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Cross-Pillar Activities Task 1: CESSDA Resource Directory

D1 CESSDA Resource Directory Policy and Development Strategy

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Executive Summary

2022 marks the fourth anniversary of the CESSDA Resource Directory (RD). Since 2018, the RD team members have gained experience and knowledge about the service and curation process and the RD has grown both in quantity and in quality. This deliverable thus answers a need to formalise the RD's collection development policy and the curation process created and followed by the RD editors. It also suggests different developments for the RD and proposes a maintenance strategy to foster its sustainability.

Abbreviations and Acronyms

CESSDA	Consortium of European Social Science Data Archives
CROSSDA	Croatian Social Science Data Archive
CSDA	Czech Social Science Data Archive
DAG	CESSDA Data Archiving Guide
ERIC	European Research Infrastructure Consortium
FORS	Swiss Centre of Expertise in the Social Sciences
GESIS	Leibniz-Institute for the Social Sciences
MK-DASS	Macedonian Social Science Data Archive
PM	Person-month
RD	CESSDA Resource Directory
SP	CESSDA Service Provider
SND	Swedish National Data Service
WG	CESSDA Working Group

Introduction

As part of the Consortium of European Social Science Data Archives (CESSDA) Agenda 2021-2022, this report focuses on two important aspects for the future of the CESSDA Resource Directory¹ (RD), which concerns its policies and development strategies.

Purpose and Scope

The RD was created in 2018. This tool/service,² developed primarily for data service professionals at CESSDA member Service Providers (SPs) and CESSDA partners, offers a central access point to updated resources (e.g., documents, training materials, tools, and peer-to-peer support services) useful for building, developing, and improving data archive services and practices. First published as a Google Sheet (version 1.0), the RD was migrated to the Zotero platform (v1.1) in 2019. In 2020, the first general update of the RD took place (v2.0). In 2021, the update targeted specifically the technical tools used by data archives (v2.1).

During these years, the RD team members have gained experience and knowledge about the service and curation process, both as editors of the resources and as managers of the RD. Over the years, the resource items have grown considerably in number while maintaining high-quality thanks to the procedures created by the RD editors. The remarks provided by CESSDA SPs and partners, either as RD users (e.g., from the gap analysis performed in 2018) or as RD contributors (e.g., during the update processes or peer-to-peer discussions) also indicate the way forward.

Fortified by this experience and knowledge, it is now time:

- to formalise the collection development policy of the RD and the curation process to ensure a more advanced and specific collection based on explicit priorities, and a homogenous treatment of the resources;
- to review some processes and suggest new developments to improve the service and promote its use; and
- to propose a governance and maintenance strategy of the RD to foster its sustainability.

¹ The CESSDA Resource Directory is available here:

https://www.zotero.org/groups/2382601/cessda_resource_directory/library (25.03.2022).

² The RD is both a tool (regarding the technical platform) and a service (regarding the editorial, acquisition and maintenance work). In the following text, to stress this the mention "tool/service" is used.

Value of the Resource Directory for the CESSDA Community

There are several reasons why the RD is a valuable tool/service for the CESSDA Community (i.e., CESSDA SPs and partners, CESSDA Working Groups (WGs) and teams, and CESSDA Main Office) and why it should be further developed and maintained in the future.

The RD provides useful resources for all CESSDA SPs and partners regardless their maturity level

In 2018, professionals at prospective social science data archives and new CESSDA SPs were the primary audiences of the RD. Since then, the RD's scope has widened to also serve data archive professionals in more established and mature SPs and partners. For example, emphasis is now also put on collecting resources helping to develop new services and improving practices regarding emerging topics (e.g., sensitive data, new data types such as social media data and big data). Therefore, the RD becomes more and more a useful and insightful tool/service for the whole CESSDA Community.

The RD benefits to CESSDA WGs and teams

The RD facilitates the discovery of the resources produced by the CESSDA Community and the dissemination of these resources within the CESSDA Community. Moreover, the RD supports and complements other tasks and activities within CESSDA. For example, from the RD, all CESSDA SPs and partners updated policies (e.g., regarding preservation) or CoreTrustSeal certification reports are available at once. This could be useful to SPs and partners to create or update their own policies or CTS. This could also be useful for monitoring the situation in different countries, for mentorship purposes, and to update the CESSDA Data Archiving Guide (DAG). Collaborations with CESSDA WGs and teams should be discussed and strengthened in the future.

The RD offers a unique tool/service for the CESSDA Community

The RD fills a gap, since there is no other directory aimed at (social sciences) data archive professionals and data archives in general. Indeed, based on the desk research performed,³ it is very different from other available directories and services by its target audience and scope (e.g., SSH Open Marketplace is dedicated for researchers). Moreover, the RD aims to become a comprehensive collection of resources of most importance for the CESSDA Community (e.g., resources helping to understand and meet CESSDA requirements). On top of that, there is also a possibility of extending the RD services to hold CESSDA non-public

³ Glavica Marijana, Alfredsson Iris, Kranjec Irena, Bornatici Christina, Michaela Kudrnáčová (2022). *D6 Review of Zotero/Resource Directory as a Platform for the Tools Directory*. Zenodo.

<https://doi.org/10.5281/zenodo.6901846>

deliverables which could be available strictly to the CESSDA Community (including or not partners). Even though the RD is not a repository, hosting non-public CESSDA deliverables would make a possible exception.

The RD conforms to CESSDA's values

According to CESSDA Strategy 2018-2022,⁴ the value proposition to SPs should be "to share their expertise" and "be more efficient and provide better services" (p.11). The RD serves both values, by offering a central place for SPs to share their resources and to find resources to build new services, improve their services and support the development of skills and knowledge of their data archive professionals.

The RD helps SPs to meet CESSDA's obligations

As already acknowledged in the first deliverable published regarding the RD,⁵ there is considerable expertise, knowledge, skills, and solutions in all aspects of running a social science data archive among the CESSDA SPs. However, this knowledge is not evenly spread. Learning from the experiences or resources of SPs that are specialists in a specific domain will help other CESSDA SPs and partners leapfrog forward in this domain. This learning from others (and sharing of specific resources, like some tools) has been recognised in the CESSDA ERIC Statutes Annex 2 on Service Provider Obligations.⁶ The RD provides a starting point to meet these obligations in an organised and systematic fashion.

The RD supports SPs to offer better services to their research community

The resources maintained in the RD aim to trigger professional best practice. The RD actively contribute to the adoption and promotion of standards for data archiving, thereby enhancing the quality of infrastructural services. Overall, the resources gathered in the RD support the development of better data archives, which means in the end better services to the CESSDA end-user community that are data depositors and data users, or in other words to the social sciences research community.

⁴ Ron Dekker. (2018). *CESSDA Strategy 2018-2022* (Final). Zenodo. <https://doi.org/10.5281/zenodo.3492063>.

⁵ Bornatici Christina & Priddy Mike (2019). *CESSDA Widening Activities 2018 Deliverable 1 – Resource Directory*. Zenodo. <https://doi.org/10.5281/zenodo.7030936>.

⁶ The articles 6, 10 and 11 of the Annex 2 of the Statutes of CESSDA ERIC states: "CESSDA Service Providers shall have the following obligations: ... 6. share their data archiving tools (under the intellectual property conditions provided for in Article 16 of the Statutes); ... 10. Provide mentor support for CESSDA ERIC Observers and their representative Service Providers to achieve full Membership; 11. Provide member support for countries with immature and fragile national infrastructures to help them build up needed competence later to be able to fulfil tasks as Members." Accessed from <https://cessda.eu/About/Governance/Statutes> (25.03.2022).

Structure of the Document

The aim of this deliverable is to outline the existing policy and practice regarding the RD activities and also to suggest several development strategies for the RD. The text has been organised in three main sections. The first part 'Resource Directory Policy' is dedicated to the introduction of the RD, its aims, target audience and work process. This part is relatively stable and only little impacted by envisioned development. The second part 'Development Strategies' elaborates on the processes which are envisioned to improve the RD such as the acquisition, possible collaborations, technical development, promotion and user assessment. The last part proposes a 'Maintenance and Sustainability' strategy.

Part 1: Resource Directory Policy

This part publishes the core policy for the RD, which is its collection development policy. This policy defines the RD, its aim, target audience and scope of collection, and thus the RD's long term strategy. Revising this policy from time to time is however important and a review process is also specified. This policy should become a standalone document publicly shared on the CESSDA website with other important documentation about the RD.

Collection Development Policy

The purpose of the collection development policy is to articulate the role of the CESSDA Resource Directory (RD) and provide direction in the selection process of resources. This document defines the aim and target audience of the RD and sets out criteria for selecting and appraising resources for inclusion in the RD. The detailed curation process is defined in a specific document (see Annex 1).

Definition

The RD is a central access point to a wide range of resources for building, developing, and improving data archive services, and for capability and capacity development of data archive professionals. Information on relevant resources of different types (e.g., documents, training materials, tools, and peer-to-peer support services) are collected, selected, and reviewed, making the RD a curated inventory of existing resources.

The RD is a structured collection of metadata, which facilitates the discovery of the resources. The resources are accessible via web links or DOIs. Currently, no resource is physically attached. Exceptions for specific resources could be accepted in the future, depending on the RD's developments.

Aim

The aim of the RD is to offer a central access point to an updated collection of resources that help to build sustainable and mature data archives, to support the development of new services and features within existing data archives, and to inform data archive professionals about general data archiving practices and emerging topics. Thus, the RD facilitates the dissemination of these resources within the CESSDA Community, which consists of CESSDA

member, observer, or partner service providers, CESSDA working groups and teams, and CESSDA main office.

Moreover, the RD aims to become a comprehensive collection of information on a selection of resources of most importance for the CESSDA Community. These are, first, the resources helping to understand and meet CESSDA requirements, and second, the resources created by the CESSDA Community meeting the collection development policy (e.g., CTS certifications, archiving policies and tools).

Target Audience

The RD was developed for data archive professionals (i.e., managers, data archivists, IT specialists, communication specialists, etc.) at CESSDA SPs and partners, who constitute the main audience. A lot of resources may also be useful for data archive professionals beyond CESSDA and the social sciences.

This strong focus towards data archive professionals distinguishes the RD from the other platforms that mainly target researchers (e.g., the CESSDA Training Resources webpage, the SSH Open Marketplace).

Scope of the Collection

The RD includes resources that can support data archive professionals in their work, be it building their data archive service, developing, and improving their data archiving practices, their user communication and support, or their technical infrastructure. Support is understood as not only resources that offer guidance (e.g., training materials), but also resources that are informative per se (e.g., report, article, presentation) or that could be used as examples (e.g., data archive policies).

Only high-quality, reliable, and up-to-date resources in English – to be understandable by the whole CESSDA Community – and with a developed content are included in the RD. Since the aim of the RD is not to be an archive of the CESSDA Community's resources, the updated version of a resource included in the RD replaces the older version of that resource. Reports/deliverables from previous CESSDA projects are not treated as outdated no matter how old they are. The content in these reports, as well as their form, can be useful and informative regardless of the production date. Resources should have a working link, or an email address in the case of consultancy for example.

The main focus of the collection is on data archiving in social sciences, but as new areas and interdisciplinary research grow in number, the RD will adapt and extend its scope regarding the development of social science data archives.

The RD gathers resources:

- from past and current CESSDA projects and teams;
- from CESSDA SPs and partners; and
- beyond the CESSDA Community.

These sources should however not be treated with the same priority. Covering resources developed by the CESSDA Community is of first importance.

Review of this Policy

This collection development policy should be periodically revised (e.g., once every 3-4 years) to ensure that the collection meets the needs and developments at social science data archives. Each time the collection development policy is (substantially) revised, there should be an assessment of all the resources already in the RD to keep only those who are still aligned with the new policy.

Part 2: Development Strategies

Since its creation in 2018, the RD has come a long way. It grew and was moved from one platform to another, it underwent a general update and has addressed the partners' desire to explore the technical tools that data archives use around their archiving activities (based on the gap analysis performed in 2018).⁷ Similarly, the RD team has learned a lot over time.

The RD is not a rigid platform but a living and constantly developing service that responds to the needs and requirements of the CESSDA Community. To live up to its full potential and be maximally useful for data archive professionals, while keeping its maintenance costs reasonable, some developments are needed.

There are current practices that are serving their purpose but there is still room for improvement. This part elaborates on the acquisition process, further collaboration with CESSDA WGs and teams, the technical development (specifically the transition to CESSDA's new website which is essential for certain operations) and the promotion of the RD. Some of these activities could be started now, but points related to the new CESSDA website should be included in the CESSDA Agenda 2023-2024.

Acquisition Process

Acquisition of resources is an important part of the RD's work. Newly published and relevant resources for the RD purpose should be added and maintained. The acquisition process as of now suffers some problems, the main one being too long a period of time in between the general updates, that should be reduced in the future. This section, therefore, comprises two parts: one that describes the current acquisition practice and the problems associated with it, and the other which aims to describe the future acquisition ambitions which would eliminate these problems faced.

Current Process

Until now information about resources has been gathered by two main means: from the CESSDA Community and the RD editors' various actions. First, the CESSDA Community, mainly SPs and WG leaders, submitted resource proposals to the RD editors by answering the general update requests sent by the RD editors. This has happened approximately every

⁷ Bornatici Christina (2019). *CESSDA Widening Activities 2018 Deliverable 5 – Gap Analysis of CESSDA Resources*. Zenodo. <https://doi.org/10.5281/zenodo.7030942>.

two years until now (i.e., in 2018, 2020; the next general update is planned for 2022). Moreover, a specific request for tools and services used and developed by SPs for all activities connected to data archiving services (e.g., anything from data acquisition to data dissemination, also including the management of users) was sent in 2021.

Second, the RD editors have carried out a monitoring of CESSDA newsletters and resources from CESSDA and other relevant projects (e.g., SSHOC) shared in Zenodo or announced in their respective Basecamps. The RD editors have also conducted desk research to complete the collection. Depending on the needs, this desk research could target resources on specific topics, or from initiatives and projects external to the CESSDA Community. For example, in 2021, it was noticed that SPs' policies around data archiving were missing as well as the CoreTrustSeal certification reports. Both types of resources are of first importance for the RD's goal. The editors included this information by searching the CoreTrustSeal's and SPs' websites. Finally, collaborations with some CESSDA teams (e.g., the teams developing the CESSDA Data Archiving Guide and working on the CESSDA Mentorship Programme) have been started in 2021.

This current process poses some problems. First, there was a complaint about the burden of answering too many surveys for CESSDA and its related projects. Second, the time frame between two general updates (about two years) is too long, mainly if SPs have new websites and all resources have different links or have developed new policies and services. In two years, some resources might not exist anymore, while others might have been newly developed or updated (e.g., new topics of interest for the community such as Dataverse, review of policies related to the CTS certification). Third, to keep an up-to-date and interesting directory for the users, the current process relies mostly on the monitoring and desk research of the RD editors as well as their regular checks of the availability of the RD resources (i.e., mainly regarding working links), which requires human resources. Fourth, RD editors are not experts in all specific domains and thus, it is difficult to assess what is very important or missing concerning some domains or emerging topics. Finally, there was also one recent demand that it might be desirable for the SPs to be able to add and edit their resources more regularly. For all these reasons, a new acquisition process is envisioned.

Future Process

In the future, the goal is to rely more on the expertise of data archive professionals active within the CESSDA Community. This should be done in three ways: 1) by establishing a RD Contributors Community that will be regularly active; 2) by further developing collaboration with experts in various CESSDA teams; 3) by creating a form where anyone can submit resources at any time.

First, the main change concerns the establishment of the **RD Contributors Community**⁸, formed by data archive professionals at CESSDA SPs and partners following the model of the ELSST Translators, which do not receive PMs for their participation in the translations. However, contrary to the ELSST Translators, the RD Contributors Community could meet only twice a year. These could be focussed half-day sessions where in a first (facultative) part RD contributors are introduced to the RD and receive explanation on how to proceed to add and review their institutional resources. In a second part, they can review their resources, add new ones, and ask questions to and receive private guidance from the RD editors. Then, the RD contributors could have a few more weeks to complete their proposals and reviews if not already done. Once this is done, the RD editors should curate the resources. This step is essential and cannot be omitted to have a high-quality collection and homogenised treatment. This also explains why SPs cannot have continuous direct access to edit their resources in the RD. This new process for the general update might be tested in 2022 and refined in the next work plan period (2023-2024). To help contributors in their work, a 'Guide for RD Contributors' should also be developed. The curation section could be a simplification of the 'Guide for the RD Editors' elaborated in Annex 1.

Second, current **collaborations with CESSDA teams** should be strengthened and specific collaborations with other CESSDA teams gathering, producing, or having expertise on resources of interest for the RD (e.g., the CESSDA Newsletter team, the CESSDA Metadata Office, the four CESSDA Working Groups) should be defined. According to the discussion with the different teams, some could also take part in the RD Contributors Community to represent the work they are doing within CESSDA.

Third, on top of that, any user – from the CESSDA Community or beyond – (hereafter mentioned as 'general users') should be able to submit proposals for new resources and request for changes in current resources at any time. In the newly published CESSDA website⁹, an email address has been added for this purpose. However, to facilitate RD editors' work, this should be replaced by a **submission form** where metadata fields used in the RD could be informed. Few fields should be compulsory, but all necessary information should be included.

The role of the RD editors will thus be less crucial in this envisioned acquisition process. However, the RD editors might still monitor some projects and results and conduct specific desk research to complete the collection. The amount of this work will depend on the collaborations with CESSDA teams and the success of the RD Contributors Community.

⁸ For more information on the RD Contributors Community, see 'Part 3: Maintenance and Sustainability'.

⁹ <https://cessda.openconcept.no/Tools/Resource-Directory> (25.03.2022).

The RD at the Service of CESSDA

If the RD is already useful for the CESSDA Community, its connections and collaborations with CESSDA WGs and teams could intensify to better serve this particular audience, while at the same time benefiting the development of the RD's collection, and thus data archives professionals in general. Below are different suggestions on how collaborations with CESSDA, its WGs and teams could be started or deepened. But first, this part presents how the RD could be used to include information, and maybe even access to, CESSDA and SPs non-public resources.

Inclusion of Non-Publicly Accessible Resources

Different resources developed by the CESSDA Community cannot be shared publicly and thus do not have a public link. Among them, non-public CESSDA deliverables could be mentioned first. Indeed, over the years a lot of CESSDA deliverables restricted to CESSDA members have been developed. These resources are currently not easily findable and available to data archive professionals at CESSDA SPs. Moreover, the number of resources and the topics they treat are unknown for most data archive professionals.

A second group of non-public resources are developed by CESSDA SPs and partners. These could be their internal detailed archiving workflows, or the restricted code of tools developed internally, for example. These resources could, and, for some of them, should be shared with other SPs based on the CESSDA Annex 2 SPs' Obligations¹⁰. The RD could be a solution to find more easily information about the non-public CESSDA deliverables and SPs resources, and even to access them, depending on the technical developments.

Currently, providing public metadata about these restricted resources is already possible in the RD. Since no public link can be shared, adding an email address where RD users can send a request to access the resource could be a solution. For non-public deliverables, a link that leads to a CESSDA folder only accessible by CESSDA SPs (and maybe partners - to be decided by CESSDA) could also be a solution. If accessing the resource published in the RD is most important, sometimes only the metadata can be shared and accessing them already give some valuable information to RD users. This was the case when adding in 2021 metadata regarding non-public tools and services developed by SPs the Tools Directory purpose. When no public link was available (e.g., for internal use tools) and when the tool could not be shared to other CESSDA SPs, then 'N/A' was included instead of a link.

¹⁰ The article 6 of the Annex 2 of the Statutes of CESSDA ERIC states: "CESSDA Service Providers shall have the following obligations: ... 6. share their data archiving tools (under the intellectual property conditions provided for in Article 16 of the Statutes)." Accessed from <https://cessda.eu/About/Governance/Statutes> (25.03.2022).

In the future, the RD could offer a better solution for sharing these non-public resources if the RD is moved to a platform offering not only a public catalogue, but also a restricted access for the CESSDA Community (partners' access should be decided by CESSDA MO and/or WG leaders). This way, the metadata of non-public resources could be shared publicly or only with some users. Non-public metadata could be used for deliverables that do not fit the RD's collection development policy.

Moreover, the new platform should allow saving physical files in the restricted access area. For these specific resources, a physical file could thus be included in the system and available to people and institutions who have access rights. The RD could thus be a central place to access all CESSDA restricted deliverables and diverse SPs' (and partners') resources that could be shared with other SPs but not outside the CESSDA Community.

Current and Future Advantages of Using the RD for CESSDA WGs and Teams

The RD already provides benefits to, and receives them from, other CESSDA teams. Indeed, it benefits from the CESSDA Newsletter – a service from the Widening & Outreach WG – and is useful for the Tool WG by developing, hosting, and maintaining the Tools Directory. The RD is also connected with the CESSDA Data Archiving Guide (DAG) – developed within the Training WG – and this connection should become stronger in the future. This part presents the collaborations already agreed with different teams in diverse WGs and suggests future collaboration paths.

CESSDA Data Archiving Guide (DAG)

Collaborations between the RD and the DAG seem natural – they have a similar target audience, that is data archive professionals – and beneficial for both services. In 2021, the RD and DAG teams discussed potential collaborations. Some collaborations are already agreed (1-2), others should be further discussed and depend on the technical developments of the RD (3-4):

1. **Inclusion of the DAG in the RD**

It was decided that the DAG, as well as the resources mentioned in it, should be listed in the RD. They should all receive a "DAG" tag to see and access all DAG resources easily.

2. **The RD used as a source for DAG authors**

It was also discussed that when developing or reviewing any new content, the DAG authors should use the RD to find resources. If no relevant resources are found, the DAG team should inform the RD team. The RD team could then support the DAG team in looking for relevant resources that could also fill a gap in the RD.

3. **Adding links to specific RD resources in the DAG**

The DAG chapters use external resources as sources and examples. The RD team could provide links to sets of topical resources that could be shared in sections such as 'Sources and further reading' or 'Links to examples'. For instance, in the sub-chapter 'Preservation Policies' of DAG chapter 2 'Policies of Data Archives', preservation policies from four CESSDA SPs are listed as examples (their titles and links are provided). A link leading to all preservation policies available in the RD could be added in the DAG. This could be done by using specific tags in the RD, such as "preservation policy".

4. **Maintenance of the DAG resources by the RD team**

As the RD team, the DAG team needs to be ensured that the cited sources and examples will stay up to date. The RD team could support the DAG team for the maintenance of their resources. Indeed, content in the RD is regularly checked to include the newest version of a resource and review the metadata (e.g., title, link, etc.). These regular checks are necessary, for example to repair broken links, as websites are quite often renewed. If information on the resources mentioned in the DAG are linked to the RD, then their maintenance could be done from the RD by the RD editors. This could be done in two ways:

- a. The link used in the DAG could lead to a specific resource in the RD. In the RD, the DAG user can click on the link leading to the resource. Based on 2021 discussions, this solution is not favoured by the DAG team, since this creates an intermediate click and there is no more direct access to the resource from the DAG. From the RD side, a link to specific resource is possible with Zotero, but it would be safer to have a link based on a number attributed to each resource item and published in the metadata (e.g., www.cessda.eu/rd/221). This is not the case currently.
- b. Another solution consists of technically linking both services in order to automatically update the title and link of a resource in DAG if these resource's metadata have been reviewed in the RD. Retrieving information from the RD's metadata should therefore be possible for the DAG or any other CESSDA system in the future. This solution would need technical developments at both services.

Finally, the additional resources such as SPs' detailed internal curation processes and archival workflows that could be shared in restricted access areas could be an asset for DAG.

CESSDA Monitoring of the European Research Data Policies and Research Infrastructures

The RD team has not met yet with the Monitoring team. However, it seems that different collaborations could be favourable to both services:

1. **Inclusion of monitoring reports in the RD**

Past public monitoring reports are already included in the RD, in the specific subcategory "1.5. Monitoring", which offers these reports an additional discovery opportunity. These reports are useful for the RD target audience to find out what is happening in other countries concerning specifically the context in which data archives evolve.

2. **The RD as a source for monitoring CESSDA SPs and partners**

As for the DAG, the RD could be used by the Monitoring team to find up-to-date policies and governance information about CESSDA SPs and partners. This could save resources for the Monitoring team, since looking for this different information in the diverse websites is time consuming.

3. **Completing the RD's collection to become a better source for the monitoring needs**

The monitoring team could share a list of information they need indicating where or in which kind of resources they usually find this information. When the needed information conforms with the RD's collection development policy, the RD team could add these requests for the next acquisition session involving the RD contributors. The resource included in the RD will then be reviewed and updated at each new acquisition session.

CESSDA Mentorship Programme

The resource item included in the RD informs data archive professionals in their work, as well as in building and developing their data archive. The RD is thus a valuable tool for both mentees and mentors. Some discussions already took place between the RD and the Mentorship teams:

1. **Presenting the RD to the mentees and mentors**

For the Mentorship Programme 2021-2022, it was agreed that the RD team would present the RD and how to use the Zotero platform to find resources to the mentees and the mentors. Such presentation could be given at the beginning of each new Mentorship Programme to be most valuable. This is also a way for the RD team to promote the RD.

2. **Completing the RD's collection based on mentees questions**

Following the presentation of the RD, an exercise based on the gap analysis performed in 2018 could be done with the mentees (and mentors). This consists for the participants to raise a minimum of three questions they currently have at their data archives and to try to find answers using the RD. Then, they report if they have found resources answering their questions and if this information was sufficient or if they would complete it by an additional search in another platform. These answers

help to complete the collection based on attested needs, and to focus RD editors' desk research.

Possible Collaborations with Other CESSDA WGs and Teams

In general, collaborations with CESSDA WGs and their related teams – and thus experts in different domains – would support the acquisition of high-quality resources on important and emerging topics developed within CESSDA Community and beyond. This would be greatly beneficial in completing the RD's collection.

The inclusion of such resources in the RD offers an additional way to discover and use them by the whole CESSDA Community. On a case-by-case basis, a specific tag could be added to specific resources that would allow CESSDA teams to easily retrieve resources useful for them or their users. The RD's information could also be used for different purposes, like statistics and monitoring if SPs are sharing or not information on their policies, archiving tools, etc.

One could think of a list of interesting resources for the RD in each CESSDA WG (see Table 1). Further collaboration ideas might emerge after discussing with specific WG and team leaders.

Table 1: Partial list of interesting resources for the RD

CESSDA WGs	Type of resources
CESSDA general (in)	<ul style="list-style-type: none"> • CESSDA policies (e.g., on widening the perimeter of data, data access, PID) • CESSDA requirements for SPs (e.g., CESSDA ERIC Statutes Annex 2)
Training WG	<ul style="list-style-type: none"> • Training resources for staff (e.g., training material for the event on social science journals data sharing policy)
Tools WG	<ul style="list-style-type: none"> • Tools and services developed by CESSDA as well as the user documentation and information on the installation prerequisites and process. • Tools directory (already included in the RD)
Trust WG	<ul style="list-style-type: none"> • Resources developed or used to support archives in achieving the CoreTrustSeal certification
Widening Outreach WG &	<ul style="list-style-type: none"> • Relevant resources published in the CESSDA Newsletter (already included in the RD)

Technical Developments

Moving the RD from the Zotero Platform to the CESSDA Website

The main envisioned technical development concerns the migration of the RD from the Zotero platform to the CESSDA website. When the RD was developed in 2018, the original aim was to publish it on the CESSDA website.¹¹ Five scenarios for presenting the content of the RD were assessed at that time, each with advantages and disadvantages. All scenarios followed two rules that should be recalled and followed in choosing any future solution:

- The RD must be accessible to all data archive professionals at CESSDA SPs and partners, and preferably to other data archiving professionals in Europe and beyond, as these are the main users.
- To maintain a high-quality collection and standardised treatment of the resources the RD editors should be able to add, review and delete resources and the metadata used to describe the resources.

In relation to the future acquisition process described above, a third rule should be followed:

- Users of the RD should have the possibility to suggest new resources or changes in resources already published at any time. Technical solutions that facilitate general users' and contributors' suggestions and reviews, and the editors' treatment of these suggestions and reviews should be prioritised to minimise the resources needed to maintain and update the RD from both sides.

From a Google Sheet to the Zotero Platform

In 2018, the RD was first developed and published as a Google Sheet, due to lack of resources. As this was not a user-friendly solution, after the completion of the Widening Activities 2018 project, the RD was moved to the Zotero platform, as a group library.

The Zotero platform offers a more user-friendly environment than a Google Sheet and some helpful features for the editors (e.g., using the URL or DOI to fill in automatically metadata related to a resource). However, Zotero is a reference management software meant for building bibliography and inserting references in texts. **Metadata** are thus not always appropriate for describing the resource items and for the RD purpose. This is shown for example by the necessary use of the 'Extra' field or the use of the 'Abstract' field to include information about tools resources (for more examples see the sections 'Applying the rule in the current platform Zotero' of the Annex 1 of this document). If RD editors have found

¹¹ See section "4.1 Publishing the Resource Directory online" in Bornatici Christina & Priddy Mike (2019) *CESSDA Widening Activities 2018 Deliverable 1 – Resource Directory*. Zenodo. <https://doi.org/10.5281/zenodo.7030936>.

tricks to overcome these limitations, this makes it more difficult for users to understand and thus use the RD. Moreover, the **discovery** of resources is difficult since the search is limited (e.g., there is no faceted search). Only users who are familiar with the platform will know how to overcome this limitation and make the best use of Zotero and of the categories and tags RD editors have developed. This means that users should receive training on Zotero before being able to use the RD efficiently, which is a clear barrier on the RD use. In addition, Zotero cannot offer within the same group library a **restricted access** to CESSDA Community's non-public resources for some users, in this case CESSDA SPs. For this purpose, another group library should be created, which would generate even more confusion for users. Another important negative aspect of Zotero as a platform for the RD is that it does not allow a proper **curation** platform for RD editors. Indeed, there are no internal fields where information about the curation process could be shared among editors (e.g., indicating the editor in charge of a resource item, its editorial status, or raising a specific question on the treatment of the item to other editors). Finally, it is not possible to have a submission form for general users, nor specific curation access for contributors that would allow them to edit a resource item without giving them the rights to publish. Currently, both the curation and the acquisition processes must be treated externally, on different Google sheets, which is not ideal.

Full Integration of the RD into the CESSDA Website

For the reasons explained above, the Zotero platform is not appropriate for the RD needs and aims. The RD editors have managed to adapt and found solutions, but these solutions are far from being optimal and, overall, the Zotero platform hinders the use of the RD. Moreover, the Zotero platform prevents some developments (e.g., regarding the acquisition process, inclusion of the non-public resources or connection with the DAG) and complicate the maintenance of the RD (e.g., for the curation process, the editors use external documents to report information on the curation status (see Curation Workflow in Annex 1)). Therefore, finding a new platform for the RD is necessary.

Integrating the RD in the CESSDA website has several advantages. First, branded as a genuine CESSDA tool/service, it would foster the knowledge and accessibility of the RD by the primary audience, that is data archive professionals at CESSDA SPs and partners. Second, it would allow RD Editors and CESSDA Main Office to analyse the website traffic (e.g., number of visits, from which country, how users arrive to the website) and thus assess the use of the RD, which is not possible with the Zotero platform. Third, specific features could be developed in the CESSDA website, which would facilitate the discovery of resources, their acquisition and curation, and thus increase the usefulness and the use of the RD. Let's give two examples of features concerning resources' discovery. A tailor-made faceted search would make good use of the metadata and facilitate searching and filtering results for an easy and user-friendly discovery. A result window adapted to the specific

metadata used in the RD would also enhance the readability of the metadata attached to a resource, unlike Zotero. Desired features based on the current development strategies are listed in the Annex 2 of this document.

In 2018, the full inclusion of the RD into the CESSDA website was already favoured but presented several technical challenges regarding the migration of the RD and the maintenance of each resource item by the editors. Also, new web pages should have been created regarding the advanced search, the result windows, and the data entry and curation. Currently, these technical challenges are far less important, since some core features (search, display and editors' curation) have already been developed for the CESSDA Training Resources webpage and only need to be adapted to the RD. Moreover, the metadata can be easily exported from Zotero in a .csv file. Metadata have been included in Zotero to facilitate a future migration. Of course, further features should be developed to meet the development strategies (e.g., different access and curation rights for specific users, interoperability between the RD and DAG). The prioritisation in the development of these features is also defined in the Annex 2.

The transfer of the RD from the Zotero platform to the CESSDA website and the development of specific features should be the priority for the next Agenda period (2023-2024). Once this is done, the RD will leave the development phase and reach the maintenance phase.

Promotion and User Assessment

Five years after its creation, the RD is already quite an established platform overflowing with various informational sources. Now that the RD and procedures around it are established and the RD has reached a certain quality, it is crucial to focus more on promotional activities, followed in a second phase by user assessment activities.

Promotion Activities

There have already been some efforts to familiarise CESSDA SPs and partners with the RD. This section presents future activities that are planned or could be undertaken to promote the RD and its use by the main audience.

User Guide

To become more approachable, a user guide will be developed this year. It should be revised once the RD is migrated from the Zotero platform to the CESSDA website.

Informal Presentations to CESSDA Teams

In general, presenting the RD to CESSDA teams is a good way to show specific features that could interest these teams and start discussing possible collaborations. It also allows to answer questions and receive specific feedback. CESSDA teams (and their users/recipients) are an important group, since they are composed of active data archiving professionals from CESSDA SPs and partners.

An informal presentation has already been done, and others are planned. Indeed, before discussing possible collaborations with the DAG team, the RD's aim and content was presented to them in 2021. A presentation to the Mentorship Programme's mentees and mentors is also planned for this spring. Other CESSDA teams should be approached later this year if resources are sufficient or beginning of the next work period.

Within the RD team, presentations have also been done or are planned. In February, a presentation of the RD to CESSDA SPs and partners took place in preamble of a discussion regarding the Tools Directory more specifically. Later this year, the RD's contributors should also receive a presentation of the RD before being introduced to the curation process.

Formal Presentations

In the future, formal presentations should be given to a wider audience, through a CESSDA webinar for example. Presenting the RD together with the DAG could be an asset for both services since the audience is similar. For such presentations, it is perhaps necessary to wait until the migration of the Zotero platform to the CESSDA website is completed.

CESSDA Newsletter

RD news, such as the annual increase of resources, results of a specific acquisition activity, inclusion of a new feature, etc., should be shared in the CESSDA Newsletter. These are opportunities to remind CESSDA SPs and partners about the existence of the RD and to boost its use.

Referencing the RD in Important Services

The RD should be referenced as a tool/service in other important and relevant services for the audience, such as the SSH Open Marketplace.

User Assessment Activities

Gaining feedback over the RD's utility and the main audience's needs is essential to make right decisions about its future developments. The RD was strongly appreciated at its very first release in 2018 by CESSDA partners who believed the RD is a valuable source of

information.¹² Since then, except some informal exchanges that were favourable, there has been no formal user assessment. Quantitative use assessment of the RD is not possible in the current Zotero platform, since it lacks **website traffic** functions which could have been used to evaluate access to the RD. This issue will be overcome once the RD is accessible from the CESSDA website. Until then, **user feedback** is the only way to assess the RD. This could be done in several ways.

Presentations

As it was already mentioned, some of the promotional activities – mainly presentations – can be interlinked with gaining feedback from (potential) users.

Feedback from Contributors Community

Also, once the Contributors Community will be established, they could provide insightful feedback on both the acquisition and the curation processes, as well as the topics that should be added to complete the RD's collection.

Gap Analysis

Another possibility is to conduct follow up gap analyses that could target the whole CESSDA Community or only some SPs and partners (e.g., mentees involved in the Mentorship Programme or the DAG authors of a new chapter). Depending on the target and aim, the 'original' gap analysis (cf. explained in page 19) could be reviewed. However, for wide targets (e.g., CESSDA Community), gap analyses should be postponed after the RD has been more heavily promoted.

¹² See Bornatici Christina & Priddy Mike (2019). *CESSDA Widening Activities 2018 Deliverable 1 – Resource Directory*. Zenodo. <https://doi.org/10.5281/zenodo.7030936>; and Bornatici Christina (2019). *CESSDA Widening Activities 2018 Deliverable 5 – Gap Analysis of CESSDA Resources*. Zenodo. <https://doi.org/10.5281/zenodo.7030942>.

Part 3: Maintenance and Sustainability

At this point, the RD has well-established procedures and quality controls and is filled with more than 400 resource items from various informational sources, within and above the CESSDA Community. Hopefully, the RD will soon leave the development phase and reach the maintenance phase, notably by being migrated to the CESSDA website. A new but expected challenge lies ahead and questions regarding sustainability necessarily arise.

Since the very beginning of the RD development in 2018, it has become evident that such a tool has a real potential to prove itself beneficial on many levels, as detailed in the introduction. Among the most relevant reasons at the core of the RD's aim, let's bear in mind that the RD's content can serve as an inspiration for SPs and partners when building their data archive or adding new services. It can also be used as a place where the four pillars of CESSDA (Tools, Training, Trust and Widening & Outreach) can promote work done within their WGs and teams.

For a product like the RD, regular maintenance is essential, since new resources of value to the RD are created, others become obsolete, and links can be broken and should be repaired. A guaranteed funding for maintenance activities should be ensured. Relying on Agenda Tasks for maintenance activities is not sufficient and jeopardises the RD. However, Agenda Tasks are appropriate to fund developments to better serve the users, allow new usages and foster collaborations with CESSDA WGs teams.

In 2021, CESSDA introduced a maintenance model for four of its major tools (CESSDA Data Catalogue, Vocabulary Service, European Language Social Science Thesaurus and European Question Bank). Each tool has a Content Contact (3 person-months (PMs) per year) and all tools should have (but currently do not) a Technical Contact (3 PMs per year). The Service Level Agreement between CESSDA and the Content Contact outlines the parameters of the Content Contact work and lasts for two years.

It is not yet decided how to treat other CESSDA tools, such as the Data Management Expert Guide, the DAG and the RD. Below a suggested maintenance model for the RD is introduced. This part, inspired by two SSHOC Deliverables,¹³ thus must be read as a first

¹³ Mari Kleemola, Katja Moilanen, Daan Broeder, Matej Ďurčo, Klaus Illmayer, Maurizio Sanesi, Emiliano Degl'Innocenti, Hervé L'Hours, Benjamin Mathers, Johan Fihn Marberg, Eleni Tsoulouha, Athina Kritsotaki, & Cesare Concordia. (2021). *D3.6 Report on SSHOC format interoperability solution services, including new software*. <https://doi.org/10.5281/zenodo.5561604>.

Clara Petitfils, Suzanne Dumouchel, Nicolas Larrousse, Edward J. Gray, Laure Barbot, Arnaud Roi, Matej Ďurčo, Klaus Illmayer, Stefan Buddenbohm, & Tomasz Parkola. (2021). *D7.5 Marketplace - Governance*. <https://doi.org/10.5281/zenodo.5608487>.

version of the RD governance and sustainability scheme, that should be updated regarding future developments and needs.

Governance Model and Roles of the Different Stakeholders

This section aims at describing the envisioned governance model for the RD, especially in the perspective of its sustainability. A governance model is required to sustain the different components of the RD: from its technical development and ongoing future maintenance (e.g., acquisition and curation of new resources) to its more strategic design through the definition of governing bodies and their roles.

The governance model suggested builds on two bodies: the Governing Board and the Editorial Board. In addition, the Contributors Community counts as an effort to ensure collecting new information and updating existing ones, while the Technical Host hosts the RD and implements the technical specifications.

Governing Board

Role

The Governing Board is committed to supporting the sustainability of the RD. It defines the RD's strategic policy in order to foster the development of the RD with regards to CESSDA Community's needs and challenges. The Governing Board proposes the bi-annual Agenda for the RD, in consultation with the Editorial Board. The Governing Board approves the decisions of the Editorial Board. If any conflict arises from different approaches, then the Governing Board decides.

Composition

The Governing Board is composed of **one representative from each of the CESSDA WGs** (currently these are Tools, Training, Trust, Widening & Outreach). With this composition, it can be ensured that the content of the RD supports the various activities conducted within CESSDA.

Relations to other bodies

The Governing Board shall always consult the Editorial Board and take its recommendations into account. For instance, the Editorial Board, involved in the RD's daily operation will be able to provide frequent and operation-related inputs to the Governing Board.

Editorial Board

Role

The Editorial Board is in charge of the RD's day-to-day operation. Its core priority is the implementation of the Governing Board's strategic orientation relating to the acquisition and curation of information and the technical functioning. It ensures the achievement of the RD's aim, the successful implementation of the RD's collection development policy and the effectiveness of the acquisition and curation processes.

Regarding the acquisition process, the Editorial Board should train the contributors, coordinate and supervise the contributors' working meetings ('sprints'), maintain and develop new collaborations with CESSDA teams, and conduct specific desk research to complete the RD's collection.

The Editorial board is also in charge of the management and maintenance of the RD's content. It reviews and curates the contributors' and general users' (i.e., any user from the CESSDA Community or beyond) contributions following the curation process (Annex 1). Editors have all rights regarding editing the content and filtering the "noisy input" from contributors. The Editorial Board is thus in charge of the final decision on the inclusion of a resource in the RD.

The Editorial Board suggests technical developments to the Governing Board and collaborates with the Technical Host concerning the technical implementation and other technical matters.

The Editorial Board develops and maintains the RD's documentation. It can decide to review the RD policies and processes based, among others, on its observation of the RD users and usages, and the feedback from contributors. These reviews should be submitted for decision to the Governing Board.

Composition

The Editorial Board is composed of **data archive professionals from CESSDA SPs**.

Members of the Editorial Board are also called '**Editors**'. Editors should come from different SPs to ensure knowledge sharing. Editors' work is expected to be funded by CESSDA but could also be based on a voluntary contribution. The ideal size for the Editorial Board is around three to five members, but this depends on the developments of the RD.

One editor, and thus SP, has also the role of '**Product owner**'. The product owner manages the Editorial Board, has the overall responsibility for all RD's activities and is the RD's primary contact point.

Overall, the Editorial Board, led by the Product owner, has similar roles as the Content Contact in the current CESSDA tool maintenance model.

Relations to other bodies

The Editorial Board is consulted by the Governing Board for any relevant decisions and strategic orientations on content, technical, and managerial matters.

The Editorial Board can, whenever it deems necessary, raise awareness, provide recommendations, or suggest new strategic orientation, policies and processes or the reformulation or deletion of existing ones to the Governing Board. The Editorial Board can therefore contribute to the strategic orientation, formulate recommendation, or demand action on specific matters to the Governing Board when required.

The Editorial Board receives and considers feedback formulated by the Contributors Community, and any other RD's contributor or user. The Editorial Board acts as the contact point of the Contributors Community, and any other RD's contributor or user.

Contributors Community

Role

The Contributors Community will ensure that information from each SP is shared and current. The members of the community will be the Editorial Board's contact point with the SPs. The role of the Contributors Community is to inform the Editorial Board when changes are made to resources already in the RD (update or delete resource) and when there are new resources to add to the RD. These changes can be reported continuously during the year, or during the biyearly sprints when updating the RD is in focus.

Composition

The Contributors Community is composed of **one representative from each of the CESSDA SPs**. Representatives from partners as well as representatives of CESSDA teams can also take part in the Contributors Community.

Following the model of the ELSST Translators, members of the Contributors Community, or 'Contributors', participate based on an in-kind contribution. Sharing their resources (or information on their resources) is not directly mentioned in the CESSDA Statutes Annex 2 on Service Provider Obligations, except for some data archiving tools (article 6). However, learning from others has been recognised in the articles 10 and 11, and sharing their resources in the RD could be understood as a way of providing member support to other organisations.

Relations to other bodies

Feedback from the Contributors Community should be directed at the Editorial Board.

Technology Host

Role

The Technology Host is in charge of hosting the RD and implementing the technical specifications. It should also fix bugs and assure the security and technical maintenance of the RD.

Composition

CESSDA Main Office, and the dedicated team implements the technical aspects.

Relations to other bodies

The Technology Host collaborates with the Editorial Board.

Sustainability Model

During the past years (2018, 2020, 2021, 2022), the maintenance and development of the RD has been funded through CESSDA Work Plan and Agenda 21-22 Tasks. The sustainability model described here proposes to secure maintenance costs through a guaranteed funding and to fund developments through CESSDA Agenda Tasks. Indeed, in the future, adding functionalities could be important, for example to align the RD with new needs of the CESSDA Community or based on new collaborations with CESSDA WGs and teams. Such developments of the RD should be funded via CESSDA Agenda Tasks.

Maintenance Cost Estimation Scenario

Different maintenance costs have been considered relative to the bodies defined in the Governance Model. Three kinds of costs apply:

- governing costs are linked to the Governing Board;
- curation costs to the Editorial Board; and
- operational costs to the Technical Host.

The governing costs include costs related to the governance and institutional outreach needed for the RD. The content costs include all costs related to the intellectual maintenance of the service, curation related costs, community involvement and dissemination efforts. The operational costs include the costs for hardware, technical maintenance, and daily operation of the service.

The cost estimation scenario includes the strictly necessary funding needed to keep the RD up and running (Table 2). The PM rate used for the estimation is the following: 1 PM = 6'000 euros.

Table 2: Estimation of the RD annual costs for maintenance

Cost item	Annual cost
Governing costs	0.5 PM annually, appr. 3'000 euros
Content costs	5 PM annually, appr. 30'000 euros
Operational costs	Externalised to CESSDA MO

Overall, the costs are moderate. Costs linked to the Editorial Board will represent the highest costs of the service. Since the value of the service is in the content – and the value of content grows over time, the resources should be geared towards curation. In terms of content, the costs should cover:

- The organisation of 1-2 sprints per year to collect new content from the SPs (and other interested entities) and update content already included in the RD;
- The curation of the suggested resource items;
- The check and update of resources stemming from other institutions and projects;
- The completion of the RD's collection based on the CESSDA Community needs (e.g., collecting resources created outside CESSDA for about 1-2 topics);
- Small revisions of the acquisition and curation processes;
- The outreach and promotional activities (e.g., training and communication with potential users and contributors, creation of leaflets).

5 PMs are envisioned to do this work and should be separate as 2 PMs for the editor that is also the project owner and who will have some reporting to do and meetings with the Governing Board in addition to its editorial work, and 1 PM for the other three editors.

An important aspect of this content costs' estimation relies on the development of the Contributors Community with in-kind contributions of CESSDA SPs and the assumption that technical features allowing an efficient collaboration between contributors and editors are implemented.

The governing costs assure that the representatives of the four WGs can meet once or twice a year.

The operational costs (regarding technical maintenance) are 'externalised' to CESSDA MO and should be low since there are synergies with the maintenance of other CESSDA webpages.

Of course, operational costs will be higher during the next years since new developments are necessary to support the RD needs (cf. Annex 2). However, these development costs should be funded as part of a specific project or CESSDA Agenda Tasks and do not enter in the above maintenance scenario.

Conclusion

The RD is already a working tool/service with a well-developed collection development policy and curation process. To improve its visibility and use and to allow new use cases beneficial to the CESSDA Community, it is important to move the RD to a platform that could be customised for its needs. This would also facilitate the acquisition and maintenance of the resource by CESSDA SPs and partners, and their curation by RD editors. This migration along with other developments should be considered for the activities of the Agenda 2023-2024.

Together with the DAG, the RD holds a special place among the various CESSDA tools, services and activities and has the potential to become an important tool/service of this collection; the RD would therefore benefit from sustainable planning. The RD is indeed not only one of the CESSDA tools and services targeting CESSDA SPs and partners' data archive professionals, but also a CESSDA's outreach tool for data archive professionals beyond CESSDA and the social sciences. To foster the sustainability of this valuable tool/service for the CESSDA Community, a governance and maintenance model should be decided. Finally, an even stronger collaboration between the RD and other CESSDA tools, services and activities would conjointly improve them and their sustainability.

Annex 1: Curation Process – Guide for the RD Editors

This section aims to introduce the curation process (i.e., the selection and edition of the resources) of information provided to or else acquired by the RD. This part is useful mainly to the RD editors since it serves as a step-by-step guide explaining how to assess the incoming resources and subsequently which metadata to add and how to proceed. However, it can be informative also for the SPs who are considering suggesting resources to the RD.

Curation Workflow

Once submitted by the SPs or else acquired (e.g., through the CESSDA Newsletter), the metadata and link to the resources are stored in an internal document shared by the RD editors. Editors subsequently share the curation responsibility of the resources among them. One editor always takes charge of the whole curation and publication process for a resource. For a new resource, as well as for a new version of a resource already included in the RD, the editor in charge ensures that the resource is (still) in line with the development collection policy. This assessment should be more thorough for new resources. Only resources that observe the development collection policy are included in the RD. Therefore, new resources, new versions of resources included in the RD, as well as resources already included in the RD, reviewed during this process and not (anymore) aligned with the collection policy should be excluded from the RD.

Rejected Resources

If the editor in charge decides that the newly submitted resource is not in line with the development collection policy, s/he describes in the internal document the main reason for not including the resource, assigns the status “not relevant” and informs the provider of the resource about the rejection and the motive. In case multiple resources have been submitted by the same provider, this should be done after all resources have been curated.

Accepted Resources

After the fit assessment, the editor in charge checks that the resource complies with the granularity and latest version rules. In case of questions regarding the metadata or the resource fit, the editor can raise them at the next RD editors board meeting. Once this is done, the editor opens a new resource item in Zotero and informs the metadata fields following the explanations below. Finally, the editor assigns the status “accepted and included in the RD” in the internal document and informs the provider of the resource about its inclusion in the RD. In case multiple resources have been submitted by the same provider, this should be done after all resources have been curated.

Granularity rule

The editor in charge should verify that the resource link shared leads clearly to a specific resource item (e.g., a report or a video) and not to a collection of resources. Indeed, the aim of the RD is not to gather links to SP's websites for example, but specific documents or web pages giving sufficient information on a specific subject around data archiving. On a case-by-case basis, an exception to this granularity rule can be made, after consulting the other RD editors. The general guideline is that if a whole collection targets a specific subject, then the whole collection could be added to the RD together with a selection of specific resources from this collection. See the resources related to the 'FSD data management guide' as an example.

Latest version rule

In the case a new version of a resource already included in the RD is submitted, only the newest version is kept in the RD. The outdated version is deleted.

Attribution of Metadata

The RD uses ordinary metadata for indexing resources (item type, authors, publication date, title, abstract, link) as well as a metadata field created specifically for the RD's purpose (categories). The metadata have been chosen carefully since they are key elements for the search and discovery of resources. Multiplying metadata is however not desired to keep editorial work reasonable.

This section explains the rules that the RD editors should follow and how to apply these rules. This last part depends on the platform hosting the RD, which is currently Zotero. Therefore, each metadata field contains at least the following sections: general and, if needed, specific rules as well as information on how to apply these rules using Zotero software.

The metadata's implementation described hereafter always considers the possibility of using another platform or software to display and/or maintain the RD. For this purpose, it is important that all metadata are easily accessible or transferable to another system.

Categories

General rule

Each resource is labelled with the categories most effectively targeting the resource. The goal is always to facilitate users' search and discovery. The resources are organised under four main categories following the CoreTrustSeal requirements and the Open Archival Information System model:

1. *Organisation* covers resources dealing with institutional management;
2. *Digital object management* deals with activities around the acquisition, curation, dissemination, and long-time preservation of data;
3. *User support and communication* gathers resources on support, assistance, and advice to users of the services;
4. *Technical infrastructure* includes resources on hardware, software and tools needed to run a data archive, especially data archiving and curation tools created and/or used by SPs, resources on the implementation and maintenance of technical systems and technical resilience.

This categorisation also allows a clear division between resources for the institutional management (1) and internal data archiving work (2), resources targeting the contacts with data archive users (3) and the technical tools used by data archives (4).

The main categories are divided into subcategories that target more specific activities (Table 3). Since the content of a resource might cover more than one category (and subcategory), the same resource can therefore be labelled with more than one category (and subcategory). Each resource should be labelled with at least one category and one subcategory of this category.

Table 3: Overview of the categories used for the RD

Category	Explanation
1. ORGANISATION	Resources dealing with the institutional management
1.1 Organisational structure	Resources dealing with the structure of the organisation, e.g., mission statement, type of organisation, main purpose, nature, and scope of the data collected, primary recipients of the services, etc.
1.2 Staffing, management and financing	Resources that describe the operation of the organisation, e.g., staffing, management, financing, advisory board.
1.3 National and international cooperation	Resources that address various forms of collaboration at the national and international level.
1.4 Certification	Resources on how to certify the repository, e.g., institutional CoreTrustSeal certification reports.
1.5 Monitoring	Resources tracking the progress and obstacles within data archives (development potential).
2. DIGITAL OBJECT MANAGEMENT	Resources dealing with broad and specific activities around the acquisition, curation, dissemination and long-time preservation of data
2.1 Pre-ingest - Acquisition	Resources describing actions taken before entering data into the repository, e.g., how to identify valuable data, contact data producers, acquisition policy etc.

2.2 Ingest - Curation	Resources describing the process of entering data and associated metadata into a data repository, and how to manage data to ensure that they are fit for contemporary purposes and available for discovery and reuse.
2.3 Access - Dissemination	Resources describing how to make the data available through a distribution mechanism, e.g., catalogue, access management, etc.
2.4 Preservation	Resources describing actions required to maintain access to digital materials beyond the limits of media failure or technological change, e.g., how to create and implement a data preservation plan and succession plan.
3. USER SUPPORT & COMMUNICATION	Resources dealing with support, assistance, and advice to users of the services
3.1 General information about the institution	Resources describing the purpose of the institution and the services provided for research.
3.2 Data deposit	Resources describing how to deposit data, e.g., licences, list of recommended formats, metadata needed
3.3 Data access	Resources describing how to get access to data, e.g., licences, access levels
3.4 Data management	Resources describing how to manage data during the research life cycle, e.g., DMP, ethical and legal matters
3.5 Data (re)use	Resources describing why and how to reuse data
4. TECHNICAL INFRASTRUCTURE	Resources dealing with the hardware, software and tools needed to run a data archive (e.g., data archiving and curation tools created and/or used by SPs) resources dealing with the implementation, maintenance and resilience of technical systems, and resources explaining how to use them.
4.1 Pre-ingest - Acquisition	Tools and services resources used in the pre-ingest process, e.g., secure large file transfer, anonymisation, etc.
4.2 Ingest - Curation	Tools and services resources used in the ingest process, e.g., tools on quality control and metadata checks, etc.
4.3 Access - Dissemination	Tools and services resources used for access, e.g., publishing, exploring, accessing, downloading archived data, etc.
4.4 Preservation	Tools and services resources allowing to preserve data in the long term
4.5 User support & communication	Tools and services resources suitable for user support and communication in general, e.g., user database, managing user information and messages, etc.
4.6 Other	Other tools and services resources that do not fall into the above subcategories but are a part of technical infrastructure. Currently, this category exists to check if some resources could be grouped in a new subcategory. In the future, these resources should be included in meaningful subcategories and this 'other' subcategory should be deleted.

Applying the rule in the current platform Zotero

All items in the Zotero library can be organised within collections and sub-collections, allowing a hierarchical organisation of items. Since Zotero is currently used to display the RD, all resources in the 'CESSDA Resource Directory' group library are placed in collections and sub-collections named following the main and sub-categories. Since a new resource item is automatically saved into the collection selected at the time, the group library (a top-level folder named 'CESSDA Resource Directory') should be selected. Then, using the drag and drop technique, the resource item can be added in all meaningful subcategories (i.e., sub-collections). It is important to note that this does not duplicate the item. Finally, when one item is added in a subcategory (i.e., subcollection), it should also be added to the main category (i.e., collection).

Deleting an item in a (sub-)collection or deleting a whole (sub-)collection does not delete the items from the other (sub-)collection nor the library. The group library always shows all resource items. When a resource item needs modification, changes can be done either in the group library, in a collection or a sub-collection. The other versions will be automatically adapted.

Item Type

General rule

The resources shared through the RD can be of different types. In the first version of the RD (v1.0 in 2018), seven types were defined: 1. Document, report, deliverable; 2. Presentation, poster, image; 3. Webpage; 4. Webinar, video, or audio recording; 5. Tutorial, training tools and materials; 6. Software; 7. Expertise, consultancy, peer-to-peer services. These types are still important, but the categorisation depends on the software used to share the RD. The rules concerning the choice of the item type are thus closely related to the software used, that is Zotero.

Applying the rule in the current platform Zotero

Zotero offers a wide range of item types. This part discusses the most relevant item types for the RD purpose. For resources having an ISBN or DOI, Zotero has a function "add by identifier" represented by a magic wand in the toolbar allowing to add a resource simply by copy-pasting the identifier in the pop-up window that appears. Zotero then automatically fills in all the known metadata (including the item type for example). If this is helpful, the automatically filled in metadata should be reviewed by the RD editor following the curation process rules.

For *written resources*, the following item types are used:

- Document: A generic document item to use if no other types are relevant.
- Report: A report published by an institution, a project, etc. (e.g., for deliverables).

- Journal Article: An article published in a scholarly journal.
- Book: A book or similar published item.
- Book Section: A section of a book.
- Webpage: An online page of a website. When possible, a more specific item type (e.g., Blog Post, Report) should be used.
- Blog Post: An article or entry posted to a blog website.

For *audio and video resources*, the following item type is used:

- Presentation: A presentation made as part of a conference, meeting, symposium, lecture, etc. Use this item type for webinars' slides and recordings.

The generic item types 'Audio Recording' (for any form of an audio recording) and 'Video Recording' (for any form of video recording) are not appropriate for the RD purpose, since there is no film casting, film director, but rather recorded presentations with presenters.

For *tools and related services (i.e., the Tools Directory)*, the following item type is used:

- Software: Tools (software, application, computer programme or script) and related services.

For *consultations*, the following item type is used:

- Email: Contact information for consultation.

Title and Subtitle

General rule

The exact title, and subtitle if any, of the resource is used. Whenever there is a subtitle, a colon (:) separates the title from the subtitle, as follows: [Exact title](#): [Exact subtitle](#).

Specificities

For consultations, the title should begin by [Consultancy on + topic](#).

For webinars, the [acronyms of the organisers and Webinar](#) should be added as a subtitle following this example: FAIR Data in Trustworthy Repositories: DANS, EUDAT & OpenAIRE Webinar.

Applying the rule in the current platform Zotero

The 'Title' field is available for all item types. There is no subtitle field. The 'Title' field is used for the title and subtitle. Zotero knows that before the colon it is the title and after the colon, it is the subtitle.

Rationale

In the first version of the RD, the titles were sometimes adapted to ease the discovery for the users. For example, for each CESSDA SP's resource on preservation policy, the 'SP's acronym' was used followed by 'Preservation policy', no matter the exact title of the resource). However, the current version of the RD (v2.1) hosted in Zotero offers a better search. Moreover, since Zotero is a reference management software, exported citations could thus be accurate. Finally, using exact titles is better for interoperability between systems and avoids unnecessary confusion for users, regardless of the platform chosen for the RD.

Abstract

General rule

The original summary is used. However, it could be shortened when necessary or changed to make the resource more usable for the aim of the RD. If there is no available summary, the editor should add a general description of the resource.

Applying the rule in the current platform Zotero

The 'Abstract' field is available for all item types.

Creators (Authors, Programmers, Institutions, Projects)

General rule

Resources in the RD can stem from different authors. For example, many resources are developed within a CESSDA project by individuals working for a SP, be it a member, observer or partner SP. Creators of a resource could then be individuals (e.g., authors, programmers) and/or entities (i.e., institutions, projects).

For individuals, their name and surname are used, as follows: [Surname, Name](#).

For institutions and projects, their [acronyms or short titles](#) are used following the original letter case. For example: 'ADP', 'CESSDA SaW', 'OpenAIRE'.

When the main authors are individuals, then their respective institutions should also be acknowledged, but only when these are CESSDA member, observer or partner SPs. If the resource was developed within a project and has individual authors, then the project should also be acknowledged, but only if this was a CESSDA project ([see the list](#)).

When the main author is a project (no individual authors), then the institutions included in the creation of the resource should also be acknowledged, but only when these are CESSDA member, observer or partner SPs.

Regarding CESSDA SPs, it is possible that some SPs have changed their name over time (e.g., NSD became Sikt) or that different institutions were SPs in a country (e.g., for Croatia FFZG was the partner SP and CROSSDA is the member SP). The name adopted when the

resource was developed should be used in the main metadata (author, institution, extra fields). The latest official name should be used in the tag.

Applying the rule in the current platform Zotero

In Zotero, diverse fields answer the specific RD's needs concerning authors. First, there is a specific field to acknowledge the authors of a resource for each item type. Depending on the item type, this field is called differently: 'Author' for most item types, 'Programmer' for software, 'Presenter' for presentations, etc. Second, a specific 'Institution' field is available for the item type 'Report'. Third, Zotero's 'Extra' field could be used to add information on institutions, when the specific field is unavailable, and on projects. Hereafter, the RD editors' practice is defined for these three types of fields.

- *'Author' and other related fields ('Programmer', 'Presenter', etc.)*

When the individual authors are known, they should be included in this field. Zotero allows adding as many authors as needed.

If no individuals are specified, then institutions (for resources developed by institutions) or projects (for resources developed within a project) are used instead. When there are several institutions involved in the creation of a resource and the resource is created during a project, the highest level should be acknowledged in the 'Author' field, that is the project. In this specific case, when CESSDA SPs (partner, observer or member SP) were involved in creating the resource, these SPs should then be included in the 'Institution' or 'Extra' fields.

In addition to common roles like 'Author', 'Programmer', 'Presenter', Zotero offers to select specific roles, for example 'Contributor', 'Editor', 'Reviewed author' and 'Translator'. An item can have multiple creators of numerous different kinds. However, the RD reports information about the creators without entering in too many details on their role, as the RD goal is not to give extra-detailed bibliographic information. Thus, the main field (first in the drop-down list) is always used, that is 'Author' for most item types, 'Programmer' for software and 'Presenter' for presentations. This is also safer for citation purposes since some roles cannot be used in citations. Moreover, this practice facilitates the transfer of information about the creators in the case another platform should be used.

- *'Institution' field (for most item types) or 'Company' field (for software)*

This field is used in Zotero for the institution publishing a resource (e.g., report, software). Only one institution/company (or entity) could be added. The institution added here should be a CESSDA SP (partner, observer or member SP). If there are more than one institution/company (or entity) linked to a resource, then the 'Extra' field should be used for subsequent institutions/companies (or entities).

- *'Extra' field*¹⁴

If specific authors are specified and, for institutions that are CESSDA SPs (partner, observer or member SP), if the institution/company field is not available or already filled in by one institution/company, the 'Extra' field is used. The process is similar for projects. Relevant current and past projects are listed in CESSDA website.¹⁵ If multiple entities were involved then they should be added in separate lines, as follows:

Institution: Acronym of institution1

Institution: Acronym of institution2

Project: Acronym of project

- *Tags*

Tags can be used to acknowledge other (i.e., outside of CESSDA) institutions or projects linked to the resource.

Date of Publication

General rule

The RD records the year of publication. However, if known and relevant (e.g., for a webinar), the exact date of publication is used. When the date/year of publication is unknown (e.g., for a webpage) or not relevant (e.g., for a consultancy), *N/A* is mentioned.

For exact dates, the format *Year-Month-Day* is used, for example 2021-05-31 (ISO 8601 format).

Applying the rule in the current platform Zotero

The fields 'Date' and 'Accessed' are available for all item types. The date or year of publication should be recorded in the 'Date' field.

Tip: Entering 'today', 'yesterday', and 'tomorrow' in the 'Accessed' field automatically enters the corresponding date.

Link (URL, DOI, etc.)

General rule

The resources should be accessible via DOIs (<https://doi.org/> + DOI number) or [web links](#). When there is a DOI, the DOI should always be used. When there is only a web link, whenever possible, the link should point to a landing page, rather than directly to a file. This is to avoid possible changes in the link to a PDF (for example) when there is a new version

¹⁴ The 'Extra' field is a free field for storing additional information. This field should be only used for storing additional metadata not included in an item's fields. The metadata name precedes the information. Both are separated by a colon (:). For adding different metadata, use separate lines for interoperability purposes.

¹⁵ <https://www.cessda.eu/Development-Impact> (19.01.2023).

of the file, while the landing page link would stay the same. However, the landing page should be avoided, when the resource cannot be easily and quickly found by the user (e.g., when there are many links mixed with text, the exact title of the resource is not mentioned, and/or the landing page could be a separate resource).

If a resource is available in several places (e.g., different websites publish the same file), the main link should point to the first author of the resource. If this includes more than one entity, then the link should point to the highest level (e.g., SSHOC for a resource developed by CESSDA and CLARIN within SSHOC).

If a resource is not available online (e.g., internal tools developed and used by a SP that is proprietary), then add [N/A](#).

Specificities

For consultations, the [e-mail address](#) of the institution providing the consultations is added in the 'URL' field.

Applying the rule in the current platform Zotero

The 'URL' field is available for every item type. Depending on the item type, a 'DOI' field (for journal articles), an 'ISSN' field (for periodicals) and an 'ISBN' field (for books) are also available. Anyway, the DOI (as a link) should always be inserted in the 'URL' field. For the purpose of the RD, recording ISSN and ISBN numbers is not needed.

Tags

General rule

Tags are keywords that describe the content of a resource and offer users an additional way to find relevant resources. All resources should have at least a tag. Tags are written in lower cases (except acronyms), using the singular form, and in British English. The RD editors should make sure that the tags are harmonised.

Applying the rule in the current platform Zotero

The 'Tag' field is available for all item types.

Specific Metadata for Tools and Services

In 2021, a specific effort was made to populate the RD with tools (computer programs, software scripts, services, etc.) created and/or used by data archives in their activities (i.e., the tools directory). On top of the above-mentioned metadata (item type, title, abstract, creator, link, and tags), specific metadata are used to ease the discoverability of specific tools, encourage the exchange of knowledge and skills, and finally facilitate their use by CESSDA SPs and partners.

These metadata can be grouped in three categories: user and usage, funder, and technical information. In general, user and description of usage should be added for all tools and services, while indication of the funder and technical information should only be added for tools developed by CESSDA SPs (and partners). Other specific metadata (e.g., release date or tools version, which can often change) are not included to keep editorial work reasonable.

User

General rule

To foster knowledge sharing, not only the creators, but also all CESSDA SPs (and partners) using a specific tool or service should be mentioned. RD users could then contact the creators/developers or the users of a specific tool to discuss their issues and find solutions.

It is assumed that SPs (or partners) who developed a tool are also using it, unless otherwise stated.

Applying the rule in the current platform Zotero

'Institution' field should not be used for this purpose, as this is for the creators/developers of the tool. Zotero has no specific field for this kind of information, the 'Extra' field should thus be used as follows:

User: Acronym of SP1

User: Acronym of SP2

Usage

General rule

Not only the information on who is using a particular tool, but also the information about how the tool is used is interesting to foster knowledge sharing. All users should thus briefly explain their usage of a tool since different SPs and partners may use the same tool for a different purpose.

Applying the rule in the current platform Zotero

Zotero has no specific field for this kind of information, the 'Abstract' field should thus be used. Information should be added after the general description of the tool or service, as follows:

Usage: At 'acronym of all SPs using the tool similarly', this is used 'brief description of usage1'.

Funder

General rule

The name of the institution or the project who funded the development of the tool. Information should be provided only for tools developed by CESSDA SPs. If the tool was developed with CESSDA ERIC funds (direct contribution or in kind), the intellectual property belongs to CESSDA ERIC (Article 16 of the CESSDA Statutes). Also, according to Annex 2 of the CESSDA Statutes, SPs are required to share their data archiving tools.

Applying the rule in the current platform Zotero

Zotero has no specific field for this kind of information, the 'Extra' field should thus be used as follows:

Funder: [Funder 1](#)

Licence

General rule

The valued information for the RD users is if the tool or service is available in open access ([Open access](#)) or if it is proprietary ([Proprietary](#)), no matter the type of licence used or the company owning the tool.

For tools developed by SPs' and partners' that are not available to others (yet), [Proprietary](#) should be used.

Applying the rule in the current platform Zotero

If a licence is applicable, it should be specified in the 'Rights' field.

Availability of the Code Source to Other Organisations

General rule

For resources developed by SPs (and partners), it should be mentioned if a tool or service is or could be [Available](#) to other CESSDA SPs (and partners) or, on the contrary, if it is [Not available](#).

Applying the rule in the current platform Zotero

Zotero has no specific field for this kind of information, the 'Abstract' field should thus be used. Information should be added after the general description of the tool or service, as follows:

[Availability of the code source to other organisations: Available](#)

Source Code, User and Technical Documentation

General rule

For resources developed by SPs (and partners), these three fields inform if the source code and any written documentation or a support contact was available to users and developers.

Applying the rule in the current platform Zotero

Zotero has no specific field for this kind of information, the 'Abstract' field should thus be used. Information should be added after the general description of the tool or service, as follows:

[Source code: URL or email](#)

[User documentation: URL or email](#)

[Technical documentation: URL or email](#)

Platform and Interoperability

General rule

For resources developed by SPs (and partners), a description of the platform and interoperability features, specifying programming language, operating system, databases, plugins, and the similar should be mentioned.

Applying the rule in the current platform Zotero

Zotero has no specific field for this kind of information, the 'Abstract' field should thus be used. Information should be added after the general description of the tool or service, as follows:

[Platform and interoperability: Add text](#)

Standards Compliance

General rule

For tools developed by SPs (and partners), the supported standards and description of its implementation should be mentioned.

Applying the rule in the current platform Zotero

Zotero has no specific field for this kind of information, the 'Abstract' field should thus be used. Information should be added after the general description of the tool or service, as follows:

[Standards compliance: Add text](#)

Review of the Curation Process

Contrary to the collection development policy, the curation process is likely to evolve more often since this is a practical guide for RD editors. If main rules concerning the curation workflow and the attribution of metadata should be quite stable, how this is done in practice will evolve if the platform used to display the RD changes. Moreover, specific choices and practices, like the sub-categorisations or the rules regarding tags, could evolve regarding the

development of the collection and the development at and needs of social science data archives and professionals.

Annex 2: Technical Features

As asked by the CESSDA Chief Technical Officer, this section defines the desired technical features for the RD. Table 4 presents a preliminary list of features based on current envisioned development strategies for the RD and Figure 1 shows the possible statuses attributed to a resource item regarding its curation stage. Naturally, these features should be refined at a later stage. However, it has the value of describing the needs and set a basis for discussion with other actors and decision makers.

A prioritisation in the development of these features is also suggested (Table 4). Four phases are proposed. Features in the **first phase** should be available when the RD is migrated from the Zotero platform. Compared to the Zotero platform, these features improve the resource discovery and the readability of the results for the users, while editors have the same curation options (that is basically a private login - or similar solution - that allows them and only them to edit, publish and remove resource items). In a **second phase**, light developments are suggested that consist of an improved discovery and new metadata visible only to editors to facilitate the curation process. The **third phase** aims to facilitate the proposition of new resources and updates by the contributors and general users, as well as to treat efficiently these contributions by the editors. The **fourth phase** includes extra features that support new contributions or to include a repository for non-public documents.

Table 4: Preliminary list of desired features

Users	Area	Features [development phase]
All	Discovery	<ul style="list-style-type: none"> • [1] Faceted search using RD's metadata • [2] Search facility (truncation, Boolean) • [2] A specific number and/or a direct link should be attributed to each resource item (published or dismissed). • [3] Users should be able to create and use specific link to a collection of resources (e.g., with the metadata used in the faceted search)
All	Results	<ul style="list-style-type: none"> • [1] General result window (all results with main metadata) • [1] Specific result window for a resource item with all metadata
RD contributors and editors	Curation windows - editing rights	<ul style="list-style-type: none"> • Restricted access to the curation windows for the [1] RD editors and [3] contributors (private login). • [1] Editors and [3] contributors have editing rights on all resources, this includes suggestions of addition, review and deletion of resources and metadata.

		<ul style="list-style-type: none"> • [2] Specific metadata field for the curation process should be added. These are not published and serves only to communicate between contributors and editors (e.g., curation status, publishing decision and remarks). • [1] Curation windows should offer the same search facility and faceted search. [3] In the main curation window, contributors should per default see only resources linked to their institution (or CESSDA team). • [3] Once a contributor or editor submits a new resource or an update, the curation status of the resource item should be adapted (see Figure 1 below). • [3] A system should track editions by each contributor or editor (or at least date and person for last edition). • [4] Interoperability between systems/platforms to facilitate metadata entry: When adding a new resource, metadata already available in other platforms (e.g., CESSDA Training Platform, SSH Open Marketplace) should be retrieved for example after adding the DOI or a title.
RD editors	Curation windows - publishing rights	<ul style="list-style-type: none"> • [1] Only editors have rights to curate and publish a new or reviewed resource • [2] Specific metadata should only be available to editors (e.g., remarks on misplacement, discussion on curation process).
General users	Submission form	<ul style="list-style-type: none"> • [3] Form to suggest new resources and updates with all metadata (only some compulsory) • [3] Filled information are included in the RD editors' curation window • [4] Similar interoperability system as described above could be available from the submission form.
CESSDA Community	Repository option	<ul style="list-style-type: none"> • [4] Restricted access to the CESSDA Community (including or not partners - to be decided) of non-public resources (e.g., CESSDA non-public deliverables and SPs' (and partners') archiving workflows or tools). • [4] The metadata related to these resources could be publicly available or restricted. • [4] This part of the RD contains the resource itself (physical document).

Figure 1: Status attributed to a resource item regarding its curation stage

