### SSHOC webinar

# Dataverse, requirements of CESSDA Service Providers

18 March 2020, 11.00 -12.30 CET







Laura Huis in 't Veld (DANS) functional manager



Slava Tykhonov (DANS) lead developer



Marion Wittenberg (DANS) task leader



#### Content of this Presentation

- Background of SSHOC task 5.2
- What is Dataverse?
- Quality and maturity of software with SSHOC task 5.2
- Data previewers
- © CESSDA metadata and controlled vocabularies
- Translations using weblate









#### Type of action & funding:

Research and Innovation action (INFRAEOSC-04-2018)

Partners: 47

(20 beneficiaries + 27 LTPs)

**SSH ESFRI Landmarks and Projects** & international SSH data infrastructures **Project budget:** € 14,455,594.08

**Duration: 40 months** (January 2019 – 30 April 2022)

**Project website:** www.SSHOpenCloud.eu



#### Objectives:

- creating the social sciences and humanities (SSH) part of European Open Science Cloud (EOSC)
- maximising re-use through Open Science and FAIR principles (standards, common catalogue, access control, semantic techniques, training)
- interconnecting existing and new infrastructures (clustered cloud infrastructure)
- establishing appropriate governance model for SSH-EOSC

# Task 5.2 Hosting and sharing data repositories

### Objective

Development of a research data repository service on EOSC, for SSH institutions currently without such a facility for their designated communities

#### Deliverables

After 38 months (February 2022): Data repository service running on EOSC

After 40 months (April 2022): Report on principles of governance and sustainability of the data repository service



### SSHOC task 5.2 Hosting and sharing data repositories

- Makes use of Dataverse software
- # 4 ERICs: DARIAH, CLARIN, EHRIS and CESSDA
- Building mature infrastructure based on requirements of involved communities
- Investigating sustainable governance models
- Training Service Providers and institutes how to use Dataverse as a service



#### Partners SSHOC task 5.2























# History of task 5.2

Two projects to investigate how Dataverse can be used as a Research Data Management service for CESSDA Service Providers

- CESSDA SaW project
  - DANS offered a test environment of Dataverse to run experiments
- © CESSDA DataverseEU project (2018)
  - POC how to make Dataverse CESSDA compliant
  - Partners: DANS, AUSSDA, ADP, SND, TARKI, GESIS



### Why this webinar

- To demonstrate our work
- To discuss with you your ideas on:
  - Dataverse installation on your own technical environment
  - Dataverse running on the CESSDA Google cloud
  - What kind of extra functionality, like data viewers
  - Translations
  - Metadata, controlled vocabularies



#### What is Dataverse?

- Repository software for sharing and publishing datasets
  - Metadata and files (all kind off file formats)
  - Roles and permissions for users to control access
- Open Source Software developed by IQSS Harvard
- Solution Service S
- A few examples of the <u>55</u> dataverse services:
  - <u>https://dataverse.nl</u> Netherlands
  - https://data.aussda.at Austria
  - <u>https://dataverse.harvard.edu</u> Harvard USA
  - <u>https://dataverse.unc.edu</u> ODUM Institute USA
  - https://dataverse.ada.edu.au Australia
  - https://dataverse.scholarsportal.info Canada









44,244 Downloads



#### Welcome to DataverseNL





Utrecht University



Maastricht University







IT Sort -

Search this dataverse...



Advanced Search



Dataverses (347)



Datasets (1,338)



Files (7,587)

#### **Dataverse Category**

Organization or Institution (108)

Research Group (59) Research Project (57)

Department (22)

Researcher (13)

More...

#### Publication Year

2019 (651)

2016 (223) 2018 (202)

2013 (163)

2017 (156)

1 to 10 of 1,685 Results



OCISS: Effect of spectral contrast enhancement on speech-on-speech intelligibility and voice cue sensitivity in cochlear implant users Mar 17, 2020 - Ear Nose Throat UMCG Dataverse



El Boghdady, Nawal; Langner, Florian; Gaudrain, Etienne; Başkent, Deniz; Nogueira, Waldo, 2020, "OCISS: Effect of spectral contrast enhancement on speech-on-speech intelligibility and voice cue sensitivity in cochlear implant users", https://hdl.handle.net/10411/GPSSP1, DataverseNL, V1

JND\_data.csv: Just-noticeable-differences for German CI participants for F0 and VTL. SoS\_Intelligibility\_data.csv: Speech-on-speech intelligibility data for German CI participants for F0 and VTL manipulations of the masker and for 2 coding strategies. SoS\_Comprehension\_data.csv: S...

#### OCISS: Effect of Channel Interaction on Vocal Cue Perception in Cochlear Implant Users

Mar 12, 2020 - Department Cognitive Science and Artificial Intelligence

Mar 13, 2020 - Ear Nose Throat UMCG Dataverse

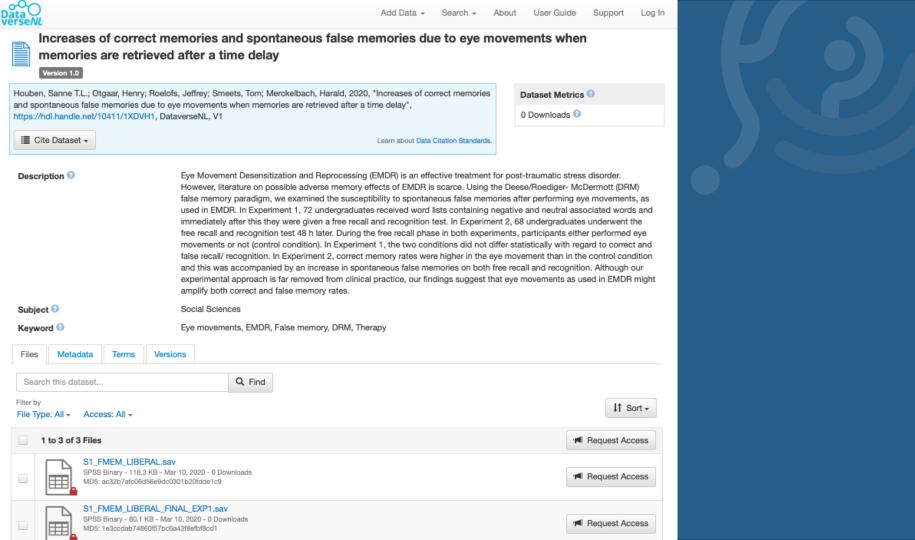


Noqueira, Waldo: El Boghdady, Nawal; Langner, Florian; Gaudrain, Etienne; Baskent, Deniz, 2020, "OCISS: Effect of Channel Interaction on Vocal Cue Perception in Cochlear Implant Users\*, https://hdl.handle.net/10411/TYWSXR, DataverseNL, V1

JND\_data.csv: Just-noticeable-differences for German CI participants for F0 and VTL. SoS\_Intelligibility\_data.csv: Speech-on-speech intelligibility data for German CI participants for F0 and VTL manipulations of the masker and for three simulation patterns. SoS. Comprehension\_data....

A Process-oriented Dataset of Revisions during Writing







Permissions ^

#### DataverseNL > Permissions

Current access configuration to your dataverse.

Select if all users or only certain users are able to add to this dataverse, by clicking the Edit Access button.

Edit Access

#### Who can add to this dataverse?

Anyone adding to this dataverse needs to be given access

When a user adds a new dataset to this dataverse, which role should be automatically assigned to them on that dataset?

Contributor - Edit metadata, upload files, and edit files, edit Terms, Guestbook, Submit datasets for review

#### Users/Groups ^

All the users and groups that have access to your dataverse.

Assign Roles to Users/Groups

#### 1 User/Group

| User/Group Name (Affiliation) - | ID ¢            | Role ¢ | Action                 |  |  |
|---------------------------------|-----------------|--------|------------------------|--|--|
| Dataverse Admin (DANS)          | @dataverseAdmin | Admin  | ★ Remove Assigned Role |  |  |

Roles ^

All the roles set up in your dataverse, that you can assign to users and groups.

+ Add New Role

Admin - A person who has all permissions for dataverses, datasets, and files.

AddDataverse AddDataset ViewUnpublishedDataverse ViewUnpublishedDataset DownloadFile EditDataverse EditDataset ManageDataversePermissions

ManageDatasetPermissions | PublishDataverse | PublishDataset | DeleteDataverse | DeleteDatasetDraft



Contributor - For datasets, a person who can edit License + Terms, and then submit them for review.

ViewUnpublishedDataset | DownloadFile | EditDataset | DeleteDatasetDraft

### Would you like to 'play' with dataverse?

Please use the demo site of DANS: <a href="https://demo.dataverse.nl/dataverse/general">https://demo.dataverse.nl/dataverse/general</a>

Note: User permissions for production dataverses are usually more restrictive



### Main differences compared to NESSTAR

- Dataverse is suitable for all kinds of data, not only survey data
- Dataverse has a persistent identifier (study level, and possible for file level)
- Dataverse can keep track of versions of the dataset
- Federated login
- Dataverse has a variety of user permissions

Dataverse is not very suitable for publishing survey data in a very granular way (but we are working on data viewers)





### Questions for this first part?





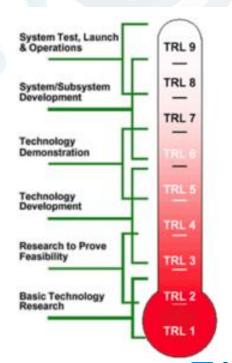
### **SSHOC** Dataverse

Overview of functionality we would like to develop



# Quality of services in EOSC (CESSDA Cloud)

- EOSC requires the level 8 of maturity (at least)
- highest possible quality of software to be accepted as a service for EOSC
- clear and transparent evaluation of services is essential
- the evidence of technical maturity is the key to success (EOSC Synergy SQA guideline)
- the limited warranty will allow to stop out-ofwarranty services





# Dataverse applications maturity

Every software package should follow the same CESSDA Maturity Model to be accepted as a service.

Must have: Kubernetes infrastructure with upstream Docker images, warranty statement, documentation, unit tests, Selenium tests, jenkins pipeline

Running demonstration service will allow to create the connection to your own Dataverse, for example, you can connect PDF viewer deployed on CESSDA Cloud to your own Dataverse instance.



# Dataverse App Store

Weblate as a service: multilingual translations (September 2020)

Interoperability: external controlled vocabularies (CESSDA Vocabulary service, December 2020)

Data previewers: DDI Explorer, Spreadsheet/CSV, PDF, Text files, HTML, Images, video render, audio, JSON, GeoJSON/Shapefiles/Map, XML (June 2021 in CESSDA Cloud)

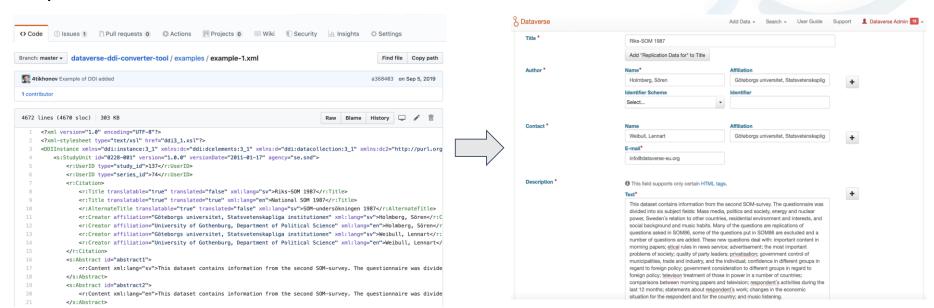
Data processing: NESSTAR DDI migration tool (June 2021 in CESSDA Cloud)





### NESSTAR DDI migration tool

Pipeline: NESSTAR XML results as metadata and files stored in Dataverse



NESSTAR study unit is metadata, variables will be saved as tab file that can be opened in DDI preview.

More information: <a href="https://github.com/IQSS/dataverse-ddi-converter-tool/">https://github.com/IQSS/dataverse-ddi-converter-tool/</a>



# Dataverse previewers

All Dataverse previewers are maintained by Global Dataverse Community Consortium (GDCC).

Most of them developed by institute QDR (USA), Dataverse SSHOC contributed Spreadsheet viewer for tabular data.

DDI Explorer was developed by Scholars Portal (Canada) and integrated to Kubernetes by SSHOC project.

Available viewers: Spreadsheet/CSV, PDF, Text files, HTML, images, video render, audio preview, STATA, DDI Explorer

All previewers are available only for Open Access Data.

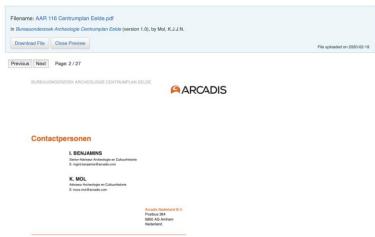




### Example: PDF previewer



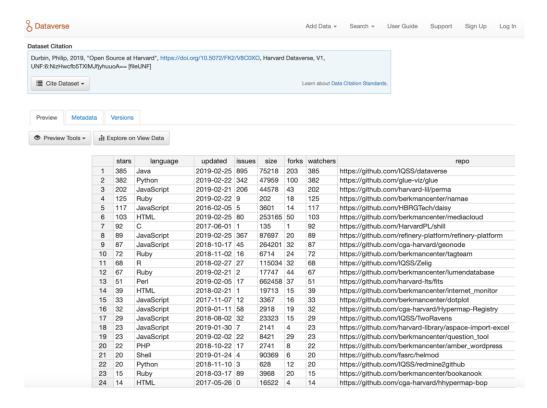
#### **PDF Preview**



Built-in Dataverse viewer



### Example: Spreadsheet previewer



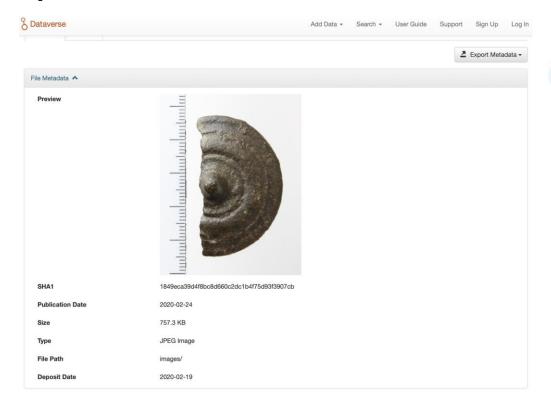


#### Some features:

- Can be sorted by values in columns
- select functionality to copy and paste rows/columns/values
- values can be modified but not saved



# Image previewer







# Questions concerning part 2?







# Configuring Dataverse for CESSDA - CESSDA Mandatory Metadata fields (CMM)

DataverseEU: Comparison made between standard Dataverse metadata fields and CMM.

SSHOC: Implement findings from the DataverseEU project

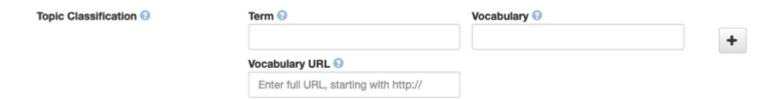


### Dataverse controlled vocabularies plugin

- Developed by DANS in CESSDA Dataverse project, extended as a plugin in SSHOC Dataverse
- Implemented as simple xhtml extension (javascript) of Dataverse templates
- can be enabled by providing CV middleware API endpoint (internal/external microservice)
- can be connected to any external controlled vocabulary exposed through API endpoint



# Current situation (default dataverse)





#### **Desired situation**

- For certain fields, users are required to use a specific field
- When typing, the system will return search results from this CV only

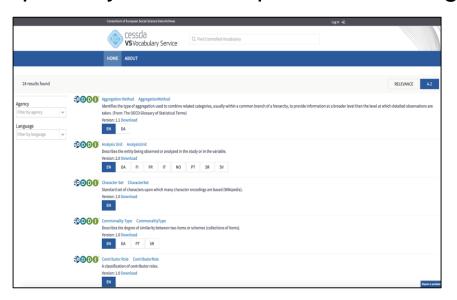
#### Mapping:

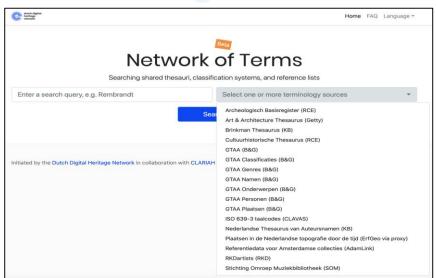
| Dataverse metadata field | Controlled Vocabulary                             |  |  |  |
|--------------------------|---|--|--|--|
| Keyword                  | ELSST   |  |  |  |
| Topic Classification     | CESSDA Topic Classification                       |  |  |  |
| Kind of Data             | DDI Controlled Vocabulary for General Data Format |  |  |  |
| Unit of Analysis         | DDI Controlled Vocabulary for Analysis Unit       |  |  |  |
| Time Method              | DDI Controlled Vocabulary for Time Method         |  |  |  |
| Sampling Procedure       | DDI Controlled Vocabulary for Sampling Procedure  |  |  |  |



# External controlled vocabularies support

Dataverse SSHOC project developing a plugin that allows to connect repository to API endpoints delivering controlled vocabularies:



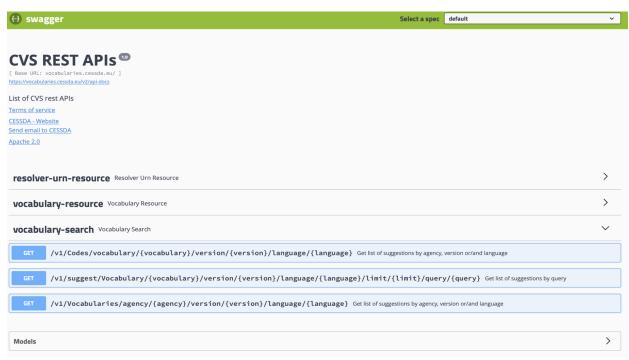


**CESSDA** Vocabulary service

NDE network



# CESSDA CVs Open API





- Maintained by CESSDA
- Deployed on CESSDA Cloud k8s
- Has multilingual support
- Shows different versions of CVs
- Elasticsearch syntax to query





### Example of term details in CESSDA Vocabulary service

#### Family: Household Family in English

| Family.HouseholdFamily | Family: Household family | A more specific term that refers only to people who are related through family ties (see definition for 'Family') and live in the same household at a point in time. If not known whether the analysis unit is 'Family' or 'Household family', use 'Family'.   |
|------------------------|--------------------------|--|
| Household              | Household                | A person or a group of persons who share the same dwelling unit and common living arrangements. These common living arrangements may include pooling some, or all, of their income and wealth, and consuming certain types of goods and services collectively, mainly housing and food (Eurostat).   |
| HousingUnit            | Housing unit             | U.S. Census: A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters. Separate living quarters are those in which the occupants live and eat separately from any other persons in the building and which have direct access from the outside of the building or through a common hall. |

#### Family: Household Family in French (Famille: menage)

| Family.HouseholdFamily | Famille : ménage | Un terme plus spécifique, se réfère aux personnes qui sont liées par des liens familiaux (voir la définition pour 'Famille') et qui vivent dans le même ménage à un moment donné. Si vous ne savez pas si l'unité d'analyse est 'Famille' ou 'Famille : ménage', utilisez 'Famille'.  |
|------------------------|------------------|---|
| Household              | Ménage           | Une personne ou un groupe de personnes qui partagent la même unité d'habitation et les mêmes conditions de vie. Ces conditions de vie peuvent inclure la mise en commun d'une partie, ou de la totalité, des revenus et des richesses, et la consommation de certains types de biens et de services, principalement le logement et la nourriture (Eurostat).  |
| HousingUnit            | Logement         | Recensement US: une unité d'habitation est une maison, un appartement, un mobile home, un groupe de pièces, ou une pièce unique qui est occupée (ou si vacant, est destinée à l'occupation) comme lieu de vie séparé. Les lieux de vie séparés sont ceux dans lesquels les occupants vivent et mangent séparément de toute autre personne dans le bâtiment et qui ont un accès direct depuis l'extérieur du bâtiment ou par un hall commun. |

#### Keywords are language dependent:

if Dataverse interface will be switched to another language (for example, French), it will query CESSDA vocabulary service to find keywords in the selected language. Keyword linked to the same code, doesn't matter in which language!





### Questions about part 3?





#### Weblate introduction

DataverseEU will run Weblate as a service for the user interface, metadata schema and SOLR translation.

New releases of dataverse software can induce changes in User Interface, e.g. adding or deleted buttons. Issue is: how to keep track?

We've developed an experimental but adjustable pipeline for multilingual support that allows to download and synchronize all translations and provides easy access for translators to keep all properties up-to-date.

All translations are available in Dataverse Consortium github.





### Weblate as community service

- All translators will get account and permissions
- after Dataverse release will get new properties, all properties will be synchronized and available in Weblate
- translators will receive a notifications with assigned tasks and will start a collaborative work
- Weblate GUI indicates all missing translations and provides statistics to admin with information what's missing
- After all translations are ready, updated properties will be published as language packages in GDCC github repo: <a href="http://github.com/GlobalDataverseCommunityConsortium/dataverse-language-packs">http://github.com/GlobalDataverseCommunityConsortium/dataverse-language-packs</a>
- Every Dataverse version has own branch in github and handled separately by Weblate





# Weblate demo (1) - available translations

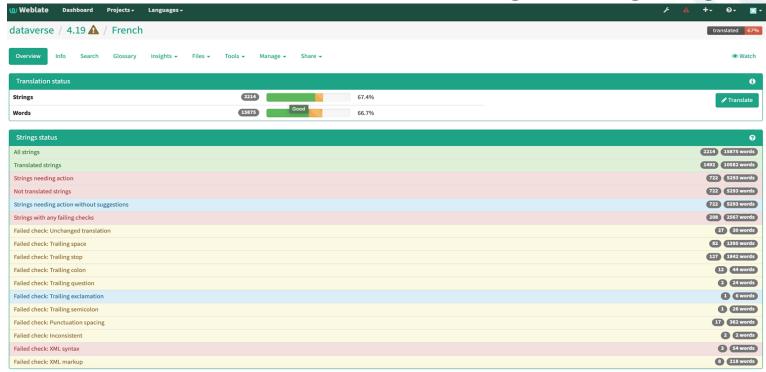
| <b>Weblate</b> Dashboard Pr | rojects + Languages +        |                |                      |          |               |            | ۶ <u>۸</u> +- 0- <u>۱۱</u> |
|-----------------------------|------------------------------|----------------|----------------------|----------|---------------|------------|----------------------------|
| dataverse / develop         | <b>A</b>                     |                |                      |          |               |            | translated 80%             |
| Translations Info Alerts    | Search Glossaries Insights ▼ | Files 		 Tools | Manage → Share →     |          |               |            | Watch                      |
| Language V                  | Strings $\vee$               | Words ∨        | Needs editing $\vee$ | Checks ∨ | Suggestions 🗸 | Comments ~ | • 🗆                        |
| English                     | source 99.9%                 | 100.0%         | 0.0%                 | 0.0%     | 0.0%          | 0.0%       | <b>✓</b> Translate         |
| French                      | 67.3%                        | 66.6%          | 0.0%                 | 9.3%     | 0.0%          | 0.0%       |                            |
| French (Canada)             | 99.9%                        | 99.9%          | 0.0%                 | 9.1%     | 0.0%          | 0.0%       | <b>ℰ</b> Translate         |
| German                      | 81.0%                        | 83.7%          | 0.0%                 | 20.9%    | 0.0%          | 0.0%       |                            |
| German (Austria)            | 68.7%                        | 69.3%          | 0.0%                 | 9.1%     | 0.0%          | 0.0%       | <b>ℰ</b> Translate         |
| Hungarian                   | 68.2%                        | 69.0%          | 0.0%                 | 7.1%     | 0.0%          | 0.0%       | <b>ℰ</b> Translate         |
| Indonesian                  | 81.7%                        | 80.3%          | 0.0%                 | 10.5%    | 0.0%          | 0.0%       |                            |
| Italian                     | 80.7%                        | 83.6%          | 0.0%                 | 4.4%     | 0.0%          | 0.0%       | <b>ℰ</b> Translate         |
| Northern Sami (se_SE)       | 80.9%                        | 83.7%          | 0.0%                 | 50.0%    | 0.0%          | 0.0%       | <b>ℰ</b> Translate         |
| Portuguese (Brazil)         | 99.7%                        | 99.8%          | 0.0%                 | 8.6%     | 0.0%          | 0.0%       | <b><i>I Iranslate</i></b>  |
| Slovenian                   | 74.2%                        | 78.3%          | 0.0%                 | 5.3%     | 0.0%          | 0.0%       | <b>♂</b> Translate         |
| Ukrainian (ua_UA)           | 67.4%                        | 69.7%          | 0.0%                 | 11.7%    | 0.0%          | 0.0%       | <b> </b>                   |
| Start now translation       | ·                            | ·              |                      |          |               |            |                            |

Source: <a href="http://weblate.dataverse.org/projects/dataverse/4\_19main/">http://weblate.dataverse.org/projects/dataverse/4\_19main/</a>





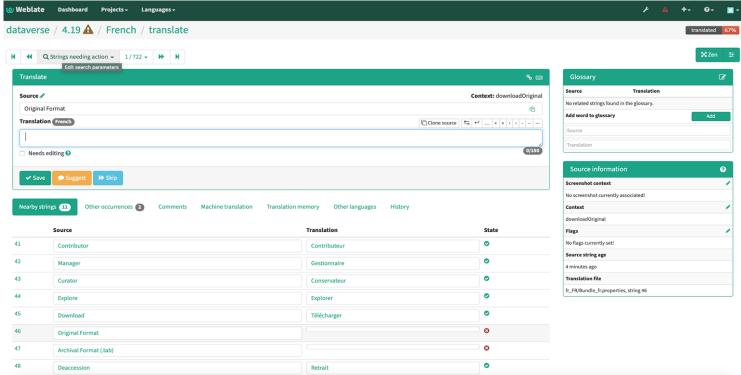
# Weblate demo (2) - manage language





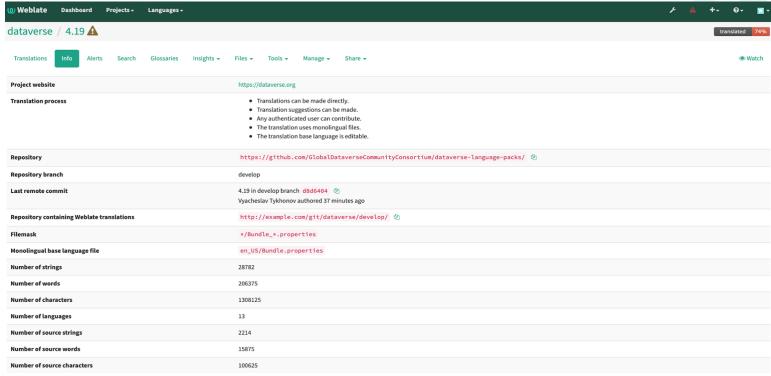


Weblate demo (3) - properties to translate





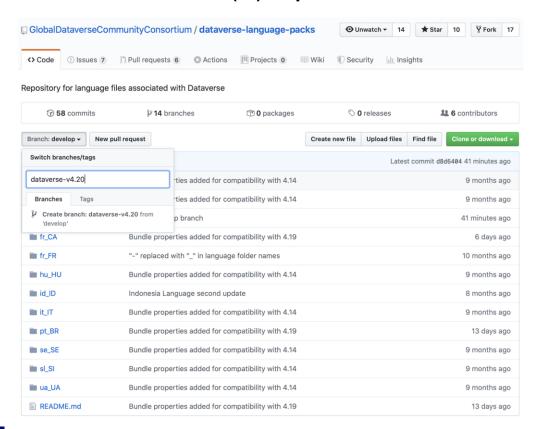
# Weblate demo (4) - info and repository to push







### Weblate demo (5) - publish translations in new branch



Suggestions for the translation pipeline:

- "develop" branch always contains all available languages with their latest versions of translations
- Weblate will use "develop" as a monolingual base to create translations for new Dataverse versions like 4.20
- new branch (dataverse-v4.20) should be created to synchronize all Weblate translations with github repository
- Weblate admin should check the consistency of all available translations and decide when language package is ready to push

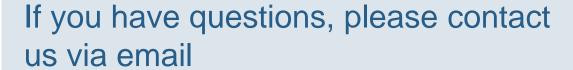
### Questions concerning part 4 and the overall webinar







### Thank you for participating in this webinar



marion.wittenberg@dans.knaw.nl

laura.huisintveld@dans.knaw.nl

vyacheslav.tykhonov@dans.knaw.nl



