

CESSDA Work Plan 2020

Trust Support

D5 Workshop report presenting the current state of the Trust Landscape and implications for CESSDA Service Providers

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Executive Summary

This report first summarises the results of the CESSDA Trust Workshop (January 2021) and then continues to describe the wider Trust Landscape.

The trust landscape is developing rapidly but the *Turning FAIR into reality* report (2018) remains the baseline for many of the ongoing initiatives. CESSDA and its Service Providers should advocate the need for, and benefits of, domain or subject-based curation and deposition of data with a discipline specific trustworthy digital repository. In addition to making digital objects FAIR, they need to be kept FAIR over time.

The CESSDA Trust team will continue to support Service Providers in CoreTrustSeal certification in 2021. SPs preparing a CoreTrustSeal application are encouraged to get in contact with the Trust team as early as possible.

In addition to CoreTrustSeal, two emerging evaluation methods are relevant for CESSDA and its Service Providers: key performance indicators (KPIs) and (automated) FAIR assessments. CESSDA and SPs should enhance the machine-understandability of their metadata and collaborate with relevant assessment tools to better align them with community standards.

CESSDA needs to continue to closely monitor the evolution of the trust landscape both in the context of EOSC and globally. The CESSDA Trust Group has a wide range of existing connections, and the CESSDA Trust approach has been validated by being referenced and used by SSHOC, FAIRsFAIR and EOSC Nordic.

Abbreviations and Acronyms

ADP	Social Science Data Archive
APIS	Portuguese Archive of Social Information
CDC	CESSDA Data Catalogue
CESSDA	Consortium of European Social Science Data Archives
DANS	Data Archiving and Networked Services
DATICE	Icelandic Social Science Data Service
DDA	Danish Data Archives
DMP	data management plan
EOSC	European Open Science Cloud
ESES	earth, space and environmental science

FAIR	Findable, Accessible, Interoperable, Reusable
FSD	Finnish Social Science Data Archive
GESIS	GESIS - Leibniz Institute for the Social Sciences
KPI	key performance indicator
LIDA	Lithuanian Data Archive for Social Sciences and Humanities
NDSA	National Digital Stewardship Alliance
NSD	Norwegian Centre for Research Data
OAIS	Open Archival Information System
PID	persistent identifier
RDA	Research Data Alliance
SND	Swedish National Data Service
SODHA	Social Sciences and Digital Humanities Archives
SP	Service Provider
SRIA	Strategic Research and Innovation Agenda
SSH	social sciences and humanities
SSHOC	Social Sciences & Humanities Open Cloud
TDR	trusted digital repository
WG	working group

Introduction

Trust is an essential part of open science, FAIR¹, and the European Open Science Cloud (EOSC). This report provides an overview of ongoing trust-relevant activities and discussions that are of interest to CESSDA and its Service Providers (SP). It follows on from the Trust Working Group final report 2019 and relates to the following activities and objectives in the CESSDA Trust 2020 Work Plan:

- Activity 3 Landscape Integration: Leveraging the Trust Group involvement in a range of Trust activities elsewhere to provide relevant contextual information related to Trust, CoreTrustSeal as well as FAIR and Open data.
- Activity 4 Workshop: Planning and delivering a workshop to provide an end of year review, particularly with regard to SP progress and landscape, and a look ahead to 2021.
- Objective 3. Wider Trust Landscape Alignment. Landscape overview: Integrating outcomes of Trust-relevant activities. Certification, FAIR, EOSC/SSHOC, RDA (FAIR Trust and repositories, services, objects/data, software) and including Trust Models across SSH (In SSHOC) and maturity activities (SSHOC, EOSC, RDA etc).

This report first summarises the results of the CESSDA Trust Workshop that took place on January 29, 2021 and then continues to describe the Trust Landscape. The focus starts with CoreTrustSeal as a Trustworthy Digital Repository (TDR) standard for social sciences and humanities and then moves out to wider EOSC perspective and beyond Europe. The final section outlines the CESSDA trust connections and impact. The draft of this report was used as input into the CESSDA Trust workshop.

¹ Wilkinson, M., Dumontier, M., Aalbersberg, I. et al. (2016). The FAIR Guiding Principles for scientific data management and stewardship. *Sci Data* 3, 160018. <https://doi.org/10.1038/sdata.2016.18>

Workshop “Trust Landscape and the implications for CESSDA Service Providers”

Participants and themes

The CESSDA Trust workshop was held virtually on January 29th, 2021 (see Annex 1 for agenda). The workshop was attended by 27 people representing 19 members and partners of the CESSDA consortium². The workshop consisted of four parts. First the status of the CoreTrustSeal certification within the CESSDA community was presented and discussed. Secondly, trust issues in relation to the Service Providers’ obligations (also known as the Annex II of the statutes³ of the CESSDA ERIC) were discussed. The third part of the workshop consisted of a discussion of Trust Landscape and the fourth and final part was an evaluation of the workshop by the participants including suggestions for future directions. A short summary of the workshop is provided below, detailed notes and other workshop materials are restricted to CESSDA Service Providers.

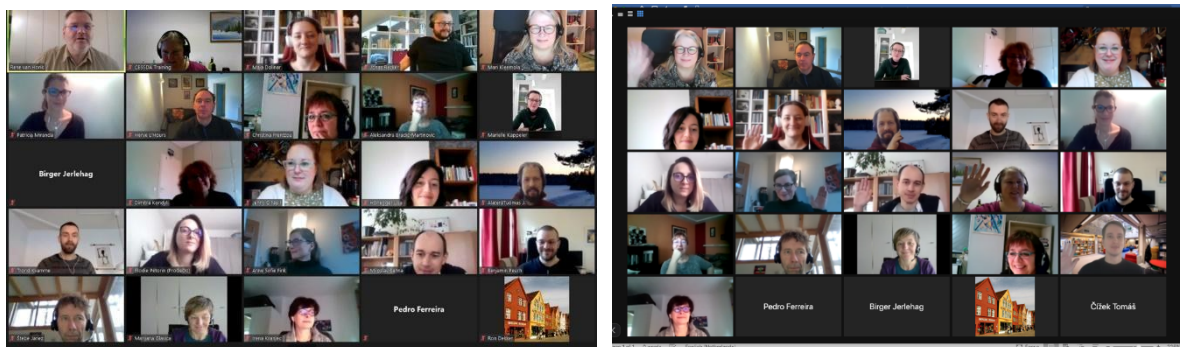


Figure 1. Participants of the CESSDA Trust Workshop 29.01.2021.

Summary of discussions

The workshop started with an overview of the state of art concerning the CoreTrustSeal status of CESSDA Service Providers. Currently eleven Service Providers are certified against the CoreTrustSeal requirements. Six SPs are due to renew their certification in 2021 and five

² The following organisations were represented in the workshop: ADP (Slovenia), APIS (Portugal), AUSSDA (Austria), CSDA (Czech Republic), CROSSDA (Croatia), DANS (Netherlands), DCS (Serbia), DNA (Denmark), EKKE (Greece), FORS (Switzerland), FSD (Finland), GESIS (Germany), ISSDA (Ireland), NSD (Norway), PROGEDO (France), SASDA (Slovakia), SND (Sweden), SOHDA (Belgium), UKDS (United Kingdom).

³ CESSDA Statutes:

<https://www.cessda.eu/content/download/1466/20924/file/STATUTES%20ERIC%20CESSDA%20UPD%2025.09.20.pdf>

SPs plan to apply for certification in 2021 for the first time. The CESSDA Trust group has supported the SPs by providing guidance and feedback on their concept application forms. This support also aligns with support for CoreTrustSeal certification provided by the FAIRsFAIR⁴, SSHOC⁵ and EOSC Nordic⁶ projects.

The current CoreTrustSeal requirements will be in use until the end of 2022. It can be expected that submission of formal CoreTrustSeal applications will be frozen at some point in the last quarter of 2022. The SPs should be aware of this timeline when planning their certification.

Two CESSDA SPs reported on their current certification activities: SODHA (Social Sciences and Digital Humanities Archives) from Belgium and APIS (Portuguese Archive of Social Information) from Portugal. The presentations were followed by lively discussion and sharing of experiences.

The discussion on Annex II Obligations focused on practical interpretation of the fourteen requirements for the SPs and participants provided valuable feedback on the proposed interpretations. The results will be reported in a separate deliverable. The Annex II discussion was followed by a landscape review that provided an overview of the connections between various initiatives around trust and CESSDA Trust team members, the impact of CESSDA trust work, and FAIR testing and metrics. The discussion on landscape overview from the workshop participants has been incorporated below in the trust landscape section.

The CESSDA Trust team will continue to provide support for CoreTrustSeal certification in 2021. SPs preparing a CoreTrustSeal application are encouraged to get in contact with the Trust team. The team also intends to work on ways to simplify the provision of evidence for CoreTrustSeal requirements by identifying types of documentation that all SPs can refer to, and will continue to monitor closely the evolution of the trust landscape.

⁴ FAIRsFAIR support program: <https://www.fairsfair.eu/application-results-open-call-data-repositories>

⁵ SSHOC certification support: <https://sshopencloud.eu/sshoc-certification-support>

⁶ EOSC-Nordic support: <https://www.eosc-nordic.eu/certification-support-seminar-on-fair-data/>

Trust Landscape Overview

Certification of repositories

It is a CESSDA Annex II Obligation that Service Providers adhere to the principles of the Open Archival Information System (OAIS) reference model and any agreed CESSDA ERIC requirements for operating trusted repositories. An agreed CESSDA Requirement is the CoreTrustSeal⁷ certification for which progress within the CESSDA community is monitored. CESSDA's choice of CoreTrustSeal has been validated by the FAIR Working Group's recent report⁸ on certification of services that supports the continued use of CoreTrustSeal as the baseline for TDR standards and assessment.

A revised version of the CoreTrustSeal Requirements 2020–2022 was published in November 2019, and applications against the revised requirements were accepted from 1 January 2020 onwards. Since the changes were minor, the revision should have very limited impact on Service Providers' ongoing certification processes. However, it is expected that the next revision of CoreTrustSeal (in 2022) will be more significant in terms of structure and content. Service Providers should take this into account when planning the timetable for their CoreTrustSeal certification application.

The FAIR principles

The trust landscape, including FAIR and open data, is developing rapidly. To date, the *Turning FAIR into reality* report⁹ (2018) by the European Expert Group remains the common reference in Europe and beyond, and the baseline for many of the FAIR and EOSC related work packages and projects. *Turning FAIR into Reality* outlines a FAIR ecosystem that relies on policies, DMPs, identifiers, standards and repositories (see figure 2). Repositories offer databases and data services and should be certified according to emerging standards for trustworthiness and FAIR. Repositories providing long-term stewardship of data should be encouraged and supported to achieve CoreTrustSeal certification.

⁷ CoreTrustSeal: <https://www.coretrustseal.org/>

⁸ EOSC Executive Board FAIR Working Group (2021). Recommendations on certifying services required to enable FAIR within EOSC. <https://doi.org/10.2777/127253>, published: 2021-01-08.

⁹ Directorate-General for Research and Innovation (European Commission):

Turning FAIR into reality. Final report and action plan from the European Commission expert group on FAIR data. Published: 2018-11-26. <https://op.europa.eu/s/oID1>

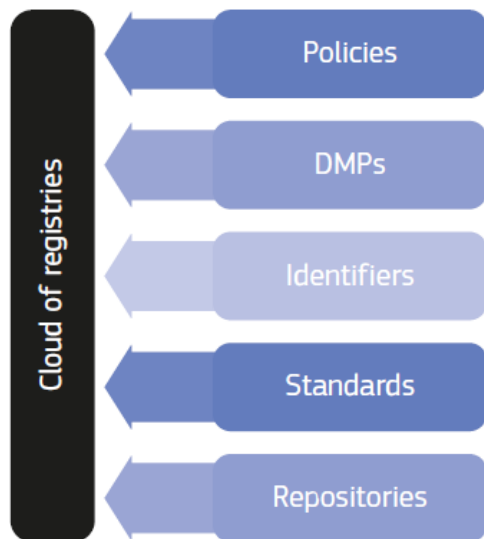


Figure 2. The essential components enabling the FAIR ecosystem (Figure 6 of Turning FAIR into Reality report).

It is important to emphasise that in addition to making digital objects FAIR, it is essential that they are kept FAIR over time. This is a task that usually requires resources and usually domain specific expertise. The preservation aspect is often underestimated or forgotten in the ongoing discussion.

The FAIR Working Group of the EOSC Executive Board considers the CoreTrustSeal as the right level for research data repositories and recommends that the CoreTrustSeal+FAIR approach proposed by the FAIRsFAIR project should be extensively tested¹⁰.

Metrics

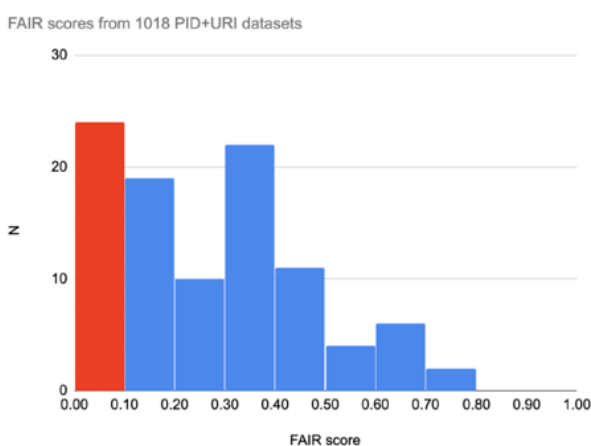
All repository services have some kind of organisational embedding, and it is this organisational aspect that the current CoreTrustSeal certification is focused on. Datasets in a CoreTrustSeal certified repository are managed, curated and preserved for the long-term in such a way that they are and stay FAIR for the repository's Designated Community (Mokrane & Recker 2019¹¹). In addition to CoreTrustSeal, two emerging evaluation methods are relevant for CESSDA and its Service Providers: key performance indicators (KPIs) and (automated) FAIR assessments.

¹⁰ EOSC Executive Board FAIR Working Group (2021). Recommendations on certifying services required to enable FAIR within EOSC. <https://doi.org/10.2777/127253>, published: 2021-01-08.

¹¹ Mokrane, Mustapha & Recker, Jonas (2019). CoreTrustSeal-certified repositories. Enabling Findable, Accessible, Interoperable and Reusable (FAIR) data. 16th International Conference on Digital Preservation iPRES 2019, Amsterdam, The Netherlands. <https://osf.io/9da2x/>

CESSDA's work on Key Performance Indicators (KPIs) will integrate clarification of Annex II obligations and give an improved overview of Service Providers for future work as well as support reporting on the CESSDA ERIC level. The draft KPIs were shared with the Service Providers in November 2020.

Automated assessments of Digital Objects against the FAIR principles are being developed. Currently the two most advanced and adopted methods are the FAIR Maturity Evaluation Service (Wilkinson et al. 2019¹²) and the F-UJI Automated FAIR Data Assessment Tool (Devaraju et al. 2020¹³). The EOSC Nordic project has tested and continues to test a sample of metadata records from Nordic and Baltic repositories using these tools. The CESSDA Data Catalogue (CDC) and six Service Providers are included in the EOSC Nordic sample of repositories. Figure 3 presents results from adopting the FAIR Maturity Evaluation Service that consists of 22 tests. The histogram shows the averaged FAIR scores for all the 98 repositories, 0 meaning that none of the 22 tests were passed, and 1 meaning that all 22 tests were passed. In the table, CDC and SPs' scores are shown as percentages of passed tests. (Jaunsen et al. 2020¹⁴.)



CDC	24.03
NSD	29.55
SND	48.64
DDA	47.73
FSD (Aila)	70.91
LIDA	31.82
DATICE	45.45

Figure 5. Averaged FAIR score histogram for data repositories that were evaluated in the sample (blue bars) and repositories

¹² Wilkinson, M.D., Dumontier, M., Sansone, SA. et al. Evaluating FAIR maturity through a scalable, automated, community-governed framework. *Sci Data* 6, 174 (2019).

<https://doi.org/10.1038/s41597-019-0184-5>

¹³ Devaraju, Anusuriya, Huber, Robert, Mokrane, Mustapha, Herterich, Patricia, Cepinskas, Linas, de Vries, Jerry, ... Angus White. (2020, October 12). FAIRsFAIR Data Object Assessment Metrics (Version 0.4). Zenodo. <http://doi.org/10.5281/zenodo.4081213>

¹⁴ Andreas Ortmann Jaunsen, Mari Kleemola, Tuomas J. Alaterä, Heikki Lehvaslaiho, Adil Hasan, Josefine Nordling, & Pauli Assinen. (2020). D4.1 An assessment of FAIR-uptake among regional digital repositories (Version 1.0). Zenodo. <https://doi.org/10.5281/zenodo.4045401>

Figure 3. FAIR scores from testing done by EOSC-Nordic using the FAIR Maturity Evaluation Service (Jaunsen et al. 2020).

The CESSDA SPs' FAIR scores tend to be higher than the average, although there is room for improvement. CESSDA and the SPs should add more machine-understandable metadata in their catalogues. The tools should be developed to better align with community standards, and CESSDA should participate in shaping the used SSH standards.

The EOSC-Nordic project has decided to use the F-UJI tool for testing in the future, and a new test report is due in spring 2021.

Currently several European projects are working on different aspects of FAIR and certification of repositories, services and digital objects. The FAIR synchronisation force¹⁵ has been set up to maximise collaboration, minimise duplication, and promote adherence to the *Turning FAIR into Reality* report (for an overview of the synchronisation force results, see Dillo et al. 2020¹⁶).

Different types of repositories

CoreTrustSeal certification has traditionally consisted of domain/subject-based repositories. However, the repository landscape is wider. Communications with a number of stakeholders presented the CoreTrustSeal Board with a challenge to continue to meet the needs of the domain/subject-based repository community while addressing the demand for assessment, peer review and recognition from a wider group of actors delivering data curation, storage, and access services. The recent CoreTrustSeal community feedback request¹⁷ proposes to define CoreTrustSeal applicants as either representing a specialist (e.g. domain or subject-based) or a generalist repository (with a potentially heterogeneous collection and a non-specialist designated community). The report also acknowledges that software providers and providers of technical infrastructure and associated services which support trustworthy digital repositories are vital components of the data ecosystem.

For CESSDA and its Service Providers, it is important to emphasise the need for domain/subject-based curation and deposition of data with a discipline specific trustworthy

¹⁵ FAIR synchronisation force: <https://www.fairsfair.eu/advisory-board/synchronisation-force>

¹⁶ Ingrid Dillo, Marjan Grootveld, Simon Hodson, & Sara Pittonet Gaiarin. (2020). Second Report of the FAIRsFAIR Synchronisation Force (D5.5) (Version 1.0). Zenodo. <https://doi.org/10.5281/zenodo.3953978>

¹⁷ CoreTrustSeal: Specialists, Generalists, and Technical Repository Service Providers. A request for community feedback.

<https://www.coretrustseal.org/why-certification/specialists-generalists-technical-repository-service-providers/> (published 22 June 2020).

digital repository as recommended by policy makers including Science Europe (2018¹⁸) while acknowledging that resources do not permit all data to be curated to this level. CESSDA should support work to identify different types of repositories and efforts to design selection/recommendation systems (like re3data.org¹⁹ or FAIRsharing²⁰).

A critical reason for using disciplinary TDRs is their ability to understand the needs of their 'Designated Community' (including social scientists for CESSDA SPs) and to offer active preservation of the data and metadata they deposit. This is a key differentiator between a generic repository technology system (e.g. Figshare²¹, Zenodo²²) and an actively preserved and curated collection.

To ensure trust, the differences in curation responsibility and in the expectations of services provided must be clear to all stakeholders: repositories, reviewers, depositors, users, and funders. The value of data assets is maximised when deposited in a domain or subject-based repository that meet specialist (domain or disciplinary) standards as required by the Designated Community and are able to support data, depositors and end users from that community.

Persistent Identifiers

Persistent identifiers are an essential component of the FAIR ecosystem. FAIR digital objects consist of uniquely, persistently identified FAIR data, metadata and documentation. CESSDA has a PID policy²³ and PID Checklist²⁴ so CESSDA and the SPs are well positioned in this regard. The EOSC PID policy²⁵ was published in 2020 and defines a set of expectations about what persistent identifiers will be used to support a functioning environment of FAIR research. The FREYA project²⁶ ended in 2020 and supported the EOSC by developing a PID infrastructure that facilitates and boosts the EOSC ecosystem.

¹⁸ Science Europe (2018). Practical Guide to the International Alignment of Research Data Management. https://www.scienceurope.org/media/jezkhnoo/se_rdm_practical_guide_final.pdf

¹⁹ <https://www.re3data.org/>

²⁰ <https://fairsharing.org/>

²¹ <https://figshare.com/>

²² <https://zenodo.org/>

²³ CESSDA ERIC Persistent Identifier Policy 2019. Principles, Recommendations and Best Practices. Version 2.0. <https://doi.org/10.5281/zenodo.3611327>

²⁴ ESSDA ERIC Checklist for the Usage of Persistent Identifiers. Version 1.0, 2019. <https://doi.org/10.5281/zenodo.3611333>

²⁵ A Persistent Identifier (PID) policy for the European Open Science Cloud (EOSC). Published: 2020-10-15 <https://op.europa.eu/s/oIER>

²⁶ FREYA project: <https://www.project-freya.eu/en>

EOSC and associated landscape

European Open Science Cloud (EOSC) is a major effort to connect research data services across Europe. In July 2020, the EOSC Association²⁷ was established as a legal entity. Due to its over-arching nature, EOSC has been mentioned in this report already several times. This chapter draws attention to EOSC recommendations and materials on certifying repositories and services that are of special interest to CESSDA and its Service Providers.

The recent EOSC FAIR WG report on certification of services²⁸ makes several recommendations, including:

- repositories and services wanting to join EOSC are strongly recommended to use the certification framework criteria to check and improve their practices, with the aim to progress towards certification
- certified repositories should be clearly identified as such
- CoreTrustSeal is considered the right level for research data repositories managed in the research environment with respect to DIN 31644 (nestorseal) and ISO 16363:2013
- existing work on certification of the services required to enable FAIR should be extended under the next framework programme and ensure applicability across disciplines
- one should not seek to define certification for all the types of services in the FAIR ecosystem; priorities should be established
- the capability/maturity approach proposed in CoretrustSeal+FAIR should be extensively tested
- all the certification frameworks proposed for other components of the FAIR ecosystem will also have to be extensively tested and feedback from a variety of stakeholders gathered.
- clarifying community standards to enable FAIR is needed.

Further reading recommendations include:

- [EOSC Strategic Research and Innovation Agenda \(SRIA\) of the European Open Science Cloud](#)
- [Outputs from the key EOSC Working Groups](#)
- Recommendations by the European Commission and EOSC Executive Board
 - [Recommendations on FAIR Metrics for EOSC](#)

²⁷ EOSC Association Statutes: https://www.eosc.eu/sites/default/files/EOSC_Statutes.pdf

²⁸ EOSC Executive Board FAIR Working Group (2021). Recommendations on certifying services required to enable FAIR within EOSC. <https://doi.org/10.2777/127253>, published: 2021-01-08.

- [Recommendations on certifying services required to enable FAIR within EOSC](#)
- [EOSC Six Recommendations for Implementation of FAIR Practice](#)
- Materials from the [EOSC Governance Symposium 2020](#):
 - [FAIR Forever](#) by Digital Preservation Coalition (DPC)
 - [Introducing the Minimal Viable EOSC](#) by Rupert Lueck
- [Identifying digital skill sets for EOSC](#) by the “Minimum EOSC Skill Set” Task force of the EOSC Skills and Training working group
- [EOSC-study on FAIR Data and Legal Interoperability](#) by X-officio, commissioned by the EOSC FAIR working group
- [ARCHIVER project](#) that aims at introducing improvements in the area of archiving and digital preservation services, supporting the IT requirements of European scientists and providing end-to-end archival and preservation services, cost-effective for data generated in the petabyte range with high, sustained ingest rates, in the context of scientific research projects.
- [EOSC Core and the Service Management System](#) presentation in November 2020 on developments of the EOSC Portal and core services
- Magas, M. and Dubber, A. (2020). [Expanding EOSC: Engagement of the wider public and private sectors in EOSC](#).
- Devaraju, A., Mokrane, M., Cepinskas, L., Huber, R., Herterich, P., de Vries, J., Akerman, V., L’Hours, H., Davidson, J. and Diepenbroek, M. (2021). From Conceptualization to Implementation: FAIR Assessment of Research Data Objects. Data Science Journal, 20(1), p.4. DOI: <http://doi.org/10.5334/dsj-2021-004>

Developments and initiatives beyond Europe

This section briefly lists developments outside Europe that the CESSDA Trust Group is following.

- Canadian [Portage Network Data Repository Expert Group](#)
- Australian Research Data Commons: [Trusted Data Repositories Community of Practice](#)

- [RDA/Force11 FAIRsharing WG](#), especially the discussion around their output: "Data Repository Selection: Criteria that Matter"²⁹
- A repository cohort established in partnership with CoreTrustSeal and the World Data System and supported by the Council of Data Facilities to advance the [implementation of FAIR principles in ESES repositories](#)
- [NDSA Levels of Preservation](#)
- TRUST principles (Lin et al. 2020³⁰)
- CoreTrustSeal developments
 - CoreTrustSeal: [Specialists, Generalists, and Technical Repository Service Providers](#).
 - [Meeting community needs](#) - CoreTrustSeal invites inputs and feedback to help shape how CoreTrustSeal certification might best serve the needs of the community and ensure trustworthiness in a complicated and evolving landscape.
 - The Odum Institute Data Archive is the 100th CoreTrustSeal-certified TDR. It was also the first repository to apply and be certified against the new CoreTrustSeal Requirements 2020–2022.

CESSDA Trust Connections & Impact

The CESSDA Trust Group has a wide range of existing connections to the trust landscape (see Figure 1). The Trust Group's connections are primarily focused around work on the European Open Science Cloud (EOSC) and FAIR (Findable, Accessible, Interoperable, Reusable) principles. Key areas include the projects EOSC-hub³¹, FAIRsFAIR, FREYA and SSHOC. The TRUST work (Lin et al. 2020) will be monitored as a possible route for alignment between the FAIR principles and requirements for trusted digital repositories (based on the OAIS reference model³²).

²⁹ Sansone, Susanna-Assunta, McQuilton, Peter, Cousijn, Helena, Cannon, Matthew, Chan, Wei Mun, Callaghan, Sarah, ... Threlfall, Jonathan. (2020, October 13). Data Repository Selection: Criteria That Matter. Zenodo. <http://doi.org/10.5281/zenodo.4084763>

³⁰ Lin, D., Crabtree, J., Dillo, I. et al. The TRUST Principles for digital repositories. Sci Data 7, 144 (2020). <https://doi.org/10.1038/s41597-020-0486-7>

³¹ EOSC Hub: <https://www.eosc-hub.eu/>

³² OAIS reference model: <https://public.ccsds.org/pubs/650x0m2.pdf>

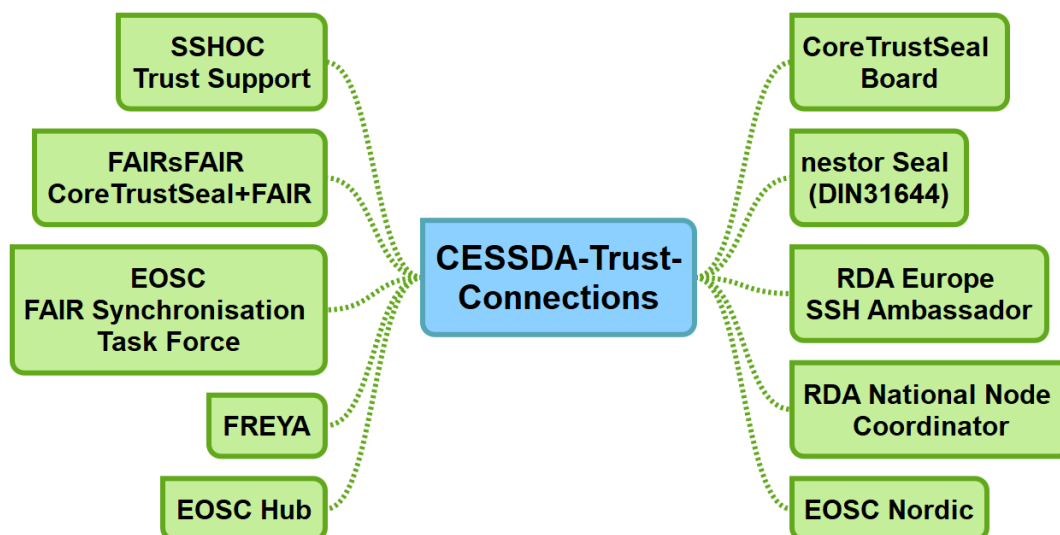


Figure 4. CESSDA Trust Group members' connections to the trust landscape.

The evolving CESSDA Trust approach³³ has been validated by being referenced and used by SSHOC, FAIRsFAIR and EOSC Nordic. This demonstrates an impactful expertise in the important area of Trust standards and certification. CESSDA is thus well connected and well positioned to have an impact in the future developments of the trust landscape. CESSDA is also well positioned through SSHOC to engage with the EOSC.

The landscape task continues in 2021 with a focus on areas of CESSDA impact including Trustworthy Repositories, FAIR and EOSC.

Conclusion

The CESSDA Trust team will continue to provide support for CoreTrustSeal certification in 2021. SPs preparing a CoreTrustSeal application are encouraged to get in contact with the Trust team as early as possible. Since the next revision of CoreTrustSeal (in 2022) will be significant in terms of structure and content, Service Providers should take this into account when planning their certification timetable.

³³ L'Hours, Hervé, van Horik, René, Kleemola, Mari, Recker, Jonas, Štebe, Janez, & Jerlehag, Birger . (2020, January 22). CESSDA Trust Group: Overview of Support Approaches (Version v01.00). Zenodo. <http://doi.org/10.5281/zenodo.3621378>

The trust landscape is developing rapidly. The *Turning FAIR into reality* report (2018) remains the baseline for many of the ongoing FAIR and EOSC related initiatives. In addition to making digital objects FAIR, it is essential that they are kept FAIR over time. CESSDA and its Service Providers should advocate the need for, and benefits of, domain/subject-based curation and deposition of data with a discipline specific trustworthy digital repository.

In addition to CoreTrustSeal, two emerging evaluation methods are relevant for CESSDA and its Service Providers: key performance indicators (KPIs) and (automated) FAIR assessments. CESSDA and its Service Providers tend to score relatively well in automated FAIR assessments but regardless, they should enhance their machine-actionable metadata. In addition, CESSDA should collaborate with relevant assessment tools to better align the tools with community standards.

CESSDA needs to continue to monitor closely the evolution of the trust landscape, especially in the context of EOSC but also globally. The CESSDA Trust Group has a wide range of existing connections, and the CESSDA Trust approach has been validated by being referenced and used by SSHOC, FAIRsFAIR and EOSC Nordic.

Annex 1. Workshop program

CESSDA TRUST online Workshop

“Trust Landscape and the implications for CESSDA Service Providers”

Date of the workshop: January 29th, 2021. Time: 10:00 - 13:00 CET

Audience: CESSDA Service Providers. Organiser: CESSDA Trust Group

PROGRAM

Time	Topic	Coordination
10:00-10:30	Welcome and Introduction	René van Horik (DANS)
10:30-10:45	Certification and Trust support <ul style="list-style-type: none"> • Certification status 	Jonas Recker (GESIS)
10:45-11:15	Certification activities of Service Providers <ul style="list-style-type: none"> • Presentation: SODHA • Presentation: APIS • Q&A 	Benjamin Peuch (SODHA) Patricia Miranda (APIS)
11:15-11:30	Break	
11:30-12:00	Annex 2 obligations	Birger Jerlehag (SND)
12:00-12:30	Trust Landscape Report	Mari Kleemola (FSD)
12:30-13:00	Conclusion and Next Steps (please fill in evaluation form)	Maja Dolinar (ADP)