



Assessment Information

[CoreTrustSeal Requirements 2020–2022](#)

Repository: DANS:EASY
Website: <https://easy.dans.knaw.nl/>
Certification Date: 6 September 2021

This repository is owned by: **Data Archiving and Networked Services (DANS)**



DANS:EASY

Notes Before Completing the Application

We have read and understood the notes concerning our application submission.

True

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

CORE TRUSTWORTHY DATA REPOSITORIES REQUIREMENTS

Background & General Guidance

Glossary of Terms

BACKGROUND INFORMATION

Context

R0. Please provide context for your repository.

Repository Type. Select all relevant types from:

Domain or subject-based repository

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Brief Description of Repository

Data Archiving and Networked Services (DANS), established in 2005, supports researchers, data professionals, other data archives, research institutions and research financiers with questions in the field of data management, certification and topics such as FAIR, open access and software sustainability (1).

DANS offers the following data services:

- DataverseNL (2), a Dutch network of data repositories which uses software developed by Harvard University. Research data can already be stored, shared and published via DataverseNL during research.
- DANS: Electronic Archiving SYstem (EASY) (3), an online archiving system for depositing and reusing research data. After research, research data can be preserved and shared via DANS:EASY, the online archiving system.
- NARCIS (4): the gateway to scholarly information in the Netherlands. Narcis is the national portal for those looking for scientific information, research data, research software and descriptions of research projects, experts and research institutes in the Netherlands.
- Data backup service for commercial partners that have their own end-user facing repositories.

In addition, DANS offers training & consultancy services (5) in the field of digital sustainability, software sustainability, data management, FAIR data, and Research Data Management.

The scope of this application for CoreTrustSeal certification is the DANS:EASY repository (6). The repository contains more than 150,000 datasets (September 2020). The definition of the data unit (set, collection) varies. One data set may consist of just one file, or of many files.

DANS:EASY facilitates both a self-archiving service for deposits by individual researchers and an automated (SWORD2) ingest procedure for institutional deposits. Self-archived deposits by individual researchers are always checked and reviewed by DANS' archive staff. The automated ingest procedure is facilitated by the EASY SWORD-2 deposit service at DANS (see also R15). The automated ingest procedure allows for DANS' data expertise as well, because detailed conditions and agreements are made with such institutions about data and metadata. See R11.

Reviewer Entry

Reviewer 1

Comments:

Accept

Reviewer 2

Comments:

Accept

Brief Description of the Repository's Designated Community.

The Designated Community of DANS:EASY is made up of researchers and research organizations, predominantly in the social sciences and humanities. We make best efforts to serve other academic audiences as well; occasionally DANS acquires from other disciplines, but at the moment this only affects a small part of the DANS:EASY's holdings. See also section 2 (2. Mission of the Archive; content and designated community) of the DANS Preservation Strategy that is part of the DANS Preservation plan (7) Besides scientific researchers and research organisations, companies and the interested public are welcome to use DANS services. They benefit as a result from our repositories' services.

Reviewer Entry

Reviewer 1

Comments:

Accept

Reviewer 2

Comments:

Accept

Level of Curation Performed. Select all relevant types from:

B. Basic curation – e.g. brief checking; addition of basic metadata or documentation, C. Enhanced curation – e.g. conversion to new formats; enhancement of documentation, D. Data-level curation – as in C above; but with additional editing of deposited data for accuracy

Reviewer Entry

Reviewer 1

Comments:

Accept

Reviewer 2

Comments:

Accept

Comments

DANS:EASY offers more than one level of curation. Integrity of original copies is always maintained. In all cases there will be a brief checking and addition of basic metadata and documentation (B). For the vast majority of datasets curation level C is being performed. Depending on specific agreements with depositors, in some cases, our archivists perform additional annotations/editing of deposited data for accuracy, in consultation with the depositor (D).

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Insource/Outsource Partners. If applicable, please list them.

DANS is the Netherlands institute for permanent access to digital research resources. It is an institute of the Royal Netherlands Academy of Arts and Sciences (KNAW) (8) and the Dutch Research Council (NWO) (9). DANS is an organisational part of KNAW, and receives funding from both KNAW and NWO. DANS has its own director who is in charge of policy, processes, quality and financial affairs.

ICT-services have been outsourced to the department ICT Services of the KNAW Head Office (Afdeling ICT Services – I & A Informatisering & Automatisering van het Bureau van de KNAW), Amsterdam. DANS has a Service Level Agreement with ICT Services, available on request. As part of this SLA, DANS is also aware of the agreed service levels agreed between KNAW ICT-Services and VANCIS (see R15). This SLA covers a broad spectrum of ICT-services (ranging from office IT Services to Data Storage) provided by I & A.

Physical data storage and back-up has been outsourced in turn by the ICT service provider I & A to VANCIS Advanced ICT Services, Amsterdam (10). VANCIS has acquired several certifications such as the ISO 27001 (Information Security Management) certification, the ISO 9001 (Quality Management) certification and the ISO20000 (Information Technology Service Management).

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Summary of Significant Changes Since Last Application (if applicable).

This application is to renew DANS:EASY CoreTrustSeal certified status, earlier obtained in 2018. Since then, DANS:EASY has not been subject to significant technical or organizational changes.

However, in the previous three years DANS has made numerous small scale improvements regarding DANS:EASY to further improve sustained access and reusability of research data. Some examples: A) we created a new online deposit

form that allows for commonly used access rights and licenses (e.g. CC family) (11), see R2, B) we expanded the use of PIDs with ORCID and ISNI for persons and ISNI and ROR for organizations, see R13, and C), in line with disciplinary and ethical norms we have adopted a document to deal with personal data within the context of the GDPR, see R2 and R4.

For the next CoreTrustSeal renewal in three years (2024) we expect significant changes to repository technology and processes, since we have just started to design a migration trajectory from DANS:EASY Fedora technology towards a new technical Data Infrastructure for DANS. Our future Data Services will consist of a combination of Reuse Data Services (several Dataverse-based reuse services, i.e. Data Stations) and Data Preservation Services (DANS Data Vault). The commitments DANS makes regarding long-term preservation and reusability of data will not be subject to change.

Reviewer Entry

Reviewer 1

Comments:

Accept

Reviewer 2

Comments:

Accept

Other Relevant Information.

In 2020 DANS celebrates its 15 year anniversary (11). It started as a small scale institute with 15 employees. At this point (2020) DANS' staff consists of nearly 60 employees (45,2 fte). Apart from core level repository certification (DSA in 2013 and CoreTrustSeal in 2018) in 2016 DANS:EASY has been certified according to DIN 31644 (Nestor Seal) as well (12). DANS:EASY has a record in the re3data database (13).

R0 references:

1 - <https://dans.knaw.nl/en>

2 - <https://dans.knaw.nl/en/about/services/archiving-and-reusing-data/DataverseNL>

3 - <https://dans.knaw.nl/en/about/services/archiving-and-reusing-data/easy>

4 - <https://dans.knaw.nl/en/about/services/archiving-and-reusing-data/narcis>

5 - <https://dans.knaw.nl/en/about/services/training-consultancy>

6 - <https://easy.dans.knaw.nl>

7 - <https://dans.knaw.nl/en/about/organisation-and-policy/policy-and-strategy/preservation-plan-data-archiving-and-networked-services-dans-1>

8 - <https://knaw.nl/en>

9 - <https://www.nwo.nl/en>

10 - <https://vancis.nl>

11 - The renewed deposit form is available via the 'Deposit your data' form at <https://easy.dans.knaw.nl/ui/home> after user subscription.

12 - https://dans.knaw.nl/en/current/news/dans-turns-15-years-old?set_language=en.

13 - https://www.langzeitarchivierung.de/Webs/nestor/EN/Zertifizierung/nestor_Siegel/siegel.html

14 - <http://doi.org/10.17616/R3401D>

Reviewer Entry

Reviewer 1

Comments:

Accept

Reviewer 2

Comments:

Accept

ORGANIZATIONAL INFRASTRUCTURE

1. Mission/Scope

R1. The repository has an explicit mission to provide access to and preserve data in its domain.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Reviewer 2

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Response:

DANS is the national Dutch organisation for permanent access to digital research data, with a focus on the humanities and the social sciences. This mission is clearly stated in the KNAW-DANS Collaboration Agreement in Dutch (1) in sections 1.2 and 13 (English summary):

According to this Collaboration Agreement the mission of DANS is “to set up and maintain a national scientific data-infrastructure”. Its main tasks are:

To disseminate, preserve for the long term and enable the use of relevant scientific or scholarly dataset, according to the newest standards.

To promote the (re-)use of these datasets.

To collect and make available information on research in the Netherlands.

To offer outward-oriented services as a national counter.

The mission is also reflected in the Preservation Strategy that is part of DANS' Preservation Plan (2), see section 2.1 Mission.

DANS is an institute of KNAW (Royal Netherlands Academy of Arts and Sciences) and NWO (Netherlands Organisation for Scientific Research) and is governed by the "NWO-KNAW Collaboration Agreement DANS" (Samenwerkingsovereenkomst) between NWO and KNAW, originally from 2005, updated and replaced by a second version in January 2015 that is valid for a period of 10 years. This Collaboration Agreement in Dutch (1) has been signed by the President of KNAW and the Chairman of NWO respectively December 2014 and January 2015. DANS is, administratively speaking, part of KNAW, which is a legal entity. DANS is therefore not a legal entity on its own.

R1 Reference:

1 - <https://dans.knaw.nl/nl/over/organisatie-beleid/informatiemateriaal/SamenwerkingsovereenkomstDANSKNAW2015.pdf>

2 - <https://dans.knaw.nl/en/about/organisation-and-policy/policy-and-strategy/preservation-plan-data-archiving-and-networked-services-dans-1>

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

2. Licenses

R2. The repository maintains all applicable licenses covering data access and use and monitors compliance.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Reviewer 2

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Response:

Both to depositing and using data, agreements apply; for example the DANS Deposit Agreement and the DANS General Terms and Conditions of Use. These agreements are based upon the principles of Open Access and the relevant legislation of The Netherlands and the European Union such as the GDPR as well as the applicable codes of conduct for scientific research of the Dutch Association of Universities VSNU.

At its website DANS refers to all relevant legal information and its consequences for depositing and using or distributing data, including models of the deposit and processing agreement and the general conditions of use as well as help texts (1)

A. Between DANS and a Depositor

Deposit Agreement

The depositor always enters into a deposit agreement (2) with DANS when depositing a dataset in DANS:EASY. By accepting the agreement, the depositor agrees with the provisions of the deposit agreement that he or she is entering into with DANS as a repository.

This agreement contains the mutual rights and obligations that both the depositor and DANS accept with regard to storage and use of the dataset. The most important points of the agreement are:

The depositor grants DANS a non-exclusive licence to store his or her dataset and to make it available according to one of the standard access categories indicated by him or her.

The depositor declares that he or she is the person or that he or she represents the organisation that holds the rights to the dataset and/or are/is acting with permission from other possible right holders.

Processing Agreement

The depositor enters into a processing agreement (3) with DANS when the deposited dataset contains personal data within the meaning of the GDPR. This agreement is intended as a follow-up agreement to the Deposit Agreement, DANS offers a standard processing agreement. When datasets contain personal data, the access category Restricted Access: Permission Request applies by default.

This agreement contains the obligations of DANS as the processor and the depositor as the controller of the personal data. The most important points are:

DANS will process the personal data in accordance with the provisions of the processing agreement and thereby parties will comply with the regulations of the GDPR.

Appendix A containing specification of the personal data, the risk category and the retention period.

Appendix D containing information regarding Data Leaks

B. Between DANS and an end-user

Open Access licenses and CC0 Waiver

If the Depositor opts for the Open Access access category, the Depositor can place the dataset in the public domain with the Creative Commons Zero Waiver (CC0). Alternatively, the Depositor can choose from 21 various usage licenses, including the Creative Commons Licenses. These licenses set out the conditions that apply to the use of the dataset and form an agreement between the User of the data and the Depositor.

DANS General Terms and Conditions of Use

This agreement is intended for users of DANS:EASY who create an account. When registering, the user accepts the General Terms and Conditions of Use (4). The agreement applies to all access categories. With the user's permission, the "activity log" tab of the dataset, which is accessible to registered users, will indicate that the user has downloaded the dataset (stating name, organisation and role). Data files with access category Open Access can be downloaded and used by registered and non-registered users. The General Terms and Conditions of Use are not applicable to this access category if a non-registered user downloads Open Access data. Data files with access categories Open Access for Registered Users or Restricted Access can only be downloaded and used by registered users. The DANS privacy regulations (see R4), available via the DANS website, describe how DANS processes personal data.

DANS License

DANS enters into this agreement (5) with registered users of DANS:EASY who want to use a dataset that is subject to the terms of this license: datasets with access categories Restricted Access: Permission Request, Restricted Access: Group Access and Open Access for Registered Users. The application of the DANS License has been agreed with the Depositor in the relevant deposit agreement.

The DANS licence sets out the conditions for using datasets to which the aforementioned access categories apply. The most important points of the agreement are:

The user needs permission of the rightsholder of the dataset for further distribution or disclosure of the entire dataset or of substantial parts thereof.

DANS shall in no way be liable for the contents or accompanying documentation of the dataset, including infringements of privacy rights within the meaning of the GDPR, unless in the event of intent or gross negligence on the part of DANS. If the licence conditions are not complied with, the use of the dataset must immediately be discontinued upon DANS' first request.

The User will indemnify DANS against all claims by third parties which are directly or indirectly related to the use of a dataset made available.

R2 References:

- 1 - <https://dans.knaw.nl/en/about/organisation-and-policy/legal-information>
- 2 - https://dans.knaw.nl/en/about/organisation-and-policy/legal-information/STANDARD_Deposit_agreement_26092019_1_2_UK.pdf
- 3 - https://dans.knaw.nl/en/about/organisation-and-policy/legal-information/STANDARD_Processing_agreement_sustained_archiving_26092019_1_2_UK.pdf
- 4 - <https://dans.knaw.nl/en/about/organisation-and-policy/legal-information/dansgeneralconditionsofuseukdef.pdf>
- 5 - <https://dans.knaw.nl/en/about/organisation-and-policy/legal-information/DANSLicence.pdf>

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

3. Continuity of access

R3. The repository has a continuity plan to ensure ongoing access to and preservation of its holdings.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:

Accept

Reviewer 2

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Response:

Responsibility:

According to article 3 of the Deposit Agreement (1) the repository shall ensure, to the best of its ability and resources, that the deposited dataset is archived in a sustainable manner and remains legible and accessible.

Preservation periods are, beyond this, not formally guaranteed in the Licence Agreement. However, continued preservation is guaranteed by the funding organisations of DANS as indicated below.

Continuity:

As stated earlier DANS is an institute of the Royal Netherlands Academy of Arts and Sciences (KNAW) and Netherlands Organisation for Scientific Research (NWO).

In the event of termination of the NWO-KNAW Collaboration Agreement (mentioned under R1) NWO and KNAW will make arrangements regarding the discontinuity or altered continuity of DANS. It is explicitly stated in this Collaboration Agreement that in the latter case KNAW and NWO will take over the responsibility for the data files archived at DANS and store these elsewhere “in the most responsible manner possible and under equivalent technical conditions” (article 10.6 of the Collaboration Agreement).

The present NWO-KNAW Collaboration Agreement has come into force January 2015 and is valid for a period of ten years.

R3 Reference:

1 - https://dans.knaw.nl/en/about/organisation-and-policy/legal-information/STANDARD_Deposit_agreement_26092019_1_2_UK.pdf

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

4. Confidentiality/Ethics

R4. The repository ensures, to the extent possible, that data are created, curated, accessed, and used in compliance with disciplinary and ethical norms.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Reviewer 2

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Response:

The DANS Deposit Agreement, the DANS Processing Agreement and the DANS General Terms and Conditions of Use (1) are based upon the principles of Open Access and the relevant legislation of The Netherlands and the European Union as well as the applicable codes of conduct for scientific research of the Dutch Association of Universities VSNU (2).

Some datasets are ingested on the base of a collective contract with a data supplier. Often these datasets are ingested in another, sometimes, fully automated way (ftp, SWORD2 or other), see R15.

By adhering to the relevant legislation DANS complies with legal and ethical criteria in research. In the clarifications of the DANS Deposit Agreement, the DANS Processing Agreement and the DANS General Terms and Conditions of Use (see reference 1) this is made clear to depositors and end-users, respectively.

The Deposit Agreement lays down some obligations for the Depositor, including: (a) The Depositor declares to be the sole entitled party with regard to the intellectual property rights to the Dataset and/or to act with the permission of the titleholder(s) or co-titleholder(s), (b) The Depositor will indemnify the Depository against all claims that others may make against the Depository with regard to the Dataset and (c) The Depositor confirms that the Dataset does not contain any data or other elements which, in isolation or upon disclosure outside the context of scientific research, are contrary to relevant national or international legislation.

Data with disclosure risk are managed and stored appropriately. DANS has an internal system of “disclosure risk classification” (internal document “Risicoklassen” available on request). Data requiring the highest degree of protection, mostly datasets containing special and /or sensitive personal data, are stored with the maximum security level. Distribution takes place in an appropriate way and according to the chosen access category of the deposit agreement. For data with high disclosure risk the access category “Restricted Access” is, as a rule, chosen, often even under additional access conditions, imposed by the depositor.

At ingest, datasets are checked and reviewed by DANS:EASY’s archive team to be sure they comply with legal and possibly ethical requirements. This check is part of the workflow for ingesting datasets. When the requirements are not met or anyway not clearly indicated (lacking informed consent forms for example) depositors will be asked to clarify this. Ultimately, when the answers are not satisfactory, the dataset could be sent back. As a rule, datasets are not anonymised by DANS itself. Anonymised datasets are accepted. For non-compliance with access conditions (including sensitive data)

see the answer given under R2.

There is a procedure for handling datasets containing special (or sensitive) personal data. This procedure, to be followed by both depositors and users, enables responsible storage and access according to the legal requirements. These policy documents - in Dutch only - are available on request. DANS takes efforts to also communicate our processes and procedures to our stakeholders through sharing online instructions such as “DANS Data Stories - Reusability and the GDPR: Archiving your data” (3)

The nature of the personal data is not important in determining whether DANS's GDPR policy applies to a dataset. As soon as there is presence of data that can be traced back to individuals in the dataset, DANS applies the policy that the dataset is offered with 'Restricted Access: Permission Request' as access category and the DANS license as license. Only by offering datasets with personal data in this way can DANS guarantee respect for the GDPR rights of data subjects, such as the right of the interviewee to withdraw consent (article 7 paragraph 3 GDPR) or the right of the interviewee to be forgotten (article 17 GDPR).

The personal data must be processed in such a way that it is possible to comply with the withdrawal of that consent at DANS. The personal data may no longer be shared from the moment of withdrawal and the relevant DANS:EASY users must be informed to stop further processing/using the data. This is only possible when it is known exactly where the personal data are located. DANS knows this as the data is only in the hands of registered users (they are not allowed to distribute it further to third parties as laid down in the DANS License). For that reason, it is necessary that the data is behind a login and is therefore not public in metadata or otherwise.

All DANS staff – including guest researchers, trainees et cetera – are obliged to sign the “Declaration of Confidentiality for Employees” (available on request) in which it is stated that he/she will observe and maintain the utmost secrecy with regard to all confidential information that is supplied or will be supplied to him/her by DANS or by persons designated by DANS. Non-compliance by staff members with the “Declaration of Confidentiality for Employees” is dealt with by either disciplinary measures or reported for prosecution as a criminal act.

The ICT service provider of DANS, ICTS, is also part of the KNAW. Regarding confidentiality, the Service Level Agreement (SLA) refers to the “Code of Conduct for ICT and Communication Facilities” of the KNAW. Both documents are available on request.

To ensure that the relevant legal knowledge remains up-to-date one member of staff has been assigned the role of Legal Officer with the explicit task to monitor the developments in this field and report possible changes to the director of DANS. The legal officer works closely with the Data Protection Officer of the KNAW, when it comes to privacy issues (4). Some of the necessary provisions have been taken at KNAW level to ensure GDPR-compliance; they apply to all KNAW-institutes (5). Regarding personal data that is present DANS:EASY, a working group within the KNAW has been established to determine necessary measures and monitor developments.

Some guidance is given to users on the handling of audio-visual datasets containing personal data (6). This concentrates

on issues like informed consent, access categories, authenticity and integrity.

In the Privacy Regulations of DANS (7) the manner is described in which DANS processes the personal data in its possession.

R4 References:

1 - <https://dans.knaw.nl/en/about/organisation-and-policy/legal-information>

2 - <https://www.vsnu.nl/files/documents/Netherlands%20Code%20of%20Conduct%20for%20Research%20Integrity%202018.pdf>

3 - <https://youtu.be/biTlb-As4SU>

4 - https://dans.knaw.nl/en/about/organisation-and-policy/legal-information/privacy-statement?set_language=en

5 - <https://www.knaw.nl/en/about-us/academy-privacy-statement>

6 - Dutch only:

<https://dans.knaw.nl/nl/over/organisatie-beleid/juridische-informatie/DANSrapportjuridischeaspectengetuigenverhalen.pdf>

7 - https://dans.knaw.nl/en/about/organisation-and-policy/legal-information/privacy-statement?set_language=en

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

5. Organizational infrastructure

R5. The repository has adequate funding and sufficient numbers of qualified staff managed through a clear system of governance to effectively carry out the mission.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:

4 – The guideline has been fully implemented in the repository
Accept

Reviewer 2

Comments:

4 – The guideline has been fully implemented in the repository
Accept

Response:

In the “Collaboration Agreement” (see R1) it is laid down that DANS is funded by NWO and KNAW.

These two organisations, the two major national research organisations of the Netherlands, have agreed to structurally provide lump sum finance to DANS for the period 2015 – 2025, with possible ending of the agreement in between with a one-year notice period. Furthermore DANS is engaged permanently in a range of externally funded projects (like EOSC-hub, FREYA, FAIRsFAIR, Europeana Archaeology) as well as European data-infrastructures (CESSDA ERIC, DARIAH-EU, CLARIAH Plus) (1). These projects often run over several years.

In “Sharing data together - DANS strategy policy 2015-2020” the mission, target groups and strategy of DANS are described. The full text of the DANS strategy policy is also available in Dutch on the DANS website (2). Strategy policy documents are updated every five years and the strategy policy for 2021 and further is under construction at the time of application.

Concerning in-house advice, the “Research and Innovation department” of DANS supports the DANS services. It focuses on innovating how to make digital information available in a sustainable form during the different phases of the research cycle. Research and Innovation collaborates on different research projects with other parties: see the multi-annual research programme (pdf) (3).

Sufficient numbers of appropriately qualified staff are available. These cover diverse IT-competences like IT-support both for hardware and software, IT-development, data archival / documentary skills, research and development, communication as well as staff with the necessary background of the disciplines covered by DANS (4). Regularly updated job descriptions, as a rule based on profiles of functions needed for the repository activities, exist which set out the required qualifications of the digital repository personnel. There is an organisational chart available for the DANS organisation as a whole (5). There is ample opportunity to update the professional knowledge, both in one of the long-term (inter)national projects, data-infrastructures or in one of the European data infra-structures in which DANS participates.

R5 References:

1 - <https://dans.knaw.nl/en/projects>

2 - <https://dans.knaw.nl/en/about/organisation-and-policy/information-material/DANSstrategienota20152020UK.pdf>

3 - <https://dans.knaw.nl/en/about/research-and-innovation/research-and-innovation>

4 - https://dans.knaw.nl/en/about/organisation-and-policy/staff?set_language=en

5 - <https://dans.knaw.nl/en/about/organisation-and-policy/organigram>

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

6. Expert guidance

R6. The repository adopts mechanism(s) to secure ongoing expert guidance and feedback (either inhouse or external, including scientific guidance, if relevant).

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Reviewer 2

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Response:

The Scientific Advisory Committee (Wetenschappelijke Advies Raad) offers solicited and unsolicited advice to DANS. This Committee consists of disciplinary experts like researchers and scholars in the fields of DANS with a background in IT applications: humanities, archaeology, social sciences (1).

External advisers are often consulted on varying fields of expertise and specialised subjects, for example on legal matters. DANS hosts a user panel where panel members provide feedback on existing DANS services and contribute ideas for new services (2). DANS has an external steering committee and advisory boards as well (3)

DANS invites visiting fellows, for example Indiana University Professor of Engineering and Information Science Katy Börner, to share their knowledge on data management and archiving, and sees it as part of its task to share the newly acquired knowledge with others, for instance by organising workshops (4).

The designated community, indicated under R0, is monitored through substantial contacts, for instance during data acquisition and ingest, in applied research projects, membership of European Research Infrastructures (like CEESDA, DARIAH, CLARIN, SSHOC, ODISSEI), pilot studies with data producers, via training & consultancy and by offering

discipline-specific services. The pertaining section (2.3 Community watch and dedicated services) in the DANS Preservation Strategy that is part of the DANS Preservation Plan (5) describes a selection of activities and services for specific communities, whereas the section 11 “Recurring monitoring processes” provides an overview of generic processes for monitoring and improving the quality of DANS:EASY.

R6 References:

1 - <https://dans.knaw.nl/en/about/organisation-and-policy/steering-committe-and-advisory-boards>

2 - <https://dans.knaw.nl/en/about/organisation-and-policy/user-panel>

3 - <https://dans.knaw.nl/en/about/organisation-and-policy/steering-committe-and-advisory-boards>

4 - <https://dans.knaw.nl/en/about/research-and-innovation/research-and-innovation>

5 - <https://dans.knaw.nl/en/about/organisation-and-policy/policy-and-strategy/preservation-plan-data-archiving-and-networked-services-dans-1>

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

DIGITAL OBJECT MANAGEMENT

7. Data integrity and authenticity

R7. The repository guarantees the integrity and authenticity of the data.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:

4 – The guideline has been fully implemented in the repository
Accept

Reviewer 2

Comments:

4 – The guideline has been fully implemented in the repository
Accept

Response:

Background Information

DANS:EASY is designed as a long-term preservation repository with a focus on the social sciences and the humanities. The data archive provides long-term access to research data to promote reuse for new research and replication of existing research. DANS aims to operate according to the FAIR Guiding Principles in making its data in the Archive Findable, Accessible, Interoperable and Reusable.

Evidence for the workflows and procedures described in this response statement are to be found in the DANS preservation plan (1).

Integrity

DANS considers the integrity of its holdings as:

Completeness: no data have been lost (unintentionally). No datasets or files are lost.

Correctness: no data have been altered. All datasets and files record fixity. All intended changes record new fixity and provenance information.

The above can be assessed by all stakeholders of DANS:EASY.

DANS facilitates this by:

Policies, procedures and IT-support for calculating, recording and comparing fixity information.

Security policy / measures to prevent access / changes by unauthorized users or viruses.

Fixity checks

Fixity in the Ingest stage:

Fixity during deposit is implemented during the transfer phase (via HTTPS, SWORD or ftp). After deposit, fixity is calculated and recorded for each file. Potential errors can be reported to the depositor if fixity information was provided with the deposit. Otherwise, DANS:EASY returns the calculated fixity information and asks the depositor to verify these. Virus-scans are performed periodically before data ingestion through the web interface, and as standard for all other ingest ways (like SWORD2, see R15).

Fixity in Archival Storage:

Fixity for the archival storage is implemented on storage- and on object level. Data is stored and backed-up automatically and the media are automatically monitored for block-level integrity. In addition, the Fedora system of DANS:EASY automatically records fixity for each object (data and metadata files). Reported errors will be resolved manually.

Fixity for the user:

Fixity information is visible after uploading files via the user interface as SHA-1 checksum. After submitting a dataset, the depositor receives a Deposit Confirmation which includes the Deposit Agreement, an XML of the submitted metadata and a text file listing all of the files with their SHA-1 checksums. This text file is also included in the DIP of the dataset.

Completeness of the data and metadata

The complete chain of the data archive's custody of all datasets is documented through metadata. All actions are explicit, complete, correct and current. If any actions are performed by DANS which would result in changes to the data files or

their organisation, those actions are performed on a copy of the data. The original submission will always be stored exactly as deposited, within a (virtual) folder called 'original'. The "original" version can therefore always be said to be an integral copy of the version deposited with DANS:EASY.

The original metadata is printed in the licence agreement.

Changes in data and metadata and version control

DANS:EASY distinguishes between two forms of alteration post ingest:

New version and therefore creation of a new dataset when there is a change to the data.

Minor change: when there is a change to metadata, descriptive documents or supplementary files

When there is a new (version of a) data set, the data archive recreates all descriptive and structural metadata and retains the old file and the previous AIP within the preservation system. The new dataset is assigned a new persistent identifier. This way, the already existing persistent identifier will continue to refer uniquely to the earlier version of the dataset. The new and the previous dataset are cross-referenced in their respective descriptive metadata. Alternatively, when there is a minor change, this change is documented in the administrative metadata; no new persistent identifier is minted. In the case of data conversion to another file format for preservation or access purposes, DANS:EASY maintains the original file(s). The conversion aims to preserve the content of the data, because this is a significant property of the data. Preservation of other aspects, such as the layout of the input format (the "look and feel") is considered to be of lesser importance. In principle, DANS does not delete data. For our approach towards 'Removing the Dataset and/or changing its accessibility' see section 5 in the Deposit agreement (2)

Authenticity

Concerning authenticity ("The degree to which a person (or system) regards an object as what it is purported to be. Authenticity is judged on the basis of evidence"), DANS has a provenance document in which the way of publishing data at DANS is described in general. It also contains information on the way DANS deals with mutations and additions of (meta) data. The public document is available at the website (3).

Strategy for data changes

During the ingest of data, DANS:EASY recommends or enforces the depositor to submit its data using preferred - or accepted formats. The list of preferred formats published on the DANS website (4). For more details, see R8. In this way the depositor is responsible for potential transformations, and as such for ensuring the authenticity of the data.

Additionally, during the archival procedure, an archivist may convert files to preferred formats to ensure long-term preservation and accessibility. If files are migrated, the migrated files will be published with the dataset for use. The original files, as deposited, will always be archived with the dataset. Only the approved/curated data and metadata will be published. If the data and metadata required transformations, then the original data are kept, but not published. The depositor will become aware of these changes when the dataset is published.

An archivist may apply minor changes to the metadata or the directory structure. Larger issues will be consulted with the depositor.

Provenance data

The depositor should provide the available documentation about the creation of the data, and how the data can be used. Part of the assessment of the data by DANS:EASY consists of verifying whether the deposited data have not been corrupted, e.g. whether the checksums are correct and whether the files can be opened without errors. It consists furthermore of verifying whether the deposited data is in preferred formats and authentic and thus represents the complete/correct information collected in the project; a typical error is the omission of the codebook for a survey.

After the curation-and/or acceptance of the dataset, the dataset will be sent to the archival storage, where it will be stored in a redundant manner, and where it will be monitored for fixity changes. When unintended changes may appear, the authentic copy will be determined and retrieved and the event will be recorded in the provenance document. The data and metadata will be published.

The user will receive the curated files from DANS:EASY, without transformations. The original files and the provenance document and/or details about the significant properties are currently not provided via the common user interface, but can be provided upon request by the depositor.

Logging of changes in data and metadata

A data archivist runs through a standard checklist. All actions resulting from this procedure and performed on a dataset by the data archivist are registered in the internal administration. In the metadata field 'remarks' the data archivist can document possible additional changes or special issues concerning the data set.

Comparing of essential properties of different versions

The significant properties are not determined or recorded as such; authenticity is ensured by the professional judgement of the data producer and/or data archivist. When data or metadata transformations are needed because of changes in the general policy on data / metadata formats the data archivist will always keep the original data, judge whether the authenticity of the data will be maintained after the transformation and manually document the transformation in the remarks/provenance-field of the dataset. In some cases, a compromise will be made between the authenticity, usability and (financial/technical) costs. Such a compromise will be based on the relative significance of the lost significant properties and the chance that they can still be retrieved from the original data.

Checking identities of depositors

As part of the assessment of the data by DANS:EASY it is verified whether the depositor and/or data producer can be identified, either via federated identity management or via an email-confirmation routine.

R7 References:

- 1 - <https://dans.knaw.nl/en/about/organisation-and-policy/policy-and-strategy/preservation-plan-data-archiving-and-networked-services-dans-1>
- 2 - https://dans.knaw.nl/en/about/organisation-and-policy/legal-information/STANDARD_Deposit_agreement_26092019_

1_2_UK.pdf

3 - <https://dans.knaw.nl/en/deposit/information-about-depositing-data/dans-provenance-document-uk.pdf>

4 - <https://dans.knaw.nl/en/about/services/easy/information-about-depositing-data/before-depositing/file-formats>

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

8. Appraisal

R8. The repository accepts data and metadata based on defined criteria to ensure relevance and understandability for data users.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:

4 – The guideline has been fully implemented in the repository
Accept

Reviewer 2

Comments:

4 – The guideline has been fully implemented in the repository
Accept

Response:

For DANS it is crucial that research data remain accessible and usable in the long term. As indicated under R0 DANS has a strong focus on the humanities and the social sciences, supported by our mission (R1). If other academic audiences approach us, we make best efforts to serve them as well. If DANS staff is not confident that we are able to successfully ingest, preserve and make accessible the data (e.g. if a potential data depositor generates 2 petabytes of raw data per day), we will refrain. There is no explicit procedure for the selection of data. As described under R0 DANS is renewing its data services offering. The new future Data Services will consist of a combination of Reuse Data Services (several Dataverse-based reuse services, i.e. Data Stations) and Data Preservation Services (DANS Data Vault) which will have collection policy elements explicitly built into its structure (1). See also R12 on the selection policy. Rather than actively setting out to acquire specific data, the policy of DANS is to leave it to the researcher and the communities to decide which

data are eligible for long-term archiving and access through DANS:EASY. Some guidelines for users are given in the section “Preparing documentation and files” of the DANS web page “before depositing” (2). This approach is supported by outreach efforts ranging from consultancy, data acquisition staff liaising with specific academic disciplines and a biannual data prize to providing guidelines for the selection of information objects.

As pointed out under R7 – Authenticity, DANS:EASY recommends or enforces the depositor to submit its data using preferred or accepted data formats. See R7- Authenticity (in particular provenance) for further details on how checks around completeness and understandability of the data ingested are performed.

For understandability see also R14 for the requirements on metadata.

The list of preferred and non-preferred formats is published on the DANS-website (3). To preserve the data, DANS:EASY staff migrates the original file format to an open format that is independent of the particular hardware and software that were applied to create them. File formats that are non-proprietary, or are proprietary but in widespread use, will tend to retain the best chance of being readable in the future. Non-standard proprietary formats, used only by a specific software program or specific software version, are likely to present problems for future use

The following definitions are used:

Preferred formats are file formats of which DANS is confident that they will offer the best long-term guarantees in terms of usability, accessibility and sustainability. Depositing research data in preferred formats will always be accepted by DANS. Non-preferred formats are file formats that are widely used in addition to the preferred formats, and which will be moderately to reasonably usable, accessible and robust in the long term.

DANS strongly recommends depositors to supply their data in the preferred formats, but non-preferred formats will in most cases also be allowed. If data are submitted in other formats than those in the lists of preferred or acceptable formats mentioned depositors should contact DANS. In principle these other formats will not be accepted, unless there are convincing reasons to do this. Long-term preservation cannot be guaranteed then however.

When the data does not meet the required general conditions (see R7), in particular when metadata are not sufficient, informed consent declarations or codebooks are missing or data are incomplete or do not match the description, the data archivist will request the data producer to fix the issues and redeposit, or the data archivist will resolve the issues. For documented evidence on this point see also R12 (instructions).

R8 References:

- 1 - https://dans.knaw.nl/en/about/organisation-and-policy/policy-and-strategy/dans-2021-2025?set_language=en
- 2 - <https://dans.knaw.nl/en/deposit/information-about-depositing-data>
- 3 - https://dans.knaw.nl/en/deposit/information-about-depositing-data/file-formats?set_language=en

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

9. Documented storage procedures

R9. The repository applies documented processes and procedures in managing archival storage of the data.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Reviewer 2

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Response:

DANS has a Preservation Plan (1) which incorporates our Preservation Strategy and our Preservation Policy. The Preservation Strategy is the general framework in which DANS:EASY operates. Preservation decisions for DANS:EASY are made within the context of the mission and strategy, balancing the constraints of costs, scholarly value, user accessibility, and legal admissibility. The Preservation Policy details the commitment to support the long-term management of data and also outlines the roles and responsibilities of all those involved in the collection and management of data. DANS has an internal Data Processing Manual for data managers as well, in order to describe and document our processes and procedures.

DANS is committed to taking all necessary precautions to ensure the physical safety and security of the data it preserves in DANS:EASY. This includes a periodical technology vulnerability scan, the SLA with the data storage provider including a confidentiality statement (see Background Information, Outsource Partners), a procedure for file fixity checking as well as the Declaration of Confidentiality for employees and a periodical safety inventory by the KNAW.

As stated under R4, data with disclosure risk are managed and stored appropriately, using the DANS internal system of “disclosure risk classification” (risicoklassen) for data storage (details see under R4).

In essence, the purpose of archival storage is to ensure that what is passed to it from the ingest process remains identical and accessible. In DANS:EASY the archival storage function receives AIPs (Archival Information Packages) from the ingest function and adds them to the permanent storage facility, oversees the management of this storage, including media refreshment and monitoring. This function is also responsible for ensuring that an AIP can be retrieved.

There is a strategy for backup copies: the data is stored on a dedicated server and every 24 hours tape backups are made which are stored in two physically separate locations. For more details on this see under R15.

The plans and procedure regarding crises are laid down in the Business Continuity Plan –Crisis management plan DANS 2020 (available on request). The document (in Dutch) includes information on:

The composition, roles and responsibilities of the crisis management team;

The protocol when a crisis occurs;

Information on the susceptibility of the relevant locations for the operation of the data archive.

For checks to ensure consistency across archival copies see R7.

Most measures described above relevant for preservation are part of the DANS:EASY instructions – see R12 (instructions). Documentation is contained in the AIP.

R9 Reference:

1 - <https://dans.knaw.nl/en/about/organisation-and-policy/policy-and-strategy/preservation-plan-data-archiving-and-networked-services-dans-1>

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

10. Preservation plan

R10. The repository assumes responsibility for long-term preservation and manages this function in a planned and documented way.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Reviewer 2

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Response:

Preservation planning at DANS is structured around the main functional concepts of the OAIS reference model. The preservation actions DANS:EASY performs are documented in our Preservation Policy that is part of the Preservation Plan (1). Specific methods of executing this policy are documented in an internal Data Processing Manual (available on request). The goal of the Preservation Planning OAIS function is to ensure that the data in the data archive remain accessible, understandable, and sufficiently usable over the long term. The preservation strategy of DANS:EASY is based upon open and available file formats, data migration and media refreshment. Preservation decisions are made within the context of the mission and strategy, balancing the constraints of costs, scholarly value, user accessibility, and legal admissibility. DANS aims to operate according to the FAIR Guiding Principles in making its data Findable, Accessible, Interoperable and Reusable. Therefore, in the Preservation Policy thought has been given as well to how DANS aims to operate according to the FAIR principles.

As specified in R8 DANS has two levels of preservation: preferred formats and non-preferred formats. Supplying data in preferred formats is strongly recommended by DANS, but non-preferred formats will in most cases also be allowed. Other formats will not be accepted, in principle, unless there are convincing reasons to do this. Long-term preservation cannot be guaranteed however in the latter case.

In addition, the Deposit Agreement (2) between Depository, i.e. DANS, and Depositor provides for all actions necessary to meet the responsibilities. In article 3 it says:

3. Depository

3.1. The Depository will, to the best of its ability and resources, permanently archive the Dataset, preserving its readability and accessibility.

3.2. The Depository will archive the Dataset unaltered and in its original software format as far as possible, taking into account the technological state of the art and the cost of implementation. The Depository will have the right to change the design and/or functionality of the Dataset in so far as it is necessary to ensure the digital preservation, distribution or reusability of the Dataset.

3.3. If the Dataset has been assigned to the “Restricted Access” category, the Depository will, to the best of its ability and resources, ensure effective technical provisions to prevent unauthorized third parties from accessing and/or consulting substantial parts of the Dataset.

3.4. The Depositor will remain the controller of the Dataset within the meaning of the General Data Protection Regulation (GDPR) insofar as the Dataset contains personal data within the meaning of the GDPR. The Depository will be a processor within the meaning of the GDPR. If the Dataset contains personal data, the Depositor and the Depository will conclude a processing agreement, except in the case of bibliographical data which exclusively refer to personal data that are necessary for the accountability of the Dataset, such as its creator, rights holders and citations (hereinafter: “Bibliographical Data”).

The handover of responsibilities is clearly stated in the Deposit Agreement. This formally takes place after acceptance by DANS of a submitted dataset, according to article 10 of the Deposit agreement:

10. Duration, cancellation, termination of the agreement

10.1. This agreement takes effect on the date of the written acceptance of this deposit agreement by the Depositor. The Depository will then publish the Dataset as soon as possible.

10.2. This agreement will remain in effect for an indefinite period of time, unless:

- a. Either of the parties cancels the agreement in writing, subject to a notice period of six months;
- b. Pursuant to Article 5 of this agreement, the Dataset has been permanently removed from the archival system;
- c. Article 8 applies.

10.3. Changing the access category or Open Access Licence is always permitted at the written request of the Depositor, with due observance of Article 6(5) of this agreement.

According to the articles 1.2 and 1.3 DANS is authorised to make copies of the dataset as well as transform, and store the items, as well as provide access to them:

1.2. The Depository will receive the right to include the Dataset in its digital archival system. The Depository will transfer the contents of the Dataset to a compatible carrier in a manner and format of its choice.

1.3. Subject to the terms of this deposit agreement, the Depository will receive the right to make the Dataset, or substantial parts of it, available to third parties by means of electronic distribution. In addition, the Depository will have the right to make a copy of the Dataset, whether or not on behalf of third parties, or allow third parties to download a copy.

R10 Reference:

1 - <https://dans.knaw.nl/en/about/organisation-and-policy/policy-and-strategy/preservation-plan-data-archiving-and-networked-services-dans-1>

2 - https://dans.knaw.nl/en/about/organisation-and-policy/legal-information/STANDARD_Deposit_agreement_26092019_1_2_UK.pdf

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

11. Data quality

R11. The repository has appropriate expertise to address technical data and metadata quality and ensures that sufficient information is available for end users to make quality-related evaluations.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Reviewer 2

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Response:

In all cases, whether researchers deposit their research data via a self-deposit form or through an automated ingest process (see R0), DANS staff provides comprehensive guidance and advice on data and metadata quality.

DANS:EASY self-deposit

In the case of self-deposit, all incoming datasets are checked and reviewed by DANS staff during ingest. Archivists check the submitted data, metadata and other documentation. This could result in going back to the data depositor/producer to improve the metadata and/or documentation. This could be the case when metadata are not sufficient, informed consent declarations or codebooks are missing or data are incomplete or do not match the description. Also DANS:EASY offers several controlled vocabularies, e.g. the ABR thesaurus for the archaeological domain and the NARCIS subject classification.

DANS:EASY automatic ingest

Suppliers who ingest their data into DANS:EASY through automatic ingest facilities (SWORD2, see R15) receive detailed guidance from our archivists about data and metadata ingest. The automated ingest procedure (SWORD2) enforces guidance on data and metadata quality as well, since detailed conditions and agreements are made with such institutions about delivering data and metadata. These contracts are not publically available. In specific cases we also use thesauri

that support the data standardisation process, e.g. our collaboration with PAN (Portable Antiquities of the Netherlands) where we work with standard object descriptions that consists of links to existing datasets and thesauri. Another option where data is automatically ingested in DANS:EASY is through the so-called front office/back office model that is based on a contract between a selection of Dutch universities and DANS. The Front Office (Universities) focuses on information and awareness raising, as well as quality aspects before the data are deposited. DANS provides data expertise and the long-term preservation of the data. Clear arrangements are made for this that also address the topic of quality control standards.

In all cases, providing Dublin Core metadata is obligatory for all deposits. Some metadata fields are obligatory, while the others are optional. DANS follows as much as possible the specifications of Qualified Dublin Core (see R14 for more details).

More specifically, DANS can keep up with international quality standards in the field of discipline-specific data formats and metadata schemas through intensive cooperation in and with a number of national and international bodies in the field of data archiving and data curation.

DANS always keeps in line with the standards in research domains as much as possible in order to maintain the relevant data and metadata quality for our designated community. The participation of DANS in several European Research Data Infrastructures is one way of doing this: the CLARIN, CESSDA, DARIAH ERIC's. These infrastructures represent the interests of large, international, disciplinary communities. CLARIN provides access to digital language data collections across Europe and has introduced a dedicated metadata scheme, called CMDI. DANS provides the option for a depositor to include CMDI metadata. Furthermore, DANS is the service provider for the Netherlands in the CESSDA ERIC, which comprises the European national social sciences data archives. As a CESSDA Service Provider, DANS should follow the CESSDA requirements on data and metadata like the CESSDA metadata model (1). DANS has been working on a mapping of the DANS metadata to the CMM and has provided metadata from social science datasets stored at DANS to be included in the CESSDA Data Catalogue. Regarding social science data survey data is also the focus of Survey Data Netherlands, a collaboration between CentERdata and DANS, which allows users to browse survey data from various repositories, including the data archive. DANS is also the Dutch coordinator of the DARIAH ERIC, a research infrastructure for the arts and humanities.

Together these infrastructures, with their national branches, enable DANS to stay in close contact with these communities, in particular on the data and metadata formats they find useful.

Archaeologists in the Netherlands are required to deposit their data in the e-depot for Dutch archaeology, EDNA, which is accommodated at DANS. In order to make submitting data more efficient DANS has implemented the sector's information exchange protocol SIKB0102 (2). DANS has been involved in the development of this protocol and informs its users about this protocol via our website (3). The metadata that the DANS:EASY requires is automatically extracted from the "digital packing slip" (in Dutch also known as "pakbon"). Other advantages of adherence to the protocol are the uniform delivery of data and the possibility to link the data to other research information such as archaeological reports.

DANS currently does not offer the possibility to rate or comment on the data. However DANS runs several initiatives that highlight the importance of data quality such as Small data projects (KDP), a grant that is awarded to researchers or projects that document and make accessible datasets that otherwise would not have been made reusable (4) and the role of DANS (publisher in collaboration with Brill Publishers) in Research Data Journal, a peer-reviewed e-only open access journal for data papers (5).

Citations to related works are provided in DANS:EASY as standard field in the DIP. DANS:EASY automatically generates the citation to the dataset concerned, following the Datacite model. The model for citation can also be found in the DANS General Terms and Conditions of use (6).

R11 Reference:

1 - <https://doi.org/10.5281/zenodo.3236171>

2 - <https://www.sikb.nl/datastandaarden/sikb0102-archeologie>

3 - <https://dans.knaw.nl/en/about/services/easy/information-about-depositing-data/before-depositing/archaeological-exchange-protocol>

4 - <https://dans.knaw.nl/nl/actueel/nieuws/kdp-subsidie-toegekend-aan-10-nieuwe-projecten>

5 - <https://dansdatajournal.nl/rdp/index.html>

6 - <https://dans.knaw.nl/en/about/organisation-and-policy/legal-information/dansgeneralconditionsofuseukdef.pdf>

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

12. Workflows

R12. Archiving takes place according to defined workflows from ingest to dissemination.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Reviewer 2

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Response:

The work processes have been developed over nearly fifty years. They are described in documents and implemented in the archival workflow, which is based upon the OAIS reference model.

DANS provides extensive information for depositors on preparing data for depositing via deposit instructions and background information (1). In DANS:EASY itself further assistance is provided during the deposit procedure.

The archivist checks the metadata, the privacy clauses, and the file format. When the SIP becomes an AIP (Archival Information Package) preservation procedures ensure its readability over time. All actions related to the preservation of the data are documented in the Provenance document (2).

Data distribution and controlled access are done in an automated way, documented in two documents: the DANS Deposit Agreement and the DANS:EASY General Terms and Conditions of Use (see also R2 and R4). On this web page (3) clarifying information can be found on the handling of the data and the restrictions thereof, both for depositors and users.

For security levels references to the DANS system of “disclosure risk classification” as well as the “Declaration of Confidentiality for Employees” (both more detailed information in R4) are made.

Appraisal and selection

The designated community is leading in this respect. Data that do not fit in the profiles of the designated community of DANS are either refused and possibly referred to other data archives in the Netherlands or Europe or, still accepted if DANS staff, based on our data expertise, feels confident that it can preserve the data and metadata for the long term.

There is no explicit procedure for the decision process on selection in DANS as DANS:EASY has not, within the limits provided by the designated community, an explicit selection policy. As stated in R9 it is left to the researcher and the communities to decide which data are eligible for long-term archiving and access, as seen from the perspective of the possible value for the discipline concerned in combination with the suitability of the data formats, the quality of metadata and costs. In collaboration with 4TU.Datacentrum and SURF, DANS has provided the publication “Selection of research data - Guidelines for appraising and selecting research data (Heiko Tjalsma and Jeroen Rombouts eds., (4))” as well as a checklist on selecting research data (5).

The types of data managed are the standard types used in the social sciences as well as in the humanities.

Workflows are regularly monitored by DANS management and permanently improved.

R12 References:

- 1 - <https://dans.knaw.nl/en/about/services/easy/information-about-depositing-data>
- 2 - <https://dans.knaw.nl/en/deposit/information-about-depositing-data/dans-provenance-document-uk.pdf>
- 3 - <https://dans.knaw.nl/en/about/organisation-and-policy/legal-information>
- 4 - <https://pure.knaw.nl/portal/en/publications/selection-of-research-data-guidelines-for-appraising-and-selectin>
- 5 - <https://dans.knaw.nl/en/about/organisation-and-policy/legal-information/DANSselectionofresearchdata.pdf>

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

13. Data discovery and identification

R13. The repository enables users to discover the data and refer to them in a persistent way through proper citation.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:

4 – The guideline has been fully implemented in the repository
Accept

Reviewer 2

Comments:

4 – The guideline has been fully implemented in the repository
Accept

Response:

As re-using research data is key to DANS's mission, data discovery is supported in various ways. All the datasets can be found in DANS:EASY by searching or browsing.

DANS:EASY Metadata search function

The DANS:EASY data archive has a search function directly available in the header of the website (1). Alternatively, an advanced search can be done into target specific Dublin Core metadata fields (2).

DANS:EASY metadata browse function

A browse feature is available (4). Browsing can be done through research disciplines, Open or Restricted Access regimes of special collections. The browse filters can also be used to narrow down the search results.

The results of search or browse will be a list of datasets, described by metadata. The metadata itself is always visible to anyone, irrespective of Open or Restricted Access regimes. DANS stimulates adding as many metadata and other relevant documentation as possible.

DANS:EASY Metadata in other services & indexes.

DANS:EASY Metadata is included in several external Data Services and search engines. DANS participates in NARCIS, "The gateway to scholarly information in the Netherlands" (5) to increase data discovery and to relate researchers, research data, publications and funding. By means of the OAI-PMH protocol (6) not just NARCIS, but also other Data Services can harvest and include the metadata of DANS:EASY in their service. This is done by e.g. B2FIND and OpenAIRE. Datasets of DANS are included in portals of European Data Infrastructures in which DANS is involved, like CESSDA or CLARIN. Furthermore, DANS has opened up DANS:EASY for searching the metadata via Google Data Search and other search engines.

Data citations

DANS follows, in the General DANS Conditions of Use (7), the Datacite guidelines (see R11).

Identifiers

Datasets in DANS:EASY can be identified by three kinds of identifiers:

DOI - persistent identifiers for citation of datasets and unique, persistent identification.

URN:NBN - persistent identifiers for long-term identification of datasets within the national repository infrastructure.

internal Fedora identifiers for objects like datasets, files, and folders.

R13 References:

1 - <https://easy.dans.knaw.nl/ui/home>

2 - <https://easy.dans.knaw.nl/ui/advancedsearch>

3 - <https://easy.dans.knaw.nl/ui/advancedsearch>

4 - <https://easy.dans.knaw.nl/ui/browse>

5 - <http://www.narcis.nl/?Language=en>

6 - <http://www.openarchives.org/pmh>

7 - <https://dans.knaw.nl/en/about/organisation-and-policy/legal-information/dansgeneralconditionsofuseukdef.pdf>

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

14. Data reuse

R14. The repository enables reuse of the data over time, ensuring that appropriate metadata are available to support the understanding and use of the data.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Reviewer 2

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Response:

DANS:EASY contains descriptive metadata on two levels: the Dataset level and the File Item level. In the instructions for depositing (1) DANS stimulates data producers to document their source material, research methods and publications related to the data. Understandability of the data is ensured by the metadata and background documentation of the dataset.

In these instructions there is special attention for disciplinary differences. The instructions describe what is obligatory and what is (strongly) recommended. The use of DDI metadata (DDI = Data Documentation Initiative, ref. 2) is obligatory for one special (longitudinal) social science research program funded by NWO.

Providing Dublin Core metadata (3) is obligatory for all depositions. DANS follows as much as possible the specifications of Qualified Dublin Core. Some metadata fields are obligatory, while the others are optional. DANS has considered making more fields obligatory, but has decided against it on the grounds that metadata might then become a threshold

resulting in researchers not offering their data. As a general policy, the number of obligatory fields is therefore kept as low as possible.

To ensure that data producers observe the description guidelines, the archivists check the submitted metadata, along with the data and other documentation. This often results in contacting the data producer to improve the metadata and/or documentation.

DANS monitors the evolution of the standard formats as used in the social sciences and humanities (including archaeology) in and outside the European Research Data Infrastructures closely (see R11). For possible future migrations special project plans will be developed if the need arises.

R14 References:

1 - <https://dans.knaw.nl/en/deposit/information-about-depositing-data>

2 - <http://www.ddialliance.org/>

3 - <http://dublincore.org/documents/dcmi-terms/>

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

TECHNOLOGY

15. Technical infrastructure

R15. The repository functions on well-supported operating systems and other core infrastructural software and is using hardware and software technologies appropriate to the services it provides to its Designated Community.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Reviewer 2

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Response:

DANS follows the OAIS reference model across the archival process without significant deviations. There is considerable support for Ingest, Archival storage, Data Management and Access. The Preservation policy in the Preservation Plan (1) relates DANS's policy to these functions.

DANS:EASY is based on a Fedora Commons repository 3 (2). It runs on Red Hat Enterprise Linux. Services to the Designated Community such as deposition and dissemination front-ends are implemented as separate services. For institutional depositors, there is a machine-machine deposit interface, based on the SWORD 2.0 protocol (3). This interface is a two-phase process of 1) submitting a deposit for ingest and 2) tracking the state of the deposit through the ingest flow.

IT infrastructure is a strategic component of DANS to achieve its mission and provide long-term access to digital research data. Digital preservation involves the retention of both the information object and its meaning. It is therefore necessary that preservation techniques can understand and recreate these to ensure the authenticity and accessibility of the data.

Community supported software is used as much as possible. DANS keeps a basic software inventory list that distinguishes between ICT support/server software and software application and development environment. Standards for the social science are followed as well as standards in fields of humanities, such as archaeology and history. See for preferred formats R8.

DANS schedules regular technical maintenance of DANS:EASY and always communicates around this to our users.

Storage Management

This includes activities for storing data, retrieving data and monitoring data, as well as organising and monitoring the redundancy. The data is stored on a dedicated server and every 24 hours tape backups are made which are stored in two physically separate locations. The monitoring of the servers and tape backups is automated and aimed at detecting and resolving errors in the security of the data. Fast storage is used for the operation of the archival system. The storage array for the original datasets and the tapes are replaced at regular intervals. Access is restricted to engineers who perform a fixed and specified number of maintenance roles. No data recovery has been necessary so far.

Almost all storage is outsourced (as indicated under Background Information, Outsource Partners). DANS maintains an SLA with the outsource partner with clear agreements on security and storage management (internal, available upon request). The outsource data centres are redundant, secured and well-connected, located in the Netherlands, at two

different locations. Monitoring is used to detect and resolve errors in the security of the data.

Technical support is provided for the IT infrastructure by DANS. This ranges from resolving hardware problems of laptops and desktops, to problems with the operating systems or installed applications. In addition, technical support staff liaises with the external IT providers.

Application support is provided for by DANS internally for the systems developed by DANS. These include mainly DANS:EASY, but also the DANS website, the ERP Filemaker database, the PID (URN) server and the Data statistics application. In addition, application support staff liaises with providers of related IT components.

Functional support ensures that DANS:EASY functions as it is supposed to function, and that the functions meet the needs of all users: data managers, partners and the designated community. They coordinate/delegate bugs and changes to application-or technical support and/or liaise with service providers.

Infrastructural development is key to to keep serving our users in the best possible way. As mentioned under R0, currently, DANS is in the process of innovating our data services. This will affect our future technical infrastructure as well.

R15 references:

1 - <https://dans.knaw.nl/en/about/organisation-and-policy/policy-and-strategy/preservation-plan-data-archiving-and-networked-services-dans-1>

2 - <https://github.com/fcrepo3>. More information via https://en.wikipedia.org/wiki/Fedora_Commons and <http://fedora-commons.org/>

3 - <https://github.com/DANS-KNAW/easy-sword2-dans-examples>

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

16. Security

R16. The technical infrastructure of the repository provides for protection of the facility and its data, products, services, and users.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Reviewer 2

Comments:

4 – The guideline has been fully implemented in the repository

Accept

Response:

Security policy

The security policy at DANS is in place to ensure that valuable digital data remains available (availability) and does not become corrupted (integrity) or fall into the wrong hands (confidentiality). If data that is managed by DANS is lost or damaged, it might jeopardise confidence in DANS as the data custodian. Additionally, a serious breach of information security could even endanger the continued existence of DANS.

To provide optimal access to the digital objects DANS follows a fixed procedure if DANS:EASY is interrupted – whether scheduled or not. When DANS:EASY should break down in an unscheduled way, users are informed by a warning page.

Depending on the nature of the problem, DANS can use the audit log to trace back data producers who were depositing data at the moment of the interruption. By contacting them potential data loss can be prevented. In less severe cases of interruption DANS:EASY can be accessed in read-only mode, which excludes ingest, but allows for data access including dissemination.

The ICT infrastructure is secured by several security measures and security layers. The DANS:EASY servers are physically located in a secured environment with strict access rules. The storage of the DANS:EASY data is backed-up daily. The back-up has versioning with a file retention time of 90 days. The back-up is stored within the Netherlands in two different locations.

The plans and procedures regarding crises are laid down in the Business Continuity Plan – Crisis management Plan DANS 2020. For details see under R9. This document is confidential, but can be asked for by CoreTrustSeal reviewer upon request.

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

APPLICANT FEEDBACK

Comments/feedback

These Requirements are not seen as final, and we value your input to improve the CoreTrustSeal certification procedure. Any comments on the quality of the Requirements, their relevance to your organization, or any other contribution, will be considered as part of future iterations.

Response:

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments: