




A European Cancer Image Platform Linked to Biological and Health Data for Next-Generation Artificial Intelligence and Precision Medicine in Oncology

Deliverable D3.5: Data access sub-portal

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1. Version log

Issue Date	Version	Involved	Comments
22/08/2022	V0.1	Lauren Fromont and Teresa Garcia Lezana	First draft
29/09/2022	V1	Anais Emelie & Karim Lekadir	Revised and corrected final version.

2. Executive Summary

The objective of this deliverable is to provide a tool that Data Access Committees (DACs), that is, data owners, can easily use to manage their members, attach their policies and data use conditions to their datasets, and manage access requests as per *Task 3.5. Data access management*. This document details the specifications of the user interface prototype that we created to meet these requirements. It includes projections for improvement and next steps.



Table of Contents

1.	Version log	2
2.	Executive Summary	2
1	Introduction	4
1.1	A DAC portal in the context of EuCanImage	4
1.2	A DAC portal to facilitate data access	5
2	Specifications of the DAC portal prototype	5
2.1	Managing your DAC	5
2.2	Managing data requests	6
2.2.1	Policies	6
2.2.2	Requests	8
3	Concluding remarks	9

Acronyms

Name	Abbreviation
Data Access Committee	DAC
Findable, Accessible, Inter-operable, Re-usable	FAIR
Open source imaging informatics platform	XNAT
Data Use Ontology	DUO
European Genome-Phenome Archive	EGA
Centre for Genomic Regulation	CRG



1 Introduction

1.1 A DAC portal in the context of EuCanImage

EuCanImage pursues the creation of an integrated “FAIR” imaging platform linked to biological and health data repositories for the development of artificial intelligence in precision clinical oncology. Following this goal, EuCanImage’s repositories will be cross-linked to repositories at EGA and XNAT, where corresponding non-imaging and imaging data will be hosted, curated and managed. Access to these controlled datasets is managed through data access committees (DACs), a.k.a. data controllers. They review data requests to grant or deny access permissions to the submitted datasets (Figure 1). Therefore, EuCanImage needs a tool that will allow DACs to perform these operations, thus enabling a link between requesters and the Access Manager itself. For this reason, we propose the implementation of a DAC portal, which will contribute to ease the access and distribution of the data by simplifying the process of acquiring access credentials according to the access rules of the respective imaging collections. This new DAC portal consists of a user interface that allows members of the DAC to easily manage data access requests, manage granted credentials, as well as manage their own DAC.

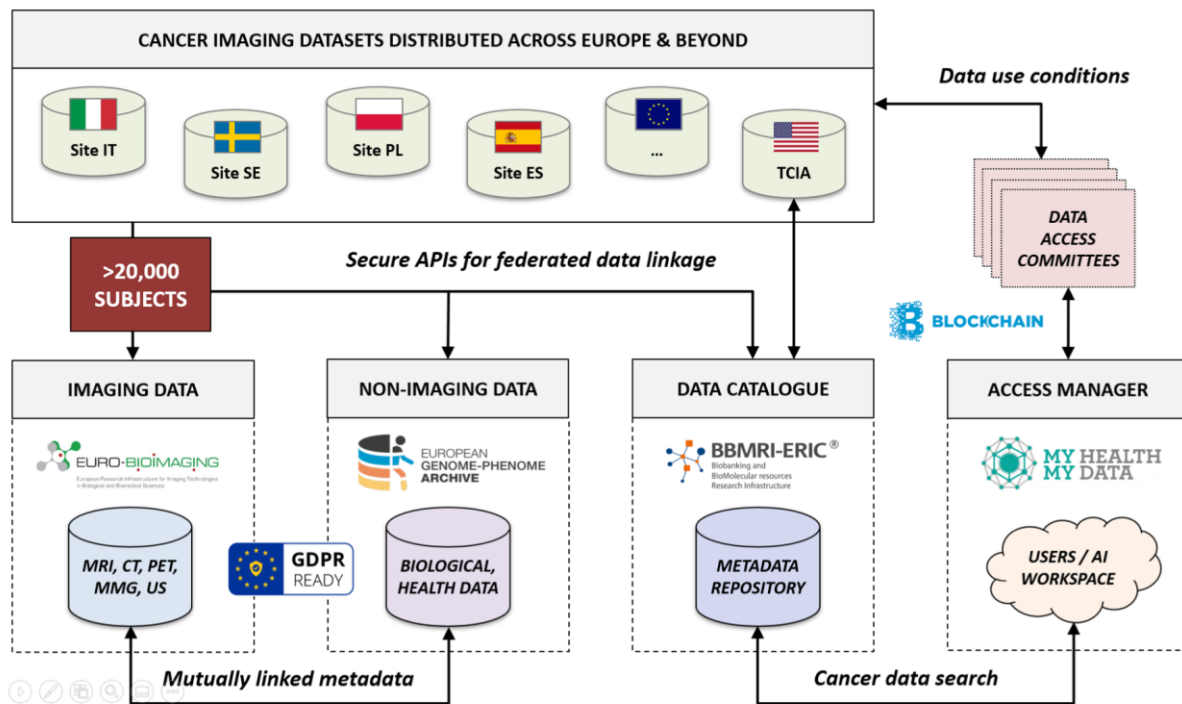


Figure 1: The main components of EuCanImage’s Data Management platform. The Data Access Committees (DAC) Portal will constitute the interface between users and the Access Manager



1.2 A DAC portal to facilitate data access

“Data access” refers to the protocol that encompasses:

- a. registering a user (user)
- b. requesting access to a dataset (user)
- c. **managing the request (DAC)**
- d. Accessing files (user)

The present deliverable concerns point **c.** (in **bold**). In addition, the requirements for a DAC portal should include:

- registering a DAC;
- modifying an existing DAC;
- adding DAC members;
- changing a DAC’s main contact.

A 6’ introduction of all the steps described above can be found [here](#). Below we provide the specifications of the DAC portal prototype. While we provide screen captures for illustration purposes, the underlying system has been tested with real data and is ready to be used by EuCanImage.

2 Specifications of the DAC portal prototype

2.1 Managing your DAC

Owners of specific EuCanImage datasets will form a DAC. The DAC members consist of one administrator who is also the main contact, and as many members as needed.

The first step is to create a DAC (Figure 2). This DAC will be reviewed by a third instance (at the CRG this role is undertaken by the Helpdesk) and validated (or not).

My DACs - Create a DAC
Fill in the following form to request the creation of a new DAC.

Title *
DAC title...

Description
DAC description...

*: Required fields
You can add members after this new DAC is validated.

CREATE

Figure 2: Screen capture of the DAC creation page.



Upon validation, the creator of a DAC is automatically an administrator. This person will have the possibility to edit the DAC (Figure 3), to modify the title, description, members (adding / removing / modifying their role). Only administrators can modify these aspects.

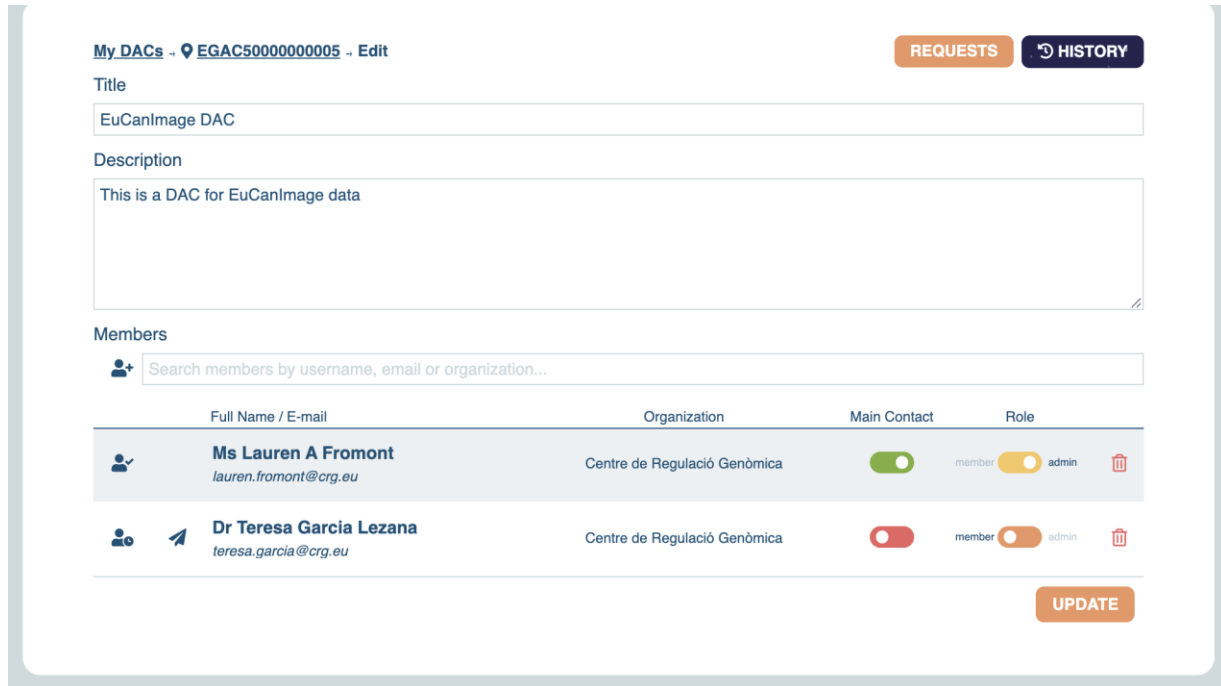


Figure 3: Screen capture of the DAC edition page.

These features will allow EuCanImage cohorts to manage the internal organisation of their DACs. Meanwhile, the CRG also introduced key features that will allow cohorts flexibility to handle data requests. [See video tutorial - DAC policy management.](#)

2.2 Managing data requests

2.2.1 Policies

It is important for EuCanImage cohorts to be able to import their own policy and to link it to a specific dataset (or datasets) of interest. Thus, the DAC portal environment allows DACs to import a policy as text or URL (Figure 4), edit a policy and add data use conditions (e.g., in the form of DUO codes: Figure 5), and access the listing of all policies they have imported (Figure 6).



My Policies - Create a Policy
Fill in the following form to create a new Policy.

DAC *
Select a DAC

Short Description *
Provide a short description about this policy...

Content
Provide the policy content...

Url
Provide the policy url if you have one...

*: Required fields
You can add DUO codes after the policy is created.

CREATE

Figure 4: Screen capture of the Policy creation page

Edit EGAP5000000000

DAC
EGAC50000000005 EuCanImage DAC

Short Description *
EuCanImage Policy

Content
This is the policy description

Url
Provide the policy url if you have one...

Data Use Conditions
Search for DUO codes...

DUO:0000022

You can add/remove modifiers by clicking the DUO codes.

*: Required fields

UPDATE

Figure 5: Screen capture of the policy edition page

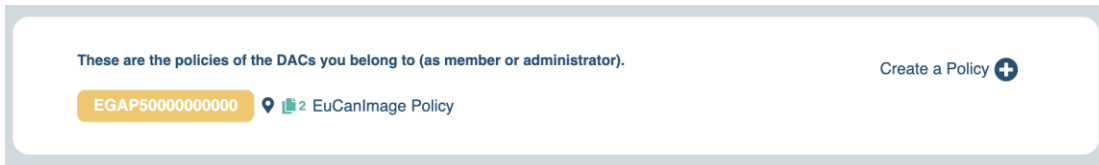


Figure 6: Screen capture of the list of policies in a given DAC (in this example, only one is listed).

2.2.2 Requests

Last — but not least — DACs should be able to handle data requests as easily as possible. As data controllers, they are a pivotal step in the data access and distribution process.

In our updated DAC portal, managing data requests is as simple as clicking on a button (Figure 7). To ease the browsing of requests, there is a filter option as well as grouping options (by dataset or requester. As can be seen on the top right corner, it is also possible to access the history of requests that have already been handled (Figure 8). It is always possible to withdraw access to a user. [See video tutorial - Managing requests](#). Finally, there is an additional feature under construction: providing access in a specific time window (measurable in days, weeks, or months).

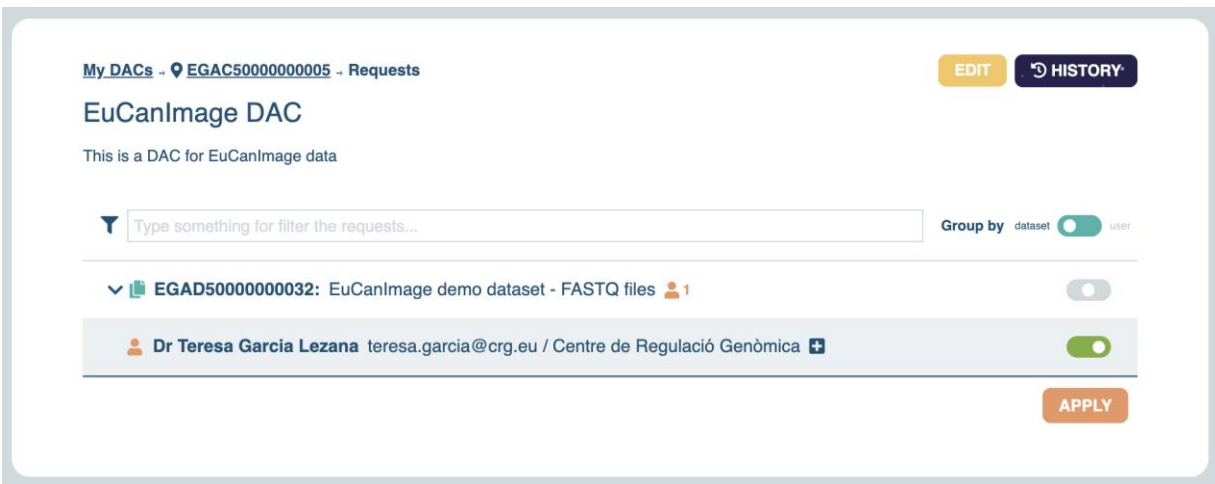


Figure 7: Screen capture of the managing requests page

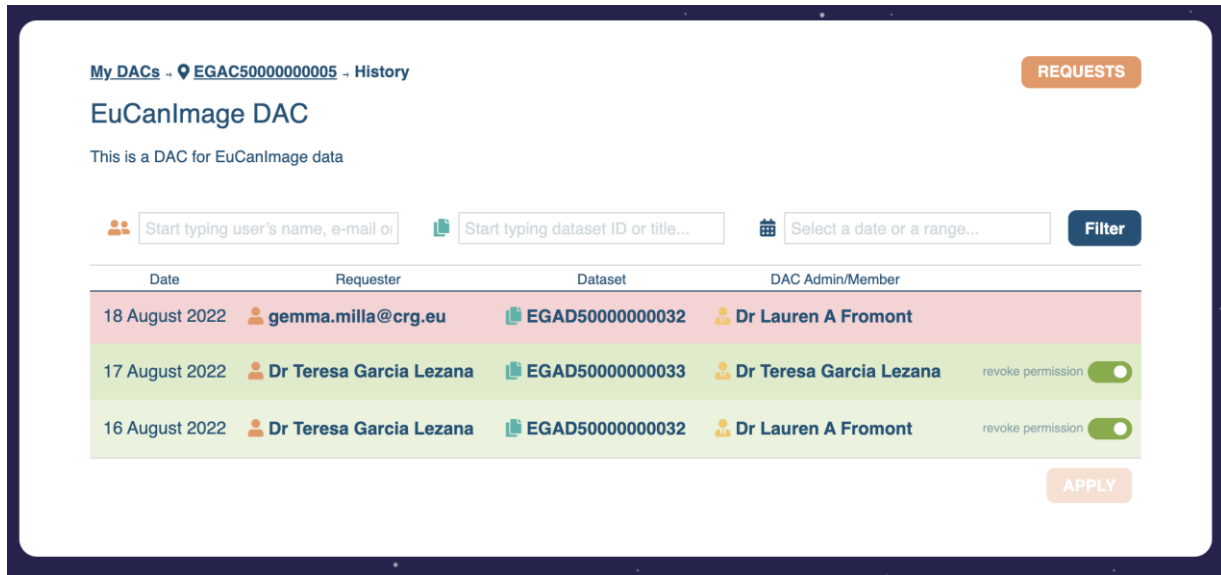


Figure 8: Screen capture of the request history page

3 Concluding remarks

To ease data access management we created a new DAC portal prototype. In parallel, we implemented a single identity request to facilitate navigation between EuCanImage and underlying repositories (as EGA).

- **New DAC portal.** A demonstration of use of the new DAC portal was presented at the EuCanImage platform working group. The prototype was accepted and no modifications were suggested at the moment. The discussion addressed the next steps we will need to focus on for the integration of the DAC portal into the EuCanImage platform. More specifically, the establishment of the bridge between XNAT and EGA for user management, and the association with the metadata model (patient clinical data), as well as with the catalogue. This integration will benefit from previous experience from the EuCanShare integration prototype.
- **Single identity request.** EuCanImage portal implemented a single central identification system (keycloak) to avoid multiple identity requests in the linked repositories (e.g., EGA). The user will only authenticate in the EuCanImage platform once, and then will automatically be able to carry its identity to underlying repositories.

List of figures

Figure 1: The main components of EuCanImage’s Data Management platform. The Data Access Committees (DAC) Portal will constitute the interface between users and the Access Manager.....4

Figure 2: Screen capture of the DAC creation page.....5

Figure 3: Screen capture of the DAC edition page.6

Figure 4: Screen capture of the Policy creation page.....7



Figure 5: Screen capture of the policy edition page7

Figure 6: Screen capture of the list of policies in a given DAC (in this example, only one is listed).....8

Figure 7: Screen capture of the managing requests page8

Figure 8: Screen capture of the request history page9