European Commission

JRC TECHNICAL REPORTS

European Cybersecurity Atlas

User Manual

NAI-FOVINO, I.

NEISSE, R.

2020

Joint
Research
Centre

This publication is a Technical report by the Joint Research Centre (JRC), the European Commission's science and knowledge service. It aims to provide evidence-based scientific support to the European policymaking process. The scientific output expressed does not imply a policy position of the European Commission. Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use that might be made of this publication.

JRC Science Hub
https://ec.europa.eu/jrc

JRC 122961

Luxembourg: Publications Office of the European Union, 2020

How to cite this report: Nai-Fovino, I., Neisse, R., *European Cybersecurity Atlas*. User Manual

Contents

1 Introduction 1
2 Anonymous users 3
3 Authenticated users 7
4 Organisation representatives 11
5 Moderators 16
6 Researchers 18

1 Introduction

The Commission made a commitment in the Communication adopted in 2018 to launch a pilot phase under Horizon 2020 to help bring national cybersecurity centres together into a network. To help on the creation of this network, one of the ongoing EU initiatives is the establishment of a Cybersecurity Atlas to provide a consistent overview of the cybersecurity expertise in the EU and to boost the collaboration.

The Cybersecurity Atlas is a web application accessible through the following address: https://cybersecurity-atlas.ec.europa.eu

This document contains the user guides for the different roles taking part in the piloting phase of the Atlas platform. The roles are:

- **Anonymous user**: anyone accessing the Atlas portal without authenticating. This includes part of the public functionality, which is accessible by search engines.
- **Authenticated user**: user that authenticates using EU Login and have their e-mail account validated.
- **Organisation representative**: authenticated user that is responsible for providing detailed information about an organisation participating in the Atlas. Organisation representatives in the piloting phase were identified by the pilot coordinators and are explicitly granted access either to create a new organisation profile or to edit organisation data imported from the cybersecurity competence survey performed in 2018.
- **Moderator**: this are the pilot project coordinators and additional/assistant moderators appointed by them. They are responsible for reviewing the organisation data and approving them before they are published in the Atlas.
- **Researcher**: a cybersecurity researcher in one of the organisations listed participating in the Atlas. By default these researchers will be allowed to edit their profile or create a new profile. Profiles may already exist in the Atlas for researchers listed as key researchers by organisation representatives. However, any researcher may request the permission to create a new profile in the Atlas.
- **Administrator**: the user responsible for assigning authenticated users to the specific roles and monitoring the moderation workflow.

By default anyone that is enrolled in EU Login is allowed to see the public information in the Atlas. The other user roles must be explicitly assigned by the Atlas administrators upon request.

The data of organisations registered in the Atlas is never automatically published and any modification to the information must be approved by a moderator. The following figure illustrates the states of an organisation, namely: draft, ready for publication, revision requested, and published.

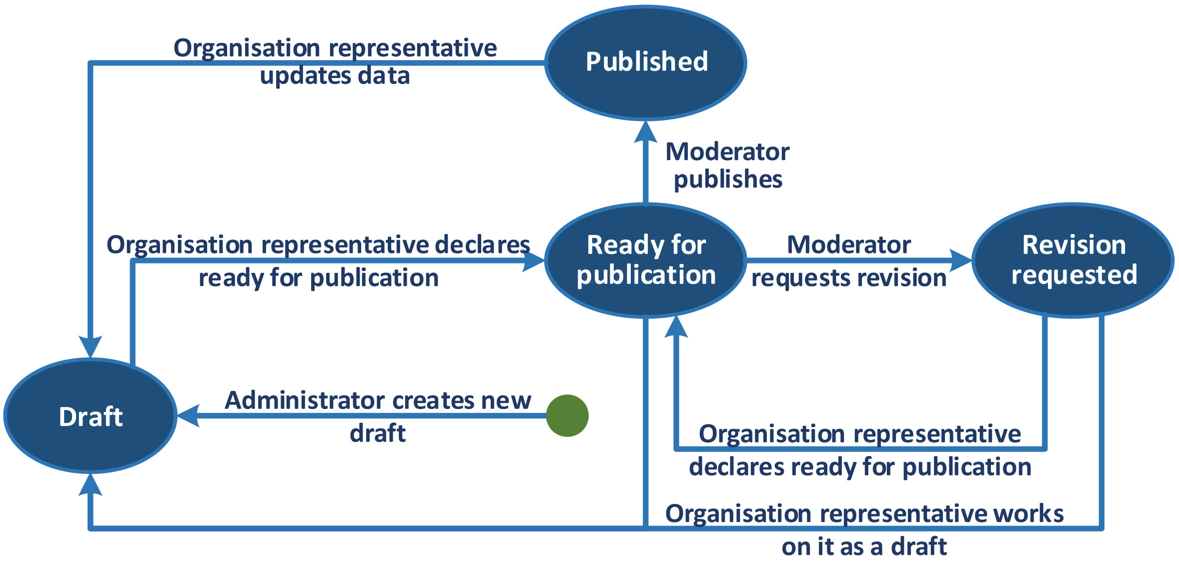

Published
Organisation representative updates data
Moderator publishes
Organisation representative declares ready for publication
Ready for publication
Moderator requests revision
Revision requested
Draft
Administrator creates new draft
Organisation representative declares ready for publication
Organisation representative works on it as a draft

Figure 1. States of an organisation record in the Atlas platform

The flow among the different states includes the following transitions as depicted in Figure 1:

- An administrator creates a new draft of an organisation upon request by an organisation representative and assigns the rights for the representative to update this record.
- When the organisation data is ready the organisation representative may declare it as ready for publication.
- A relevant moderator from one of the network pilot projects (CONCORDIA, ECHO, SPARTA, CyberSec4Europe) or from ECSO reviews the organisation data and may publish it or request a revision.
- If state is Revision requested the organisation representative can see the request and a revision log message describing the issue raised by the moderator that needs to be addressed.
- The organisation representative can then modify the organisation data saving as a draft, or declare it ready for publication again, describing in the log messages how the moderator comments were addressed.
- At any time, when the organisation data is published, ready for publication, or a revision is requested, the organisation representative may update the state to draft in order to update its content.

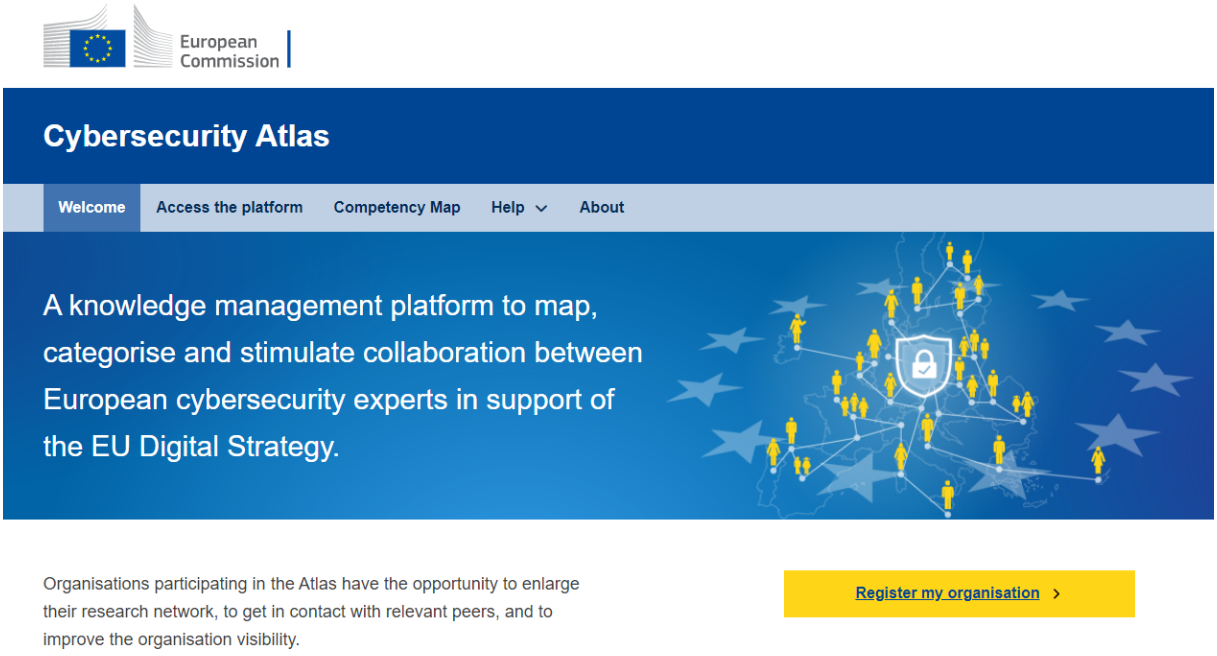
The last organisation record in the published state is the one currently shown and considered in all Atlas public visualizations and functionalities, while the other states are intermediate revisions that are used to record the changes performed and the moderation workflow until a new published version of the organisation data is created. Data may be unpublished and deleted from the Atlas upon request from the respective organisation representatives to the administrator.

This document is organized with sections focused on each of these user roles detailing the functionality and providing technical instructions on how to use the Atlas platform, namely: anonymous users, authenticated users, organisation representatives, moderators, and researchers.

2 Anonymous users

Anonymous users are allowed to see the following pages of the platform:

- The welcome page describing the context and goals of the Atlas platform (see Figure 2).
- The Help section menu containing the Frequently Asked Questions (FAQ) and the Contact page (see Figure 3, Figure 6, and Figure 7).
- The Access the platform link that redirects to the EU Login service.



A knowledge management platform to map, categorise and stimulate collaboration between European cybersecurity experts in support of the EU Digital Strategy.

Organisations participating in the Atlas have the opportunity to enlarge their research network, to get in contact with relevant peers, and to improve the organisation visibility.

Figure 2. Welcome page.

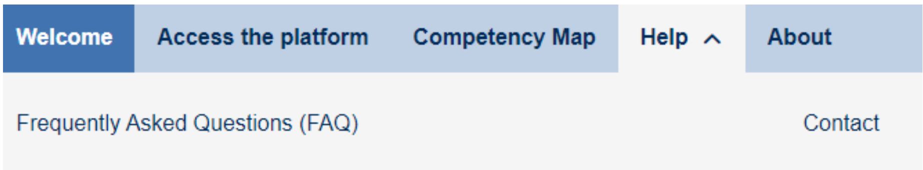
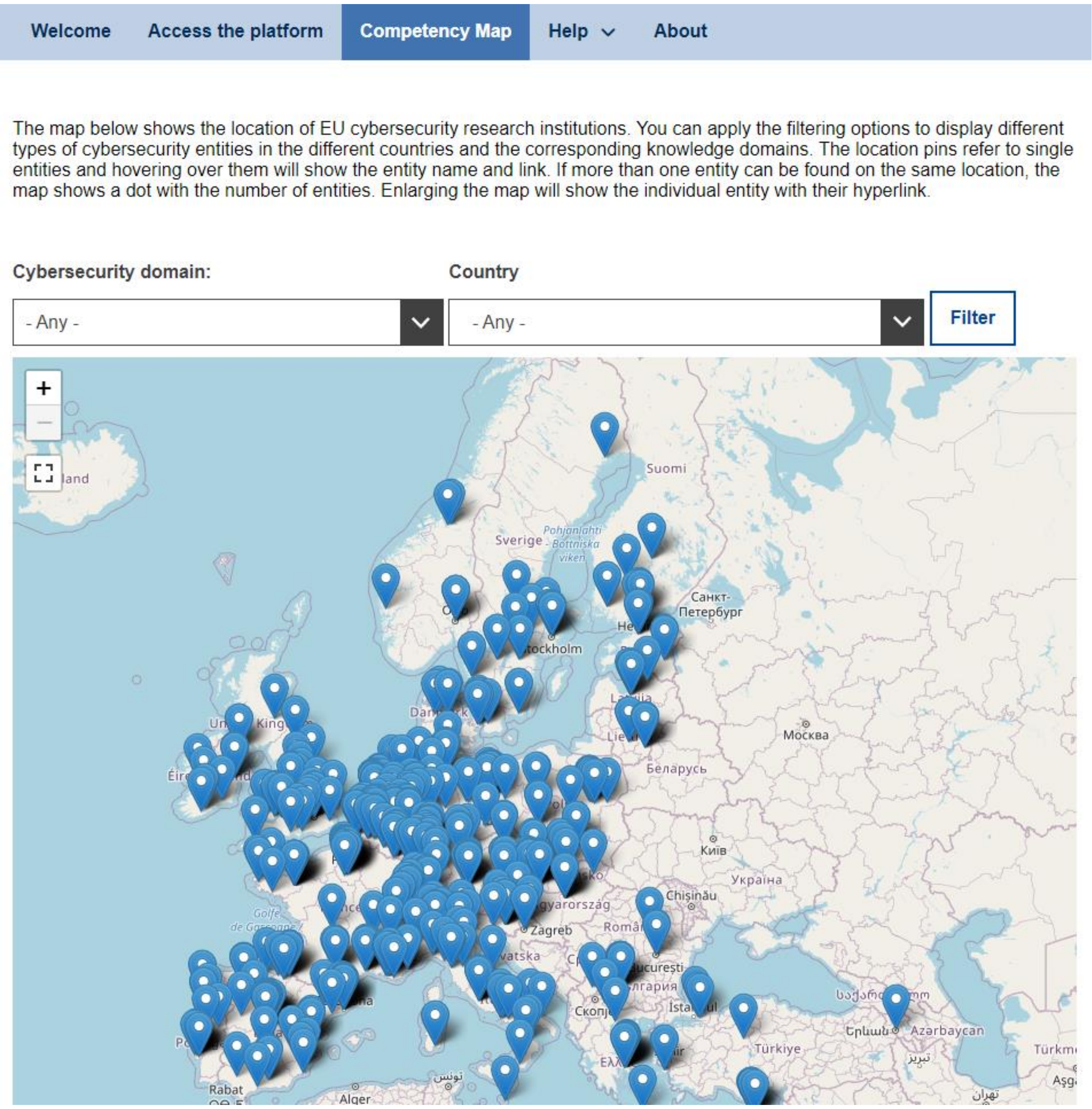


Figure 3. Help menu.

The Competency Map menu item shows all organisations registered in the Atlas using waypoints to display their position in the map, with the possibility of filtering the organisations working on a specific cybersecurity domain and also filtering them by the country where they are located (Figure 4).



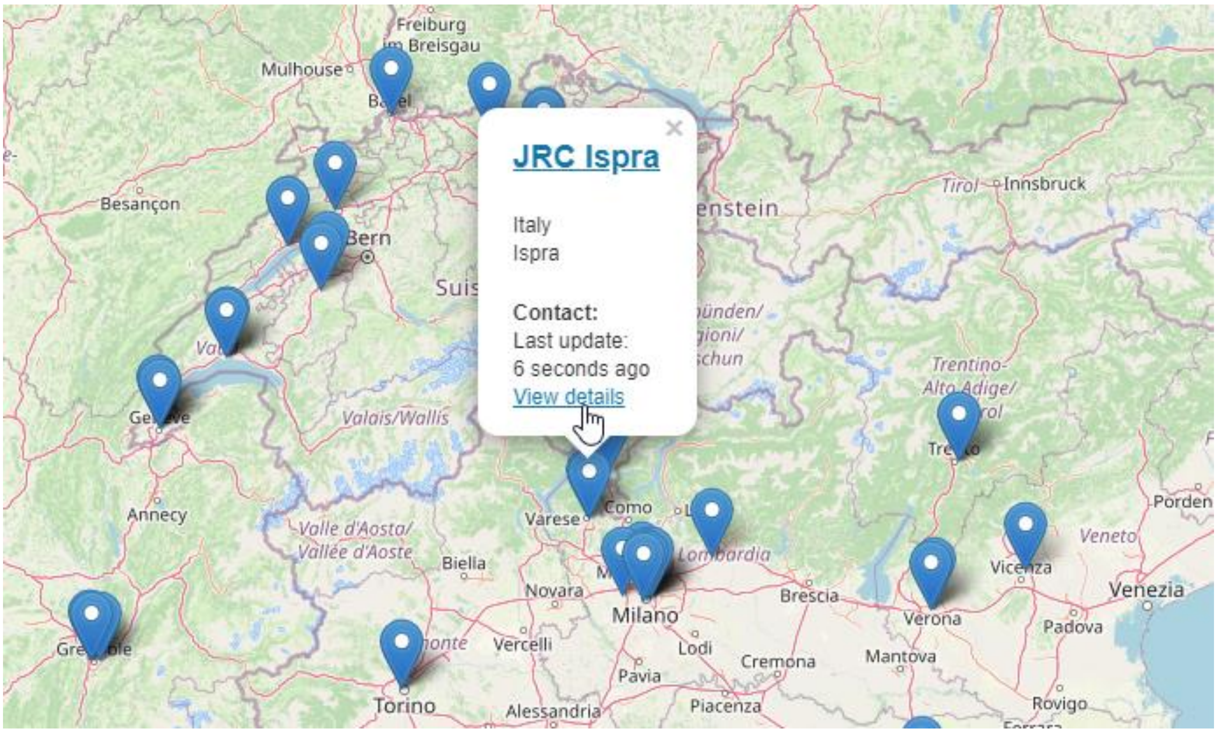
The map below shows the location of EU cybersecurity research institutions. You can apply the filtering options to display different types of cybersecurity entities in the different countries and the corresponding knowledge domains. The location pins refer to single entities and hovering over them will show the entity name and link. If more than one entity can be found on the same location, the map shows a dot with the number of entities. Enlarging the map will show the individual entity with their hyperlink.

Cybersecurity domain: - Any -

Country: - Any -

Figure 4. Competency map

Details about an organisation can be visualized by clicking on the map waypoint icon and then on the link "View details" of the organisation (see Figure 5).

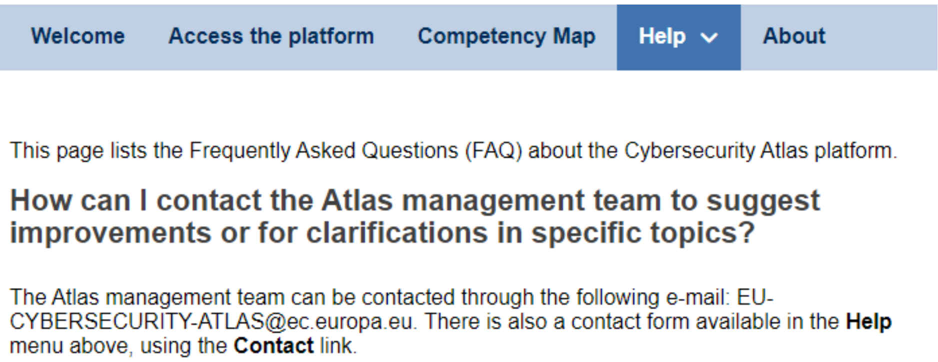


JRC Ispra

Italy
Ispra

Contact:
Last update:
6 seconds ago
View details

Figure 5. Access to the organisation details page

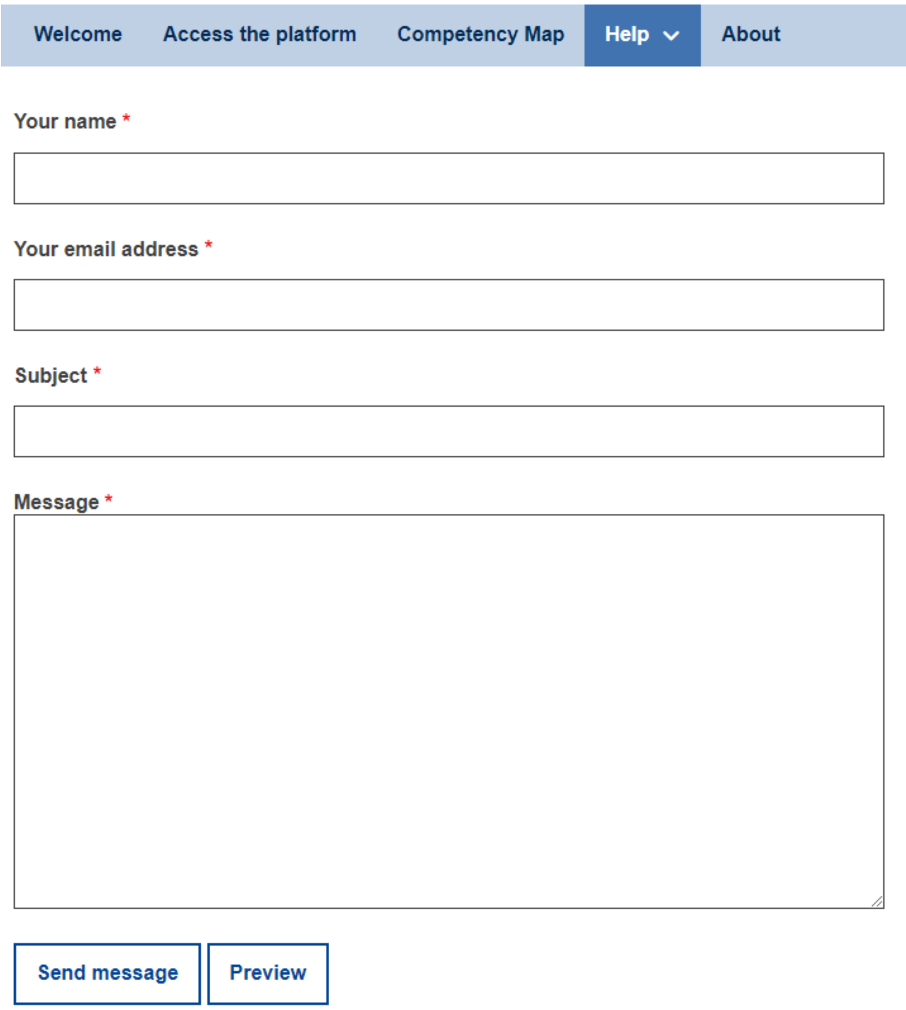


This page lists the Frequently Asked Questions (FAQ) about the Cybersecurity Atlas platform.

How can I contact the Atlas management team to suggest improvements or for clarifications in specific topics?

The Atlas management team can be contacted through the following e-mail: EU-CYBERSECURITY-ATLAS@ec.europa.eu. There is also a contact form available in the **Help** menu above, using the **Contact** link.

Figure 6. Frequently Asked Questions (FAQ) page.



Your name *

Your email address *

Subject *

Message *

Figure 7. Contact form.

3 Authenticated users

In order to access the Atlas platform anonymous users have to authenticate using EU Login, which can be done by selecting the menu item "Access the platform" (see Figure 8). This menu item will redirect users to the EU Login authentication page (see Figure 9).

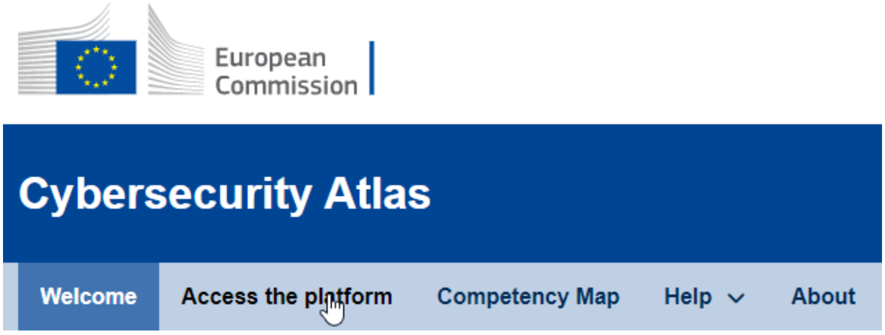
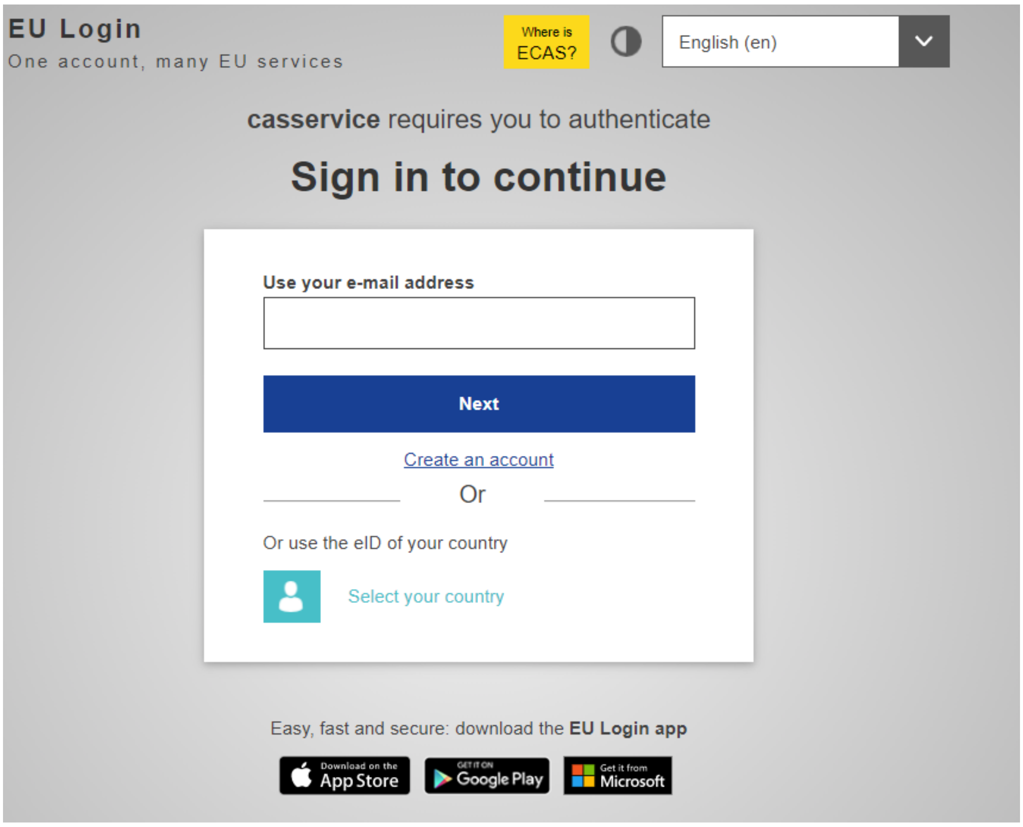


Figure 8. Menu item to access the platform.



casservice requires you to authenticate

Sign in to continue

Use your e-mail address

Or use the eID of your country

Easy, fast and secure: download the **EU Login app**

Figure 9. EU Login authentication page.

After authenticating the user will be able to access the Atlas public data and functionality. The Atlas uses a standard interface with a top menu bar in black, which allows users to see their username, links to view or edit their profile information, and an option to logout. The logout option is also replicated in the My account menu section.

The first page shown after login is the Competency Map and the Help menu contains the Frequently Asked Questions (FAQ) and a contact form accessible through the link Contact. This information is also visible to anonymous users (see Section 2).

The Charts and statistics menu (see Figure 10) has links to pages showing the number of organisations per country (see Figure 11), the list of organisations with additional filters (see Figure 12), the number of organisations per cybersecurity domain (see Figure 13), and the number of organisations per type (see Figure 14).

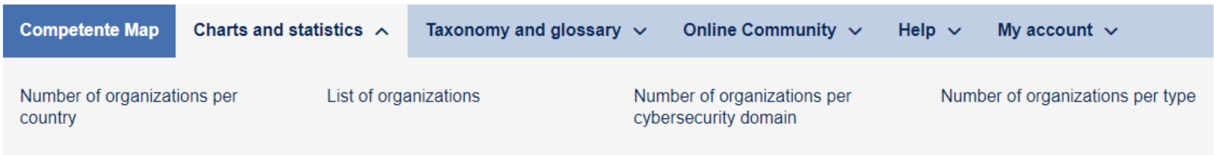
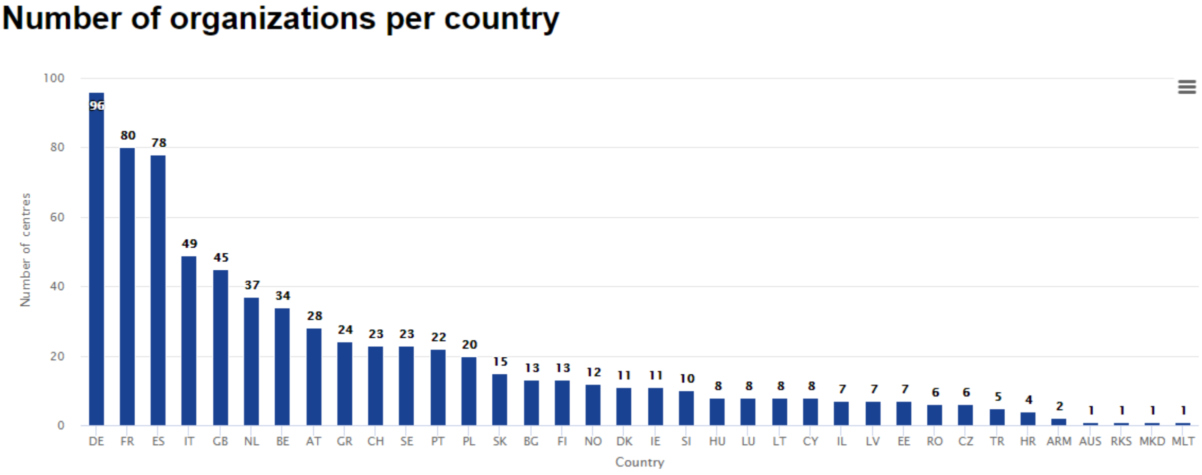
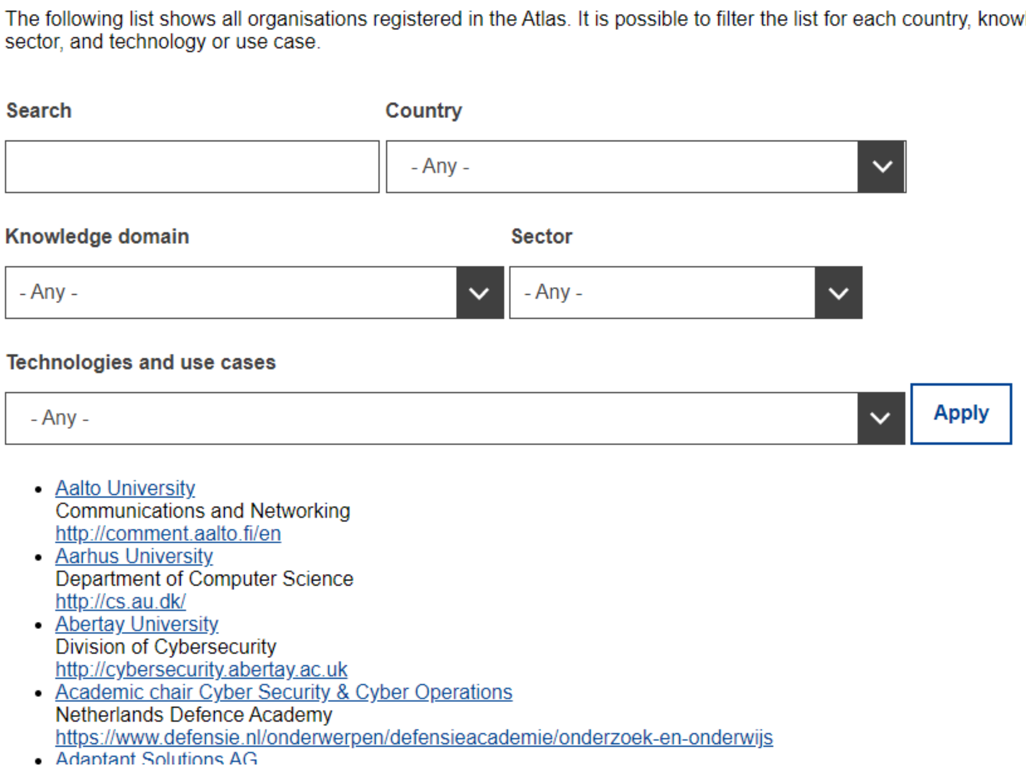

Competente Map
Charts and statistics
Taxonomy and glossary
Online Community
Help
My account
Number of organizations per country
List of organizations
Number of organizations per cybersecurity domain
Number of organizations per type

Figure 10. Charts and statistics menu items.



Number of organizations per country

Figure 11. Number of organisations per country.



The following list shows all organisations registered in the Atlas. It is possible to filter the list for each country, knowledge domain, sector, and technology or use case.

- Aalto University
  Communications and Networking
  http://comment.aalto.fi/en
- Aarhus University
  Department of Computer Science
  http://cs.au.dk/
- Abertay University
  Division of Cybersecurity
  http://cybersecurity.abertay.ac.uk
- Academic chair Cyber Security & Cyber Operations
  Netherlands Defence Academy
  https://www.defensie.nl/onderwerpen/defensieacademie/onderzoek-en-onderwijs
- Adaptant Solutions AG

Figure 12. List of organisations.

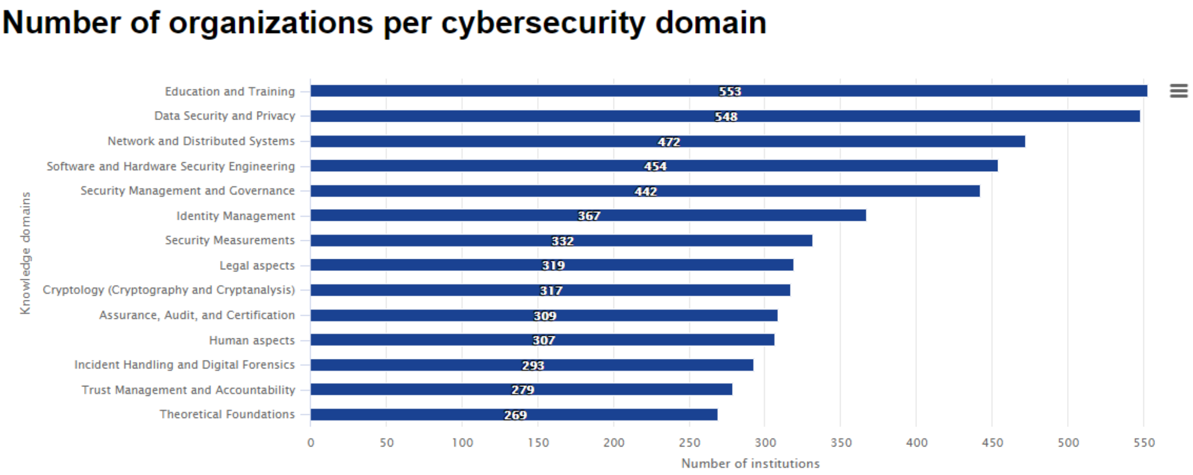


Figure 13. Number of organisations per cybersecurity domain.

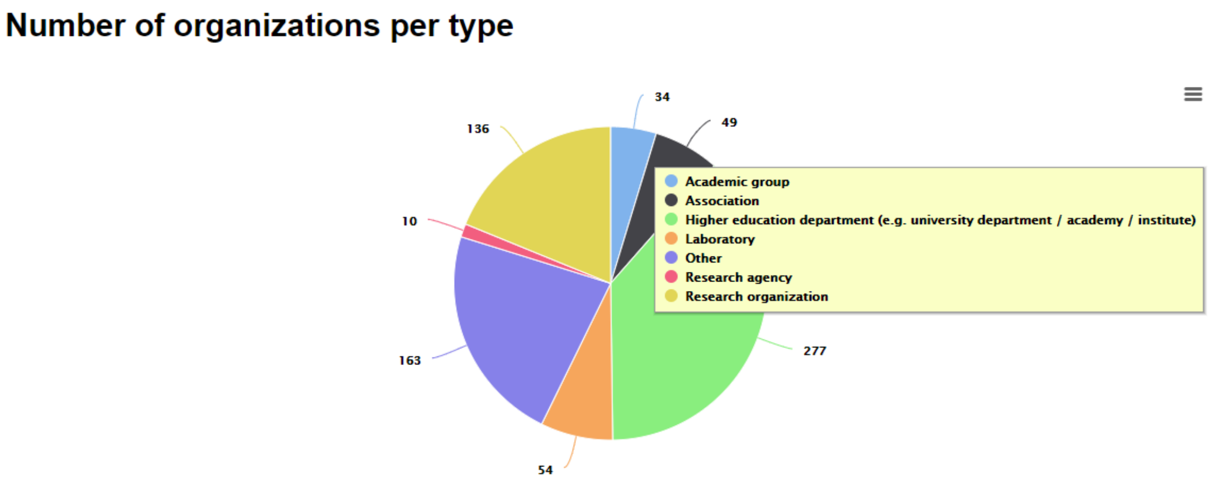


Figure 14. Number of organisations per type.

The taxonomy and glossary menu (see Figure 15) has a link to a page showing the knowledge domains and sectors definitions from the cybersecurity taxonomy.

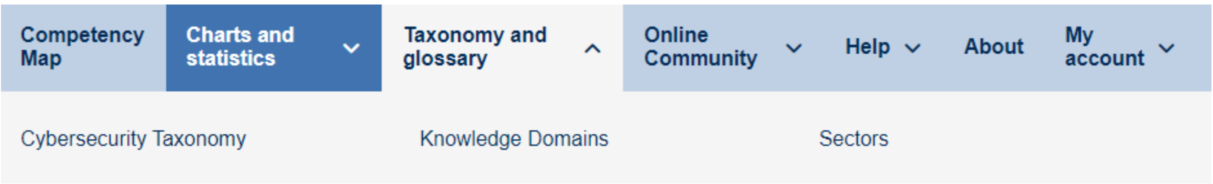


Figure 15. Taxonomy and glossary menu items.

4 Organisation representatives

Organisation representatives should contact the administrator to request the permissions to use the Atlas platform under this user role to manage their organisation data using the following e-mail address:

EU-CYBERSECURITY-ATLAS@ec.europa.eu

In this first contact e-mail they should provide:

1. Their user id and e-mail address that was already enrolled in EU Login and was already used to access the Atlas platform as an authenticated user.
2. The organisation name.
3. The department or organisational unit
4. The complete address including the street, number, city and country where the organisation is physically located.
5. The organisation URL pointing to the specific department or organisational unit.
6. Inform if the organisation is a member of ECSO or of one of the EU pilot projects to prepare the European Cybersecurity Competence Network.

The Atlas administrator will then assign to the user a new organisation or an existing organisation, if the data was already imported in the Atlas, and grant access rights to the user so (s)he can add or update the organisation data.

After access is granted, the user will see new menu links in the my account menu allowing her/him to see his/her organisations, the projects (s)he has coordinated, the projects the organisation has participated in, the list of the organisation's key researchers, and the courses and training offered (see Figure 16).

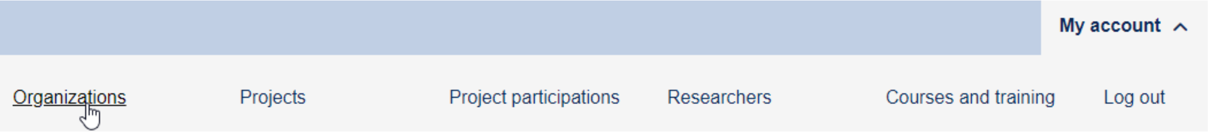
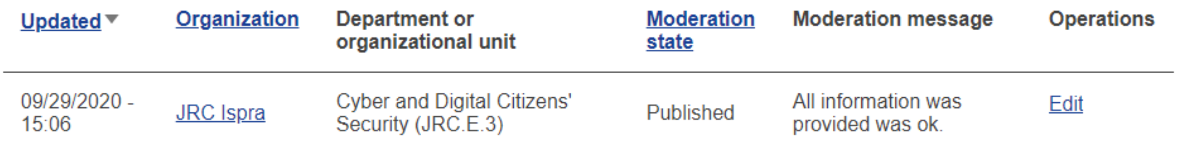


Figure 16. My account menu for organisation representatives.

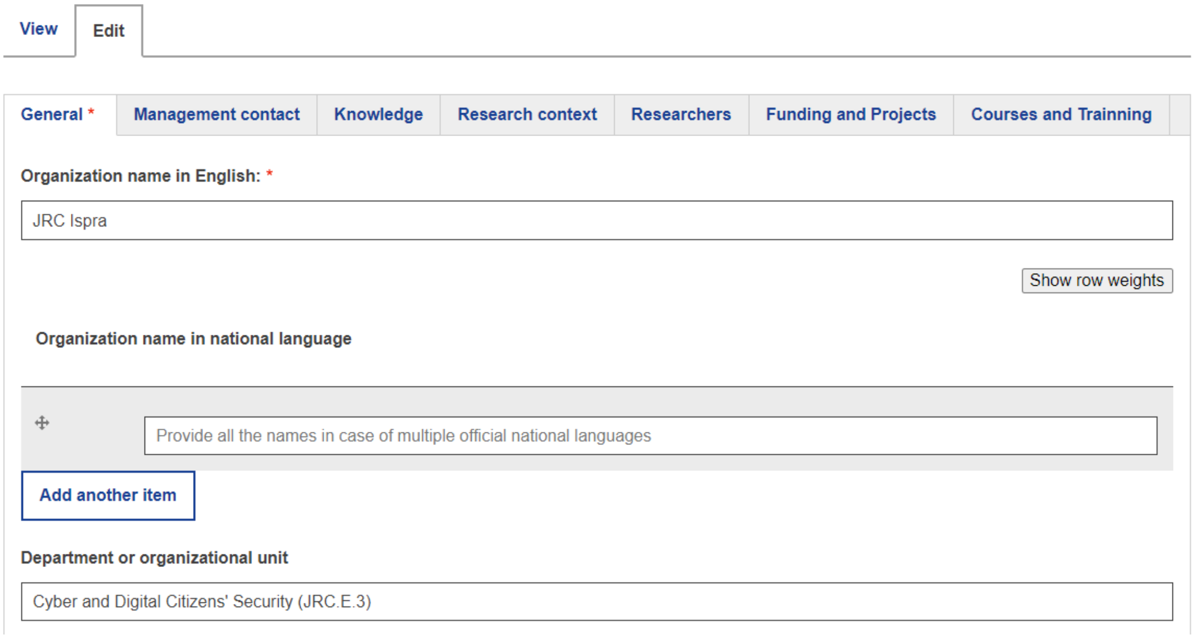
To edit the organisation data the user should click in the Organisations menu item in the my account menu, which will show the organisations registered under the account and the option to view and edit the data (see Figure 17). For each organisation registered under the user account the organisation representative will see the latest revision, which in Figure 17 is the current Published version, and the moderation message of the moderator that approved the data to be published. In order to **edit the information** and create a new revision the organisation representative just needs to follow the Edit link in the operations column, while to **view the current published data** the organisation name link should be accessed.



Updated ▾	Organization	Department or organizational unit	Moderation state	Moderation message	Operations
09/29/2020 - 15:06	JRC Ispra	Cyber and Digital Citizens' Security (JRC.E.3)	Published	All information was provided was ok.	Edit

Figure 17. Organisations in my account

Figure 18 shows the form to edit the organisation data. The form is divided in tabs where the general information about the organisation is provided, the management contact, the knowledge, the research context, the list of key researchers, funding and projects, and courses and training.



Organization name in English: *

JRC Ispra

Organization name in national language

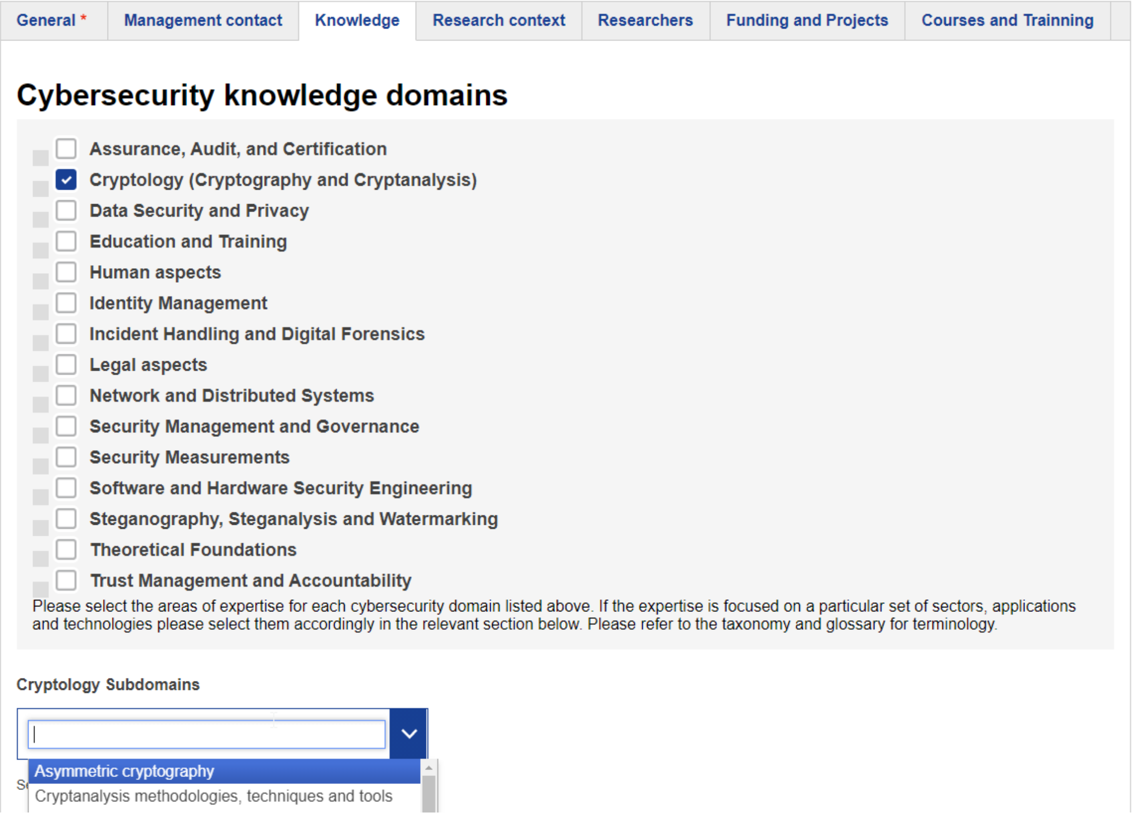
Provide all the names in case of multiple official national languages

Department or organizational unit

Cyber and Digital Citizens' Security (JRC.E.3)

Figure 18. Form to edit the organisation data

When defining the organisation knowledge the user can select the respective domain and then an additional selection option appears to allow the selection of the subdomains of expertise for each of the knowledge domains selected. Figure 19 shows an example where the user selected the Cryptology domain and the subdomains selection box appeared. If a knowledge domain or subdomain is not in the list the user may also include other elements (see Figure 20).



Cybersecurity knowledge domains

- □ Assurance, Audit, and Certification
- ☑ Cryptology (Cryptography and Cryptanalysis)
- □ Data Security and Privacy
- □ Education and Training
- □ Human aspects
- □ Identity Management
- □ Incident Handling and Digital Forensics
- □ Legal aspects
- □ Network and Distributed Systems
- □ Security Management and Governance
- □ Security Measurements
- □ Software and Hardware Security Engineering
- □ Steganography, Steganalysis and Watermarking
- □ Theoretical Foundations
- □ Trust Management and Accountability

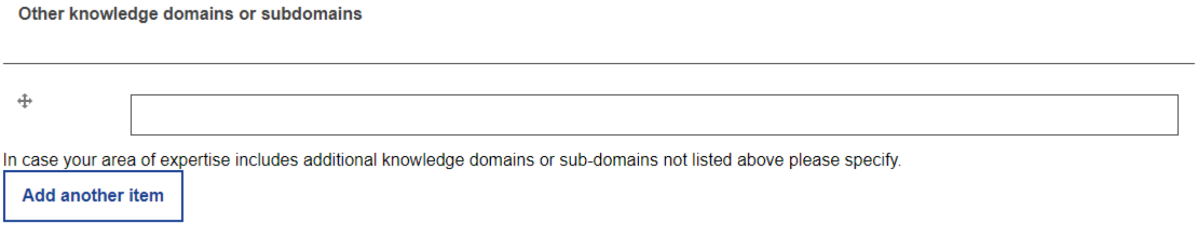
Please select the areas of expertise for each cybersecurity domain listed above. If the expertise is focused on a particular set of sectors, applications and technologies please select them accordingly in the relevant section below. Please refer to the taxonomy and glossary for terminology.

Cryptology Subdomains

Asymmetric cryptography

Cryptanalysis methodologies, techniques and tools

Figure 19. Selection of knowledge domains and subdomains

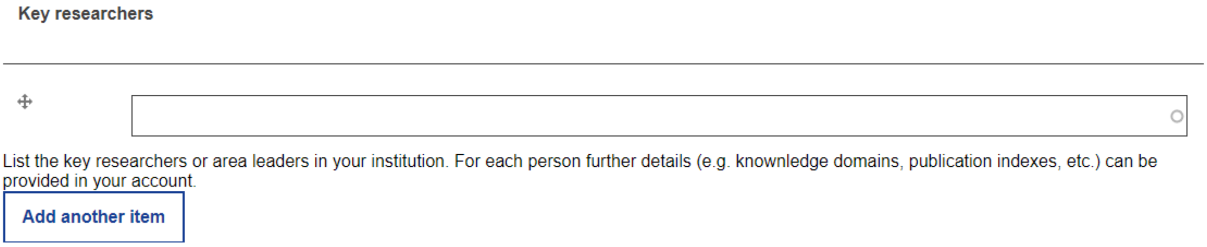


Other knowledge domains or subdomains

In case your area of expertise includes additional knowledge domains or sub-domains not listed above please specify.

Figure 20. Other knowledge domains and subdomains.

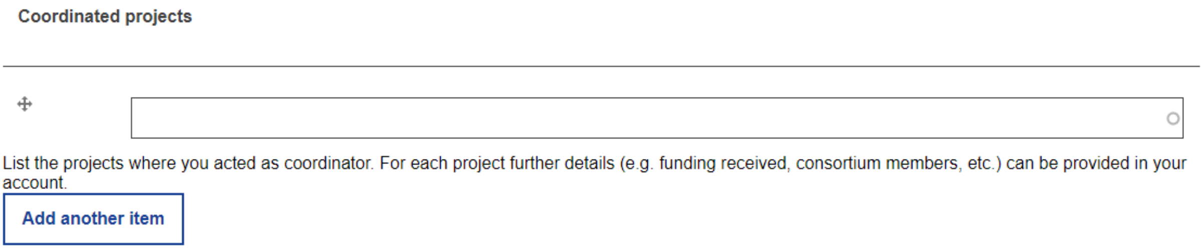
The key researchers, coordinated projects, and courses and training information about the organisation are only listed in the organisation form, and after the organisation is saved the user can edit the details about these elements in the respective link in the my account menu. The following figures show the interface in the organisation form to register these elements, simply by typing their names (see Figure 21, Figure 22, and Figure 23).



Key researchers

List the key researchers or area leaders in your institution. For each person further details (e.g. knownledge domains, publication indexes, etc.) can be provided in your account.

Figure 21. Key researchers form.


Coordinated projects

List the projects where you acted as coordinator. For each project further details (e.g. funding received, consortium members, etc.) can be provided in your account.

Figure 22. Coordinated projects form.

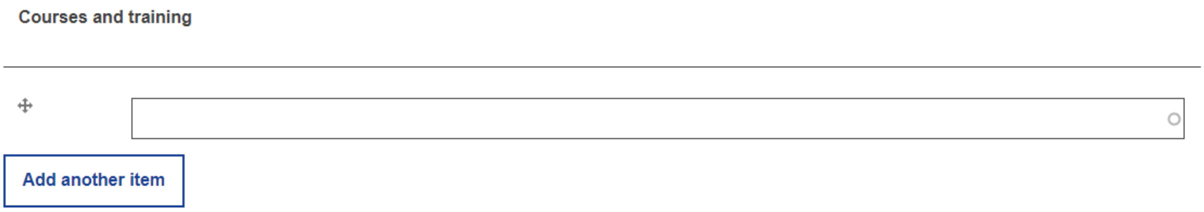
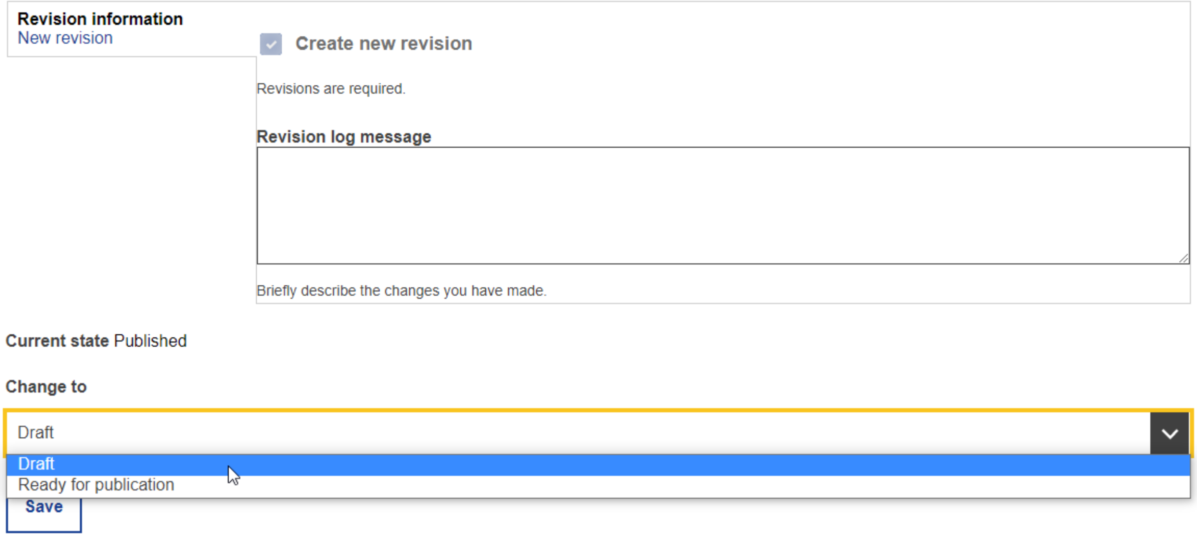

Courses and training

Figure 23. Courses and training form.

The final step after completing all the organisation data is to save it. In this step it is important to fill in the revision log message describing briefly the changes made to the organisation data, and to select the appropriate state. The user can select the draft state, if the organisation data is not yet ready to be published and (s)he wishes to make changes to it, or to select the ready for publication state. If the ready for publication state is select the organisation data will be only visible to one of the moderators, which will review the data and publish it, or, in case any inconsistencies are detected, the moderator will request a revision from the organisation representative.

When saving the organisation information validation messages must be checked for each of the tabs, otherwise the platform will not allow the data to be saved. For example, if the user provides a negative number for the number of researchers in the tab "Researchers", and when saving the data this tab is not selected the error message will not be seen while the form will not allow the data to be saved.


Revision information
New revision

☑ Create new revision

Revisions are required.

Revision log message

Briefly describe the changes you have made.

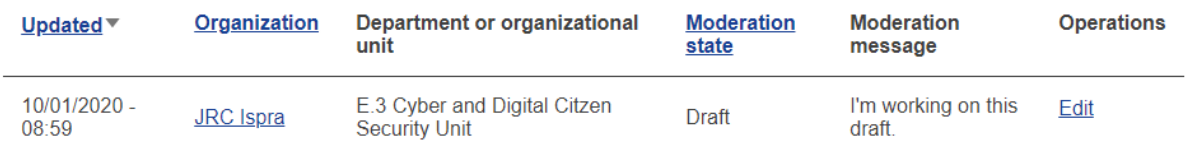
Current state Published

Change to

Draft

Figure 24. Revision log message when saving the organisation data.

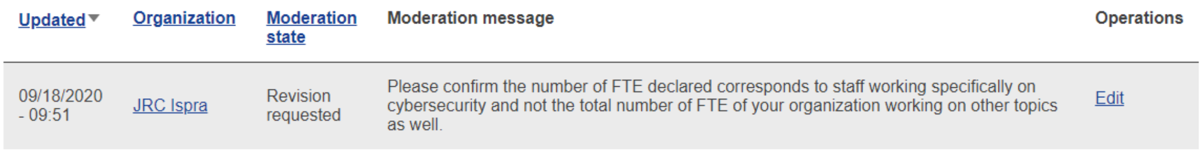
The organisation representative can monitor the status of the data provided in the my account menu by selecting the organisations menu item. When the organisation representative is working on the data and is not ready for publication it should save it in the draft revision state (see Figure 25).



Updated ▼	Organization	Department or organizational unit	Moderation state	Moderation message	Operations
10/01/2020 - 08:59	JRC Ispra	E.3 Cyber and Digital Citzen Security Unit	Draft	I'm working on this draft.	Edit

Figure 25. Organisation on working draft state.

In case the organisation moderator has detected inconsistencies the organisation representative can see in the organisations menu item the moderation state revision requested and in the moderation message the specific requests made by the moderator (see Figure 26).



Updated ▼	Organization	Moderation state	Moderation message	Operations
09/18/2020 - 09:51	JRC Ispra	Revision requested	Please confirm the number of FTE declared corresponds to staff working specifically on cybersecurity and not the total number of FTE of your organization working on other topics as well.	Edit

Figure 26. Organisation list with moderation message revision requested.

If a revision is requested the organisation representative is expected to update the organisation data in draft state and, when (s)he is confident the requests made by the moderator are fulfilled, to once more change the state to ready for publication.

The organization representative will also receive an e-mail notification whenever a revision is requested by a moderator.

The moderator and organisation representative may interact multiple times with the revision state going from ready to publication to revision requested until the organisation data is finally accepted for publication by the moderator.

5 Moderators

The moderator interface is accessible through the my account menu by selecting the moderated organisations item (see Figure 27). The moderator can then visualize all the organisation revisions and select the ones currently marked as ready for publication that require an action from him/her. Additionally, the moderator may list only the organisations ready for publication that are a member of one of the competence network pilot projects or of ECSO (see Figure 28).

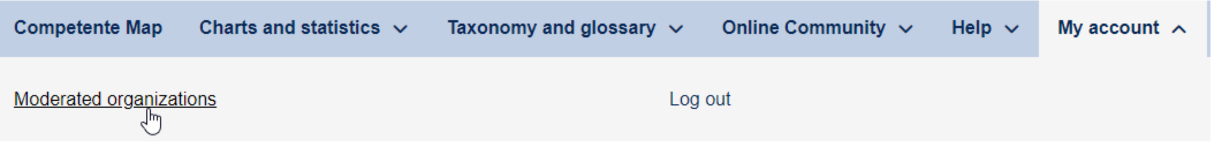
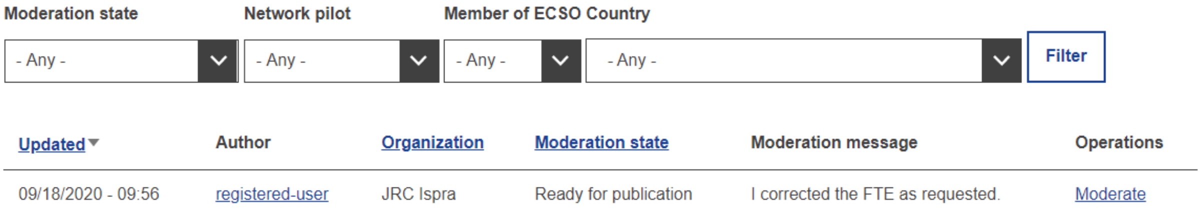


Figure 27. Moderated organisations.



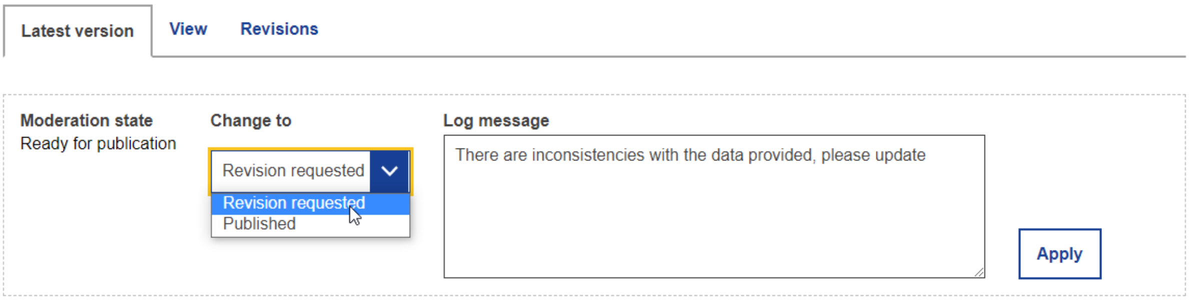
Updated ▾	Author	Organization	Moderation state	Moderation message	Operations
09/18/2020 - 09:56	registered-user	JRC Ispra	Ready for publication	I corrected the FTE as requested.	Moderate

Figure 28. Moderated organisation ready for publication.

To publish or request a revision the moderator should click in the Moderate link in the list of moderated organisations, which will then open the moderation interface (see Figure 29). In this interface the moderator can see the current version of the published organisation data in the View tab, all the revisions including the log messages detailing revision requested and the description of how the organisation representatives have modified the data in the Revisions tab, and the latest version of the organisation data in the Latest version tab (see Figure 29). The moderator receives an e-mail notification when the organizations for which (s)he is responsible is ready for publication.

There are two situations possible for moderation, a new institution that has just joined the Atlas and the moderator must check if the data is consistent, or an institution that updated/modified its content after the first registration. In the second case it is useful to compare the current published data (View tab in Figure 29) with the data in the current revision (Latest revision tab in Figure 29) to evaluate the changes made.

In the Latest version tab the moderator can publish the organisation data or request a revision if (s)he sees inconsistencies or issues with the data provided by the organisation representative. Moderators may request multiple revisions until the data is finally published in the Atlas platform.



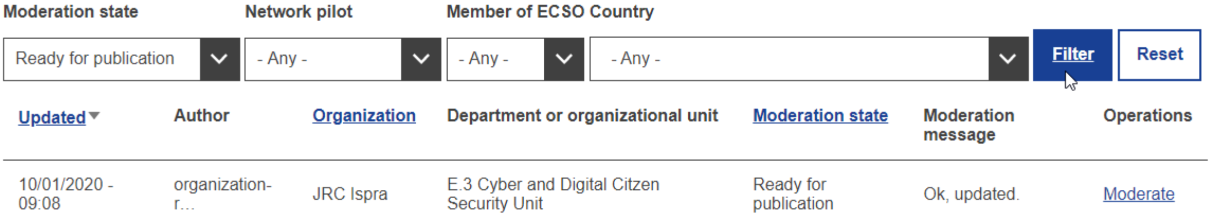
Moderation state: Ready for publication

Change to: Revision requested

Log message: There are inconsistencies with the data provided, please update

Figure 29. Moderation interface.

Moderators may also consult in the moderated organisations item in the my account menu the list of published organisations and the respective moderation messages (see Figure 30).



Moderation state: Ready for publication

Network pilot: - Any -

Member of ECSO Country: - Any - - Any -

Updated	Author	Organization	Department or organizational unit	Moderation state	Moderation message	Operations
10/01/2020 - 09:08	organization-r…	JRC Ispra	E.3 Cyber and Digital Citzen Security Unit	Ready for publication	Ok, updated.	Moderate

Figure 30. Moderated organisation published.

6 Researchers

Researchers are registered in the Atlas by organisation representatives when providing the organisation information, however, the representative may not be in the position to provide all the detailed information about each researcher. For this reason, researchers may request to be allowed access to manage their data in the Atlas. Access is allowed up request to the administrators using the following e-mail address:

EU-CYBERSECURITY-ATLAS@ec.europa.eu

The researcher must have an EU Login user and should have accessed the Atlas as an authenticated user. After access is granted the researcher will have access to the Researchers menu item in the my account menu (see Figure 31).

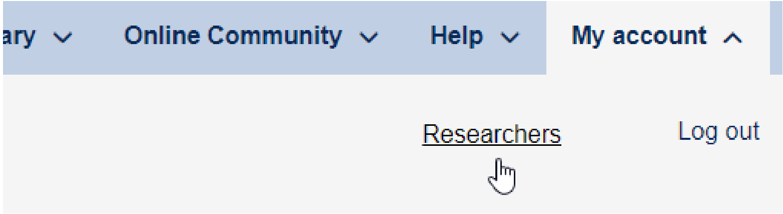


Figure 31. Researchers menu item in my account.

In the researchers menu item the user can see his/her profile and edit their information.

JRC Mission

As the science and knowledge service of the European Commission, the Joint Research Centre's mission is to support EU policies with independent evidence throughout the whole policy cycle.

EU Science Hub
ec.europa.eu/jrc

@EU_ScienceHub

EU Science Hub - Joint Research Centre

Joint Research Centre

EU Science Hub

Publications Office