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# Report on Open Science within the EOSC

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## Acronyms

EOSC	European Open Science Cloud
RI	Research Infrastructure
VLO	Virtual Language Observatory
CRF	CLARIN Resource Families
NLP	Natural Language Processing
SSH	Social Sciences and Humanities
OPERAS	Open Scholarly Communication in the European Research Area for Social Science and Humanities
SSHOC	Social Sciences and Humanities Open Cloud
COESO	Collaborative Engagement on Societal Issues
TRIPLE	Transforming Research Through Linked Interdisciplinary Exploration
VERA	Virtual Ecosystem for Research Activation
CLARIN	Common Language Resources and Technology Infrastructure
CESSDA	Consortium of European Social Science Data Archives
DARIAH	Digital Research Infrastructure for the Arts and Humanities
ERIC	European Research Infrastructure Consortium
FAIR	Findable, Accessible, Interoperable, Retrievable
DDI	Data Documentation Initiatives
OAI-PMH	Open Archives Initiative Protocol for Metadata Harvesting
ELSST	European Languages Social Sciences Thesaurus
OpenAIRE RG	OpenAIRE Research Graph
TBS	Trust Building System



## Publishable Summary

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The report *Open Science within the EOSC* collects the findings of T6.3 EOSC guidelines training and advocacy on Open Science, whose main goal is to produce, adapt and reuse general and specific guidelines to implement Open Science practices in disciplinary contexts, as well as to provide training to the SSH community on Open Science practices, tools and EOSC related content.

In T6.3 we delivered 12 training sessions and all training materials are published in open access<sup>1</sup>. In addition, we designed, developed and implemented an open workflow for the definition and management of the Open Science Training series, through the definition of a TRIPLE Training Toolkit, which reproduces the guidelines that have been designed and implemented to produce FAIR-by design training events. This set of documents constitutes section 1 of the present deliverable.

Moreover, section 2 of the report presents four use-cases which address Open Science-related issues from different perspectives. The first subsection (CNR) sheds light on pathways for interdisciplinary collaboration and managing networking challenges. The second subsection (OKMAPS) addresses the need for improved discoverability of resources across research publications, research data and research projects. The third (CLARIN) shows how the connection between data, tools and publications can be implemented and made public. A model is explored to enrich the metadata about language resource data and tools from the CLARIN Resource Families with related publications, making use of the GoTriple platform. This cross-connects the CLARIN Virtual Language Observatory, the SSHOC Open Marketplace and the GoTriple platform. The last subsection (CESSDA) examines the balance between making data more accessible and aligning with legal restrictions. It explains how data is aligned internally to make them easily harvestable, and how, in turn, enrichment features from EOSC (OpenAIRE) and GoTriple systems will be used to improve data at their original sources.

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<sup>1</sup> <https://project.gotriple.eu/training/>

## INTRODUCTION

Open Science is defined as “an inclusive construct that combines various movements and practices aiming to make **multilingual scientific knowledge openly available, accessible and reusable for everyone**, to **increase scientific collaborations and sharing of information** for the benefits of science and society, and to **open the processes of scientific knowledge creation, evaluation and communication** to societal actors beyond the traditional scientific community”<sup>2</sup>. Open Science is at the core of the development of the GoTriple platform, a service of and for the EOSC ecosystem. The EOSC enables open research and data workflows in all disciplines and scholarly domains, and the GoTriple platform, an OPERAS service, is among the very few European discovery services designed with the specific needs of SSH in mind.

The GoTriple platform is envisioned to play a crucial role in breaking down the silos that currently challenge multidisciplinary research both within and across the SSH domain, and therefore fosters Open Science practices. It **brings together digital scholarly objects of all kinds** from a wide range of databases, data repositories, publishing and aggregation services<sup>3</sup> to **promote findability and reduce fragmentation within SSH**, and thus represents a crucial step towards “bringing the long tail of Social Sciences and Humanities into Open Science”<sup>4</sup>. GoTriple advances Open Science in the EOSC by providing a single point of access to research publications, research data, and research projects relevant to the SSH field. It provides innovative services that improve the discoverability of these resources.

Furthermore, GoTriple enables **interoperability** with the larger Open Science and technical framework of the EOSC, thereby connecting the SSH data landscape with the European scholarly data commons as well as the larger Open Science frameworks and infrastructures.

Within the TRIPLE project, WP6 coordinates and ensures that the ongoing development of the GoTriple platform is strongly aligned with the evolving technical, interoperability, sustainability and governance standards of the EOSC ecosystem and that GoTriple is added to the EOSC catalogue<sup>5</sup>. To achieve this objective, Task 6.3 has been dedicated to the design and development of a training series and guidelines to replicate and reuse the working methodology and the materials.

In addition, we decided to define four use-cases which address the above-mentioned challenges in terms of making multilingual scientific knowledge openly available, accessible and reusable for everyone, increasing scientific collaborations and sharing of information, and opening the processes of scientific knowledge creation, evaluation and communication.

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<sup>2</sup> The UNESCO Recommendation on Open Science, November 2021, p. 7, <https://en.unesco.org/science-sustainable-future/open-science/recommendation>.

<sup>3</sup> OpenAire, Isidore, DOAJ, DOAB, and some databases from EKT that will be soon ingested.

<sup>4</sup> Giglia, Elena. (2019). OPERAS: bringing the long tail of Social Sciences and Humanities into Open Science. *JLIS.It*, 10(1), 140–156. <https://doi.org/10.4403/jlis.it-12523>

<sup>5</sup> <https://marketplace.eosc-portal.eu/>

This report is structured in two main sections.

Section 1 includes the current version of the TRIPLE Training Toolkit<sup>6</sup>, a tool intended to enable the design and development of FAIR-by-design training events, which constitutes a set of guidelines to deliver Open Educational Resources and open workflows.

Section 2 includes four chapters or sub-sections, each of them dedicated to a specific case of integration and/or collaboration with relevant SSH projects and Research Infrastructures.

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<sup>6</sup> Di Donato, Francesca, Provost, Lottie, Lombardo, Tiziana, Vignoli, Michela, Pohle, Stefanie, Tóth-Czifra, Erzsébet, Chen, Yin & Blotière, Emilie (2022). TRIPLE Training Toolkit (0.1). Zenodo. <https://doi.org/10.5281/zenodo.6256198>

## SECTION 1 - THE TRIPLE TRAINING TOOLKIT

In the early stages of the TRIPLE Project (Transforming Research through Linked Interdisciplinary Exploration), the need among project partners for a common understanding of European Open Science advancements and for a consistent implementation of Open Science practices called for a specific task within Work Package 6 (WP6). Accordingly, Task 6.3 focused on the design and delivery of an online training series on Open Science and the EOSC (the TRIPLE Open Science Training Series<sup>7</sup>) and on the creation of guidelines to organise online training events.

The TRIPLE Training Toolkit<sup>8</sup> was produced within Task 6.3 as a means to render the entire process of designing and delivering online training events FAIR and to address the frequent findability and reusability issues related to the management of digital training resources<sup>9</sup>.

Indeed the development of the online training series brought to light a set of challenges currently hindering the emergence of FAIR-by-design digital training resources as a common standard in research and training communities and enabled a reflection on how to overcome them. The TRIPLE Training Toolkit will help trainers create an online training series and open educational resources for projects or within their institution by showing how the resources we created within the TRIPLE Open Science Training Series are in line with the FAIR principles and by enabling for the entire open process we implemented to be easily reproduced and adapted for their own training activities.

The TRIPLE Training Toolkit consists of 11 self-explanatory files which are intended to help users navigate the entire process of designing and delivering FAIR training events and resources, from the organisation to the dissemination and assessment of the training. The Toolkit includes: a readme document; guidelines for the organisation of online training events; a step-by-step checklist which can be reused by anyone wishing to organise an online training; a table with learning objectives and learning outcomes per session; survey instruments for trainers and organisers to assess training needs and training impact in their community; template documents to be used for communication and dissemination activities and to increase outreach.

The following sections are updated versions of those published as independent files in Zenodo, they serve as a reference for those wishing to reproduce this experiment within their own

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<sup>7</sup> <https://project.gotriple.eu/training/>

<sup>8</sup> Francesca Di Donato, Lottie Provost, Tiziana Lombardo, Michela Vignoli, Stefanie Pohle, Erzsébet Tóth-Czifra, Yin Chen, & Emilie Blotière. (2022). TRIPLE Training Toolkit (0.1). Zenodo. <https://doi.org/10.5281/zenodo.6256198>

<sup>9</sup> Directorate-General for Research and Innovation (European Commission), EOSC Executive Board, Manola, Natalia, Lazzeri, Emma, Barker, Michella, Kuchma, Iryna, Gaillard, Vincianne, & Stoy, Lennart. (2021). Digital skills for FAIR and Open Science : Report from the EOSC Executive Board Skills and Training Working Group. Publications Office of the European Union. <https://data.europa.eu/doi/10.2777/59065>

institution or for their own training activities<sup>10</sup>. Please note that the training series are still ongoing and as such the present document and the files listed below will be followed by updated versions by the end of the project (2023).

## 1. README

The TRIPLE Training Toolkit is part of the work performed by Work Package 6 (WP6) under Task 6.3 in the TRIPLE Project (Transforming Research through Linked Interdisciplinary Exploration). The project is funded by the European Commission, under Grant Agreement No. 863420 and will run for 42 months starting from October 2019.

The TRIPLE Open Science Training Series focuses on the design and delivery of competence-oriented training to address the specific and general needs of the research community on Open Science topics and on the EOSC.

The experiment enabled a reflection on the current challenges to make FAIR-by-design training resources and how to overcome them.

Lead researcher: Francesca Di Donato

Other researchers: Lottie Provost, Michela Vignoli, Erzsébet Tóth-Czifra, Tiziana Lombardo, Stefanie Pohle, Emilie Blotière, Yin Chen.

The following files are deposited in Zenodo to serve as a reference for those wishing to reproduce this experiment within their own institution or for their own training activities.

Please note that the training series are still ongoing and as such the present document and the files listed below will be followed by updated versions by the end of the project (2023).

All documents are in Open Access (CC-BY) except if indicated otherwise.

### Files

\* The file Guidelines\_Organisation\_TRIPLE\_Training\_Toolkit.docx is a step-by-step guide which can be duplicated and repeated easily throughout the entire training series to support the organisers, moderators and speakers of the TRIPLE Open Science Training Series.

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<sup>10</sup> Files 4, 5 and 9 are updated versions of the ones deposited on Zenodo.

- \* The file `To_Do_TRIPLE_Training_Toolkit.xlsx` is a template spreadsheet to support organisers, moderators and speakers in sharing the tasks related to the training sessions and which gives a clear timeline of the actions to be performed.
- \* The file `List_Past_Events_TRIPLE_Training_Toolkit.docx` references all past TRIPLE training events with the name of the contributors, a short description of the event and the links to the resources.
- \* The file `Training_Objectives_Learning_Outcomes_TRIPLE_Training_Toolkit.docx` provides an overview of the Training objectives and Learning outcomes for each training session.
- \* The file `Internal_Training_Needs_Survey_TRIPLE_Training_Toolkit.docx` contains the methodology of the survey which was shared twice within the project consortium to assess the partners' training needs.
- \* The files `Internal_Training_Needs_Results1_TRIPLE_Training_Toolkit.png` and `Internal_Training_Needs_Results2_TRIPLE_Training_Toolkit.png` show the results to the internal training needs questionnaire.
- \* The file `Post_Training_Survey_TRIPLE_Training_Toolkit.docx` contains the methodology of the survey shared at the end of the training sessions to collect attendees' feedback and measure the relevance and utility of the training series
- \* The file `Post_Training_Survey_Results_TRIPLE_Training_Toolkit.xlsx` contains the answers to the post training survey. (Please note that the procedure was implemented in October 2021 and as such does not reference the answers to previous training events).
- \* The file `Promotion_Dissemination_Template_TRIPLE_Training_Toolkit.xlsx` is a template spreadsheet in which project partners report their promotion and dissemination activities regarding the TRIPLE training series.
- \* The file `Enlarged_Audience_Template_TRIPLE_Training_Toolkit.xlsx` contains the prospecting information which was collected to widen the audience of the TRIPLE training sessions.

Last updated: 25 February 2022.

## 2. Guidelines for the organisation of TRIPLE Open Science training events

This document was produced within Task 6.3 of the TRIPLE project to support the organisation of the TRIPLE Open Science Training Series. It is part of the TRIPLE Training Toolkit deposited on Zenodo. DOI: [10.5281/zenodo.6256198](https://doi.org/10.5281/zenodo.6256198).

Authors: Francesca Di Donato, Lottie Provost, Tiziana Lombardo, Michela Vignoli, Erzsébet Tóth-Czifra, Yin Chen, Stefanie Pohle.

### Application

These guidelines apply to organisers who take part in the TRIPLE Open Science Training Series, a set of instructions is provided for both speakers and moderators.

### Purpose

The purpose of this document is to provide a structured step-by-step guide which can be duplicated and repeated easily throughout the entire training series to support the organisers, moderators and speakers of the TRIPLE Open Science Training Series.

*Note:* This document is aimed at novices. If you have already taken part in the TRIPLE Open Science Training Series you may wish to go directly to the To\_Do spreadsheet.

### Contents

#### **Guidelines for organisers**

Before the event

After the event

#### **Instructions for moderators**

Before the event

After the event

#### **Instructions for speakers/presenters**

Before the event

After the event

## Guidelines for organisers

### Before the event

All training events are delivered online.

The software Zoom is used to deliver the training sessions.

The project coordinator (WP1) can provide a Zoom link but any support from other partners are more than welcome.

1. Create a Zoom link (Ask for a link to WP1 or to the moderator of the event)
  - Note: it's important to create the zoom link FIRST because it will be sent to participants via the confirmation page they see after registering.
  - Please make sure that the Zoom account will NOT be used by anyone else for the whole duration of the training session.
2. Open the Event planning document and insert the information related to the training session (if it has not already been done) under the tab "TRIPLE Events".
3. Go to Google Drive and open the TRIPLE folder (you should find it in the "Shared with Me tab" on the left of your screen).
  - From there you can access the WP6 folder and then the Task 6.3 - folder (T6.3) in which you will find relevant material used for previous training events.
  - Please open the folder Templates for organisation of training events, it contains the following templates that you can duplicate and adapt for each specific training event (add the title of the event, change date, etc.):
    - Registration form,
    - Questions from partners,
    - Template slides for speakers/moderators,
    - To Do spreadsheet template to help you with the division and monitoring of tasks,
    - Template email for event announcement to partners,
    - Promotion and dissemination strategy spreadsheet to be filled in by partners once they have disseminated the event to their networks.
  - Please create a new folder under the T6.3 folder for the training event in which you will deposit all the files relative to this specific event. Once the folder is



created, the speaker will deposit a description of the event for you to use (see 5. below).

4. Create a Registration form starting from the template (or duplicate a previous Registration form and modify the information accordingly):
  - Check that consent for recording the event is included
  - Include the description of the event
  - Modify the text in the confirmation page using the template, and add the correct link to zoom or alternative platform.
5. Copy the event description provided by the task leader and send it to the dedicated referent contact to post it on the [TRIPLE website](#) under the Training Events tab.
  - Referent person to post the event announcement: WP8 leader or Task 6.3 leader
  - It should be online 2 weeks before the event.
6. Create a Questions form to be shared among the consortium before the event, to gather questions to be addressed to the speakers, starting from the template.
7. Create a survey on [Mentimeter](#) (or duplicate a previous one) to collect participants' feedback at the end of the session. Make sure to update the code of the post-training survey on the date of the event as it expires every 48h hours.
8. Contact speakers and moderators to identify possible technical requirements (It may be necessary to hold a technical testing session before the official training event).
  - Ask them to add a reference to TRIPLE Grant Agreement n. in their presentation.
  - When possible, provide them with the template slides for moderators and speakers.
9. Send an email to the project partners to announce the event using the template email.  
**Send it 2 weeks before the event.**
  - Ask them to save the date and register
  - Ask them to disseminate the information to their respective channels (according to the training events mailing list spreadsheet)
  - Ask them to ask their questions in the dedicated questions form
  - Once they have disseminated the information, ask them to write in the promotion and dissemination strategy spreadsheet so we can have a trace of where/ to whom the information has been shared.

10. Send a grouped invitation to potential participants to register to the event via Mailchimp. **Send it 2 weeks before the event.**
  - If you do not have access to the Mailchimp account: Ask the contact person who manages the account to be added as a recipient to the Mailchimp mailing list account.
    - Go to the campaigns in Mailchimp, duplicate one of the previous “Invitation” campaigns and modify the information accordingly.
    - Copy and paste the event description provided by the task leader (see 5. above).
  - The invitation should be sent to the audience
  - Make sure you only send the invitation to contacts who have previously agreed for their emails to be reused, they are listed as “subscribed” in the contacts list.
11. Disseminate the event announcement on TRIPLE social media
  - Contact the referent person in WP8 for the promotion plan
12. Import the contacts from the registration form in a .csv file and upload them on Mailchimp. (2 days before the event and on the day of the event)
  - In Mailchimp, create a tag with the name of the event (ex: VDD for Visual Data Discovery) and assign it to all contacts from the .csv file you uploaded.
  - Make sure all imported contacts are added as subscribed.
13. Send 2 reminders with technical specifications to attendees via Mailchimp. **Send the first one 2 days before the event and the other on the day of the event.**
  - Go to the campaigns in Mailchimp, duplicate the previous “Reminder #1” and “Reminder #2” campaigns and modify the information accordingly: update the title of the session, the date and time, and the Zoom link to the training session.
  - Send the reminder to the audience with the tag of the event that you created beforehand. (ex: for the training on Visual Data Discovery, send both reminders to the Audience with the tag VDD).

#### After the event

- Keep track of the number of attendees by filling in the Calendar of OS/EOSC events table.
- Fill in the TRIPLE Public Events Reporting form

- Store the video recording on [Nakala platform](#) - TRIPLE collective account. (wait for the video recording to be deposited by WP1 leader in the dedicated Google Drive folder).  
Contact person:
- Store the video recording on [Youtube - TRIPLE channel](#).  
Contact person:
- Store the slides in Zenodo.org in the [OPERAS Community](#)  
Contact person:
- Create a resource in the DARIAH-Campus CMS  
Contact person:
- Download the data from the survey on Mentimeter and deposit it in the Google drive folder Data Post-Training Surveys
- Insert the data from the post training survey in the table Post training survey (answers)
- In Mailchimp: unsubscribe the participants who have written “No, I do not wish to receive invitations for TRIPLE Open Science events” in their registration form.
- If asked: send certificate of participation (you can find the template in the folder Templates for organising events folder). Send it to participants in version **PDF/A**.

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## Instructions for moderators

Organisers should provide the moderators with the following information:

### Before the event

- Provide them technical aspects on how to use Zoom
- Provide them the Zoom link
- Provide them (eventual) question gathered within the TRIPLE consortium with the dedicated document
- Provide the template slides with the TRIPLE Grant Agreement
- Ask for consent to deposit files into Zenodo
- Provide them the link to the Mentimeter survey to be showcased at the end of the session.

### After the event

- Send the slides to WP8 leader to be deposited in Zenodo, slides must be in OPERAS community and in .pptx format.  
Contact person:
- Send the video recording to WP8 leader to be uploaded on the TRIPLE Youtube channel. Contact person:
- Send the video recording and the slides to WP1 leader to be stored on Nakala. Contact person:

## Instructions for speakers/presenters

Organisers should provide the moderators with the following information:

### Before the event

- Provide them technical aspects on how to use Zoom
- Provide them the Zoom link
- Provide them (eventual) questions gathered within TRIPLE consortium with the dedicated document
- Provide the template slides with the TRIPLE Grant Agreement
- Provide instructions on where to deposit the slides and training materials(in the shared Google Drive)
- Ask for consent to deposit files into Zenodo

### After the event

- Speakers should deposit their slides in the dedicated Google Drive folder so that the moderator or the organiser can send them to the relevant contact person to be deposited in Nakala and Zenodo.

## 3. To Do List TRIPLE Training Events

Authors: Tiziana Lombardo, Lottie Provost, Francesca Di Donato

The purpose of this spreadsheet is to support organisers, moderators and speakers in sharing the tasks related to the training sessions and to give a clear timeline. It also serves as a reference where the links relevant to the training session are copied in column E. The original file is downloadable here: DOI: 10.5281/zenodo.6256198.

INSERT DATE AND TITLE OF THE EVENT	For details see Guidelines				Involved team	
	Task	Deadline	Resp. person	Status		Links/references
Create zoom link					Add zoom link	
Provide short description of the event to WP6						
Duplicate template documents					Add link to the registration form	
Send template slides to speaker						
Upload description of the event on website (include registration link)						
Create Email for partners to register (include registration link)						
Create Invitation campaign on Mailchimp (include registration link)						
Create Reminder campaign (x2) on Mailchimp						
Create a Tag with the name of the event on Mailchimp						
Create Mentimeter survey						
Send Email to partners to register	2 weeks before the event					
Send Invitation campaign to potential participants via Mailchimp (send to the entire audience, include registration link)	2 weeks before the event					
Disseminate event on social media						
Share the questions collected from the partners to the speaker (if any)						
Import email addresses from the registration form in Mailchimp, tag them with name of the event.						
Send Reminder campaign #1 via Mailchimp (use the tag of the event)	2 days before the event					
Final import of registered email addresses in Mailchimp, tag them with name of the event	on the day of the event					
Send Reminder campaign #2 via Mailchimp (use the tag of the event)	on the day of the event					
Update Mentimeter code on the speaker slides	on the day of the event					
Start the session recording						
<b>Important: make sure no one will use the zoom account at the same time</b>	on the day of the event					
Show the survey on mentimeter at the end of the session	on the day of the event					
Keep track of number of attendees after the event	on the day of the event					
Send speaker slides to WP6 leader (or WP6) to be stored on Zenodo, Nakala and Youtube						
Send video recording to WP6 leader (or WP6) to be stored on Zenodo, Nakala and Youtube						
Deposit your presentation (slides) in the dedicated folder in G-drive					Add link to the Google Drive folder	
Store slides on Zenodo following the procedure designed by WP6						
Download the data from the post-training survey on Mentimeter and and insert the data in the dedicated spreadsheet					Add link to a common spreadsheet which gathers all the data from past surveys	
Unsubscribe contacts who do not wish to receive future training events in Mailchimp						
Create the learning resource on Dariah-Campus						
Fill in WP6 documents on event planning and reporting						
Update the project website with the links to video recordings, slides and Dariah Campus						

FIGURE 1. To\_Do\_TRIPLE\_TRAINING\_TOOLKIT

## 4. List of Past Events TRIPLE Open Science Training Series

This document was produced within Task 6.3 of the TRIPLE project to support the organisation of the TRIPLE Open Science Training Series. It is part of the TRIPLE Training Toolkit deposited on Zenodo. DOI: 10.5281/zenodo.6256198.

Authors: Francesca Di Donato, Lottie Provost.

All the training materials related to this training series are stored in Zenodo under the OPERAS Community<sup>11</sup> and can easily be accessed by filtering the search by grant number (863420) in the repository.

Information on the specific topics of the training series is reported below. A table of training objectives and learning outcomes for each training session has been produced and can be found in the TRIPLE Training Toolkit documents.

### CLARIN Café on the Rights of Data Subjects in Language Resources

- Date: 30 March 2021 h 14.00-16.00 (CEST)
- Number of attendees: 50
- Presentation and video recording:  
<https://www.clarin.eu/blog/recap-clarin-cafe-rights-data-subjects-language-resources>

This webinar was organised as a joint collaboration between CLARIN and the TRIPLE project.

### The Open Access Publishing Platform Open Research Europe (ORE)

- Date: 21 April 2021 h 14.00-15.30 (CEST)
- Number of attendees: 90
- Presentation: <https://doi.org/10.5281/zenodo.4707975>
- Video recording: [https://youtu.be/\\_3jpFxtKIME](https://youtu.be/_3jpFxtKIME)
- Learning Resource on DARIAH-Campus: <https://tinyurl.com/4pb7ru8c>

This training session focused on the Open Access Publishing Platform Open Research Europe (ORE) and was jointly presented by Emma Lazzeri, Open Science researcher at GARR and ISTI-CNR, and Ilaria Fava, Project Officer in the field of Open Science at the Goettingen State University Library (UGOE).

### EOSC Onboarding

- Date: 26 May 2021 h 13.00-14.30
- Number of attendees: 23
- Presentation: <https://doi.org/10.5281/zenodo.5036684>
- Video recording: <https://youtu.be/nMqhLXZXHaw>
- Learning Resource on DARIAH-Campus: <https://tinyurl.com/2p8289nw>

The training session was dedicated to the EOSC onboarding and was led by Carsten Thiel, Chief Technical Officer at CESSDA ERIC and Joshua Tetteh Ocansey, Technical Officer at CESSDA ERIC.

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<sup>11</sup> <https://zenodo.org/communities/operaseu/?page=1&size=20>

## EOSC - State of the Art and Perspectives

- Date: 29 June 2021 h 14.00-15.30 (CEST)
- Number of attendees: 31
- Presentation: <https://doi.org/10.5281/zenodo.5045044>
- Video recording: <https://youtu.be/unM72WN4X8g>
- Learning Resource on DARIAH-Campus: <https://tinyurl.com/yfr7962s>

In this training session Suzanne Dumouchel, Head of European Cooperation at Huma-Num (Paris) and member of the Board of Directors of the EOSC Association, presents the latest stages of development of the EOSC and the next steps towards the EOSC implementation.

## FAIR Data in the Social Sciences and Humanities

- Date: 15 September 2021 h 14.00-15.30 (CEST)
- Number of attendees: 80
- Presentation: <https://doi.org/10.5281/zenodo.5510388>
- Video recording: <https://youtu.be/jsN-72hfVto>
- Learning Resource on DARIAH-Campus: <https://tinyurl.com/mw24sucm>

The training session was dedicated to FAIR Data in Social Sciences and Humanities and was held by Elena Giglia, Head of the Open Access Office at the University of Turin and member of the Executive Assembly of OPERAS.

## EOSC Architecture

- Date: 12 October 2021 h 14.00-15.30 (CEST)
- Number of attendees: 37
- Presentation: <https://doi.org/10.5281/zenodo.5566572>
- Video recording: <https://youtu.be/7Vlf58-yGUY>
- Learning Resource on DARIAH-Campus: <https://tinyurl.com/3au5xeyf>

The training session was dedicated to the EOSC Architecture and was presented by Ville Tenhunen, Data Solutions Architect at the EGI Foundation.

## Visual Data Discovery for the Social Sciences and Humanities Context

- Date: 15 December 2021 h 14.00-15.30 (CET)
- Number of attendees: 24
- Presentation: <https://doi.org/10.5281/zenodo.5795376>
- Video recording: [https://www.youtube.com/watch?v=WZQG\\_Ob1P40](https://www.youtube.com/watch?v=WZQG_Ob1P40)
- Learning Resource on DARIAH-Campus: to come.

The training session was dedicated to Visual Data Discovery in the Social Sciences and Humanities (SSH) and was presented by Michela Vignoli, Community Manager at Open Knowledge Maps (OKMAPS), the world's largest visual search engine for scientific knowledge.

## The Importance of User-Centred Design for Open Science

- Date: 16 February 2022, 14.00 – 15.30 (CET)
- Number of attendees: 37
- Presentation: <https://doi.org/10.5281/zenodo.6207720>
- Video recording: <https://youtu.be/PpqtSWX4azI>
- Learning Resource on DARIAH-Campus: <https://tinyurl.com/24akrvty>

This training event was devoted specifically to giving an understanding of the importance of the co-design process and the impact it has on the development of digital tools such as the GoTriple discovery platform. It was presented by Paula Forbes, Post Doctoral Researcher at Abertay University.

## The GoTriple Trust Building System

- Date: 16 March 2022, 14.00 – 15.30 (CET)
- Number of attendees: 21
- Presentation: <https://doi.org/10.5281/zenodo.6367120>
- Video Recording: [https://youtu.be/Zc4t\\_m5MXmY](https://youtu.be/Zc4t_m5MXmY)
- Learning Resource on DARIAH-Campus: to come.

This training event focused on getting acquainted with the GoTriple Trust Building System (TBS), a tool that enables SSH researchers to find reliable partners and connect with them through their network. It was presented by Gaël van Weyenbergh and Maxime Bouillard, founders of MEOH.

## Multilingual Vocabularies for the Social Sciences and Humanities

- Date: 20 April 2022, 14.00 – 15.30 (CEST)
- Number of attendees: 117
- Presentation: <https://doi.org/10.5281/zenodo.6501586>
- Video Recording: <https://youtu.be/3DVsmom4RUk>
- Learning Resource on DARIAH-Campus: to come.

This training webinar was a synergy of TRIPLE and SSHOC projects, and was devoted especially to the creation, use and management of controlled vocabularies in the SSH. It was presented by Daan Broeder with contributions from other SSHOC partners (CLARIN ERIC/SSHOC), Haris Georgiadis (EKT/TRIPLE) and Nikos Vasilogamvrakis (EKT).

## The GoTriple Pundit Annotation Tool

- Date: 11 May 2022, 14.00 – 15.30 (CEST)
- Number of attendees: 48
- Presentation: DOI: <https://doi.org/10.5281/zenodo.6552360>
- Video Recording: <https://youtu.be/DmKT4wktPG4>



- Learning Resource on DARIAH-Campus: to come.

This training webinar was dedicated to the GoTriple Pundit Annotation Tool and presented Pundit, its purpose and functionalities in the SSH research context. A step-by-step guide showcased how to use Pundit from registering to annotating web documents. It was presented by Tiziana Lombardo (Net7), Sona Arasteh (Max Weber Stiftung) and Giulio Andreini (Net7).

## Copyright and Academia in the Digital Era

- Date: 21 June 2022, 14.00 – 15.30 (CEST)
- Number of attendees: 44
- Presentation: DOI: <https://doi.org/10.5281/zenodo.6683670>
- Video Recording: [https://www.youtube.com/watch?v=ckQOIM99\\_DU](https://www.youtube.com/watch?v=ckQOIM99_DU)
- Learning Resource on DARIAH-Campus: to come.

This training webinar focused on the foundations of copyright and offered snapshots on the most relevant topics for academic authors, intermediaries and users, such as copyright flexibilities, exceptions and limitations in the field of cultural heritage access and preservation (digitization, e-lending, orphan and out-of-commerce works), copyright authorship and ownership, law and praxis of academic publishing, commercial and non-commercial licensing, collective management of authors' rights, with brief references to open access.

This document was last updated on 27 June 2022.

## 5. Training Objectives and Learning Outcomes TRIPLE Open Science Training Series

This document was produced within Task 6.3 of the TRIPLE project to support the organisation of the TRIPLE Open Science Training Series. It is part of the TRIPLE Training Toolkit deposited on Zenodo. DOI: **10.5281/zenodo.6256198**.

Authors: Francesca Di Donato, Lottie Provost.

This document concerns the period going from March 2020 to May 2022.

### Purpose

The purpose of this document is to provide an overview of the Training objectives and Learning outcomes for each session. Their definition is an integral part of the design process of the

training series as they ensure that clear objectives have been stated for the trainer and clear outcomes are identifiable by the trainee.

### Definitions

Training objectives: statements that define what the attendees are expected to learn

Learning outcomes: « After this watching this training you should be able to ... »

Note: Verbs were chosen based on this document

<https://docs.google.com/document/d/1xWZ3K52xSpHOOXHbPI223picv3oZ5Eh-/edit>

1	<b>CLARIN Café on the Rights of Data Subjects in Language Resources</b>
Training objectives	<p>Provide an overview of the legal framework governing personal data processing in the European Union.</p> <p>Present the rights of data subjects in language resources as a central element of the General Data Protection Regulation (GDPR) which entered into application on 25 May 2018.</p> <p>Explain that the rights of data subjects are divided into restraining and non-restraining rights</p>
Learning outcomes	<p>Explain what rights does the GDPR grant to data subjects.</p> <p>Identify if these rights are limited when personal data is processed for the purpose of language research.</p> <p>Identify who is responsible for handling data subjects' requests related to the exercise of their rights.</p>
2	<b>The Open Access Publishing Platform Open Research Europe (ORE)</b>
Training objectives	<p>Present Horizon Europe.</p> <p>Describe the European Commission's strategy for assessing research in the Open Science era.</p> <p>Explain the benefits researchers will gain from using the ORE platform.</p> <p>Provide technical details on how the ORE platform works and a walkthrough of the platform.</p>

Learning outcomes	<p>Explain what the ORE publishing platform is.</p> <p>Identify the benefits the ORE platform provides to researchers.</p> <p>Use the ORE platform in detail.</p> <p>Discuss how the ORE platform will facilitate compliance to European Open Access terms of funding.</p>
3	<b>EOSC Onboarding</b>
Training objectives	<p>Assist service providers in sharing services via EOSC with the EOSC Portal.</p> <p>Introduce them to some of the benefits of the EOSC Portal.</p>
Learning outcomes	<p>Explain the minimum criteria to become a provider and the requirements to onboard services into the EOSC Portal.</p> <p>Apply the process of onboarding services into the EOSC Portal.</p> <p>Gather information from the TRIPLE project to be taken into account for the next iteration of the Portal development.</p>
4	<b>EOSC - State of the Art and Perspectives</b>
Training objectives	<p>Describe the EOSC ecosystem and its actors and explain the recent changes in governance.</p> <p>Provide insights on how to contribute to the EOSC, in particular through the EOSC Association Task Forces and the ESFRI Science Clusters.</p> <p>Present the strategy of EOSC Future and the benefits it will provide to service providers and researchers.</p>
Learning outcomes	<p>Explain the latest stages of the EOSC development.</p> <p>Describe the recent changes in the EOSC governance.</p> <p>Understand the next steps for the EOSC implementation.</p> <p>Contribute to the EOSC</p>
5	<b>FAIR Data in the Social Sciences and Humanities</b>
Training objectives	<p>Define research data in SSH.</p> <p>Explain the importance of FAIR principles for the management of research data in SSH.</p> <p>Explain and show examples of FAIR principles implementation in SSH.</p>
Learning outcomes	<p>Describe how research data is defined in SSH.</p> <p>Demonstrate the importance of FAIR principles in the management of research data in SSH.</p>

	Apply FAIR principles to data and implement them in SSH.
6	<b>EOSC Architecture</b>
Training objectives	<p>Provide an overview of the EOSC Architecture principles, the EOSC Future guiding principles and the Minimum Viable EOSC.</p> <p>Explain the main components of the EOSC Architecture (EOSC Core, EOSC Exchange, EOSC Support Activities and the EOSC Interoperability Framework).</p> <p>Present the scope and purpose of the EOSC Interoperability Framework and its importance in federating the services that will compose the EOSC.</p> <p>Provide information on challenges to achieving technical, semantic, organisational and legal interoperability and a set of recommendations.</p>
Learning outcomes	<p>State the principles of the EOSC Architecture.</p> <p>Describe the main components of the EOSC Architecture.</p> <p>Analyse interoperability issues in the EOSC Architecture.</p> <p>Name the projects and further developments of the EOSC Architecture.</p>
7	<b>Visual Data Discovery for the Social Sciences and Humanities Context</b>
Training objectives	<p>Present discovery challenges in the SSH.</p> <p>Explain the different applications knowledge maps and stream graphs can have.</p> <p>Present the discovery features of the GoTriple platform.</p>
Learning outcomes	<p>State how knowledge maps and streamgraphs can help researchers overcome discovery challenges.</p> <p>Visually explore research topics and recognize trends in research with GoTriple.</p> <p>Produce and interpret knowledge maps and streamgraphs on the GoTriple platform.</p>
8	<b>The Importance of User-Centred Design for Open Science</b>
Training objectives	<p>Explain the importance of user centred design.</p> <p>Show the iterative process of understanding user needs.</p> <p>Present the creation of personas and scenarios to extract user requirements.</p> <p>Present the Cognitive Walkthrough method and the Artefacts Ecology Mapping method.</p>

Learning outcomes	<p>Understand the importance of user centred design in the open science perspective.</p> <p>Synthesise the main phases of the iterative design process.</p> <p>Define user requirements, scenarios and personas.</p> <p>Understand the main differences and complementarities of the cognitive walkthrough method and the artefacts ecology mapping method.</p>
9	<b>The GoTriple Trust Building System</b>
Training objectives	<p>Present the TBS and its main features.</p> <p>Engage with the participants and collect their feedback on the TBS</p> <p>Explain how the TBS will be linked to the GoTriple platform</p>
Learning outcomes	<p>Create a profile.</p> <p>Post a request.</p> <p>Interact with peers (invitations, introductions, group creation).</p>
10	<b>Multilingual Vocabularies for SSH</b>
Training objectives	Present multilingual SSH Vocabularies and explain their importance.
Learning outcomes	<p>Explain what SSH vocabularies are and why they are so important.</p> <p>Describe how to create a multilingual SSH vocabulary.</p> <p>Identify management needs related to the large variety of vocabularies in the SSH.</p> <p>Summarise how to build an interoperable infrastructure for vocabularies.</p>
11	<b>The GoTriple Pundit Annotation Tool</b>
Training objectives	<p>Present the Pundit Annotation Tool and its applications in SSH research.</p> <p>Show the process of using Pundit, from registration to annotating web documents.</p>
Learning outcomes	<p>Know the purposes and functionalities of the Pundit Annotation Tool.</p> <p>Understand how Pundit can be used in the SSH research context.</p>
12	<b>Copyright and Academia in the Digital Era</b>
Training objectives	Provide an introduction on the foundations of copyright, from material to digital.

	Present the principles of ownership and economic exploitation of academic works.
Learning outcomes	Understand what changed in the digital era regarding copyright. Have an overview of international and European legislation. Understand the principles of ownership and economic exploitation of academic works.

FIGURE 2. LIST\_PAST\_EVENTS\_TRIPLE\_TRAINING\_TOOLKIT\_V1.1

This document was last updated on 27 June 2022.

## 6. Internal Training Needs Survey - Methodology TRIPLE Open Science Training Series

This document was produced within Task 6.3 of the TRIPLE project to support the organisation of the TRIPLE Open Science Training Series. It is part of the TRIPLE Training Toolkit deposited on Zenodo. DOI: [10.5281/zenodo.6256198](https://doi.org/10.5281/zenodo.6256198).

Authors: Francesca Di Donato.

### Purpose

Collect partners' needs and input on training topics for the TRIPLE Open Science Training Series.

### Methodology

This survey was distributed to consortium partners twice. This document reflects only the methodology of the questionnaire and can be reused for other purposes. We used Google Forms to share the document with project partners, two separate documents containing the answers can be found in the TRIPLE Training Toolkit in .png format.

### Survey

#### 1. Introduction

Template text: *This questionnaire aims at better understanding TRIPLE Consortium needs in terms of Training, for what specifically concerns Open Science and the EOSC. It will help us*

*(WP6) in setting up a calendar of internal Training events, as planned in Task 6.3 - EOSC guidelines training and advocacy on Open Science.*

*In particular, we ask you to indicate the issues you want to know more, and to explaining more in detail what exactly your training needs are: what specifically are you interested in? What would you like to learn, test, practice?*

*Thanks for your cooperation!*

2. Please specify in which WP you are mainly involved

(free answer)

3. For which topic(s) related to Open Science and/or EOSC would you like to seize a training opportunity?

(multiple choice question)

- *Copyright and Legal issues*
- *Data discovery*
- *Data standardization*
- *Open Access publications*
- *Research evaluation*
- *Open data publishing*
- *Specific issues of WP2*
- *Specific issues of WP3*
- *Specific issues of WP4*
- *Specific issues of WP5*
- *Specific issues of WP7*
- *The EOSC architecture*
- *The EOSC future development*
- *The EOSC governance*

4. Please add your suggestions

(free answer)

This document was last updated on 25 February 2022.

Results are shown in the following figures.

For which topic(s) related to Open Science and/or EOSC would you like to seize a training opportunity?

20 réponses

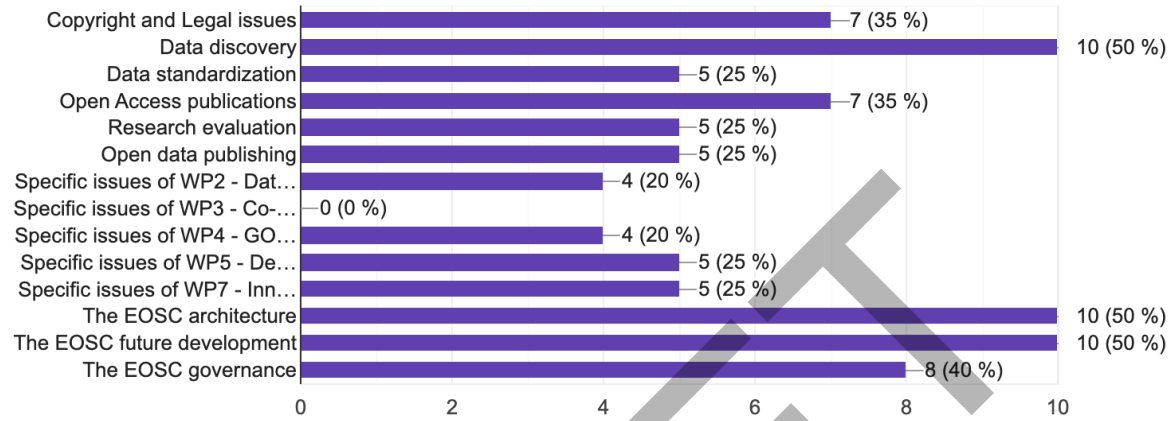


FIGURE 3. INTERNAL\_TRAINING\_NEEDS\_RESULTS1\_TRIPLE\_TRAINING\_TOOLKIT

For which topic(s) related to Open Science and/or EOSC would you like to seize a training opportunity?

9 réponses

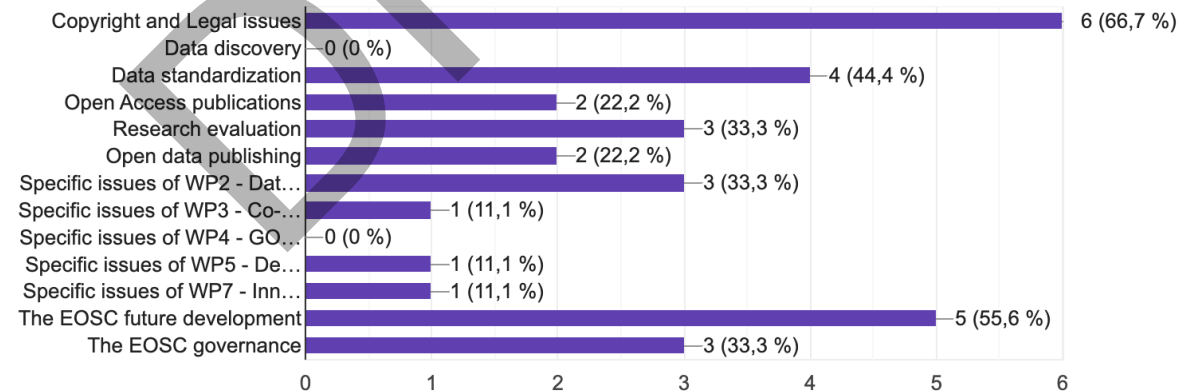


FIGURE 4. INTERNAL\_TRAINING\_NEEDS\_RESULTS2\_TRIPLE\_TRAINING\_TOOLKIT



## 7. Post-Training Survey - Methodology

This document was produced within Task 6.3 of the TRIPLE project to support the organisation of the TRIPLE Open Science Training Series. It is part of the TRIPLE Training Toolkit deposited on Zenodo. DOI: [10.5281/zenodo.6256198](https://doi.org/10.5281/zenodo.6256198).

Authors: Emilie Blotière, Francesca Di Donato, Lottie Provost.

### Purpose

The purpose of this survey is to collect attendees' feedback after each session and measure the relevance and utility of the training series.

### Methodology

We use the [Mentimeter](#) tool to display the survey to increase audience engagement at the end of the training session and to get higher response rates.

The following methodology can nonetheless be replicated using a simple questionnaire or a powerpoint format.

### Survey

#### 1. Introduction

*Thank you for attending the TRIPLE training session on title of the training.*

*We hope you enjoyed the training as much as we did.*

*With this survey we would like to ask for your opinion regarding the general organisation and learning outcomes of the training on title of the training.*

2. Ask a short set of questions that can be used by organisers to estimate and quantify to what extent the training objectives have been reached.

*Question 1: I enjoyed the training session*

*Question 2: The training session met my expectations*

*Question 3: In the session, I felt empowered to share my own ideas and ask questions*

*Question 4: The topic was relevant to my work*

*Question 5: I am interested in being informed of the coming sessions*

*Note: For all 5 questions above the following answers are available: I strongly agree, I agree, Neutral, I disagree, I strongly disagree.*

*Question 6: Any remarks or comments ?*

3. Final page: insert all links where to find training materials.

Thank you for your time !

The training materials will be uploaded on the following platforms

- Zenodo: <https://zenodo.org/communities/operaseu/?page=1&size=20>
- TRIPLE Project Youtube Channel:  
<https://www.youtube.com/channel/UCjwEHdltYYhocCC9o6RljuQ>
- To learn more about TRIPLE Training events: <https://project.qotriple.eu/training/>
- Follow us on Twitter @TripleEU with the hashtag #GoTriple: <https://twitter.com/tripleeu>


This document was last updated on 25 February 2022.

The following figures show the impact of the training event, and present the template for disseminating TRIPLE Training events.

	A	B	C	D	E	F	G	H	I	J	K	L
1	TITLE OF EVENT	Nb of attendees who responded	Q1 The I enjoyed the training session		Q2 The training session met my expectations		Q3 In the session, I felt empowered to share my own ideas and ask questions		Q4 The topic was relevant to my work		Q5 I am interested in being informed of the coming sessions	
2	EOSC Architecture	37	I Strongly Agree	6	I Strongly Agree	7	I Strongly Agree	9	I Strongly Agree	8	I Strongly Agree	11
3			I Agree	10	I Agree	6	I Agree	6	I Agree	7	I Agree	5
4			Neutral	4	Neutral	4	Neutral	5	Neutral	5	Neutral	2
5			I Disagree	1	I Disagree	2	I Disagree	0	I Disagree	0	I Disagree	0
6			I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0
7	FAIR Data in SSH	80	I Strongly Agree	3	I Strongly Agree	2	I Strongly Agree	0	I Strongly Agree	4	I Strongly Agree	4
8			I Agree	8	I Agree	7	I Agree	2	I Agree	7	I Agree	8
9			Neutral	0	Neutral	2	Neutral	8	Neutral	0	Neutral	0
10			I Disagree	1	I Disagree	0	I Disagree	2	I Disagree	2	I Disagree	1
11			I Strongly Disagree	0	I Strongly Disagree	1	I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0
12	Visual Data Discovery	24	I Strongly Agree	8	I Strongly Agree	6	I Strongly Agree	5	I Strongly Agree	7	I Strongly Agree	11
13			I Agree	4	I Agree	6	I Agree	6	I Agree	4	I Agree	0
14			Neutral	1	Neutral	1	Neutral	2	Neutral	0	Neutral	0
15			I Disagree	0	I Disagree	1	I Disagree	0	I Disagree	0	I Disagree	0
16			I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0
17	User Centred Design	37	I Strongly Agree	3	I Strongly Agree	4	I Strongly Agree	3	I Strongly Agree	4	I Strongly Agree	6
18			I Agree	0	I Agree	0	I Agree	3	I Agree	2	I Agree	0
19			Neutral	0	Neutral	0	Neutral	0	Neutral	0	Neutral	0
20			I Disagree	0	I Disagree	0	I Disagree	0	I Disagree	0	I Disagree	0
21			I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0
22	TBS	21	I Strongly Agree	8	I Strongly Agree	5	I Strongly Agree	4	I Strongly Agree	5	I Strongly Agree	7
23			I Agree	3	I Agree	5	I Agree	5	I Agree	4	I Agree	4
24			Neutral	1	Neutral	1	Neutral	3	Neutral	3	Neutral	0
25			I Disagree	0	I Disagree	1	I Disagree	0	I Disagree	0	I Disagree	1
26			I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0
27	SSH Vocabularies	28	I Strongly Agree	12	I Strongly Agree	8	I Strongly Agree	2	I Strongly Agree	11	I Strongly Agree	15
28			I Agree	14	I Agree	15	I Agree	11	I Agree	10	I Agree	7
29			Neutral	2	Neutral	3	Neutral	10	Neutral	3	Neutral	2
30			I Disagree	0	I Disagree	0	I Disagree	2	I Disagree	0	I Disagree	0
31			I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0
32	Pundit	14	I Strongly Agree	10	I Strongly Agree	10	I Strongly Agree	11	I Strongly Agree	7	I Strongly Agree	11
33			I Agree	0	I Agree	1	I Agree	1	I Agree	5	I Agree	3
34			Neutral	0	Neutral	0	Neutral	1	Neutral	2	Neutral	0
35			I Disagree	0	I Disagree	0	I Disagree	0	I Disagree	0	I Disagree	0
36			I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0
37	Copyright and academia	21	I Strongly Agree	8	I Strongly Agree	7	I Strongly Agree	6	I Strongly Agree	6	I Strongly Agree	11
38			I Agree	8	I Agree	8	I Agree	8	I Agree	8	I Agree	8
39			Neutral	0	Neutral	3	Neutral	4	Neutral	4	Neutral	0
40			I Disagree	0	I Disagree	0	I Disagree	0	I Disagree	0	I Disagree	0
41			I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0	I Strongly Disagree	0

FIGURE 5. POST\_TRAINING\_SURVEY\_RESULTS\_TRIPLE\_TRAINING\_TOOLKIT\_V1.1

This document was produced within Task 6.3 of the TRIPLE project to support the organisation of the TRIPLE Open Science Training Series. It is part of the TRIPLE Training Toolkit deposited on Zenodo.  
 DOI: 10.5281/zenodo.6256198  
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Project Number: 863420

TRANSFORMING RESEARCH THROUGH INNOVATIVE PRACTICES  
FOR LINKED INTERDISCIPLINARITY EXPLORATION

Project Number: 863420
Start Date of Project: 01/10/2019
Duration: 42 months

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Title and date of the event

The dissemination of the event is a joint responsibility of all partners!

Partner	Dissemination channel		Outreach		Dates	Notes
	Type	Details (who)	Target audience	Estimated outreach		

FIGURE 6. PROMOTION\_DISSEMINATION\_TEMPLATE\_TRIPLE\_TRAINING\_TOOLKIT

DRAFT

## SECTION 2 - USE CASES

## INTRODUCTION

Section 2 includes four chapters or sub-sections.

Chapter 1 *Report on Common Communication Strategies between TRIPLE, SSHOC and COESO projects* focuses on user journeys and points of view to bring to light pathways for collaboration in implementing the Open Science vision for Social Sciences and Humanities (SSH) in the European Open Science Cloud (EOSC) ecosystem, in particular through the design of a joint communication strategy with the European-funded projects SSHOC and COESO. In this section, we wish to illustrate the application of Open Science within the EOSC through the lens of the users' perspective. The TRIPLE, SSHOC and COESO projects have worked together towards the definition of an aligned communication strategy to promote and disseminate the project outputs, especially the platforms GoTriple (<https://www.gotriple.eu/>), SSH Open Marketplace (<https://marketplace.sshopencloud.eu/>) and VERA (not released yet, project website: <https://coeso.hypotheses.org/>)<sup>12</sup>. The aim of this joint initiative is to strengthen the collaborative potential between the three projects and platforms, outline their complementarities for end users and reach higher levels of outreach and impact (user engagement).

The second chapter *Advancing Open Science in the EOSC* showcases how GoTriple's visual discovery tools (OKMAPS) enhance the search of research resources, including publications, research data, and research projects from institutional, national and discipline-specific repositories. To complement the list-based search of the GoTriple core services, the visual discovery services provide users with an instant overview of their search results by visualising them as knowledge maps or streamgraphs. The visualisations show the main research topics within the results at a glance as well as the development of these topics over time. By interacting with the visualisations, users can also access relevant documents and other resources linked to the search terms. This way, users can easily identify useful, pertinent information for their research interests, which provides a powerful addition to the list-based view.

Chapter 3 *CLARIN Use case* is intended as an example on how data, tools, and publications that are already connected together as part of the CLARIN Resource Families, i.e. that have been manually curated using the search functionality of CLARIN VLO, maintained in a public GitHub repository and displayed together on dedicated CLARIN webpages and in the relevant CLARIN Zotero library folders, can be showcased through the GoTriple platform to enhance researchers' experience. When researchers create their data, or tools for particular data, this use case could be a good example for them to be aware about the value of high quality metadata that allows them to gain visibility at further steps. While the data and tools can already be found via the

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<sup>12</sup> The Virtual Ecosystem for Research Activation (VERA) platform will provide a collaboratory space/framework for the production and sharing of knowledge, and will enhance financial support to citizen science through collaboration with research funding organisations.

VLO (<https://vlo.clarin.eu/>) and the SSH Open Marketplace (<https://marketplace.sshopencloud.eu/>), the connection to the relevant publications in the GoTriple platform opens further perspectives for scientific exploration.

Chapter 4 *CESSDA Use case* highlights the challenges of combining open scholarly communication with data that has access restrictions. To achieve this, metadata still needs to be open and shared using common standards. Ideally, records are included in any search engine and data catalogue that is relevant to researchers, independent of their own domain to facilitate interdisciplinary research.

## 1. REPORT ON COMMON COMMUNICATION STRATEGIES BETWEEN TRIPLE, SSHOC AND COESO PROJECTS

The EOSC environment is becoming more and more noisy, and although currently there are only a handful of discovery services dedicated to SSH scholars around it, we see a great deal of confusion both from funders and users regarding the complementarity of these services. The GoTriple platform has been developed with such complementarity in mind and this deliverable introduces how key SSH infrastructures connect and build on each other under the aegis of EOSC. A jointly organised workshop “Projects, platforms and partnerships: Delivering a clear menu to the public” was held in Paris on 23 March 2022. It was organised by the project coordinators of the 3 european-funded projects COESO, SSHOC and TRIPLE and involved 40 members of the TRIPLE Consortium and external stakeholders to collectively brainstorm on two central aspects to define a common communication strategy: user journeys and common language.

Communication here targets researchers, citizen scientists, research infrastructures and partners involved in building the EOSC and mainly deals with user engagement and how to storytell the services in the EOSC marketplace perspective. The following section will therefore focus on how to create synergies through the description of user workflows and how to work together towards a common language to ultimately build collaborations between the SSH tools and services available in the EOSC.

### 1.1. Three projects, three platforms, three complementary user journeys

In order to enable participants to actively take part in defining a common communication strategy, Suzanne Dumouchel (TRIPLE project), Edward Gray (SSHOC project) and Alessia Smaniotto (COESO project) started the session with a presentation of the three projects and platforms, bringing to light the aim of the services of each platform.

To summarise, GoTriple will provide a discovery environment including publications, projects, and people, the SSH Open Marketplace will provide tools and a catalogue of services and VERA will provide matching services for researchers and non researchers to enable collaborative and participatory science practices in a digital space.

The table below recapitulates the aim of the developed services, their respective target groups and link with EOSC to bring to light potential complementarities to exploit.

Project	Service	Aim of service	Target	Link with EOSC
<b>COESO</b>	Virtual Ecosystem for Research Activation (VERA)  Provides: <ul style="list-style-type: none"> <li>• Matching services</li> <li>• Discussions</li> <li>• Collaboration</li> <li>• Dissemination</li> <li>• Funding opportunities</li> </ul>	I want to ... <ul style="list-style-type: none"> <li>• Collaborate on a common project</li> <li>• Find collaborators for participatory science projects</li> </ul>	<ul style="list-style-type: none"> <li>• Researchers</li> <li>• Citizens</li> <li>• Funders</li> <li>• Policy Makers</li> <li>• Socio-economic actors</li> </ul>	VERA will be onboarded to the EOSC Marketplace/ service catalogue as an OPERAS service.
<b>SSHOC</b>	The SSH Open Marketplace  Provides: “A toolbox of”: <ul style="list-style-type: none"> <li>• Tools</li> <li>• Catalogue of Services</li> <li>• Training materials</li> <li>• Workflows</li> <li>• Datasets</li> <li>• Publications</li> </ul>	I want to ... <ul style="list-style-type: none"> <li>• Find SSH tools and services, workflows or training materials</li> <li>• See connections between tools, workflows and publications</li> </ul>	<ul style="list-style-type: none"> <li>• Researchers</li> <li>• RIs</li> <li>• Teachers and lecturers</li> </ul>	The SSH Open Marketplace is provided by the ERICs CESSDA, CLARIN and DARIAH on behalf of the SSH Open Cluster of EOSC.
<b>TRIPLE</b>	GoTriple  Provides: A discovery platform with: <ul style="list-style-type: none"> <li>• Publications</li> <li>• Data</li> <li>• Projects</li> <li>• Profiles</li> </ul>	I want to ... <ul style="list-style-type: none"> <li>• discover and reuse open scholarly SSH resources</li> <li>• find and connect with other researchers and projects across disciplinary and language boundaries</li> </ul>	<ul style="list-style-type: none"> <li>• Researchers</li> <li>• Libraries</li> <li>• Companies</li> <li>• Public Authorities</li> <li>• Policy Makers</li> <li>• Citizens.</li> </ul>	GoTriple is a service of OPERAS. GoTriple has been added to the EOSC marketplace.

		<ul style="list-style-type: none"> <li>• Use innovative tools to support my research</li> </ul>		
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TABLE 1. THREE PROJECTS, THREE PLATFORMS (SERVICES), THREE USER JOURNEYS

The presentation of the services and features of the three projects brought to light a set of complementarities in user journeys which can considerably broaden the opportunities for collaborations across the services if they are to be exploited and reinforced.

Indeed, the description of user workflows from the perspective of the 3 target groups allows one to visualise how the targets, scopes and outputs of the services can complement each other and ultimately contribute together to strengthening networks of SSH socioeconomic networks in the EOSC. While Table 1 makes it clear that the platforms offer different services to their target users, the following paragraph highlights a set of complementarities in users' experience and interaction with the services which emerged during the collective brainstorming activity.

In particular, taking into account the projects different timelines which imply alignment limitations<sup>13</sup>, we found that complementarities in the research process, the outputs and the governance models could constitute a starting point for a reflection on how to align the communication strategies of the platforms.

**Complementarities between the platforms regarding users' research process:**

Users in the discovery phase of the research process may be looking for publications, projects and researcher profiles in the GoTriple platform and then be redirected towards the SSH Open Marketplace to find tools and workflows to complete their research. Meanwhile, users browsing the VERA platform to find citizen science projects could switch to GoTriple to also set in motion research collaborations.

**Complementarities regarding the outputs of the platforms:**

According to the user journeys shown in Table 1, both GoTriple and the SSH Open Marketplace have a strong focus on enabling and increasing the findability and reuse of SSH research data. As such, a complementary use of the outputs between the two platforms could be envisaged easily. Furthermore, the integration of citizen science projects in the GoTriple platform could provide an additional open science perspective.

**Complementarities regarding the governance models of the platforms, and especially their relation with the EOSC:**

Both the SSH Open Marketplace and GoTriple contribute to enriching the services of the EOSC for the SSH. In addition, GoTriple and VERA are both supported by the European Research Infrastructure OPERAS and the platforms will both be dedicated services of OPERAS. Furthermore, OPERAS will provide the sustainability of the GoTriple and VERA platforms and the

<sup>13</sup> SSH Open marketplace released, project has ended in April 2022; GoTriple is in beta version, project has 1 year left; VERA not yet released, project started in January 2021.

involvement of several ERICs in the SSH Open Marketplace<sup>14</sup> allows us to envision how the platforms could collaborate in communicating their services to the different target users.

Below are reported a set of questions which resume the work carried out in the first part of the workshop with the aim of opening concrete perspectives for the alignment of the three platforms' communication strategies:

- How could OPERAS inform on the SSH Open Marketplace when mentioning VERA or GoTriple ?
- How could the partners involved in the SSHOC project communicate on VERA or GoTriple when they inform about the SSH Open Marketplace? How to involve the end users and related communities?
- How can we enhance the role of the Research Infrastructures (CESSDA, CLARIN, DARIAH, OPERAS) in redirecting researchers in the relevant Helpdesk according to their needs or questions?

The following section explores pathways for collaboration to deliver a clear menu to the public, focusing on the language aspect of the communication strategy.

## 1.2. Towards a common language for Open Science and SSH services in the EOSC

The workshop then focused on defining a common language for Open Science and SSH services through the lens of the three target groups. For each platform, the participants worked collectively to describe the platform in the words of the target group and define key messages for each service.

In the tables below are reported the outputs of the collaborative exercise.

### DESCRIBE THE SERVICE IN THE WORDS OF YOUR TARGET GROUP

	VERA	GoTriple	SSH Open Marketplace
<b>Researchers</b>	<ul style="list-style-type: none"> <li>-Citizen science platform, as a researcher you can participate and collaborate with citizens.</li> <li>-Participatory research platform for people who want to do research and connect, collaborate with</li> </ul>	<ul style="list-style-type: none"> <li>-Multilingual Discovery Platform, shows results in a different way.</li> <li>-Open source and open access.</li> <li>-Trusted Network for researchers.</li> </ul>	<ul style="list-style-type: none"> <li>-Catalogue for a contextualised search for research tools, training materials and publications and workflows and data sets linked to the tools.</li> <li>-Open Source tools and solutions.</li> </ul>

<sup>14</sup> The SSHOC Marketplace is already integrated with the EOSC and its sustainability is guaranteed by DARIAH, CLARIN and CESSDA.



	a priority on societal impact.	-Nice place to search for research results and researchers.	-Community-edited.
<b>Research Institutions</b>	-Platform to enhance citizen science and civic engagement in the SSH. -Role of RIs to make bridges, bond stakeholders and ultimately create links.	-Open Source platform with features, e.g. using multilingual vocabularies and innovative services; e.g. TBS to connect projects and researchers (and therefore to some extent institutions), -Platform to display research projects affiliated with institutions.	-Discovery portal to increase visibility and value of resources to the scientific and policy communities. -SSH tools and services, training materials and workflows contextualised and easily re-usable.
<b>Citizens</b>	-VERA connects citizens to researchers to work on societal issues. It includes messaging and a collaborative space. It also includes institutional funding.	-GoTriple services like the Crowdfunding Tool or TBS are designed to reinforce the connection between science and society by enhancing the communicative potential of researchers' profiles and their projects	-A toolbox for researchers of tools, training materials, datasets, and workflows where you get explanations and suggestions of tools.

TABLE 2. DESCRIBE THE SERVICE IN YOUR OWN WORDS. OUTCOME OF THE WORKSHOP.

### KEY MESSAGES FOR YOUR TARGET GROUP

	VERA	GoTriple	SSH Open Marketplace
<b>Researchers</b>	-Connect with society -Find funding opportunities and partners	-Find publications in multiple languages -Speed Dating for researchers/Trusted network -Open source and open access	-Find Fancy Tools for your research project -Open Source tools -Discover new resources thanks to contextualisation -Contribute adding your favourite tools and resources
<b>Research Institutions</b>	-Promotion, visibility and recognition of SSH contribution -Impact and outreach	-Open source and open access -Promotion, visibility and recognition of SSH contribution	-Promotion of SSH resources in the EOSC -EU visibility for researchers' work and

		-Possibility to connect to various stakeholders via platform -Possibility to display projects affiliated with research institution	variety of digital scholarly objects -Possibility to gain an overview of the existing resources landscape in SSH
<b>Citizens</b>	-In VERA users build citizen science projects	-Visualisation of research data -Crowdfunding tool aims at connecting research to audience and helps creating non-scientific audience for researchers/projects.	-It's easy to use -It matches you with the tools you need -You can start from a search

TABLE 3. KEY MESSAGES FOR YOUR TARGET GROUP. OUTCOME OF THE WORKSHOP.

As shown in Tables 2 and 3 , the exercise resulted in the definition of specific key messages for each target group according to its use of the platform. For each platform, a short statement was then produced to encapsulate the work carried out during the workshop.

**GoTriple key statement:** GoTriple is an open source and open access platform specifically designed to a) connect researchers to each other as well as various stakeholders, b) provide a decidedly multilingual discovery service in order to connect research currently scattered along the lines of different languages and thereby facilitate collaboration, c) help researchers gain an audience broader than the scientific community and therefore enforce the societal impact of research. (key words: open source, open access, multilingual, discovery, connect, find, visualise).

**VERA key statement:** VERA is a collaboration platform to manage SSH Citizen Science projects in partnership between social scientists and citizens/engaged stakeholders. The platform will provide the collaborative functionalities users need to connect and carry out projects together. (key words: connect, collaborate, fund, society, bridge, bond, link)

**SSH Open Marketplace key statement:** The Social Sciences and Humanities Open Marketplace is a discovery portal which pools and contextualises resources for Social Sciences and Humanities research communities: tools, services, training materials, datasets, publications and workflows. The Marketplace highlights and showcases solutions and research practices for every step of the SSH research data life cycle. (key words: catalogue, toolbox, open source tools, community)

Based on these summary statements, we envisage the following next steps:

- Jointly communicate on each service and create a synergy in which the platforms (or communication teams) inform their users of the availability and relevance of the other services.

- Exploit the evidenced key words consistently when communicating to a specific target group about a determined service.
- Strengthen the complementarities in user journeys in an obvious way to clearly outline to target users how the services can be used interconnectedly in a research workflow.

## 2. ADVANCING OPEN SCIENCE IN THE EOSC: GO TRIPLE'S INNOVATIVE DISCOVERY SERVICES

GoTriple is presently implementing a variety of innovative services and tools that allow users to visualise search results; get personalised recommendations; annotate web documents; and find and connect with other researchers and projects across disciplinary, cultural and language boundaries. The tools are a mix of federated, tightly integrated and backend services as well as third party applications which enrich the user experience.

In this chapter we focus on how the visual discovery tools already included in the current beta version of GoTriple advance the Open Science resources discovery workflow. They provide an intuitive view of search results across research publications, research data, and research projects from local and discipline-specific repositories.

### 2.1. Visual Discovery Tools

The GoTriple platform features visual discovery services developed by Open Knowledge Maps<sup>15</sup> that enable users to get an instant overview of their search results. GoTriple currently integrates two visual discovery services: knowledge maps, which provide a clustered overview based on the most relevant documents matching your search query, and streamgraphs, which give an overview of the main keywords related to your search query over time. The visual discovery services enable researchers to create visualisations for research topics in any SSH discipline and support them to discover information across domains and resource types. The services help reduce complexity and provide a visual component that supports the creation of a mental model of a specific research area<sup>16</sup>.

The integration of the visual discovery services in GoTriple is modelled after popular web search engines that link to additional services and interfaces directly within their search results page. The main results page functions as a single access point for different services. When users search for a topic in GoTriple, they are presented with a list of search results as well as a preview image of a knowledge map including a short description of the service on the top right (Fig. 1). In addition the service is highlighted a second time further down in the results list to make sure the user doesn't miss these complementary tools (Fig. 2). When the users click on

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<sup>15</sup> Kraker, Peter, Kittel, Christopher, Schramm, Maxi, & Konstant, Jan. (2021). TRIPLE Deliverable: D5.6 Report on the Discovery System (Draft). Zenodo. <https://doi.org/10.5281/zenodo.5702657>

<sup>16</sup> Kraker, Peter, Schramm, Maxi, Kittel, Christopher. (2019) Open Knowledge Maps: Visuelle Literatursuche basierend auf den Prinzipien von Open Science, Mitteilungen der Vereinigung Österreichischer Bibliothekarinnen und Bibliothekare, 72(2), S. 460–477. <https://doi.org/10.31263/voebm.v72i2.3202>

one of the two links (knowledge map or streamgraph), a new tab is opened and the visual interface is being computed within 20 seconds. Once the map or streamgraph are created, the users are forwarded to the visual interface in the same tab (Fig. 3, Fig. 4). The beta version of this integration is online at <https://www.gotriple.eu/><sup>17</sup>.

The visual discovery services are provided as hosted services by Open Knowledge Maps. They are integrated in the GoTriple core platform via frontend and backend interfaces. This is done to decouple the two systems and reduce complexity both for GoTriple as well as for the innovative services. Based on the positive experiences that we have made with this hosted solution, we will move the GoTriple integration to a new infrastructure from Open Knowledge Maps by the end of the project, the so-called Custom Services<sup>18</sup>. The Custom Services provide the aforementioned visualisation capabilities as customizable cloud components on a shared, open and not-for-profit platform.

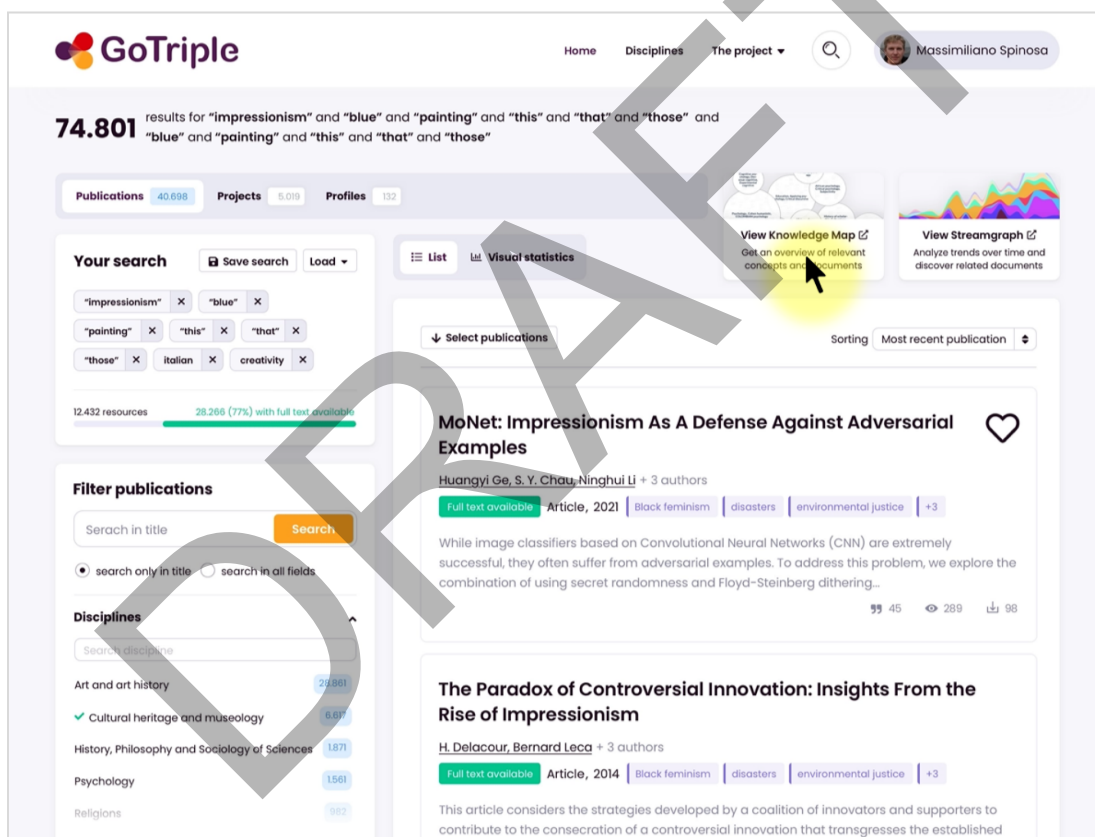
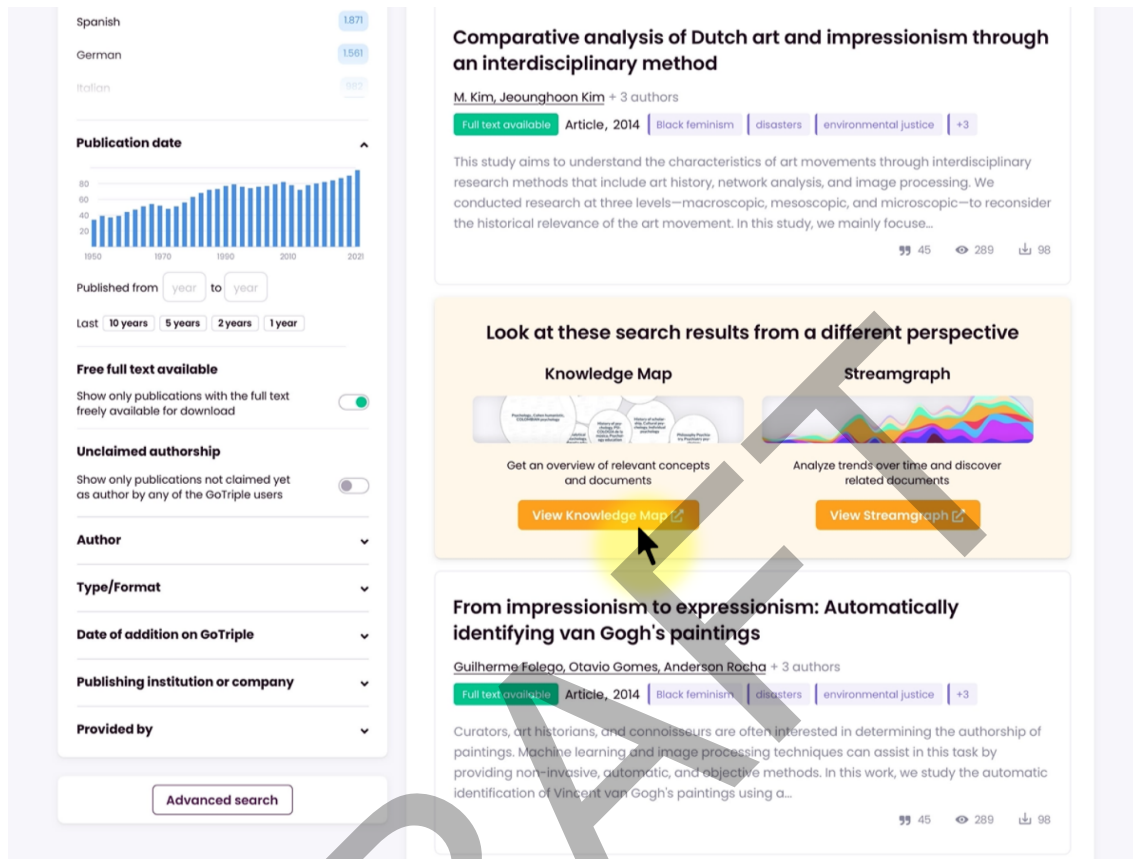


FIGURE 7. SKETCH OF THE INTEGRATION OF THE CUSTOM SERVICES COMPONENTS ON THE GOTRIPLE SEARCH RESULTS PAGE - TOP OF THE PAGE

<sup>17</sup> Please note that the interface of the beta version is somewhat different to the figures shown below. The figures shown below represent the most recent mockups that will be incorporated in one of the next releases of the platform.

<sup>18</sup> Open Knowledge Maps. (2021) Custom Services. [https://openknowledgemaps.org/doc/Custom\\_Services\\_Slidedeck.pdf](https://openknowledgemaps.org/doc/Custom_Services_Slidedeck.pdf)



The screenshot displays the GoTriple search results interface. On the left, there is a sidebar with filters for language (Spanish: 1,871, German: 1,561, Italian: 897), publication date (a bar chart from 1950 to 2021), and various other criteria like 'Free full text available' and 'Unclaimed authorship'. The main content area shows two search results. The top result is 'Comparative analysis of Dutch art and impressionism through an interdisciplinary method' by M. Kim, Jeoungmoon Kim + 3 authors, published in 2014. Below this result is a section titled 'Look at these search results from a different perspective' which features two interactive tools: 'Knowledge Map' (described as 'Get an overview of relevant concepts and documents') and 'Streamgraph' (described as 'Analyze trends over time and discover related documents'). Both tools have 'View' buttons. The second search result is 'From impressionism to expressionism: Automatically identifying van Gogh's paintings' by Guilherme Folego, Otavio Gomes, Anderson Rocha + 3 authors, also published in 2014. A large 'DRAFT' watermark is overlaid on the image.

FIGURE 8. SKETCH OF THE INTEGRATION OF THE CUSTOM SERVICES COMPONENTS ON THE GOTRIPLE SEARCH RESULTS PAGE - BOTTOM OF THE PAGE

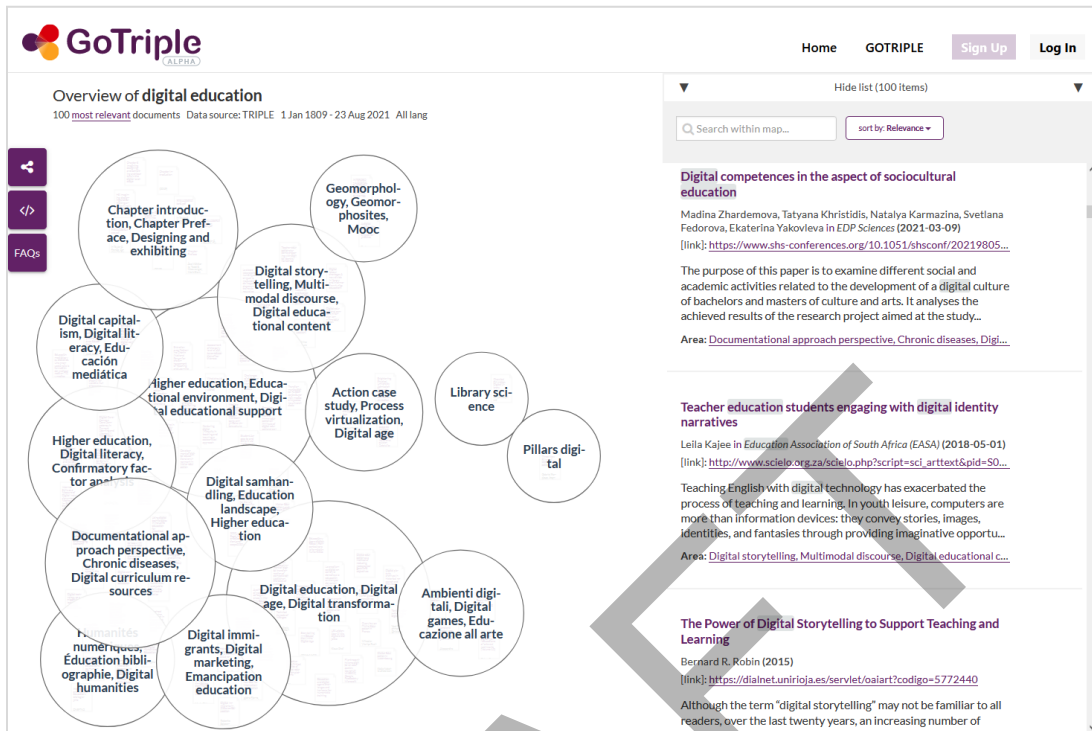


FIGURE 9. SCREENSHOT OF A KNOWLEDGE MAP ON THE TERM DIGITAL EDUCATION

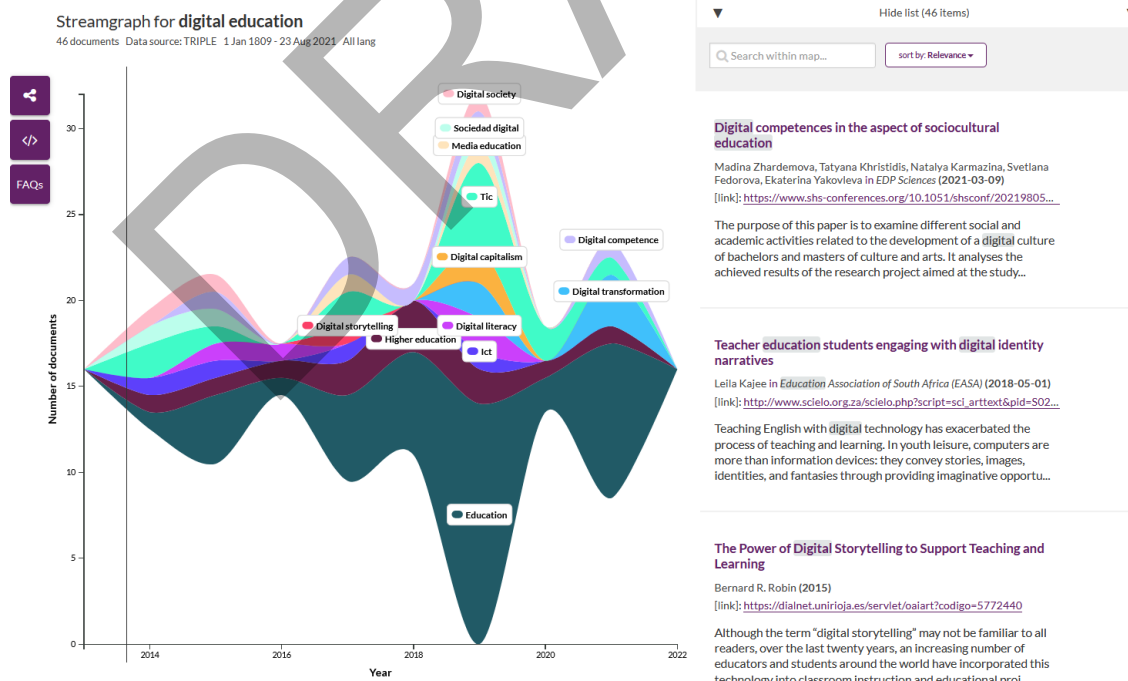


FIGURE 10. SCREENSHOT OF A STREAMGRAPH ON THE TERM DIGITAL EDUCATION



## 2.2. Community-Owned Discovery of Heterogeneous Resources

The Open Knowledge Maps Custom Services are developed as a truly open infrastructure<sup>19</sup>. The aim is to create a reusable, community-owned infrastructure that is a public good. All software is developed following open standards and is available under permissive open source licences such as the MIT license. The advantage of the open source approach is that the software can easily be migrated to other systems and thus lock-in effects are avoided. This also means that the innovative visual discovery services developed in TRIPLE can be easily connected to other data sources and integrated in other platforms and infrastructures. This makes the Custom Services especially useful for federated infrastructures such as the EOSC, which are developed in a system-of-systems approach. The Open Knowledge Maps Custom Services provide the EOSC ecosystem with a plug-and-play discovery solution that goes beyond mainstream academic search engines.

Another important point with respect to EOSC is that the visual discovery services do not only include scholarly articles, but enable a fully integrated visual search with a wide variety of scholarly outputs, including research data and scientific projects. This provides an important contribution to the digitisation of science that makes research outcomes beyond scientific publications increasingly important<sup>20</sup>. This is reflected in the development of infrastructures such as the EOSC. Studies on discoverability needs of SSH researchers done in context of the TRIPLE project confirmed that for the researchers it is not only important to discover relevant research publications. Being able to find “data in various formats as well as outputs associated to both past and on-going research projects” plays an increasing role as well<sup>21</sup>. We believe that linking these resources together in one platform creates an improved user experience and eases discovery of resources not only in SSH but also in many other areas of research.

Users of visual discovery services confirm that the overview of topics and keywords provided by the visual search services are powerful as they can broaden one’s horizon and suggest directions that one previously may not have considered investigating into<sup>22</sup>. With the Open Knowledge Maps Custom Services approach, it is possible to bring these benefits not only to the GoTriple platform, but to the whole European Open Science Cloud and the diverse communities around it.

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<sup>19</sup> Kraker, Peter, Schramm, Maxi, Kittel, Christopher. (2021) Discoverability in (a) Crisis. *ABI Technik*. 2021; 41(1): 3–12.

<sup>20</sup> European Commission. (2016) Open Innovation, Open Science and Open to the World. Tech. rep., European Commission’s Directorate-General for Research & Innovation. 2016

<sup>21</sup> Achenbach, Kelly, Błaszczczyńska, Marta, De Paoli, Stefano et al. (2022) Defining discovery: Is Google Scholar a discovery platform? An essay on the need for a new approach to scholarly discovery [version 1; peer review: 1 approved, 1 approved with reservations]. *Open Res Europe* 2022, 2:28.  
<https://doi.org/10.12688/openreseurope.14318.1>

<sup>22</sup> Matthews, David. (2021) Drowning in the literature? These smart software tools can help. *Nature Technology Feature*, 01 September 2021. <https://www.nature.com/articles/d41586-021-02346-4> (Accessed on 2022-04-11)

### 3. CLARIN USE CASE

The idea we highlight in this use case is to illustrate [EOSC principles](#) on data processing and [RDA recommendations for citation of research language data](#) by providing a triangle of relevant resources that interlink:

- Registered Data
- Registered Tools
- Publications, either on the creation or use of these Data sets and Tools

Data and tools are represented in this use case by CLARIN's flagship initiative "[Resource Families](#)" - a well-curated collection of thematically grouped language resources, in multiple languages which contains relevant publications for most of the entries.

The resource families are being harvested for the SSH Open Marketplace, so they can be found via this platform. In the course of the TRIPLE project, they will be further enhanced so that they can also be ingested into the GoTriple platform to enable users to also find the information there.

Overall, this approach will ensure improved metadata quality and better linking between language data, tools and publications. This will benefit SSH researchers and the GoTriple platform, while also demonstrating the added value of investing in Open Science.

#### 3.1. Data for Exploration - CLARIN Resource Families

The CLARIN Resource Families (CRF)<sup>23</sup> are curated collections of language data and tools. There exist three groups of families, dealing with Corpora (covering a wide range including spoken corpora, newspapers or reference corpora), Lexical Resources (lexica, glossaries, etc.) and Tools (NLP tools like Tokenizers or Named Entity Recognizers)<sup>24</sup>. Currently, there are 13 corpora families, 5 families of lexical resources, and 4 tool families. Each of these collections have been manually created by CLARIN staff (usually with a lot of input from the relevant linguistic communities) with the aim to provide a user-friendly overview of existing resources within and outside the CLARIN infrastructure. The collections share a fixed set of metadata covering relevant aspects like a link to the download page or a concordancer or the type of annotation (if available). For a lot of the entries in the resource families there is also a related publication being listed, for more on that see below.

The Resource Families are actively curated by CLARIN staff to ensure that all entries are kept up to date. For example, the URLs are regularly checked and updated if necessary. Also, in case some core metadata is not available to add to an entry, this is actively followed up with the

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<sup>23</sup> Fišer, Darja, Jakob Lenardič, and Tomaž Erjavec. "CLARIN's key resource families." *Proceedings of the eleventh international conference on language resources and evaluation (LREC 2018)*. 2018, <https://aclanthology.org/L18-1210>

<sup>24</sup> <https://www.clarin.eu/resource-families>



maintainers of the resource to hopefully expand the available information. CLARIN is open to extend the number of families with specific funding being available for this purpose<sup>25</sup>.

### 3.2. Data Preparation for Exploration via GoTriple Platform

Since their inception, the Resource Families have proven to be well received within the immediate CLARIN community and beyond. They are constantly being curated and expanded and they are an important part of CLARIN's open science strategy. As a first step to integrating the Resource Families with the EOSC, the CRFs have been added to the SSH Open Marketplace<sup>26</sup>. This integration has happened within the SSHOC project<sup>27</sup> and it is planned from the side of SSHOC to use a continuous ingest process to constantly update the CRF within the SSH Open Marketplace. The Marketplace is focused on featuring connections between resources to help researchers find relevant information more easily. For example, there are workflows<sup>28</sup> covering some common tasks (like creating a dictionary in TEI<sup>29</sup>) and for each step of the workflow, relevant tools or datasets are linked. Another example for this integration are publications. Within the Marketplace there is a special extraction workflow which scans all the publications within the Marketplace, for the mention of software tools and flags them so they can be linked as related items. Such a linkage between a resource (in this case either a tool or a dataset) and a publication could also be done for the CLARIN Resource Families, as for a lot of the entries there is also a related publication listed. But at the moment, these publications are listed as a textual reference only and sometimes there is also a link to the publication.

Within the context of SSHOC and TRIPLE, CLARIN is adapting all the Resource Families to add more related items to each entry. First this will be done by updating the publications in such a way that they are all imported into a dedicated subgroup within the CLARIN group in Zotero<sup>30</sup>. The Resource Families will then only point to Zotero. On a technical level, this will be realised by replacing the textual reference in the CRF source CSVs with a Zotero link. The CRF entries on the CLARIN website will still list the reference as text (by fetching the information from Zotero when creating the webpage) and also provide a link to the item in Zotero so users can easily go there and add it to their own Zotero library or create a reference in their preferred style.

Another relation that will be added to each entry within the Resource Families is a link to GoTriple for related publications. The idea is to guide interested scholars to publications that make use of a specific language resource, rather than describing its creation. Since this can be based on a dynamic query, the resulting gotriple.eu link would always contain the most up to date publication information. A concrete example: the [CMC resource family](#) contains an entry for the [88milSMS corpus](#) published in the CoMeRe repository. The entry could also contain a

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<sup>25</sup> see <https://www.clarin.eu/content/clarin-resource-families-project-funding>

<sup>26</sup> <https://marketplace.sshopencloud.eu/>

<sup>27</sup> <https://www.sshopencloud.eu/>

<sup>28</sup> <https://marketplace.sshopencloud.eu/search?categories=workflow>

<sup>29</sup> <https://marketplace.sshopencloud.eu/workflow/4qFarh>

<sup>30</sup> <https://www.zotero.org/groups/562080/clarin/collections/GDJJIBW>

link to [GoTriple.eu with a query on "88milSMS"](#). This link can guide interested users towards articles about e.g. how [\(dis\)agreement is expressed in SMS messages](#).

### 3.3. Conclusions and Future Steps

Improving the connection between data/tools and publications for the CLARIN Resource Families by using Zotero to store all the information about the publications is a first step for improving the interconnectivity of the various “research objects” within the EOSC. This has already been done for all existing Resource Families. The work on adding the links to GoTriple is in the process of starting up and should be completed relatively soon.

The ‘source’ of the CLARIN Resource Families are CSVs on Github<sup>31</sup> and therefore they can be harvested by SSHOC and TRIPLE from Github (this harvesting is scheduled to take place over the course of summer 2022). For easier processing it is planned to also make each family available as JSON via the CLARIN website. This is still being investigated at the moment and will likely be available later in 2022.

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<sup>31</sup> <https://github.com/clarin-eric/resource-families-html-generator/>

## 4. CESSDA USE CASE

As the GoTriple platform aims to cover the wide range of content from all areas of Social Sciences and Humanities, CESSDA provides specific expertise from the Social Sciences to the project. This section examines the challenges originating from restrictions applicable to the sharing of datasets for a number of reasons, common to Social Sciences Data and how these can be aligned with the principles of Open Science.

CESSDA provides access to Social Sciences research data, with a focus on survey data, collected, curated and provided by its national Service Providers. CESSDA is committed to Open Science. The CESSDA Data Access Policy<sup>32</sup> (which is in conformity with the EU Open Science policy<sup>33</sup> and GDPR) seeks to make data as open as possible while remaining as closed as necessary. This means that CESSDA aims to make data and metadata accessible while respecting privacy and intellectual property rights. An updated version of the CESSDA Data Access Policy will be released shortly.

Specifically, all CESSDA data and metadata shall be freely accessible at the point of use, unless there are known reasons that prohibit this. Privacy and consent concerns, contractual challenges, intellectual property restrictions, national security, and trade secrets are among the primary barriers and constraints that may prevent data from being made available for reuse.

CESSDA is attempting to strike a compromise between making its data more accessible (through data anonymization) and trustworthy and meaningful. The former may not always be the optimal trade-off, as anonymizing the data will simply enhance accessibility while reducing the data's suitability and relevance to the researcher.

CESSDA utilises the phrase "intelligent openness" in reference to data, which means that data must be comprehensible to those who seek to analyse them so that judgements can be made about their trustworthiness and the competency of those who developed as well as those who use them. In addition, CESSDA assures that significant non-open data, which also exists in other disciplines (such as social psychology), is acknowledged as a relevant contribution to EOSC, as well as the standards and framework that accept such data.

Other data and publications directly developed by CESSDA, including training materials, policies and guidelines, are published in common repositories such as Zenodo and made available through the SSHOC Marketplace, for instance. For the GoTriple Platform, CESSDA focuses on providing the records of its research data collection.

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<sup>32</sup> <https://doi.org/10.5281/zenodo.4054793>

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[https://ec.europa.eu/info/research-and-innovation/strategy/strategy-2020-2024/our-digital-future/open-science\\_en#the-eus-open-science-policy](https://ec.europa.eu/info/research-and-innovation/strategy/strategy-2020-2024/our-digital-future/open-science_en#the-eus-open-science-policy)

## 4.1 Interoperability with EOSC (OpenAIRE) and TRIPLE

CESSDA is working to conform its data to the FAIR principles, guaranteeing that data is Findable, Accessible, Interoperable, and Reusable. Interoperability with EOSC is essential to ensuring that CESSDA's data holdings are easily available and reused, hence fostering transnational and longitudinal research. CESSDA has therefore made its services (particularly the CESSDA Data Catalogue) accessible by onboarding them to the EOSC portal.

Furthermore, CESSDA is working towards listing its data, whether open or restricted, in EOSC; hence, there must be guidelines for how non-open data can be presented in catalogues independent of discipline and ways for any user to access these data easily. CESSDA is engaging in the related discussions on the EOSC Interoperability Framework through participation in the EOSC-Future project's specification work regarding the harmonisation of numerous standards to facilitate interoperability and the interchange of research materials.

CESSDA's internal metadata alignment is based on the Data Documentation Initiatives (DDI) standard, which includes machine-based exchange from archives via the XML-based metadata exchange standard Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH). It has established a pipeline for harvesting, aggregating, and validating metadata to guarantee standards are adhered to and to preserve the metadata's quality. A CESSDA harvester collects data from OAI-PMH endpoints (located at data providers/organisations) for two CESSDA services: CESSDA Data Catalogue and CESSDA Euro Question Bank. The data is based on a DDI profile, which is validated by machine-actionable verification systems such as the CESSDA Validation Metadata system. It also includes an aggregator, which ensures that data is in the proper format to be harvested by other systems. All of this ensures that standards are followed throughout CESSDA and that the best metadata is delivered to third parties like EOSC and TRIPLE.

In addition, CESSDA is active in the curation and updating of data (including historical datasets) through annotation, classification, citation, and publication, by manually improving the data holdings at the national archives, so that the data can be reused and preserved over time. CESSDA's European Languages Social Sciences Thesaurus (ELSST)<sup>34</sup> is a multilingual classification system used to organise data for efficient retrieval. CESSDA also intends to implement data access type filters in the CESSDA Data Catalogue to facilitate the retrieval of open data. This includes adding a flag or annotation field to the CESSDA metadata profile to appropriately tag records.

Metadata from CESSDA will be made accessible and harvested by EOSC (through OpenAIRE Research Graph) and GoTriple in summer 2022. CESSDA hopes that linking to these systems will make its data accessible to as many users as possible and allow it to take advantage of the enrichment procedures offered by GoTriple and OpenAIRE RG. CESSDA envisions to benefit from these procedures and improve data accuracy and reliability also at the original sources. This

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<sup>34</sup> CESSDA and Service Providers (2021) The European Language Social Science Thesaurus (ELSST), <https://elsst.cessda.eu>. DOI:10.5281/zenodo.5506929

combination of providing metadata to the portals researchers are using and improving the original source holdings will ultimately allow researchers to better find and more thoroughly investigate the data they need.

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## CONCLUSIONS: HOW TO BUILD COLLABORATIONS BETWEEN THE SSH TOOLS AND SERVICES AVAILABLE IN THE EOSC

SSH research is divided across a wide array of disciplines and languages. While this specialisation makes it possible to investigate the extensive variety of SSH topics, it also leads to a fragmentation that prevents SSH research from reaching its full potential. Use and reuse of SSH research is low<sup>35</sup>, interdisciplinary collaboration possibilities are often missed, and as a result, its societal impact is limited.

To respond to these challenges and to the related pressing needs of the research communities, GoTriple provides solutions that advance interoperability and interdisciplinary collaboration in the EOSC. In the light of the digitisation of science, being able to discover resources across research publications, research data, and research projects becomes increasingly important. GoTriple responds to this need by linking these resources together in one platform thus creating an improved user experience and timely discovery services. Not only does it benefit SSH, but other areas of research can also profit from it.

The first section of the report includes the TRIPLE training toolkit, which aims at **allowing the replication of the workflow we designed to implement and manage the Open Science TRIPLE Training Series**. This tool is conceived to **enable the creation of FAIR-by-design training materials and events**, and constitutes a unique experiment in its domain.

In the second section of this report, we showed some possible **answers to user needs**, in terms of advanced discovery tools and data and tool interoperability and presented interoperability efforts with key SSH infrastructures.

The GoTriple visual discovery services provide innovative overviews of topics and keywords that leverage the possibilities of more traditional list-based search engines. This responds to the need for more effective and creative ways to discover multilingual resources in a digitised world with hundreds of thousands of research outputs published every year. The visual discovery tools have proven to be able to broaden one's horizon and to suggest new directions to investigate<sup>36</sup>. Another aspect is that researchers depend on the availability of data in order to support research claims. In this context, **we address the need to ensure that research data and services required to process and retrieve said data remain available**. Another important point is that **the communities retain control over access to both data and services**<sup>37</sup>. To respond to these needs, the visual discovery services and GoTriple are developed as open infrastructures.

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<sup>35</sup> Kraker, Peter, Schramm, Maxi and Kittel, Christopher. "Discoverability in (a) Crisis" ABI Technik, vol. 41, no. 1, 2021, pp. 3-12. <https://doi.org/10.1515/abitech-2021-0003>

<sup>36</sup> Matthews, David. (2021) Drowning in the literature? These smart software tools can help. Nature Technology Feature, 01 September 2021. <https://www.nature.com/articles/d41586-021-02346-4> (Accessed on 2022-04-11)

<sup>37</sup> Bilder, G., Lin, J., & Neylon, C. (2015). Principles for Open Scholarly Infrastructures-v1. <https://doi.org/10.6084/m9.figshare.1314859.v1>

The CLARIN use case demonstrates how connected data, tools, and publications can be showcased through the GoTriple platform to enhance researchers' experience, and highlights the added value of GoTriple in the user workflow. In fact, the availability of open data, tools and standards enables the CLARIN Resource Families to be an important brick of the EOSC ecosystem, where the prospecting integration with GoTriple can demonstrate **a real application of an interoperable Open Science workflow.**

CESSDA's use case and the Report on common communication strategies between TRIPLE, SSHOC and COESO projects illustrate some **challenges** to be faced when trying to apply an Open science paradigm. More specifically, CESSDA's use case deals with **specific challenges concerning privacy, and consent concerns, contractual challenges, intellectual property restrictions, national security, and trade secrets**, which are among the primary barriers and constraints that may prevent data reuse. Through the so-called "intelligent openness" approach, CESSDA works to ensure that significant non-open data is acknowledged as a relevant contribution to EOSC. The plan to make CESSDA metadata available to GoTriple, i.e. providing metadata to the portals researchers are using and also improving the original source holdings, will allow researchers to discover and investigate the data they need.

Lastly, the *Report on common communication strategies between TRIPLE, SSHOC and COESO projects* illustrates the results of a brainstorming aimed at designing common communication strategies for collaboration in implementing the Open Science vision for SSH in the EOSC ecosystem. We illustrated how the TRIPLE, SSHOC and COESO projects have worked together towards the definition of an **aligned communication strategy to promote and disseminate the project outputs, so as to strengthen the collaborative potential between the three projects and platforms, outline their complementarities for end users and reach higher levels of outreach and impact (user engagement).**

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