repository. Make sure then when ticking the **Number Generator** option in the **File number** section, a *Tunnel Service* profile is also included in the same role or roles. The same Tunnel Service profile is required when selecting ‘Prompt User’.

**NOTE:** The dedicated menu option for the Data Bridge function must be enabled in the Browser. Otherwise, the configured functionality is not available at run-time.

## 6 Conversion to E5F: GUID vs Number Generator

For the conversion from RIT/E5X to E5F file, one of the options for the *File Number* is using a GUID. The GUID, acronym for Globally Unique Identifier, is a 128-bit value consisting in its textual representation of one group of 8 hexadecimal digits, followed by three groups of 4 hexadecimal digits each, followed by one group of 12 hexadecimal digits, as ‘XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX’ where ‘X’ is a hex digit (0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F). The generated GUID is a code that is very close to achieve 100% uniqueness<sup>6</sup>. In theory, with a GUID, you could even do without the Responsible Entity.

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<sup>6</sup> <http://guid.one/guid>

# ECCAIRS 5 Reporting System – Common Framework

## White Paper – Data Bridge Configuration



However there is quite a disadvantage in having a GUID as File Number, and this is that the later management of the occurrence is not really practical, if not cumbersome (e.g. querying). Changing a GUID back into a more human-understandable number is a tedious task, since the ECCAIRS system does not include a function that automatically reassigns File Numbers at the press of a button.

It can be performed manually with for instance the Browser, but must be done one by one. You have to set up a dedicated configuration (e.g. Batchelor Add-In, Browser menu items...) or even revert to using the ECCAIRS 5 Application Programming Interface (E5API) when willing to automate. Not so immediate either.

The recommendation therefore is to prefer a Number Generator for computing File Numbers, and leave the GUID option only for experimental or testing purposes.

**NOTE:** Number Generator functionality can be implemented in various places, for instance as an *Event Handler Add-In* in a *Browser* profile. Though not compulsory, it might be wise to use a single Tunnel Service profile per repository and share it with the Data Bridge and possibly also replicate the patterns used in the algorithm, unless you want to clearly distinguish occurrences obtained via Data Bridge from those recorded in normal way.

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