CoreTrustSeal 2020 Annual Report

(Version 1.0)

Contents

Version History

2020-12-11	Draft created	v00.01
2021-02-11	Board-approved version	v01.00

A Message from the CoreTrustSeal Chair

It has been more than three years since the CoreTrustSeal was formally announced in September 2017, accompanied by the launch of the first version of the CoreTrustSeal Requirements. January 2020 marked the transition to the new CoreTrustSeal Requirements 2020-2022. From 30 January onward, all new applications fell under this version of the requirements.

With this significant step completed, the CoreTrustSeal Board turned its attention to consultation on a wider topic raised by the community, including during the Review of Requirements. Together with the wider repository community, we began to explore needs and identify challenges relating to the certification of more generalist repositories (as opposed to domain-/subject-based ones), as well as the role of third-party outsource partners of CoreTrustSeal applicants. Despite the challenges of the pandemic, members of the repository and digital preservation community provided a wealth of detailed and well thought-out responses to our consultation, giving the CoreTrustSeal Board much to process and discuss. We will feed these responses into further consultations, the next revision of the CoreTrustSeal, and an evolving consultation on what strategic priorities we should deliver.

A significant milestone reached in 2020 was the award of the 100th CoreTrustSeal certification to The Odum Institute Data Archive (press release), which at the same time marked the first certification against the new CoreTrustSeal Requirements 2020–2022. The achievement of this milestone fills us with pride because it signifies the dedication of the community, whose members make an immense effort, both in the role of applicants and as members of the CoreTrustSeal Assembly of Reviewers, to ensure that our digital heritage is curated and preserved in the best possible way.

An important and rewarding aspect of our work in 2020 was the continued engagement with the Research Data Alliance, for example in the RDA/WDS Certification of Digital Repositories IG, which is such an important community "marketplace" for ideas, best practices, and discussions around the topic of repository certification. Similarly, CoreTrustSeal Board members were involved in projects such as FAIRsFAIR and SSHOC, which play an important role in promoting and facilitating CoreTrustSeal certification as well as in communicating the community's needs and expectations to the CoreTrustSeal Board.

Introduction

CoreTrustSeal is an independent, international, community based, and non-profit organization promoting sustainable and trustworthy data infrastructures. To manage its finances, CoreTrustSeal is a legal entity under Dutch law (CoreTrustSeal Foundation Statutes and Rules of Procedure) governed by a [Standards and Certification Board](#) composed of 12 elected members representing the [Assembly of Reviewers](#).

The [CoreTrustSeal Trustworthy Data Repositories Requirements](#) were developed by the DSA–WDS Partnership Working Group on Repository Audit and Certification, a Working Group (WG) of the Research Data Alliance. The goal of the effort was to create a set of harmonized common requirements for certification of repositories at the core level, drawing from criteria already put in place by the Data Seal of Approval (DSA) and the World Data System (WDS) of the International Science Council.

Developments and Activities

Concluding the 2019 Review of Requirements

When developing the Core Trustworthy Data Repositories Requirements and Procedures that are the foundation of the CoreTrustSeal certification standard, the Data Seal of Approval–World Data System (DSA–WDS) partnership Working Group formed under the umbrella of the Research Data Alliance made a commitment to review and update the Requirements every three years. With the original set of Requirements adopted in 2017 by DSA and WDS, 2019 marked their first review.

To define the Requirements for the period 2020–2022, the CoreTrustSeal Board initiated an open community review from March to May 2019. A subcommittee of the CoreTrustSeal Board was then formed to examine the feedback received from the open review period, as well as that provided by repositories during the application process and from CoreTrustSeal communications and outreach activities. Each suggestion was scrutinized and accepted, rejected, or deferred until later, with a brief explanation on the reasoning added.

Accepted feedback was incorporated into revisions of the Requirements, Extended Guidance, and Glossary. A draft revision of the CoreTrustSeal Requirements was made available in early August 2019 for further community comments, with the final versions released in November of that year. The CoreTrustSeal Application Management Tool was then updated, and applications against the revised Requirements accepted from 30 January 2020.

Given the feedback received and the number of past WDS and DSA repositories continuing to transition to the CoreTrustSeal certification, the Requirements remain fundamentally stable for

2020–2022. Community comments often indicated overlap among Requirements or the need for repeated evidence, and the Working Group ensured that any actual redundancies were removed and that additional guidance was provided for clarity in the cases of perceived redundancies. Cross-references among the Requirements were also reviewed, validated, and simplified, with the text standardized to reduce ambiguity.

The next review of CoreTrustSeal in 2022 is expected to be more extensive, as it will need to consider external demands, including the certification of generalist repositories, and the further clarification of both the FAIR Data Principles and the TRUST Principles.

More information on the 2019 Review of the CoreTrustSeal may be found here: https://www.coretrustseal.org/why-certification/review-of-requirements

Timeline of the 2019 Review

22 February 2019: Announcement made to community of the 2019 review

1 March–31 May 2019: Open review period

23–25 July 2019: CoreTrustSeal Working Group met in DANS (Den Haag, Netherlands) to discuss all comment and decide on revisions to the CoreTrustSeal

6 August 2019: First draft released of the CoreTrustSeal Trustworthy Data Repositories Requirements for 2020–2022, and the Working Group's feedback made public.

6 August–30 September 2019: Comment period on draft Requirements 2020–2022

4 September 2019: First draft released of the Working Group's Report on the 2019 Review

31 October 2019: CoreTrustSeal Application Management Tool Suspended

20 November 2019: Final CoreTrustSeal Requirements 2020–2022, Extended Guidance, and Glossary released

20 November–20 December 2019: Comment period on Glossary

30 January 2020: CoreTrustSeal Application Management Tool Reopened for certification against the Requirements 2020–2022

6 February 2020: The CoreTrustSeal Trustworthy Data Repositories Requirements 2020–2022 and its Introduction, Extended Guidance, and Glossary published on Zenodo

15 May 2020: Change files for the CoreTrustSeal Requirements and the Extended Guidance published on Zenodo

27 October 2020: Version 2.0 of the Working Group's Report is released

CoreTrustSeal Working Groups

Identifying Community Needs

A working group inspired by interest from more general repositories (including galleries, libraries, archives and museums) was convened to consider how best the CoreTrustSeal could meet their needs for trustworthy repository certification alongside those of the domain/subject-based repository community. It also addresses the possibilities for certification of third party outsource partners of applicants that act as repository and data services providers. An extensive consultation took place with an impressive range of expert feedback from a wide range and large number of respondents. As a result the CoreTrustSeal has released a final working group report committing to both specialist and generalist repository certification and to investigating how a range of third party service providers might demonstrate that they are (and potentially be assessed as) 'CoreTrustSeal-Ready'. The report [CoreTrustSeal: Specialists, Generalists, and Technical Repository Service Providers](#) also covers a range of other general and per-requirement feedback items that will provide input into the next CoreTrustSeal Revision and into the development of a set of strategic priorities. Outcomes of work on strategic priorities will then be reflected in a revised CoreTrustSeal business model to ensure continued transparency, sustainability and scalability of the standard and certification service.

TRUST

The increasing awareness of digital repositories' critical role in the modern data ecosystem and concerns of losing them due to poor management necessitate the efforts to define the principles of operating and sustaining such data resources across scientific domains. In the context of the RDA/WDS Certification of Digital Repositories IG (Interest Group), a group of community experts, including some CoreTrustSeal board members, published the TRUST Principles in Nature Research's *Scientific Data* in May 2020 to meet the demand to advocate such principles to the audience outside RDA communities. The members of the CoreTrustSeal TRUST WG continued to lead the community discussions about the TRUST Principles for Digital Repositories (TRUST) in the context of the Research Data Alliance (RDA). To meet the demand to advocate such principles to the audience outside RDA communities, some CoreTrustSeal board members, together with community experts, published the TRUST Principles in Nature Research's Scientific Data in May 2020. The publication symbolized the formal public release of TRUST and the start of the promotion and adoption of the principles as a unified message that trustworthy digital repositories are essential. The publication generated positive feedback from [social media and scholarly citations](#). It has also been translated into Spanish. So far, [36 diverse organizations](#) ranging from repositories, publishers, funders, and professional communities have endorsed TRUST.

Follow-up promotion activities with involvement of the CoreTrustSeal Board members included a session of the RDA/WDS Repository Certification Interest Group at RDA Plenary 16 ("Towards building a trustworthy repository ecosystem"), a "TRUST Principles Mini-Symposium" sponsored

by the Research Data Alliance, Research Data Canada (RDC) and the World Data System, and "The TRUST Principles in the Canadian Context," organized by RDC (see Appendix C below for details).

CoreTrustSeal Certification Support Initiatives

Disciplinary, regional or national initiatives to promote CoreTrustSeal certification of data repositories were started or are ongoing in 2020. All these initiatives offer incentives and support to interested data repositories such as funding, translations, training and webinars.

The Coalition Enabling FAIR Data Project funded by the American Geophysical Union (AGU) initiated a cohort of data repositories in 2019 with 25 participating repositories expected to complete and submit their certification applications within 3 years (February 2022). Four repositories have already been certified: NCAR Research Data Archive, NSF Arctic Data Center, BCO-DMO and IRIS DMC (see report here).

In Australia, ARDC is bringing together a community of practice to help organisations have trustworthy data repositories, particularly the CoreTrustSeal certification (see webpage).

The Portage network advances research data management in Canada, for example in the areas of curation, data management planning, research intelligence, policy, privacy and sensitive data, and special projects such as a CoreTrustSeal Certification Pilot (see webpage).

The EU-funded FAIRsFAIR project is also supporting 10 data repositories to undertake a CoreTrustSeal certification (see webpage). At the same time, the project is aiming to identify characteristics of repositories enabling FAIR data management and to apply a capability maturity model towards a CoreTrustSeal+FAIR alignment (see report here).

Similarly, the EU-funded SSHOC project (Social Sciences & Humanities Open Cloud) is supporting repository certification. A call for applications from Social Science and Humanities repositories interested in receiving support in achieving CoreTrustSeal certification was launched in June 2020. Support includes feedback on self-assessments (more details here). Another EU-funded project, EOSC Nordic, is following the FAIRsFAIR approach and provides CoreTrustSeal certification support for data repositories from the Nordic and Baltic countries (see this news item).

The RDA France is also spearheading an effort to promote CoreTrustSeal certification as part of the French National Plan for Open Science. A dedicated forum and mailing lists was created to disseminate the various activities (see webpage).

The CoreTrustSeal Board welcomes these various initiatives. Applications from repositories part of these cohorts are expected to be more mature and require a less labour intensive review process. These efforts are not only increasing the uptake of CoreTrustSeal but also creating a positive momentum within the target communities.

Outputs

See Appendix C for a list of 2020 publications by the CoreTrustSeal Board as well as further CoreTrustSeal-themed outputs, including presentations, workshops, and papers, by Board members. For further relevant outputs co-authored by members of the CoreTrustSeal Board as part of their involvement in the Social Sciences and Humanities Open Cloud (SSHOC) and FAIRsFAIR projects, see the respective communities on Zenodo:
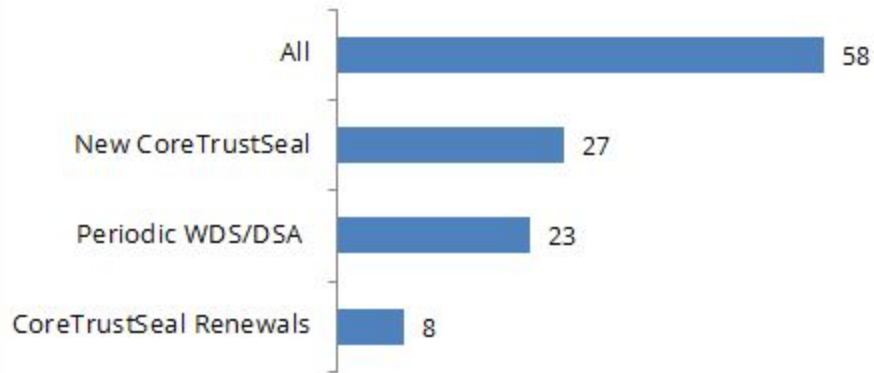
- SSHOC: https://zenodo.org/communities/sshoc/ (Query for CoreTrustSeal)
- FAIRsFAIR: https://zenodo.org/communities/fairsfair/ (Query for CoreTrustSeal)

2020 Key Facts

Number of applications submitted in 2020

Category	Number
All	58
New CoreTrustSeal	27
Periodic WDS/DSA	23
CoreTrustSeal Renewals	8

2020 Assembly of Reviewers

Category	Number
All reviewers	56
Newly nominated	12
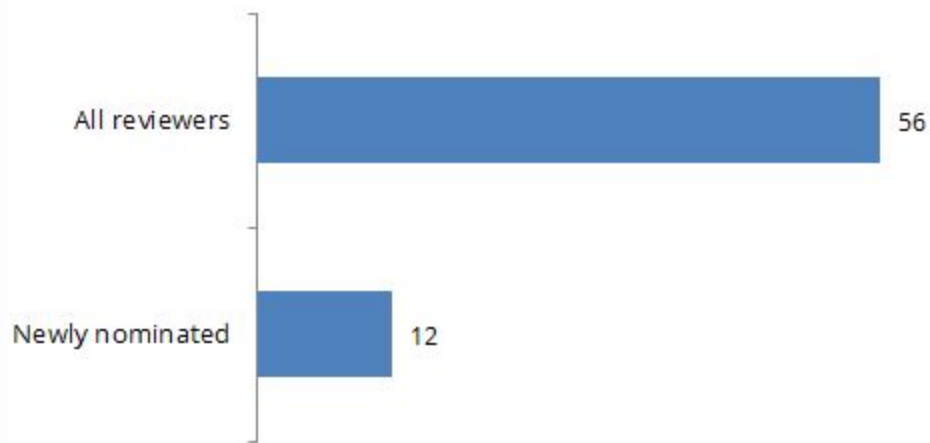
Outlook 2021

In 2021, the CoreTrustSeal Foundation will continue to engage with the community as we begin our journey towards the next revision of the CoreTrustSeal Requirements to take place in 2022. This is informed by outputs of our working groups, continued engagement with RDA Groups and emerging global trends in infrastructure development and integration including the emerging European Open Science Cloud.

But we will also see some changes happening this coming year: In January, the World Data System (WDS) announced the Oak Ridge Institute at the University of Tennessee (ORI at UT) as the new host of the WDS International Programme Office (WDS-IPO). The CoreTrustSeal Board and Chair congratulate the ORI at UT on this role and are looking forward to liaising closely with the new IPO in the coming years.

We would like to extend our thanks to the National Institute of Information and Communications Technology (NICT), the current hosting organization, and the current staff of the WDS-IPO for the invaluable, extensive, and dedicated support provided, both throughout the process of founding the CoreTrustSeal, and in leading the CoreTrustSeal secretariat.

In early summer, elections will be held to constitute the next CoreTrustSeal Board. The Board is elected by eligible members of the Assembly of Reviewers for a three-year term.

We are looking forward to continuing our work with and for the Trusted Digital Repositories community this coming year!

Appendix A: CoreTrustSeal Board 2018-21 members

Directors

1. Chair—**Jonas Recker** (GESIS-Leibniz Institute for the Social Sciences, Germany)
2. Vice-chair—**Herve L'Hours** (UK Data Archive, United Kingdom)
3. Secretary—**Mari Kleemola** (Finnish Social Science Data Archive, Finland)
4. Treasurer—**Ingrid Dillo** (Data Archiving and Networked Services, The Netherlands)

Members

5. **Jonathan Crabtree** (Odum Institute Data Archive, USA)
6. **Robert R. Downs** (CIESIN-SEDAC, Columbia University, USA)
7. **Wim Hugo** (World Data System, Japan)
8. **Reyna Jenkyns** (Ocean Networks Canada, Canada)
9. **Dawei Lin** (ImmPort Repository, DAIT-NIAID-NIH, USA)
10. **Mustapha Mokrane** (Data Archiving and Networked Services,The Netherlands)
11. **Paul Trilsbeek** (Max Planck Institute for Psycholinguistics, The Netherlands)

Ex officio

- **Lindsay Callaghan** (South African Environmental Observation Network)
- **Rorie Edmunds** (World Data System)
- **Ilona von Stein** (Data Archiving and Networked Systems)

Appendix B: List of reviewers 2018-2020

- **Alex de Sherbinin** (CIESIN)
- **Alison Fernie** (UK National Geoscience Data Centre)
- **Aude Chambodut** (International Service of Geomagnetic Indices)
- **Birger Jerlehag** (Swedish National Data Service)
- **Chenzhou Cui** (Chinese Astronomical Data Center)
- **Dave Connell** (Australian Antarctic Data Centre)
- **Dawei Lin** (ImmPort Repository, DAIT-NIAID-NIH, CoreTrustSeal Board)
- **Dean Carter** (World Data Service for Paleoclimatology)
- **Debbie Roth** (Woods Hole Open Access Server)
- **Françoise Genova** (Centre de Données astronomiques de Strasbourg)
- **Franziska Schwab** (TIB Digital Long-Term Archive)
- **Garry Baker** (UK National Geoscience Data Centre)
- **Guoqing Li** (Institute of Remote Sensing and Digital Earth, CAS)
- **Hervé L'Hours** (UK Data Archive; CoreTrustSeal Board)
- **Hiroaki Toh** (WDC – Geomagnetism, Kyoto)
- **Ian Bruno** (The Cambridge Crystallographic Data Centre)
- **Ilona von Stein** (Data Archiving and Networked Services; CoreTrustSeal Board)
- **Ingrid Dillo** (Data Archiving and Networked Services; CoreTrustSeal Board)
- **Jared Lyle** (Inter-university Consortium for Political and Social Research)
- **Jizhou Tong** (National Space Science Center, Chinese Academy of Sciences)
- **Jörg Knappen** (CLARIND-UDS)
- **John Howard** (Irish Social Science Data Archive)
- **John Westbrook** (Worldwide Protein Data Bank)
- **Jonas Recker** (GESIS Data Archive for the Social Sciences; CoreTrustSeal Board)
- **Jonathan Crabtree** (Odum Institute Data Archive, CoreTrustSeal Board)
- **Kathryn Harrison** (Environmental Information Data Centre)
- **Kehe Wang** (WDC – Space Weather, Australia)
- **Lars Kaczmirek** (AUSSDA – The Austrian Social Science Data Archive)
- **Laure Lefèvre** (WDC – Sunspot Index and Long-term Solar Observations)
- **Leonie Misquitta** (The Federal Interagency Traumatic Brain Injury Research (FITBIR) Informatics System)
- **Lisa Johnston** (The Data Repository for University of Minnesota)
- **Lisa Pegelow** (The Research Data Centre (FDZ) at IQB)
- **Lynda Kellam** (Cornell Institute for Social and Economic Research)
- **Maja Dolinar** (ADP Social Science Data Archives)
- **Mari Kleemola** (The Finnish Social Science Data Archive; CoreTrustSeal Board)
- **Marjan Grootveld** (Data Archiving and Networked Services)

Appendix C: CoreTrustSeal Outputs 2020

Presentations, Posters, and Webinars

Burger, Karine, Brian Corrie, Ingrid Dillo, Reyna Jenkyns, Mark Legott, Dawei Lin, Jeff Moon, Mike Smit, and Lee Wilson. "TRUST Principles in the Canadian Context." Presented at the TRUST Principles in the Canadian Context presented by Research Data Canada (RDC), Portage Network, Research Data Alliance (RDA), November 17, 2020. https://portagenetwork.ca/event/trust-principles-in-the-canadian-context/.

Dillo, Ingrid. "Certification of Repositories." Presented at the Biblioteca de la CEPAL Webinar, October 29, 2020. https://biblioguias.cepal.org/webinars.

———. "TRUST and FAIR: Complementarity of the Principles." Presented at the Research Data Canada: TRUST Principles Mini Symposium: The Future of Digital Repositories, July 7, 2020.
https://www.rdc-drc.ca/trust-principles-mini-symposium-the-future-of-digital-repositories/.

Dillo, Ingrid, and Barbara Siermann. "A Matter of TRUST." Presented at the #WeMissiPRES, September 22, 2020. https://www.dpconline.org/events/wemissipres.

Dillo, Ingrid, Barbara Siermann, and Laurents Sesink. "Vindbaar En Toegankelijk: Voor Hoe Lang? FAIR, TRUST En DERA." Presented at the NDE Werelddag van de Digitale Duurzaamheid, November 5, 2020.
https://www.netwerkdigitaalerfgoed.nl/events/werelddag-van-de-digitale-duurzaamheid-2020-wdpd/.

Downs, Robert. "Meeting the Challenges of the TRUST Principles for Digital Repositories." ESIP, 2020. https://doi.org/10.6084/m9.figshare.12605318.v1.

———. "Improving Data Stewardship Based on the TRUST Principles for Digital Repositories." Presented at the #WeMissiPRES, September 23, 2020.
https://www.dpconline.org/events/wemissipres.

Edmunds, Rorie. "The World Data System – Building Trust in Scientific Data." jpgu-agu2020.ipostersessions.com/Default.aspx?s=B4-FF-5C-19-26-26-AC-1B-E6-C0-57-80-6D-ED-71-B1. Presented at JpGU–AGU Joint Meeting 2020, July 14, 2020. http://www.jpgu.org/meeting_e2020v/.

_____. "CoreTrustSeal position paper on specialist and generalist repositories and technical service providers: Review of position paper and comments towards the second version." Presented at the Research Data Alliance's 16th Plenary Meeting, November 11, 2020. https://www.rd-alliance.org/plenaries/rda-16th-plenary-meeting-costa-rica-virtual.

_____. "CoreTrustSeal: Where are we now and where are we heading?" Presented at AGU Fall Meeting 2020, December 10, 2020. https://www.agu.org/fall-meeting.

Edmunds, Rorie, and L'Hours, Hervé: "Update on Specialists, Generalists, and Technical Repository Service Providers Position Paper". Presented at a webinar organized by the RDA/WDS Certification of Digital Repositories Interest Group, October 7, 2020. https://rd-alliance.org/webinar-update-specialists-generalists-and-technical-repository-service-providers-position-paper.

Hugo, Wim. "TRUST, FAIR, CARE, and CoreTrustSeal." Presented at the Research Data
Canada: TRUST Principles Mini Symposium: The Future of Digital Repositories, July 7,
2020.
https://www.rdc-drc.ca/trust-principles-mini-symposium-the-future-of-digital-repositories/.

Papers

L'Hours, Hervé. "Conversational CoreTrustSeal," September 17, 2020.
https://doi.org/10.5281/zenodo.4033966.
Lin, Dawei. "What Are the TRUST Principles?" Presented at the Research Data Canada:
TRUST Principles Mini Symposium: The Future of Digital Repositories, July 7, 2020.
https://www.rdc-drc.ca/trust-principles-mini-symposium-the-future-of-digital-repositories/.
Lin, Dawei, Jonathan Crabtree, Ingrid Dillo, Robert R. Downs, Rorie Edmunds, David Giaretta,
Marisa De Giusti, et al. "The TRUST Principles for Digital Repositories." *Scientific Data*
7, no. 1 (May 14, 2020): 144. https://doi.org/10.1038/s41597-020-0486-7.
Mayernik, Matthew S., Kelsey Breseman, Robert R. Downs, Ruth Duerr, Alexis Garretson,
Chung-Yi (Sophie) Hou, and Environmental Data Governance Initiative (EDGI) and Earth
Science Information Partners (ESIP) Data Stewardship Committee. "Risk Assessment
for Scientific Data." *Data Science Journal* 19, no. 1 (March 12, 2020): 10.
https://doi.org/10.5334/dsj-2020-010.

Workshops and convened sessions

Downs, Robert R. "GEOSS Data Management & Data Sharing Principles and TRUST:
Implications for Data Quality. Pre-ESIP Workshop: Developing Community Guidelines for
Consistently Curating and Representing Dataset Quality Information." July 13, 2020.
10.6084/m9.figshare.12711989.v1.
Downs, Robert R., Rorie Edmunds, Alex de Sherbinin, Paul Bartel. "Improving Infrastructure for
Trustworthy Digital Repositories to Enable Current and Future Use of Open Data in
Developed and Developing Countries I/II/III". Sessions at AGU Fall Meeting, December
16, 2020.
Edmunds, Rorie. "Certifying Trusted Repositories: Sharing with and Learning from RDA -
Australia's Approach to the Challenge." March 17, 2020.
Edmunds, Rorie, Dawei Lin, Jonathan Petters, and Garry Baker. "Towards Building a
Trustworthy Repository Ecosystem". Session at Research Data Alliance's 16th Plenary
Meeting, November 11, 2020.
Hugo, Wim. "Series of Work Sessions to Evaluate the Readiness of the ILIFU Consortium to
Apply for Certification." 2020.

Reports and consultations

CoreTrustSeal Standards and Certification Board. "CoreTrustSeal: Second Draft Consultation of
the Recommendations on Certifying the Services Required to Enable FAIR Research
Outputs within EOSC. Feedback," December 8, 2020.
https://doi.org/10.5281/zenodo.4311785.

_____. "CoreTrustSeal Requirements: Periodic Review 2019. Report of the CoreTrustSeal Review 2019 Working Group (Version 2.0)," October 27, 2020. https://www.coretrustseal.org/wp-content/uploads/2020/10/CoreTrustSeal-2019-Review-Report-v02_00.pdf.

_____. "Change File: CoreTrustSeal Trustworthy Data Repositories Requirements 2017-2019 to 2020–2022," May 15, 2020. https://doi.org/10.5281/zenodo.3828622.

———. "Change File: CoreTrustSeal Trustworthy Data Repositories Requirements: Extended Guidance 2017–2019 to 2020–2022," May 15, 2020. https://doi.org/10.5281/zenodo.3828636.

———. "CoreTrustSeal Board Response to the OSTP Draft Desirable Characteristics of Repositories for Managing and Sharing Data," March 12, 2020. https://doi.org/10.5281/zenodo.3709000.

———. "CoreTrustSeal: Specialists, Generalists, and Technical Repository Service Providers," June 22, 2020. https://doi.org/10.5281/zenodo.3964071.

———. "CoreTrustSeal-Response to Publisher Repository Selection Criteria," January 31, 2020. https://doi.org/10.5281/zenodo.3632916.

Stichting CoreTrustSeal. "Financial Statement 2019". September 2020. https://www.coretrustseal.org/wp-content/uploads/2020/09/20200827-ANBI-Financial-statement-2019.pdf