D4.4 Research Community Dashboard: specification and release plan

30/06/2017 | OpenAIRE-CONNECT

Open Access Infrastructure for Research in Europe towards 2020
Deliverable Code: D4.4 – Version 2.0

This deliverable includes the results of the functional requirements, a specification of the software, and a release plan for the user interface functionalities of the Research Community Dashboard Service.

H2020-EINFRA-2016-2017/H2020-EINFRA-2016-1
Grant Agreement 731011

Document Description

D4.4 Research Community Dashboard: specification and release plan

WP4 - The Research Community Dashboard: Open Science Services for Research Communities

WP participating organizations: CNR, ARC, ICM, Jisc, UniHB, PIN, IRD, CERN, CNRS, UMINHO, ICRE8	
Contractual Delivery Date: 11/2018	Actual Delivery Date: 30/11/2018
Nature: Report	Version: 3.0

Preparation Slip

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Document Change Record

Issue	Item	Reason for Change	Author	Organization
V3.0	Third version			

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OpenAIRE-CONNECT is a project funded by the European Union (Grant Agreement No 731011).

1 | INTRODUCTION

The main concept behind OpenAIRE–Connect is to realize, operate, and leverage the uptake of two new services that build on and extend the existing OpenAIRE technical and networking infrastructure, to stimulate a technical and cultural shift towards a scholarly communication ecosystem supporting more effective/transparent evaluation and reproducibility of research results. Services will be conceived that contribute to the realization of a common scientific communication ecosystem in support of Open Science publishing principles. As such, this effort will strongly ground on an end-user driven approach, to deliver services that bring immediate benefits to demanding users and can therefore appeal to others.

1.1 System Overview

OpenAIRE-Connect extends the technological services and networking bridges (human/social/support) currently offered by the OpenAIRE infrastructure to foster the expansion of an Open Science publishing paradigm and facilitate the emergence of shared solutions for it. OpenAIRE-Connect introduces three classes of new services:

- Research community services: offering support for a uniform transition of research communities towards Open Science publishing;
- Content provider services: leveraging the transition of content providers towards Open Science publishing;
- Support services: building community capacities for European and global alignment on Open Science publishing

The OpenAIRE Research Community Dashboard Service will offer a dedicated portal for each research community as one-stop solution, with a portfolio of common functionalities that are configured and adapted to the community's research production and practices. For the configuration of the dedicated portal, each community will be provided with an administration tool. Communities will be able to configure the portal through this administration tool and deploy on-demand a portal that meets its specific needs.

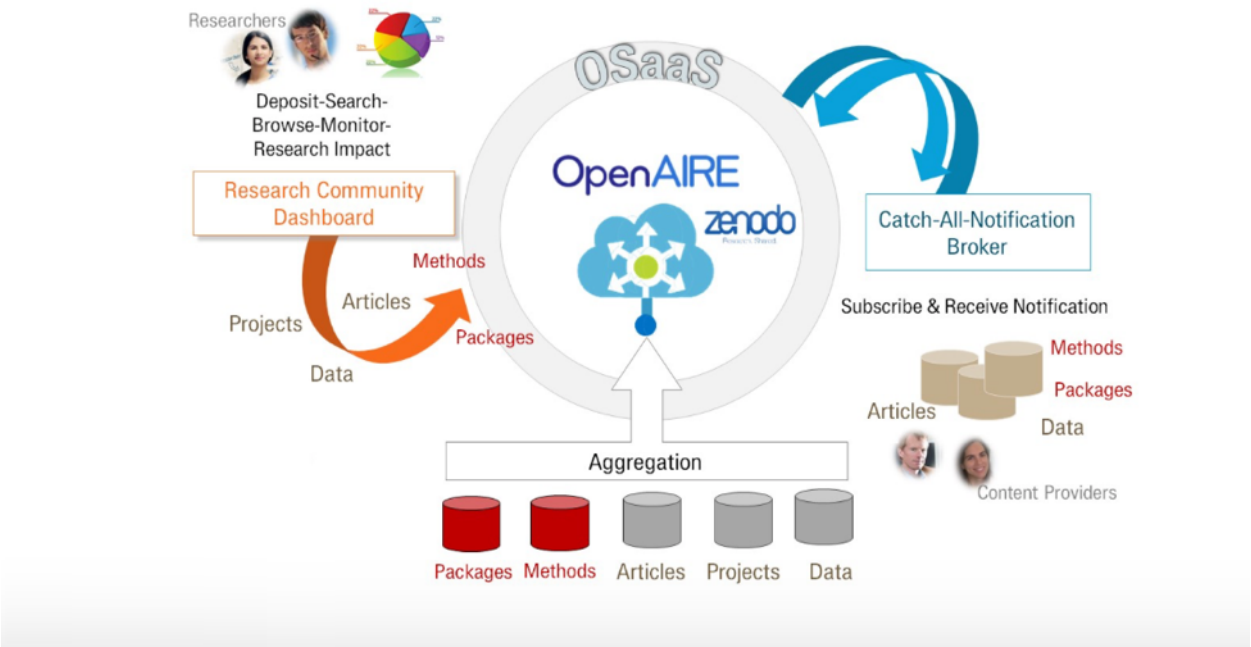

Figure 1 - Research Community Dashboard and Catch-All Notification Broker Service

1.2 Users Overview

The Research Community Dashboard aims to serve the needs of Research Communities, i.e. the needs of researchers and research operators. In general, these users need to share, re-use, promote, monitor report and evaluate scientific results related to the subject of their research. The scientific results are all intermediary and final research artefacts. In addition to scientific literature, artefacts include research data, software, and other research products (e.g. workflows, protocols, scripts, algorithms, etc.).

For the Research Community Dashboard, we have 2 kinds of users: the researchers and the research operators.

1.2.1 Researchers

Researchers need to share (for “discovery” and “transparent evaluation”) and re-use (for “reproducibility”) their scientific results.

1.2.2 Research Operators

Research operators need to promote, monitor, report and evaluate scientific results of research within their community.

2| FUNCTIONAL REQUIREMENTS

Functional requirements/specifications specify the functions that a system must perform to meet the user's needs. The user's needs, i.e. what a user would expect from a software/system to do, are described by the *user requirements*. In the next section, we present the functional requirements of OpenAIRE-Connect, together with the user requirements that imply them.

2.1 Format

Each functional specification is described by the following fields:

- **Functional Specification ID** is the unique ID of the functional specification. The format of the ID is prefixed with "FS", followed by an acronym of the corresponding service and by an incremental number.
- **Functional Specification Name** is the name of the specification.
- **Functional Specification Priority** is the level of importance of the specification.

Each user requirement is described by the following fields:

- **User Requirement ID** is the unique ID of the user requirement. The format of the ID is prefixed with "FL", followed by an acronym of the corresponding service and by an incremental number.
- **User Requirement Name** is the name of the requirement.
- **User Requirement Priority** is the level of importance of the requirement.
- **Description** explains the specification in more detail.
- **Constraints and Assumptions** detail the conditions under which a functional specification has meaning or not (if any).

Each functional specification is recorded using the following format:

Functional Specification ID	Functional Specification Name	Functional Specification Priority
User Requirement ID 1	User Requirement Name 1	User Requirement Priority 1
…	…	…
User Requirement ID n	User Requirement Name n	User Requirement Priority n

Figure 2 - Functional specifications format

The priorities assigned are:

- **Mandatory:** functionalities that are fundamental for the OpenAIRE-Connect Community Dashboard Service.
- **Important:** functionalities that will make the system more appealing to end users.
- **Interesting:** functionalities that will bring an added value to the system, but their absence does not make the product less appealing to its potential users.

The ID of the Research Community Dashboard services are:

- **CI** stands for Community Information
- **PT** stands for Portal look and feel
- **SB** stands for Search and Browse
- **CL** stands for Claim
- **MN** stands for Mining
- **DP** stands for Deposition
- **MT** stands for Monitoring
- **USM** stands for User Management
- **-A** stands for the Administration related functionality that will be offered to configure the parts of the Dashboard mentioned above.

2.2 Functional Requirements

2.2.1 Discover & define community information

FS/CI/01	Browse through all the available communities	Mandatory
FL/CI/01	**Everyone** can view all the available communities	Mandatory
FL/CI/02	**Everyone** can view the dashboard of each community	Mandatory

- **Description** The Research Community Dashboard will offer an overview page where all users will be able to view all the available communities together with some minimum information about each community (name, logo, description). If a user wishes to find out more about a community, a specific community page will be provided where more information will be available (statistics, details for content, numbers for content, tags, etc.)

- **Constraints and Assumptions** A Community API[1] will be provided by CNR. This API will provide GET methods that will return the available information for each community.

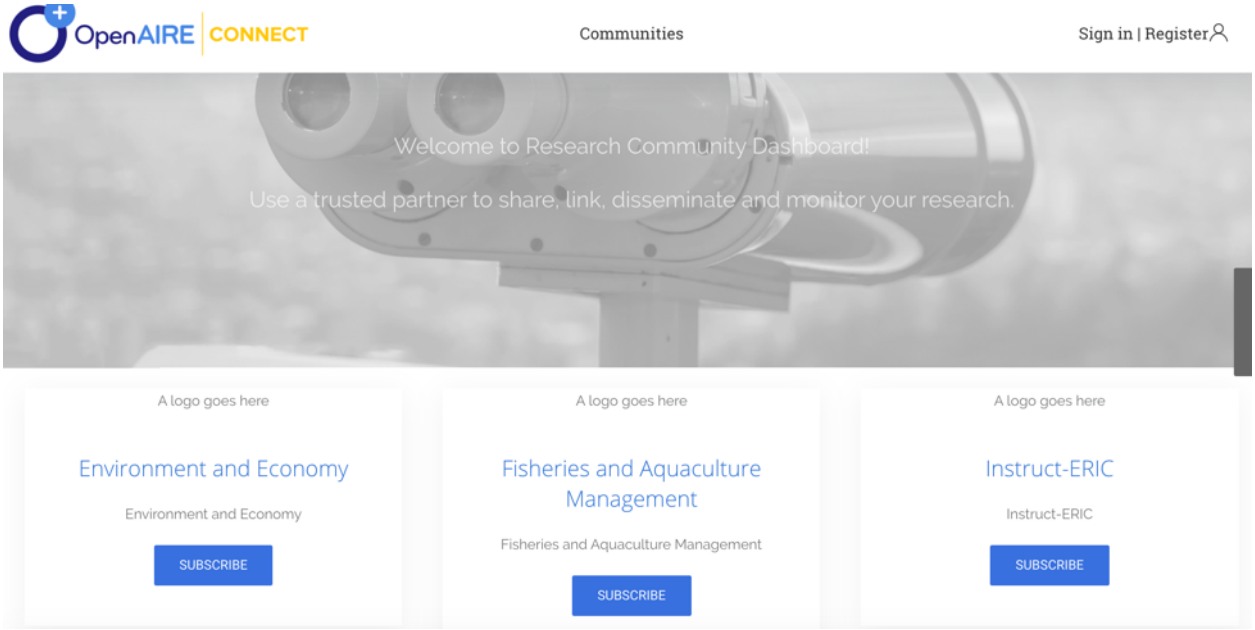

Figure 3 - Communities Overview

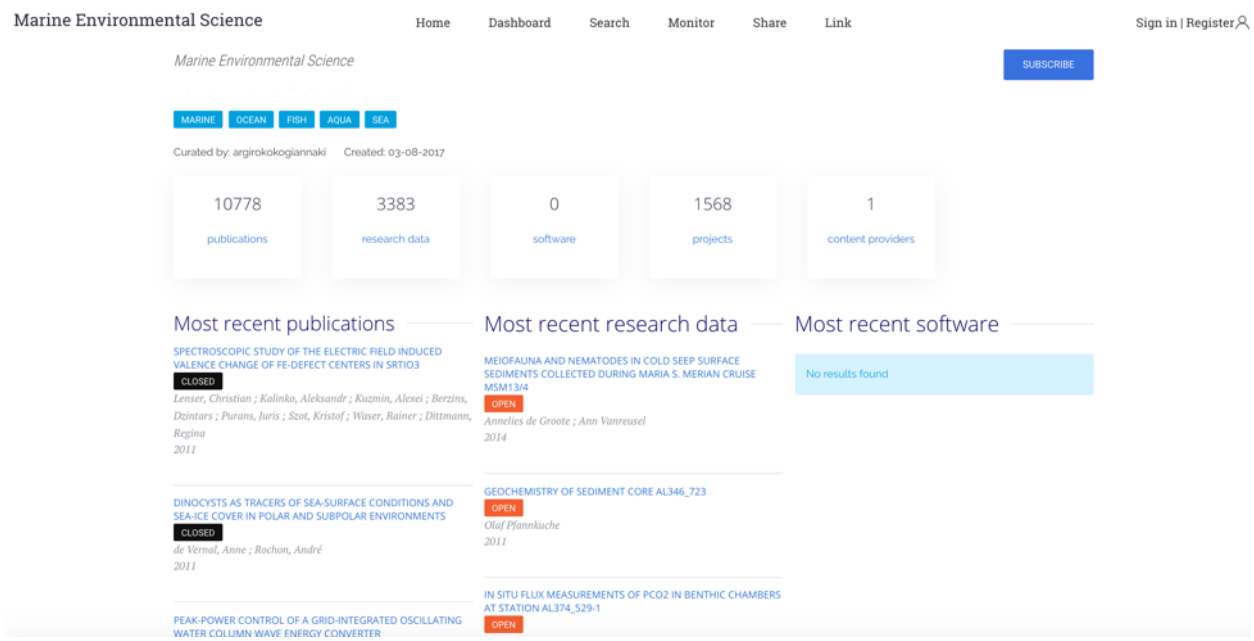

Figure 4 – A part of the Marine Environmental Science Community Dashboard

[1] Documentation of development version available here: https://dev-openaire.d4science.org/openaire/swagger-ui.html (please in the "Select a spec" dropdown list select "OpenAIRE Communities")

FS/CI-A/01	Change community information	Mandatory
FL/CI-A/01	**Research Operators** changes the metadata information of a community	Mandatory

- **Description** The Administration tool will to research operators the possibility to edit community metadata/information.
- **Constraints and Assumptions** A Community API will be provided by CNR. This API will provide POST methods that will update the available information for each community.

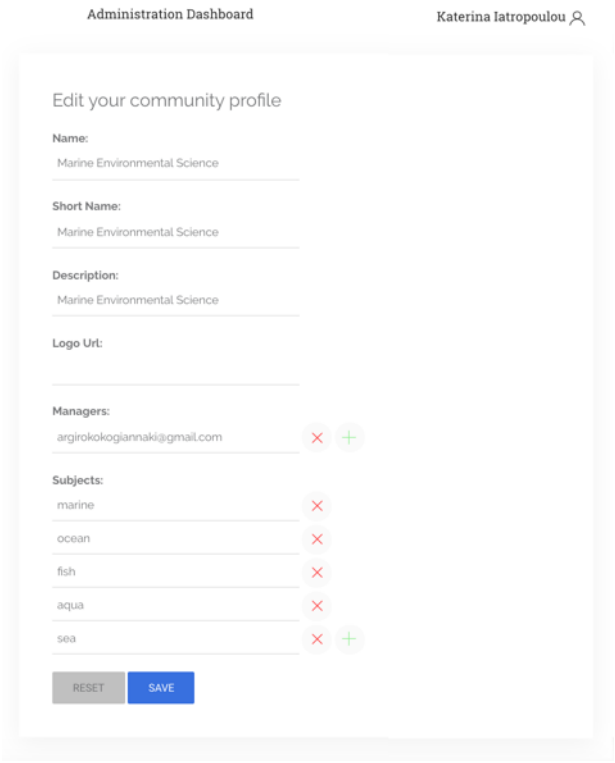

Figure 5 - Community Information edit form

2.2.2 Discover & define community content

FS/SB/01	Search/Browse allow community specific searches	Mandatory
FL/SB/01	**Everyone** runs keyword queries on the community specific content	Mandatory
FL/SB/02	**Everyone** runs advanced queries using AND/OR/NOT operators on the community specific content.	Mandatory

FL/SB/03	**Everyone** runs browse queries on the community specific content	Mandatory

- **Description** The Research Community Dashboard search and browse functionalities will give access to the community related products. Users will be able to browse, to do keyword search, and to create complicated queries (keywords + AND/OR/NOT operators).
- **Constraints and Assumptions** The OpenAIRE entities are tagged as being part of the community. These tags are made available through the Index & Search Services.

FS/SB/02	Search/Browse allow searches overall OpenAIRE content	Mandatory
FL/SB/04	**Everyone** runs keyword queries on the overall OpenAIRE content	Mandatory
FL/SB/05	**Everyone** runs advanced queries using AND/OR/NOT operators on the overall OpenAIRE content.	Mandatory
FL/SB/06	**Everyone** runs browse queries on the overall OpenAIRE content	Mandatory

- **Description** The Research Community Dashboard search and browse functionalities will give access to the overall OpenAIRE content. Users will be able to browse, to do keyword search, and to create complicated queries (keywords + AND/OR/NOT operators).
- **Constraints and Assumptions** The OpenAIRE content is made available through the Index & Search Services.

FS/SB/03	Search/Browse provides filters for the community scientific products	Important
FL/SB/07	**Everyone** narrows down search results by selecting special content-related filters	Important

- **Description** The Research Community Dashboard search and browse functionalities will provide content-tailored filters to limit the search results.
- **Constraints and Assumptions** Categorization of community products will be provided. These categories will be made available as facets from Index and Search Services.

FS/SB/04	Allow users to configure search results display	Important
FL/SB/08	**Everyone** can change the number of results displayed per page	Important
FL/SB/09	**Everyone** can sort the results based on specific metadata values (e.g. the publication date of a research product)	Important

- **Description** Search results are currently presented to the users in the default order returned by Index, i.e. based on the ranking of the results for the user's keyword search. The possibility to change this order by sorting the results based on specific metadata values (e.g. the publication date of a research product) will be provided. Additionally, the possibility to alter the default presentation of 10 results per page will be provided.
- **Constraints and Assumptions** The Index will offer sort functionality for different metadata fields. The Search API will include parameters for sorting functionality. Both Index and Search API will allow paging.

FS/SB/05	Provide application boxes where CSV files containing the scientific products can be downloaded	Important
FL/SB/10	**Everyone** downloads CSV files containing the scientific products of the community	Important

- **Description** The community products will be provided as CSV files to every user.
- **Constraints and Assumptions** Search Service will provide CSV formatting for the available content.

FS/SB/06	Provide downloadable CSV files containing search/browse results	Important
FL/SB/11	**Everyone** downloads CSV files containing the results of their search/browse queries.	Important

- **Description** The search/browse results will be provided as CSV files to every user.
- **Constraints and Assumptions** Search Service will provide CSV formatting for the returned search results.

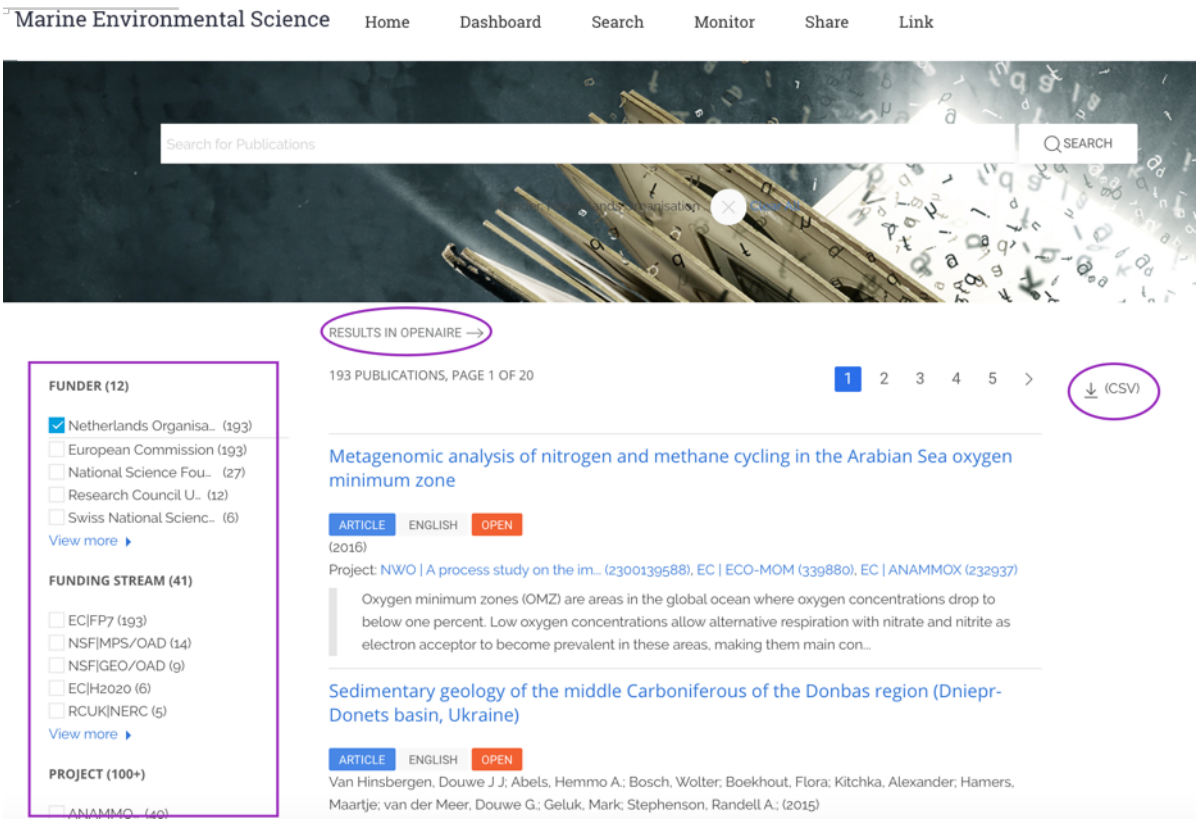

Figure 6 - Search and browse for Marine Environment Science community (filters, OpenAIRE search and csv marked)

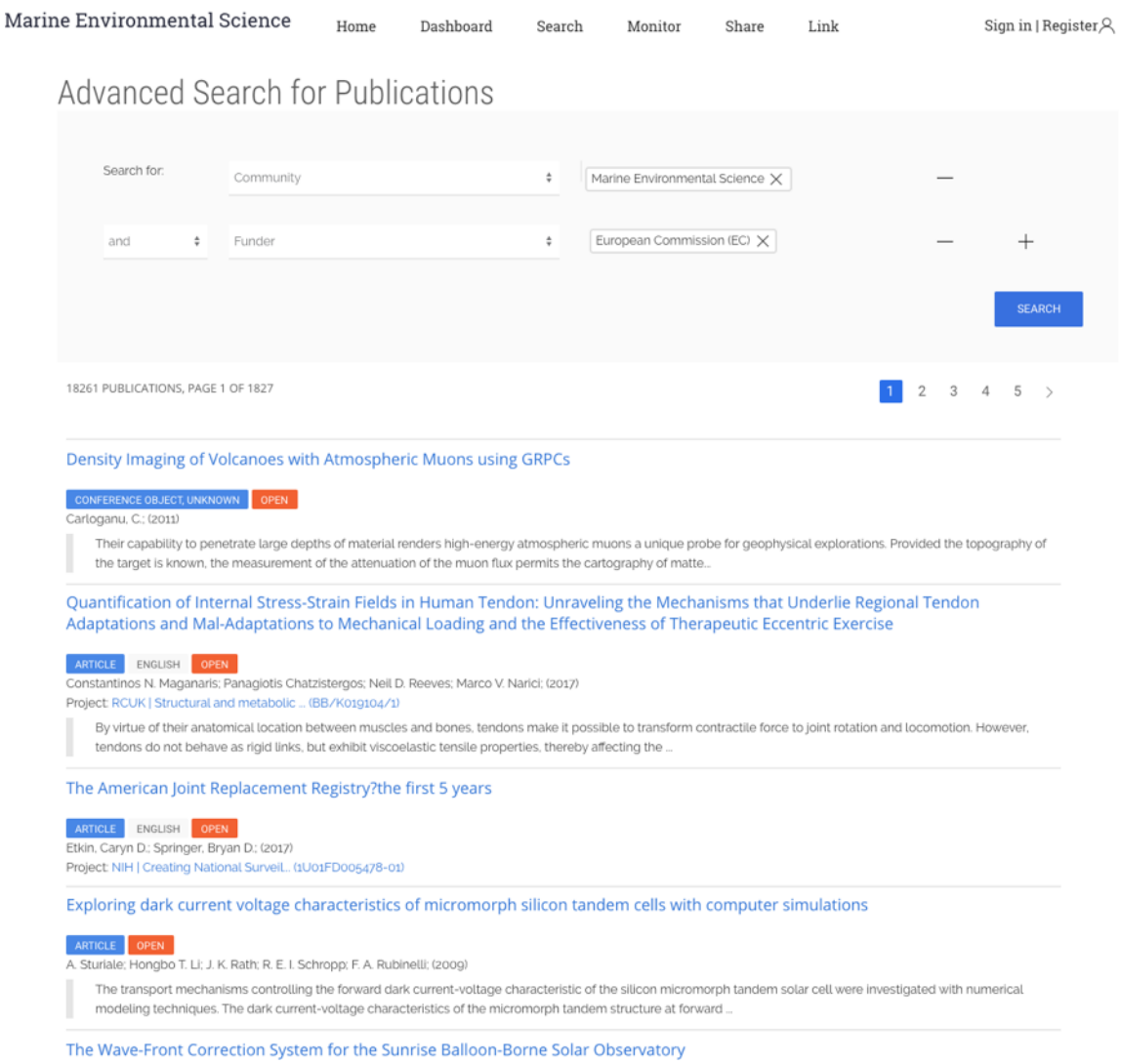

Figure 7 - Advanced search for Marine Environment Science community

FS/SB-A/01	Define searchable subsets of OpenAIRE content for each community	Mandatory
FL/SB-A/01	**Research Operators** indicate OpenAIRE content providers that have data relevant to the community	Mandatory
FL/SB-A/02	**Research Operators** indicate projects in OpenAIRE that have research results relevant to the community	Mandatory
FL/SB-A/03	**Research Operators** indicate a subset of the OpenAIRE content as relevant to the community	Important
FL/SB-A/04	**Research Operators** indicate a subset of an OpenAIRE content provider as relevant to the community	Interesting

FL/SB-A/05	**Research Operators** indicate/propose external content providers with data relevant to the community	Interesting

- **Description** The administration tool will give research operators the possibility to indicate which content providers and projects in OpenAIRE contain content relevant to their community. There will also be the possibility to indicate a subset of OpenAIRE content or of an OpenAIRE content provider, as related to their community. Additionally, we will investigate how to give them the possibility to propose content providers external to OpenAIRE.
  Constraints and Assumptions The possibility to indicate which content providers and projects in OpenAIRE are related to a community will be achieved through the Community API provided by CNR. The enhancement of the OpenAIRE content with this information will be provided as an offline procedure, during the aggregation phase, where all the aggregated records will be enhanced with the community information.

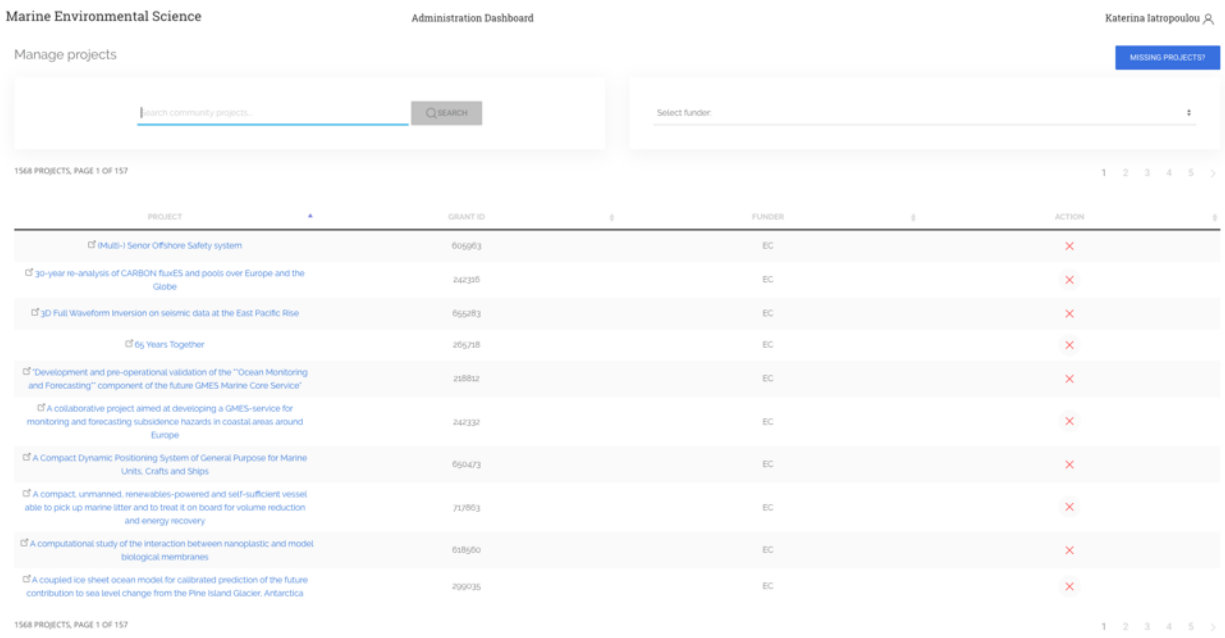

Figure 8 - Administration view of community projects

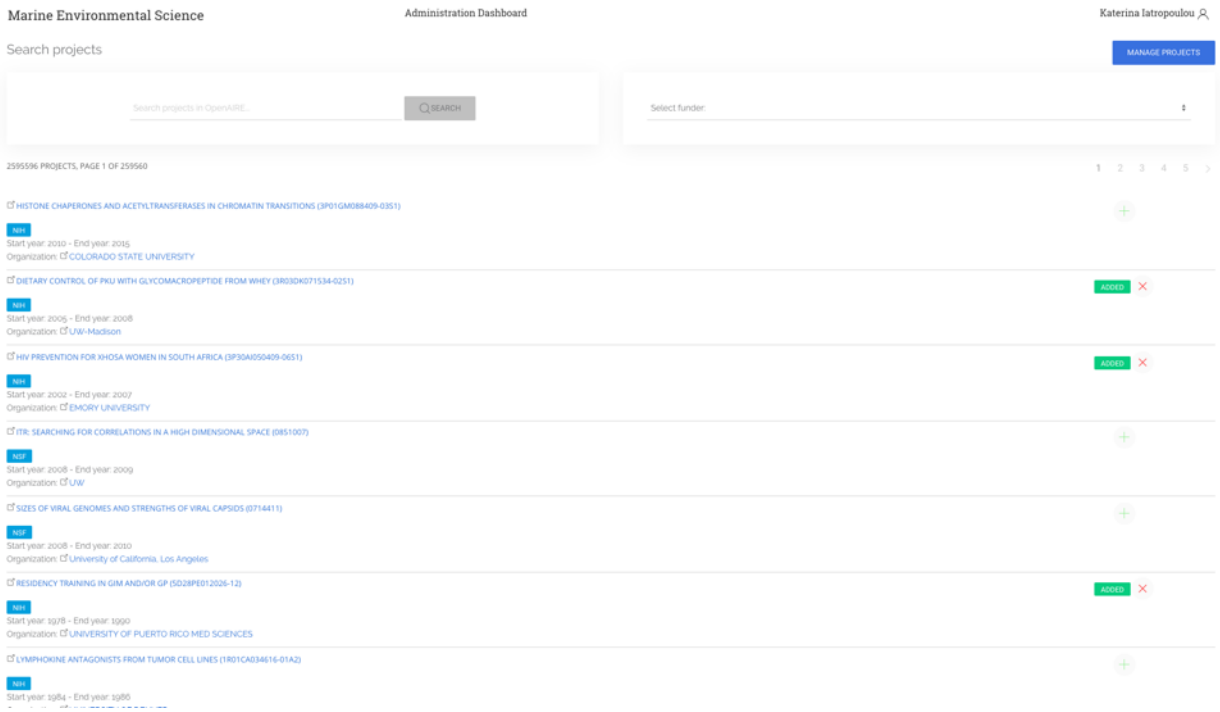

Figure 9 - Administration form for adding projects

FS/SB-A/02	Share searchable subsets between different communities	Important
FL/SB-A/06	**Research Operators** indicate other communities whose content/scientific products can be shared	Important
FL/SB-A/07	**Research Operators** indicate a subset of other communities' content/scientific products which can be shared	Interesting

- **Description** The administration tool will give research operators the possibility to indicate whether the searchable content of different communities (as a whole or a subset of it) is also of interest to their community.
- **Constraints and Assumptions** The Research Community Profile will express inheritance of the community categories and contexts.

2.2.3 Link community content

FS/CL/01	Allow implicit linking of scientific products to a community	Mandatory
FL/CL/01	When claiming, **researchers** will be prompted with their community-specific categories.	Mandatory

- **Description** When claiming, i.e. when linking scientific products with other OpenAIRE Connect entities, researcher will be able to indicate which community category they would like to link their research products with.
- **Constraints and Assumptions** The hierarchy of community categories and contexts to be provided by community operators.

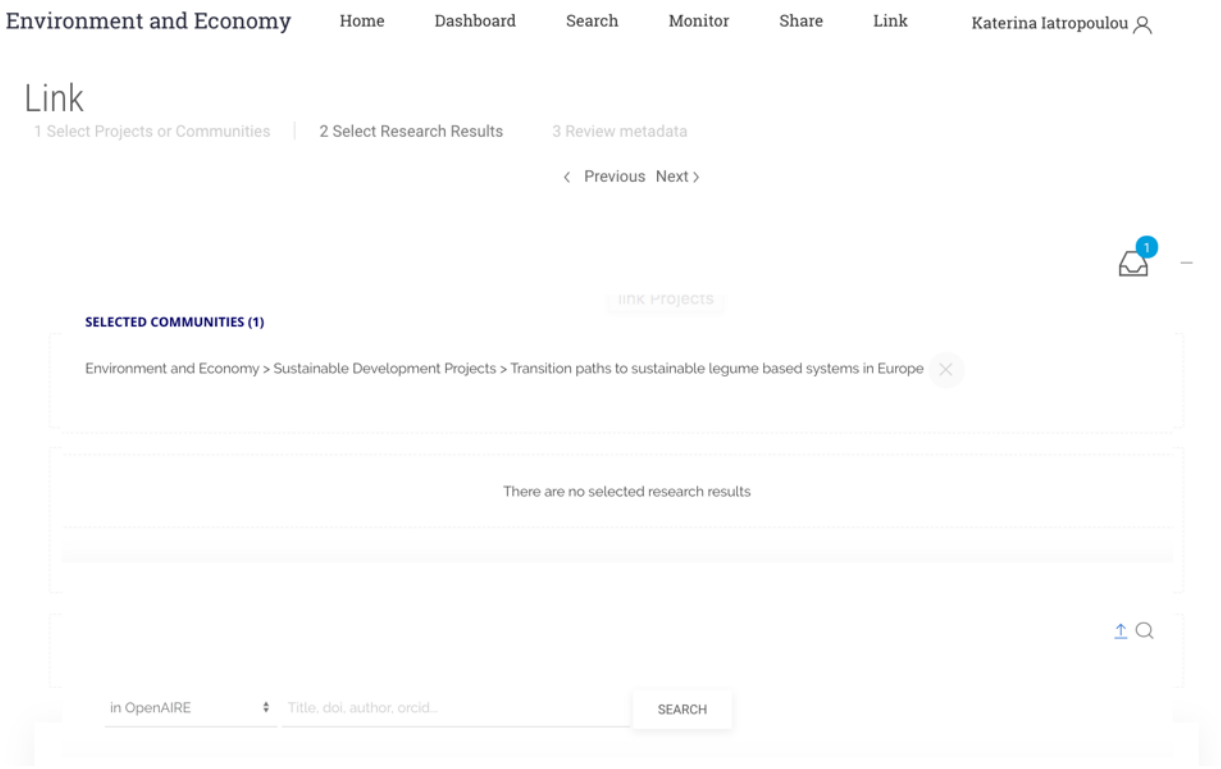

Figure 10 - Part of linking functionality

FS/CL-A/01	Curate and manage links of scientific products to a community	Mandatory
FL/CL-A/01	**Research operators** have access to all the community links	Mandatory
FL/CL-A/02	**Research operators** filter all the community links	Mandatory
FL/CL-A/03	**Research operators** will be able to remove a community link	Mandatory
FL/CL-A/04	**Research operators** will receive an e-mail notification when a new link is created related to their community.	Important

- **Description** The research operators will be able to view all community claims and remove them if not related to their community. For better visualization of the claims, filters will be available (e.g. by date, category, etc.). For better supervision of links, research operators will receive e-mail notifications when a new community-related link is created.
- **Constraints and Assumptions** Claims Service will support filtering of all the available links. Claims service will also be enhanced by a "marking" functionality that will allow research operators to mark links as invalid (if applicable).

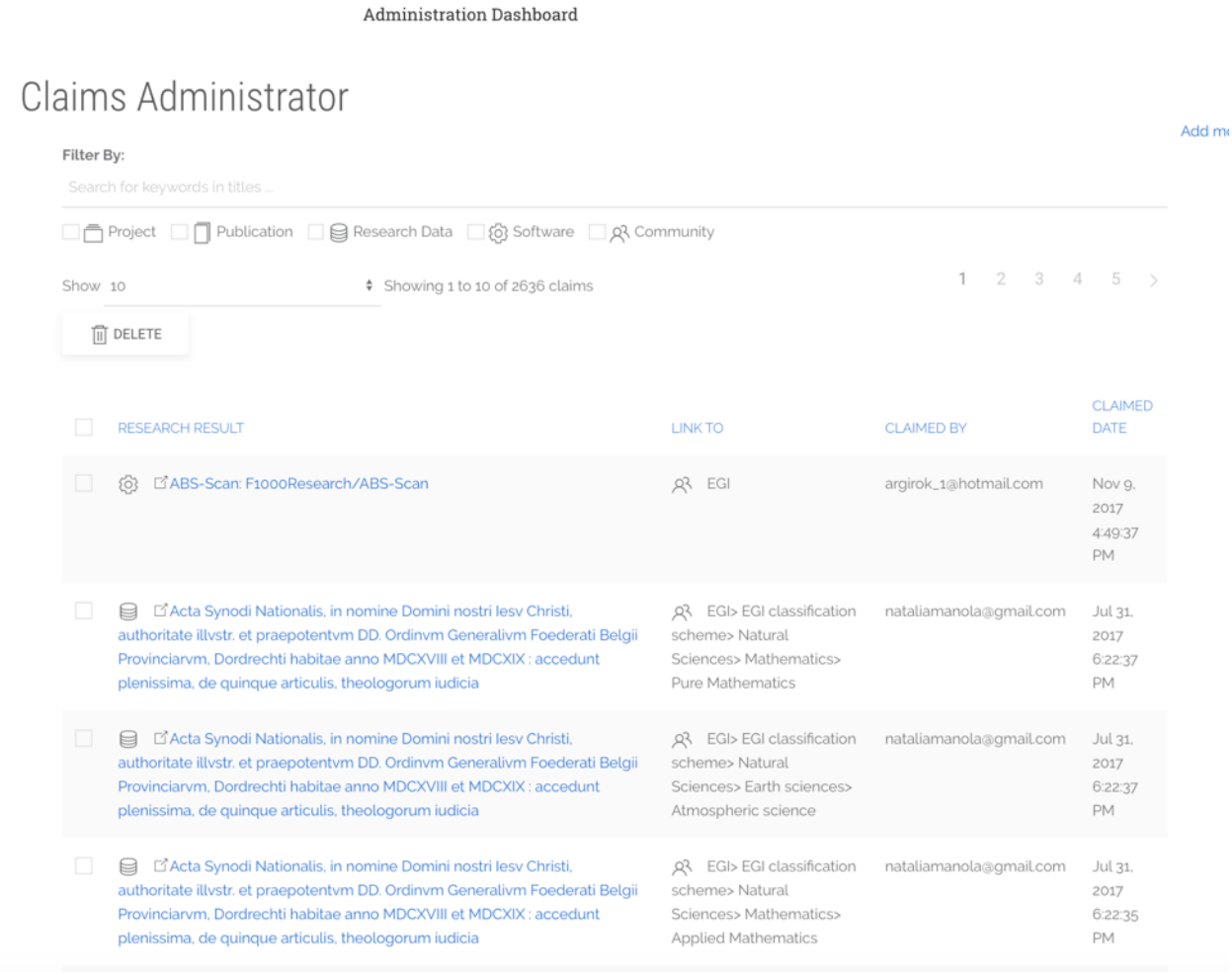

Figure 11 - Administration of claims

2.2.4 Deposit community content

FS/DP/01	Search for available content providers to deposit	Mandatory

FL/DP/01	**Everyone** can search for content providers where they can upload their research products.	Mandatory

- **Description** Users can search for content providers where they can upload their research products, based on various criteria (affiliated organization, country, etc.).
- **Constraints and Assumptions** The Search API allows users to search for data providers based on the organization they are affiliated with. There is also a map displaying the available data providers, where users can locate a content provider based on other criteria rather than their affiliation (eg. country, type of contents to upload, compatibility with OpenAIRE).

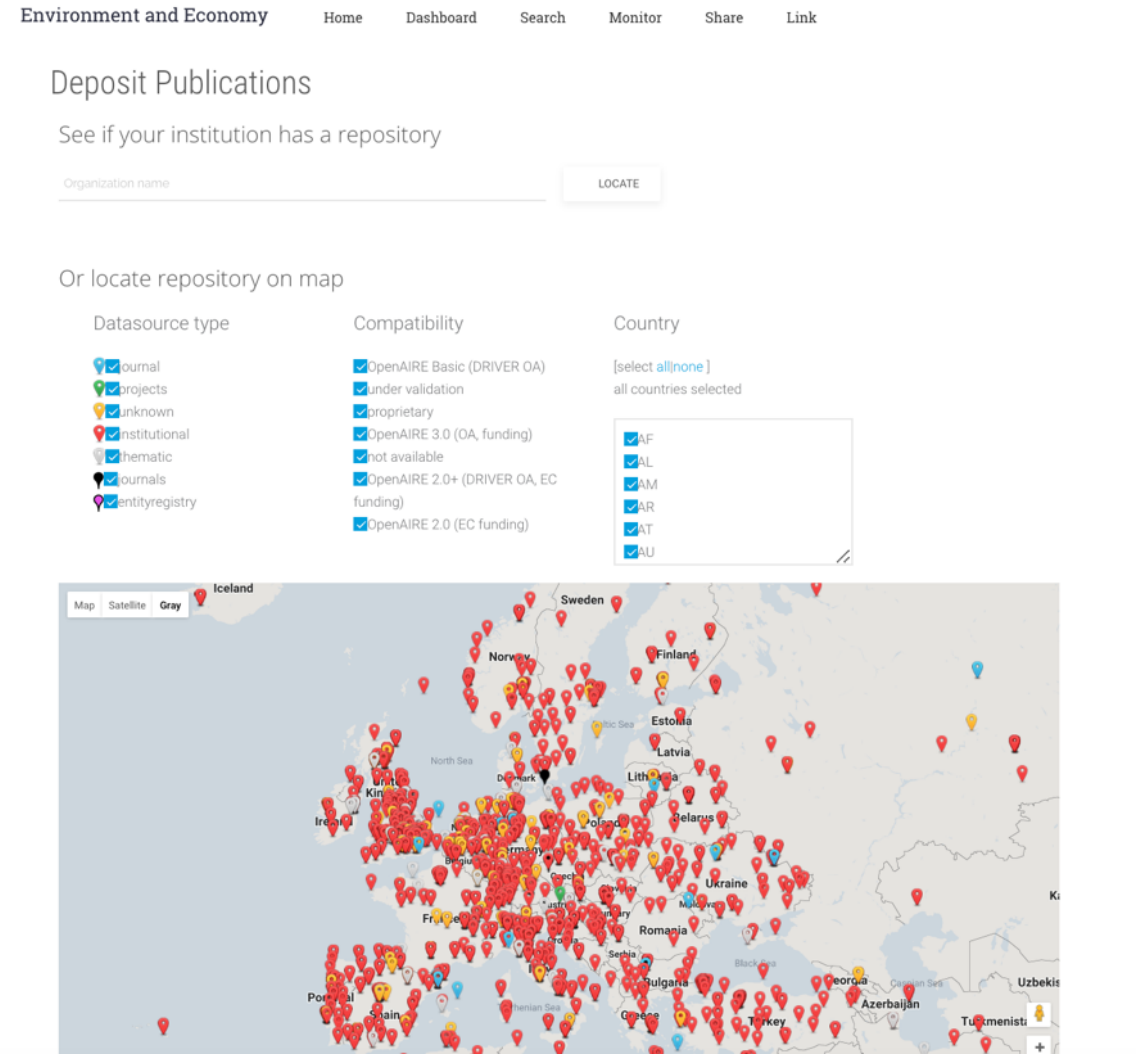

Figure 12 - Search for available repositories

FS/DP/02	Display Zenodo communities connected to an RCD community	Mandatory
FL/DP/02	**Everyone** can the Zenodo communities connected to their RCD community, where they can upload their content.	Mandatory

- **Description** Users who want to deposit in Zenodo and make their research products available in RCD, will be able to see which are the available Zenodo communities that are connected to their RCD community, where they can upload their content and make it automatically available in RCD.
- **Constraints and Assumptions** The Community API returns the list of the Zenodo communities that are connected to an RCD specific community. The Zenodo API[2] gives additional information for each community (e.g. a brief description) that allows a quick overview of the Zenodo community in RCD.

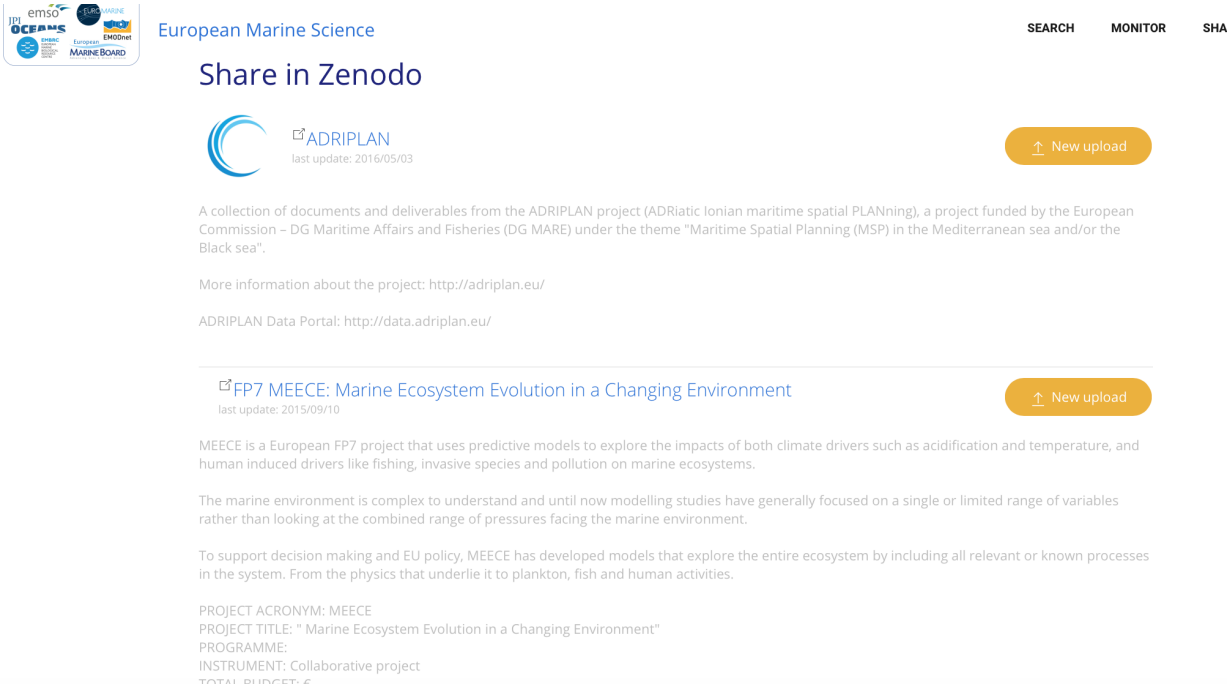

Figure 13 - List of Zenodo communities for European Marine Science

FS/DP/03	Deposit of research products in Zenodo community connected to an RCD community	Mandatory

[2] http://developers.zenodo.org

FL/DP/03	**Everyone** is provided with a direct link to a Zenodo community upload page, connected to their RCD community, where they can upload their research products and make them automatically available in RCD.	Mandatory

- **Description** Users who want to deposit in Zenodo and make their research products available in RCD, are provided with a direct link to the upload page of Zenodo community that is connected to their RCD community. The uploaded research products will be automatically available in OpenAIRE.
- **Constraints and Assumptions** The Community API returns the list of the Zenodo communities that are connected to an RCD specific community. The Zenodo API gives the link to the upload page for each Zenodo community. Once the user uploads, Zenodo automatically enhances OpenAIRE Index. This entry that Zenodo makes in OpenAIRE index is properly tagged with the relevant RCD community information. In that way, they newly uploaded research product is made available in the community's RCD through the OpenAIRE Index and Search API.

FS/DP-A/01	Connect/Disconnect a Zenodo Community to an RCD community	Mandatory
FL/DP-A/01	**Research Operators** will be able to access all available Zenodo communities.	Mandatory
FL/DP-A/02	**Research Operators** will be able to search for Zenodo communities	Mandatory
FL/DP-A/03	**Research Operators** will be able to select a Zenodo community and connect it with their RCD community.	Mandatory
FL/DP-A/04	**Research Operators** will be able to remove a Zenodo community from their RCD community.	Mandatory

- **Description** Research Operators can view all available Zenodo communities and identify which of them are connected to their RCD community. They can also make keyword searches to find Zenodo communities that matches their query. Once a Zenodo community is identified as related to their RCD community, it can be selected and added in the RCD community profile. If a Zenodo community is

no longer connected with an RCD community, or was wrongly connected, it can be removed.

- **Constraints and Assumptions** The Zenodo API provides search functionality for its communities. The Community API provides POST methods that will update the available information, relevant to Zenodo communities, for each RCD community.

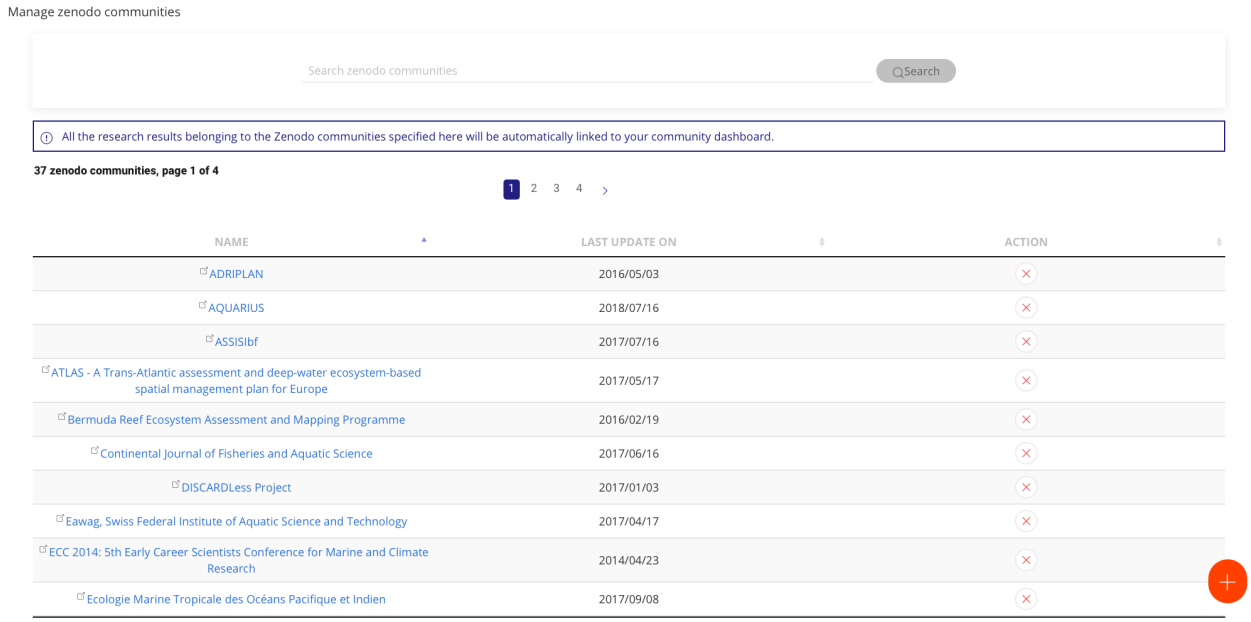

Figure 14 - Management of Zenodo communities

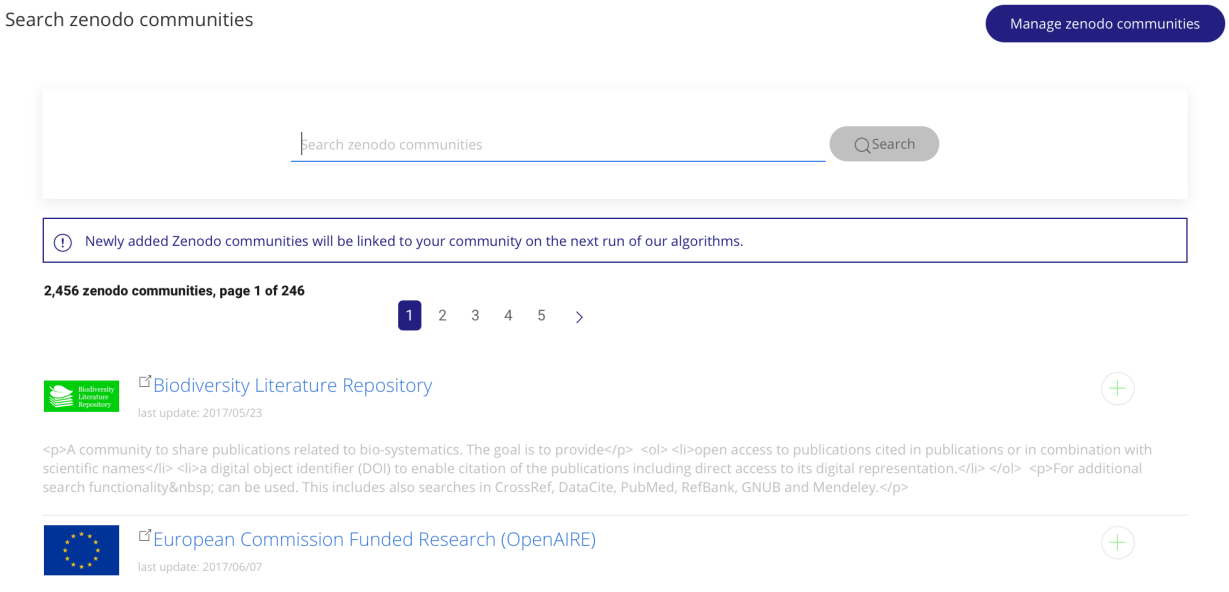

Figure 15 - Zenodo Communities access in RCD administration tool

2.2.5 Provide mining rules

FS/MN-A/01	Configure Mining Algorithms	Mandatory
FL/MN-A/01	**Research operators** will be able to configure mining algorithms	Mandatory

- **Description** Research operators will be able to configure mining algorithms. The purpose of these algorithms is to identify links from literature to research communities. The administration tool allows users to configure and customize mining algorithms and run them on their test datasets.
- **Constraints and Assumptions** We will provide an interactive system where the users will be able to configure the algorithms, run them on their datasets, examine and evaluate the results and reconfigure if necessary. The reader is referred to D4.3 “Configurable mining algorithms: specification and release plan” for more information.

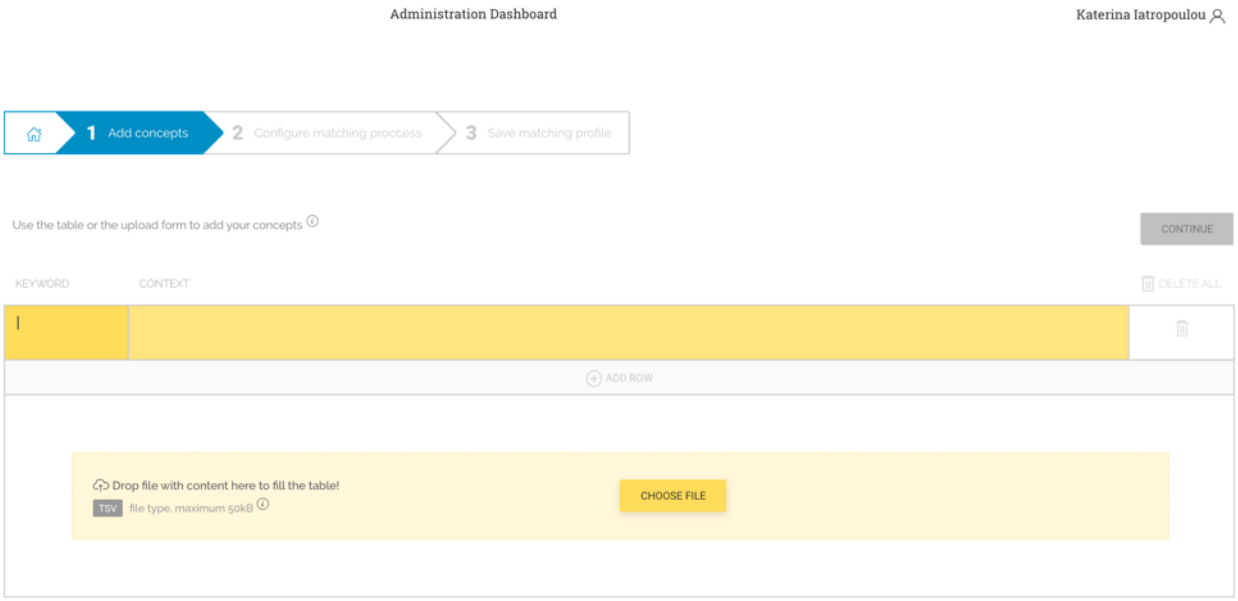

Figure 16 - Part of define mining rules admin functionality

2.2.6 User Authentication

FS/USM/01	Register for the Research Community Dashboard	Mandatory
FL/USM/01	**Everyone** can register for the Research Community Dashboard	Mandatory

- **Description** All users will be able to register for the Research Community Dashboard.
- **Constraints and Assumptions** An OpenAIRE/OpenAIRE-Connect Identity Provider (IdP) will be available for user registration.

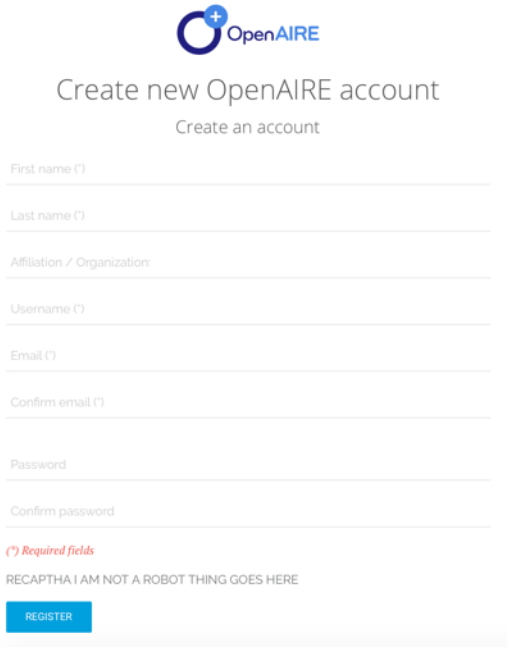

Figure 17 - Registration form

FS/USM/02	Third party sing-in into the Research Community Dashboard	Important
FL/USM/02	**Everyone** can sign-in with their social networks accounts	Important
FL/USM/03	**Everyone** can sign-in with their eduGAIN account	Important

- **Description** Everyone will be able to login with the credentials they have in the research/education organization they are affiliated with. This is provided by eduGAIN[3]. Users should be able to login with third party accounts' credentials. More precisely they should be able to login using credentials from social networks and communities (Google+, ORCID, Facebook).
- **Constraints and Assumptions** For the third party and the eduGAIN login, an authentication and authorization proxy will be used that is developed by GRnet[4].

3 https://www.geant.org/Services/Trust_identity_and_security/eduGAIN

4 https://grnet.gr/en/

For a successful login it is important that a minimum user information will be provided by third parties (e.g. an e-mail).

FS/USM/03	Login with OpenAIRE account in Research Community Dashboard	Important
FL/USM/04	**Everyone** can sign-in with their OpenAIRE account	Important

- **Description** Everyone will be able to login with the account they might already have in OpenARE.
- **Constraints and Assumptions** An OpenAIRE/OpenAIRE-Connect Identity Provider (IdP) will be available for user authentication.

FS/USM/04	Use OpenAIRE SSO service in Research Community Dashboard	Important
FL/USM/05	**Everyone** can use the account they already use in OpenAIRE	Important

- **Description** Everyone who is already be using the OpenAIRE SSO service will be able to login to OpenAIRE-Connect, without any need to create new account.
- **Constraints and Assumptions** An OpenAIRE SSO Service will be provided. This is developed by GRnet and it is already available in BETA version at https://aai.openaire.eu/oidc.

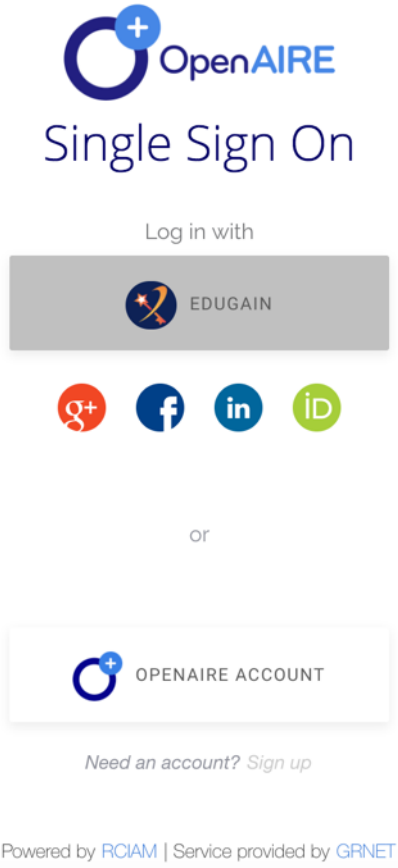

Figure 18 - OpenAIRE SSO service initial screen (eduGain, third-party and OpenAIRE login available)

2.2.7 User Functionalities

FS/USM/05	Send invitation to new users outside the Research Community Dashboard	Important
FL/USM/06	**Everyone** can invite new users to visit the Research Community Dashboard	Important

- **Description** Every user will be able to invite new users to visit the Research Community Dashboard, through an e-mail invitation.
- **Constraints and Assumptions** The functionality of automatic creation and sent of an e-mail invitation will be available.

2.2.8 User Authorization & profile

FS/USM/05	Manage user profile	Mandatory
FL/USM/06	**Everyone** can change or reset their passwords	Mandatory
FL/USM/07	**Everyone** can add additional information to their profile	Mandatory
FL/USM/08	**Everyone** can subscribe/unsubscribe to one or more communities	Mandatory
FL/USM/10	**Everyone** can request for additional privileges	Mandatory

- **Description** Apart from the reset and forget your password functionalities, users will be able to add additional information about them (e.g. affiliation information), subscribe to communities and ask additional privileges for the communities they are subscribed to.
- **Constraints and Assumptions** An OpenAIRE/OpenAIRE-Connect Identity Provider (IdP) will be available for editing the user profile. The different privileges of users will be implemented by assigning to each user different roles.

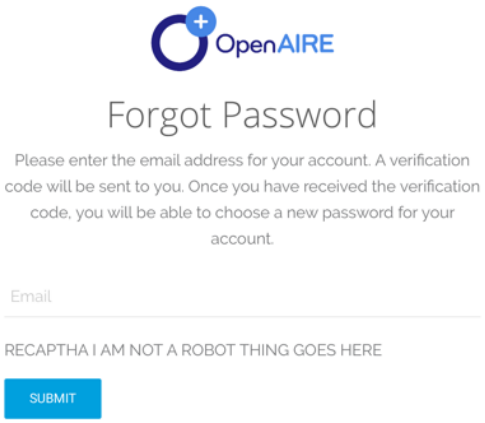

Figure 19 - Forgot password form

FS/USM-A/01	Manage Community Users	Mandatory
FL/USM-A/01	**Research operators** have access to the subscribed users of their community	Mandatory

FL/USM-A/02	**Research operators** can assign the research operator role to other users	Mandatory
FL/USM-A/03	**Research operators** will be able to invite other users to be research operators of their community	Important
FL/USM-A/04	**Research operators** will receive an e-mail notification when the list of research operators of their community changes.	Important
FL/USM-A/05	**Research operators** will be able to invite new users to their community	Important
FL/USM-A/06	**Research operators** will be able to remove subscribed users from their community	Important

- **Description** Research operators will be able to manage the users of their community. They will be able to view them, assign them roles and send invitations to either new simple users or to new research operators. More specifically, when new research operators are added in a community, the already existing research operators of the community will be automatically notified through an e-mail.
- **Constraints and Assumptions** The authentication and authorization proxy will support roles.

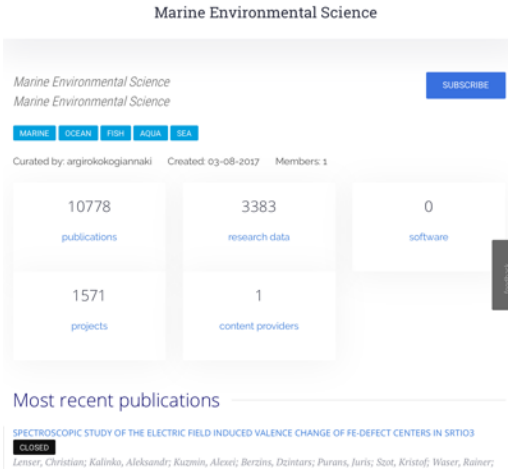

Figure 20 - Subscribe button for the Marine Environment Science

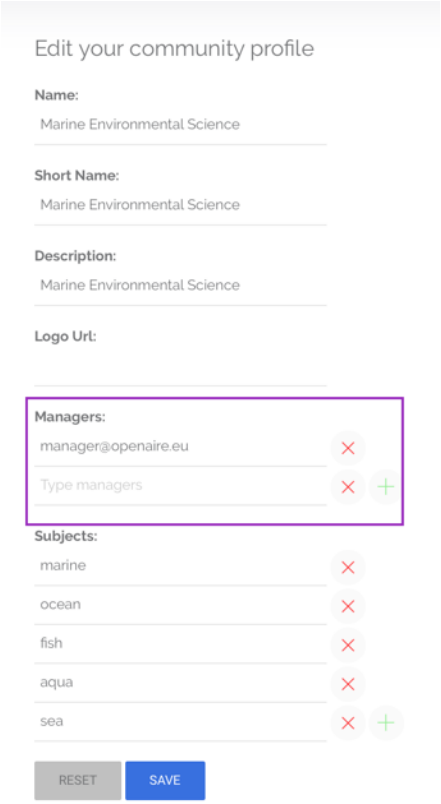

Figure 21 - Addition of Research Operators in community (marked in square)

2.2.9 Select statistics

FS/MT/01	View statistics relevant to a community	Mandatory
FL/MT/01	**Everyone** have access to statistics (numbers and charts) of a community.	Mandatory

- **Description** For each community, statistics (numbers and charts) will be available in two places: the dashboard page of a community and the statistics dedicated page ("Monitor" page) of a community. For example, there could be pie charts presenting how many "open access", "closed access", "embargoed", etc. research products a community has; timelines of how many research products there are through the years; column charts with the number of research products per project or per content provider and much more.
- **Constraints and Assumptions** Embeddable charts will be available.

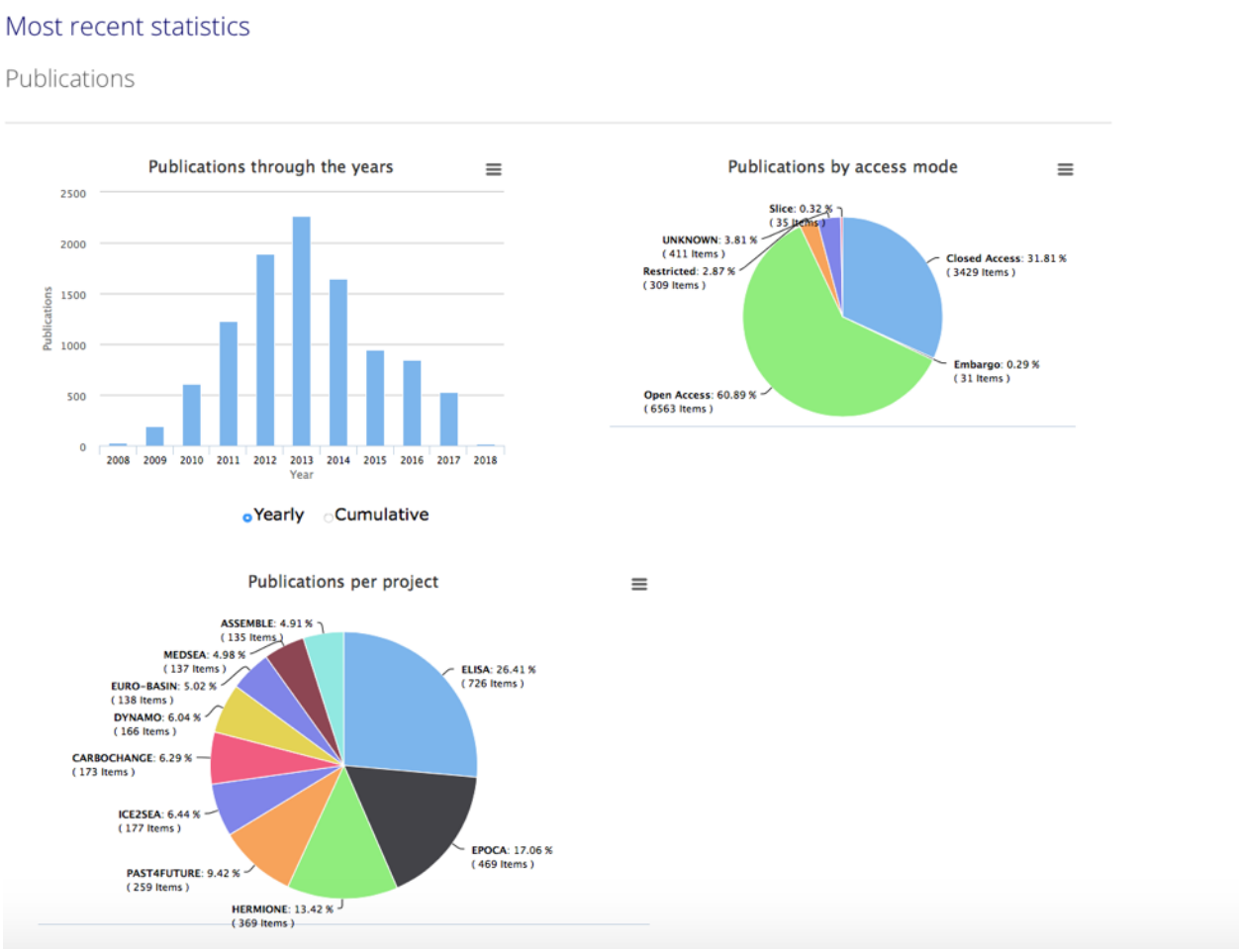

Figure 22 - Statistics view in community dashboard

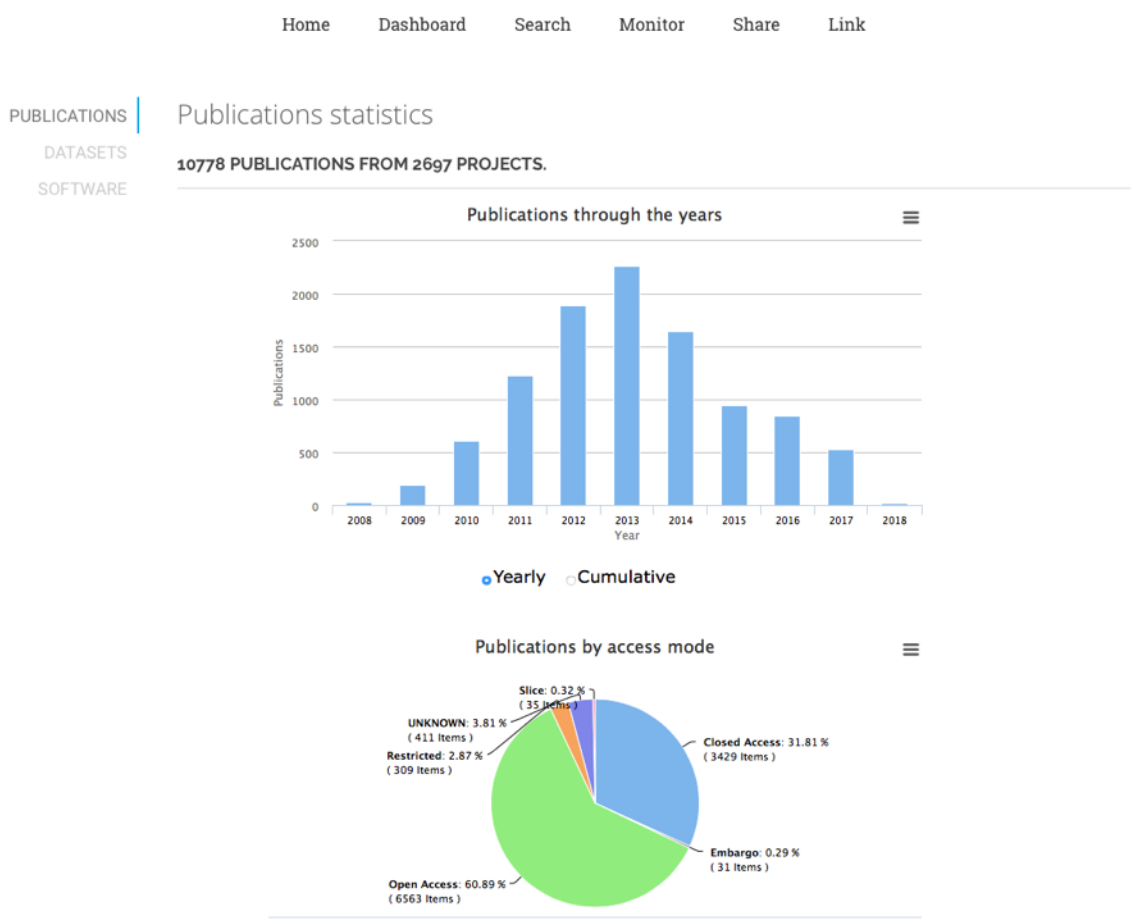

Figure 23 - Statistics view in monitor page

FS/MT-A/01	Define statistic charts relevant to a community	Mandatory
FL/MT-A/01	**Research operators** indicate which statistics (numbers and charts) will be available for their community	Mandatory
FL/MT-A/02	**Research operators** create/suggest charts to be visible in the Research Community Dashboard	Interesting

- **Description** Research operators will be able to indicate which statistics (charts & numbers) will be available in the Research Community Dashboard, i.e. in the dashboard page of their community and in the statistics dedicated page ("Monitor" page) of their community. These charts will be selected from a predefined list of charts. The possibility to suggest or even create statistics that

the research operator would like to have available for the community in the Research Community Dashboard will be examined.

- **Constraints and Assumptions** Embeddable charts will be available.

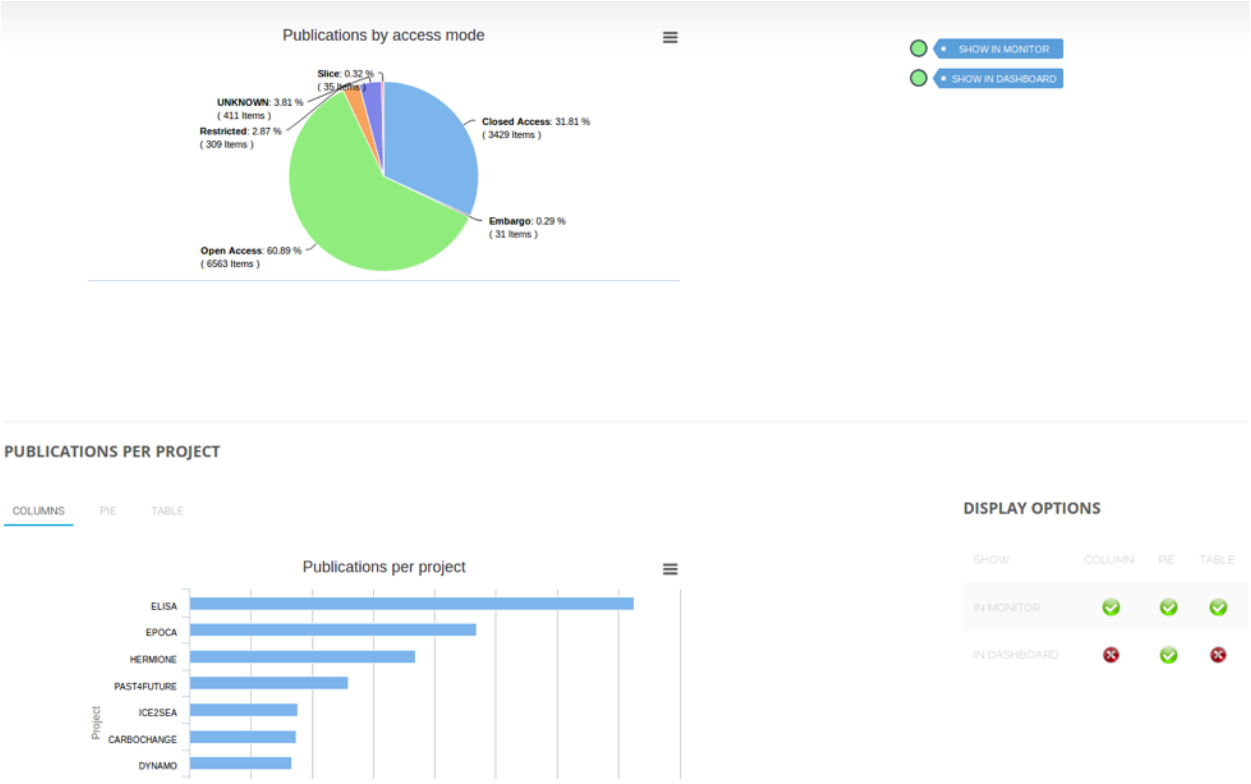

Figure 24 - administration panel for statistics

2.2.10 Configure community dashboard

FS/PT/01	Configure the community dashboard	Mandatory
FL/PT/01	**Research operators** adds the community logo	Mandatory
FL/PT/02	**Research operators** change the fonts and colours of the pages	Important
FL/PT/03	**Research operators** add help texts in the Community Dashboard pages	Important
FL/PT/04	**Research operators** active/deactivate pages	Important
FL/PT/05	**Research operators** upload images to highlight different sections of the dashboard	Interesting

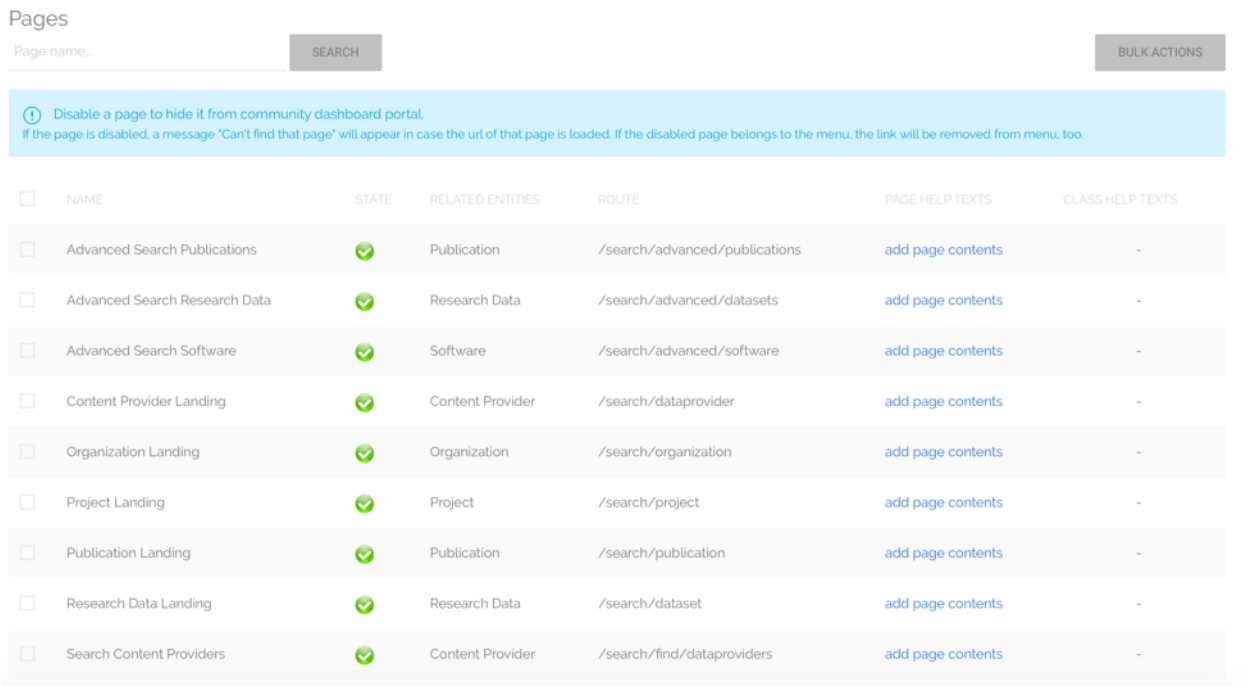

Figure 25 - Activation & deactivation pages form

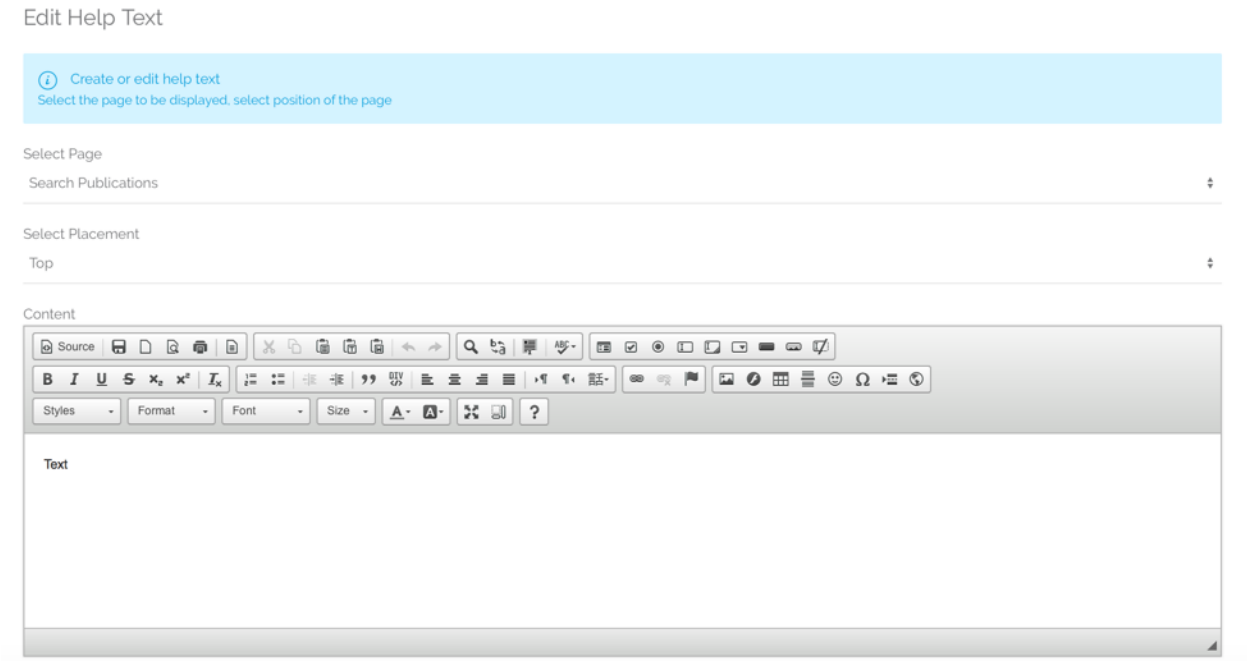

Figure 26 - Edit help text form

- **Description** Research operators will be able to customize the dashboard for the community by adding a logo, change the predefined fonts and colours of the portal, activate & deactivate pages accessible to all users and indicate what texts should be introduced in which pages. As a more advanced option the operators could upload images to highlight the different sections of the dashboard.

- **Constraints and Assumptions** The Community Research Dashboard portal will be configurable in a way that will allow a dynamic loading of both presentation and content aspects. If images are to be uploaded more disk space should be provided to each community in order to store them.

3| System Architecture

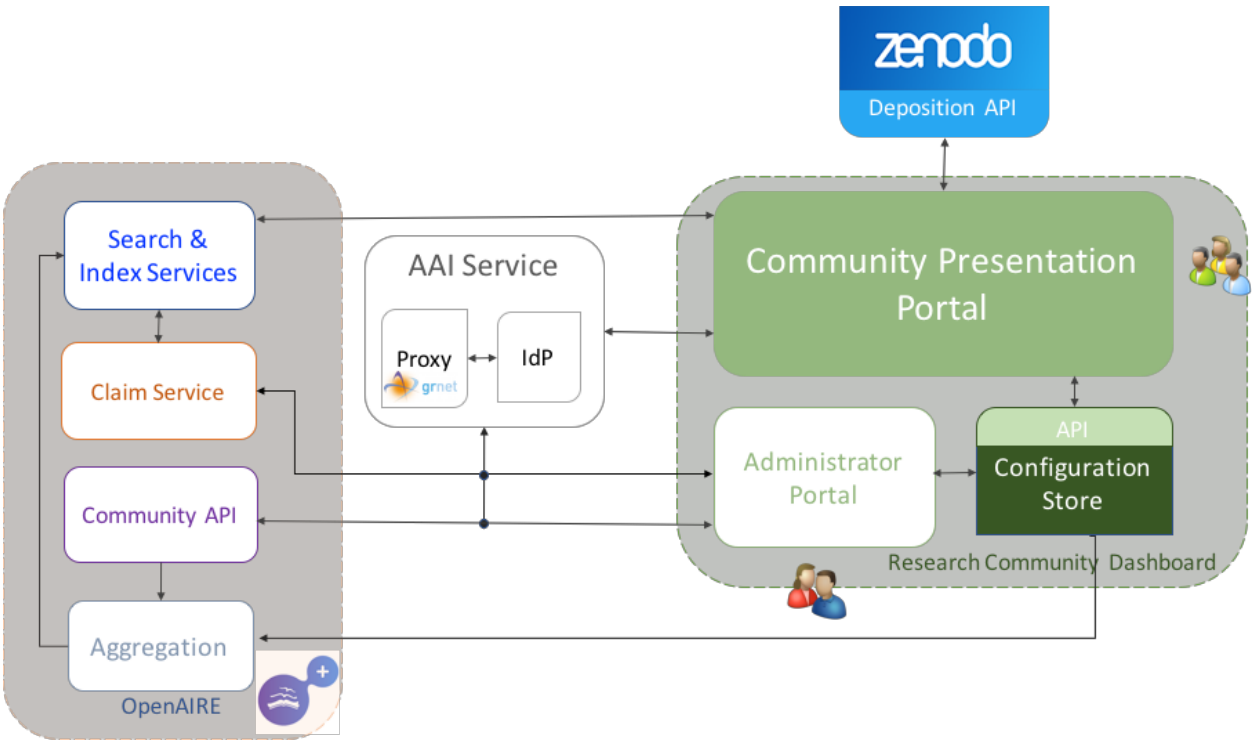

Figure 27 - System Architecture

The **Community Presentation Portal** is the core part of the Research Community Dashboard that will be accessible to all community users. It will be a web application, developed in Angular2, that will offer a portal where all the functionalities that allow users to discover, access and enhance the community's content will be available.
For the configuration of the Community Presentation Portal, each community will be provided with an administration tool. This administration tool will also be an Angular2 web application with a user interface, the **Administrator Portal**, accessible only to research operators. The research operators will be offered, through the **Administration Portal,** all the administrator functionalities.
For the storage of the community specific preferences, that are related with the configuration of the Community Presentation Portal (look and feel, active pages, fonts, help texts etc.) the **Configuration Store** will be provided. The Administration Portal and the Presentation Portal will share the configuration information through a REST API that

will expose the contents of the Configuration Store. This store is a Mongo DB[5] database.

The community specific information, i.e. the metadata of each community (name, description etc.) and the OpenAIRE entities that are related to a community, will be stored and retrieved through the **Community API**. Additionally, through the community API the community information will be made available to the OpenAIRE system and more specifically to the **Aggregation Service** and the **Index** and **Search Services**. In that way, the OpenAIRE Information Space will be enhanced with the community specific information.

For researchers to be able to upload or acknowledge a research product linked to a community, the Deposition and the Claiming mechanisms will be available. More specifically, for deposits, the Research Community Dashboard will use the **Zenodo Upload API**[6] to make direct requests for upload and publishing of files. For the claiming process, the Research Community Dashboard will use the **Claim Service REST API**, to link research results and communities.

The Claim Service will also be responsible for exposing to the Administrator portal, through its API, the research products linked with communities. In that way, the research operators will be able to curate and manage the links that are related to their community.

OpenAIRE/OpenAIRE-Connect IdP will be available for users to be registered in the OpenAIRE/OpenAIRE-Connect system, edit their profile and reset their password. The IdP will be in Shibboleth[7], a single sign-on (SSO) system. It allows users to sign in using just one identity to various systems run by federations of different organizations or institutions. The OpenAIRE/OpenAIRE-Connect IdP will be also integrated in the **AAI Proxy** implemented by GRNet. This proxy will allow the SSO with third parties such as social networks and communities such as ORCID, and GEANT's eduGain inter-federation service. The Proxy will interact with the Research Community Dashboard platform following the OpenID Connect standard[8], an authentication layer on top of OAuth 2.0[9].

5 https://www.mongodb.com

6 http://developers.zenodo.org/#quickstart-upload

7 https://shibboleth.net

8 http://openid.net/connect/

9 https://oauth.net/2/

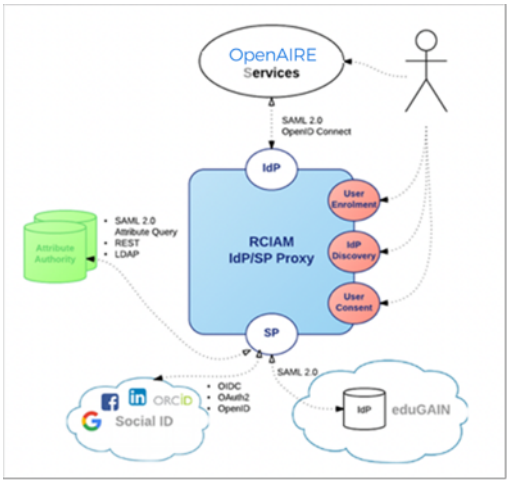

Figure 28 - AAI proxy architecture (by GRNet)

4| RELEASE PLAN

The first BETA release of the Research Community Dashboard is planned to be realized by M16. For this first phase the available functionalities will be:

- Search and browse overall OpenAIRE and by community content
- Search and browse filtering for the scientific products made available by M12
- Search and browse results downloadable in CSV format
- Downloadable CSV community reports
- Basic linking to a community
- Basic user registration and subscription
- OpenAIRE SSO integration
- Basic layout configuration (logo, simple texts)
- Search for repositories to deposit
- Mining configuration
- Basic curation of community links (delete)
- Selection of statistics charts to appear

For the second BETA release by M23, the comments received during the first testing period will be integrated for all the above-mentioned functionalities. In addition,

- Search and browse filtering for the scientific products made available by M20 (other research products added)
- Advanced layout and content configuration
- Advanced Curation of community links and notification of Research Operators
- Management of community users and notification of Research Operators
- Invitation of users
- Depositing in Zenodo through Zenodo communities

For the first production release by M27, the comments received during the second testing period will be integrated. Also, the interesting aspects of the functional specifications will be examined and decided whether they will be integrated or not in the Research Community Dashboard. These aspects are:

- Indicate a subset of an OpenAIRE content provider as relevant to the community
- Indicate/propose external content providers with data relevant to the community
- Indicate a subset of other communities' content/scientific products which can be shared
- Upload research community products in other repositories than Zenodo.
- Create/suggest charts to be visible in the Research Community Dashboard.

By M30 the final comments will be integrated.

4.1 Release Process

- **Regular deployment:** The regular deployment of the platform is always scheduled together with ICM and the process starts 2 or 3 months before the actual release. This helps us identify new system requirements and deployment issues that might appear in a BETA/PRODUCTION environment, due to the various services running.

- **Hotfix deployment:** Hotfixes will be made immediately and deployed depending on urgency.