ODECO

Towards a sustainable Open Data ECOsystem

D6.4
Dissemination and public engagement events with partner organizations

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Abbreviations

API	Application programming interface
D	Deliverable
ESR	Early Stage Researcher
EU	European Union
GPU	Graphics processing unit
LLM	Large language models
M	Milestone
ODECO	Project "Towards a sustainable Open Data ECOsystem"
UX	User experience
WP	Work Package

Nr	Partner	Partner short name	Country
Beneficiary			
1	Technische Universiteit Delft	TU Delft	Netherlands
2	Katholieke Universiteit Leuven	KUL	Belgium
3	Centre National de la Recherche Scientifique	CNRS	France
4	Universidad de Zaragoza	UNIZAR	Spain
5	Panepistimio Aigaiou	UAEGEAN	Greece
6	Aalborg Universitet	AAU	Denmark
7	Università degli Studi di Camerino	UNICAM	Italy
8	Farosnet S.A.	FAROSNET S.A.	Greece
Partner organisations			
1	7EDATA	7EDATA	Spain
2	Digitaal Vlaanderen	DV	Belgium
3	City of Copenhagen	COP	Denmark
4	City of Rotterdam	RDAM	Netherlands
5	CoC Playful Minds	CoC	Denmark
6	Derilinx	DERI	Ireland
7	ESRI	ESRI	Netherlands
8	Maggioli S.p.A	MAG	Italy
9	National Centre of Geographic Information	CNIG	Spain
10	Open Knowledge Belgium	OKB	Belgium
11	SWECO	SWECO	Netherlands
12	The Government Lab	GLAB	USA
13	Agency for Data Supply and Infrastructure	ADSI	Denmark
14	GFOSS Open Technologies Alliance	GFOSS	Greece
15	Inno3 Consulting	IC	France
16	Regione Marche	RM	Italy
17	Open Data Institute	ODI	United Kingdom

1. Introduction

The main objective of ODECO is to train a new generation of creative and innovative early-stage open data researchers, capable to face current and future challenges in the establishment of sustainable open data ecosystems supporting the EU's ambition to become a worldwide leading information economy.

An important pillar of the ODECO training programme are the secondments across organizations in different sectors and different countries. Through a combination of academic and non-academic secondments, the ODECO Early Stage Researchers (ESRs) are exposed to both environments. During the academic secondments, the emphasis is on acquiring and applying research skills. During the non-academic secondments, the emphasis is more on the acquisition of transferable skills, and the dissemination and valorisation of research. In this way, secondments at non-academic partner organizations contribute to awareness raising and dissemination of project outputs to international stakeholders. Since the secondments take place at public authorities, businesses, policymaking and advising bodies and other stakeholders, the results of the project are disseminated to key stakeholders in the open data domain.

During the secondments at non-academic organizations, the ESRs contributed to organizing at least one dissemination and/or public engagement event related to their research. The target audience of these events were members of the partner organization hosting ESRs during the secondment. This report provides an overview and discussion of these events.

The report is structured as follows. After this introductory chapter, the second chapter provides an overview of the non-academic secondments and the related events. The third chapter includes short reports on the events organized in 2022. The events organized in 2024 are reported on in chapter four. No events were organised in 2023. The fifth chapter reports on an event organized in collaboration with a partner organization outside the context of a non-academic secondment. The sixth and final chapter contains an overall conclusion about the events and collaboration with partner organizations.

2. Overview of professional secondments and events

Table 1 provides an overview of the secondments at non-academic organisations of the ODECO researchers, including details on the events organised as part of these secondments. The table only includes those secondments for which a dissemination and public engagement event has been organized before July 2024.

ESR	Secondment organisation	Events 2022
Alejandra Celis Vargas (ESR 10)	CoC Playful Minds	Sensitizing internal event with CoC Playful Minds (10/05/2022)
Maria Elena Lopez Reyes (ESR 6)	Copenhagen City Council - Fish Tank Innovation Hub	En halv times viden: Open Government Data in Practice (21/09/2022)
Abdul Aziz (ESR 8)	7eData Business S.L	Closing event of the secondment at 7eData (07/11/2022)
Dagoberto Herrera Murillo (ESR 2)	Spanish National Geographic Institute	XIII Iberian Conference on Spatial Data Infrastructures (26/10/2022)
		Events 2024
Ahmad Ashraf Bin Ahmad Shaharudin (ESR 15)	ESRI	Webinar: Business Models of Open Data Intermediaries - Insights from Practice (29/05/2024)
Davide Di Staso (ESR 1)	City of Rotterdam	Workshop Serious Game Jam (9& 23/04/2024)
Silvia Cazacu-Bucica (ESR 3)	Open Data Institute	ODI Show & Tell (30/05/2024)
Mohsan Ali (ESR 5)	GFOSS	Open Data Products and Open-Source Technologies (04/06/2024)
Umair Ahmed (ESR14)	Regione Marche	Outreach Event on Open Data and AI Applications (12/06/2024)
Ramya Chandrasekhar (ESR 4)	Inno3 Consulting	Open data for AI? – Reflections on re-use of publicly-available data for AI training datasets (21/06/2024)

Table 1: Overview of the non-academic secondments within ODECO, and the events organized with the partner organizations (between May 2022 and July 2024)

Important to mention is that at the time of writing this report, one event with a partner organization was planned to take place in August 2024. In addition, there were three secondments scheduled to take place in a later stage of the project. For each of the dissemination and public engagement events with partner organizations that will be organized later in the project, a short report will be prepared. These events related to the following secondments:

- Maria-Ioanna Maratsi (ESR 7): non-academic secondment at GFOSS (Greece).
- Caterina Santoro (ESR 12): non-academic secondment at Digitaal Vlaanderen (Belgium).
- Liubov Pilshchikova (ESR 11): non-academic secondment at Digicampus (the Netherlands).
- Héctor Ochoa Ortiz (ESR 13): non-academic secondment at Regione Marche (Italy).

3. 2022 events

In this chapter, we report on four dissemination and public engagement events with partner organizations that were organized by the ODECO researchers in 2022.

3.1. CoC Playful Minds (Alejandra Celis Vargas)

Title of the event: Sensitizing internal event with CoC Playful Minds

Date of the event: 18th May 2022

ESR(s) involved: Alejandra Celis Vargas (Aalborg University)

Partner organization: CoC Playful Minds

Objectives of the event:
The event was aimed at setting a starting point for the collaboration between CoC Playful Minds and ODECO. The two main objectives were:

To sensitize the team about Open Data.
To identify collaboration opportunities with the specific CoC Playful Minds projects.

Participants:
12 people from the CoC Playful Minds team.

Agenda:

Time	Activity	Description	Duration
12.30	Alejandra Presentation		15
12.45	ODECO presentation		10
12.55	Intro workshops	Main rules	
13.00	Activity 1: Open Data Activity	Each person writes down three different words in a post it (same colour) and place them in a white word. Afterwards, Groups of 3 people create a short sentence with the post it. Sentences should be placed in another white word (if extra words are missed can be added in a post it with different colour).	30-35
	Discussion	What is Open Data?	
13.30	PhD presentation	How can we raise the voice of children?	
13.45	Break		15
14.00	Activity 2: Open Data and CoC Playful Minds	People group according to their projects. And together create a poster in a white board to present the project. Poster contains name, sentence description and main challenge.	15
	Social brainstorming	How each project connects to the concept of open data? What kind of data? what for? why?	12
		Groups move to the right and for 3 minutes brainstorm about the questions	15 - 20
		The original group returns to its poster, read, discuss, and conclude. To present their ideas and questions	

14.45		Group presentation	30
		Discussion	
15.00	Break		5
	Activity 3: Children: What are the skills enabling children to act with open data	Brainstorm	
15.30	Closing and next steps		

Table 2: Agenda of the event with CoC Playful Minds

Outcomes:
Open Data might be very abstract for non-expert organizations and users. Finding creative and practical activities to address the topic is useful for sensitizing and introducing the Open Data field. The internal event was key to find a common definition of Open Data with the partner organization. Furthermore, two projects were identified to conduct studies in upcoming stages of the research project.

The main take aways of the event included:

- Playful learning: The partner organization grounds its activities in playful learning which might be methodologically relevant for the research project.
- Co-creation with children: CoC Playful Minds is aimed at raising the voice of children. That is why co-creation is one of their milestones. Considering the language, skills and what is natural for children is relevant for the research project.
- Real-world problem solving: According to CoC Playful Minds, children can equally construct solutions for local and global problems.

Career impact:
The event was beneficial for the career development of the ESR. Firstly, on the development of skills for collaboration between non-academic and academic parties. Secondly, this event allowed the ESR to train important skills such as facilitation, gamification, communication and planning. Thirdly, the ESR gained practical knowledge about important aspects of my research project such as co-creating with children, civic engagement and citizen participation. Finally, the network with CoC playful minds strengthened by identifying opportunities for learning and working together.

Pictures of the event

Figure 1: Participants of the event during one of the activities.

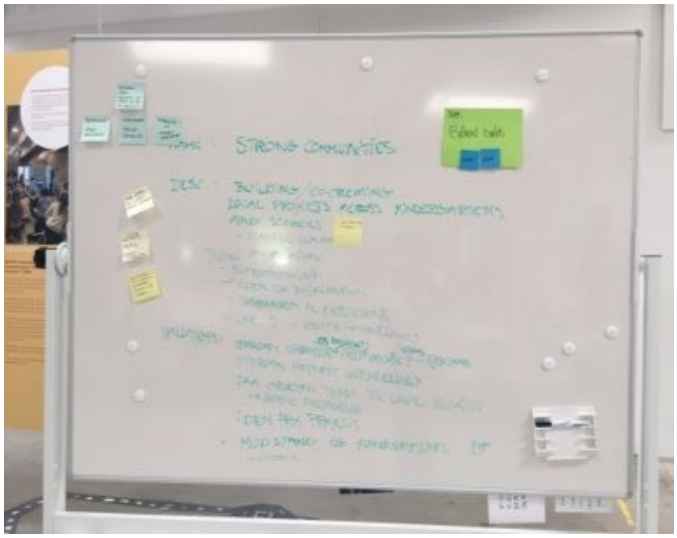

Figure 2: Results created during one of the activities.

Figure 3: Results of the activity about children's skills for acting with open data.

3.2. København Kommune - Fish Tank Innovation Hub (Maria Elena Lopez Reyes)

Title of the event: En halv times viden: Open Government Data in Practice.

Date of the event: 21st September 2022

ESR(s) involved: Maria Elena Lopez Reyes (Aalborg University)

Partner organization: København Kommune - Fish Tank Innovation Hub.

Objectives of the event:
To clarify the concepts and definitions surrounding the use of Open Government Data for the participants.
To trigger the interest of the social organizations working in the hub for future collaborations.

Participants:
- Fishtank Social Hub Coordinator.
- Social Talks members.
- Gadens Stemmer A.M.B.A. members.
- Konsulenthuset for Socialøkonomi members.

Agenda:
- ODECO project presentation (5min)
- Why is Open Government Data important? (5min)
- What is Open Government Data? (5min)
- How is Open Government Data being used? (5min)
- Brainstorming on the potentials of Open Government Data (15min)

Outcomes:
Fishtank Social Hub is s a living lab belonging to the Welfare Ministry of København Kommune. It consists of an old industrial building in what once was a meat production facility in the city's Meatpacking district. It has been reformed to host organizations and people with different backgrounds, so they can connect and create social solutions outside the municipal and private spheres. The projects that emerge from this space have the compromise to solve social problems and create change for vulnerable groups in the city. Nowadays, the hub hosts organizations working with people dealing with homeliness, unemployment, addictions, and truancy. The organizations work with the people to create new dignified alternatives to improve their lives. The organizations that occupy the shared space receive funding from the local government to sustain their activities while they innovate their business models to scale up their projects.

During the development of the secondments in the hub, a space for sharing knowledge within the community was created with the name "En halv times viden" or "Half an hour of Knowledge." The organizations belonging to the hub were invited to join the thirty minutes talk after lunch. The motivation for the talk was, on the one hand, to clarify the concept of Open Data and the practices that surround it, and on the other hand, to spark the community's interest and open the conversation about the potential value of using open government data in their practices. An interesting reflection that emerged during the talk was acknowledging the use of open data in their ordinary activities. At the beginning of the conversation, the participants were asked whether they used open data in their activities. The answers were negative and doubtful; however, after the presentation and the sharing of the main definitions of open data, the reflections went in the other direction, and the participants shared

their thoughts about which kind of activities they developed by accessing open government data, which were mainly related to gathering information to developing operations of their organizations.

The participants also showed interest and enthusiasm towards the possibility of creating new services using open government data, especially the possibility of using it as a tool for social transformation within the communities. That happened particularly after discussing an example of an initiative using a crowdsourcing approach to collect information from the community while training them to prevent floods. The results from the talk were positive, although the language barriers will be an important aspect to consider while developing the future activities within this research.

Career impact:
Engaging in the activity within the Fishtank Social Hub provided the opportunity to interact with local communities that could lead to potential collaborations or access to resources for academic studies. It also helped to broaden the perspective and understanding of the practical applications of open data in real-world settings.

Pictures of the event

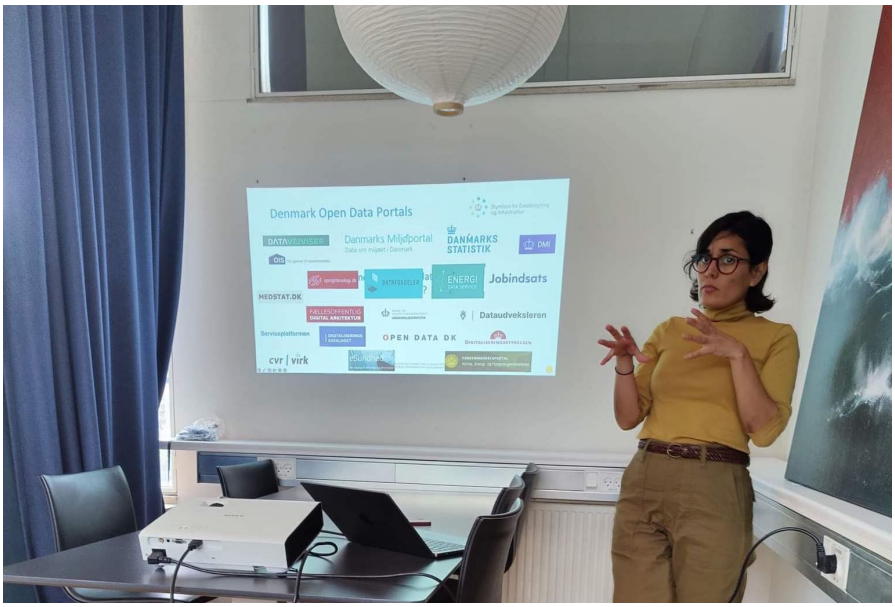

Figure 4: Maria Elena presenting her research.

Figure 5: The Fish Tank Innovation Hub.

3.3. Spanish National Geographic Institute (Dagoberto Herrera Murillo)

Title of the event: XIII Iberian Conference on Spatial Data Infrastructures

Date of the event: 26th October 2022

ESR(s) involved: Dagoberto Herrera Murillo (Universidad de Zaragoza)

Partner organization: National Centre of Geographic Information (CNIG)

Objectives of the event:
To reflect on the use of novel technologies to provide the citizen with solutions that solve specific problems through geographic data infrastructures.

Participants:
Professionals in the domain of Spatial Data Infrastructures from Spain and Portugal.

Agenda:

	AGENDA (26-10-2022)
11:00-12:15	Lightning talks about data publication -GeoE3 and Open Maps for Europe -Transformation of the Aragon IDE node into the Spatial Knowledge Infrastructure of Aragon (ICDE) -From the street to the digital twin -Digital Information Platform -INSPIRE services at the CNIG. Works done with the Inspire validator
13:10-14:00	Round Table Technological experience and evolution: bringing the SDI closer to citizens
15:30-17:00	Tools session -IDE of Caceres. Free and proprietary software -App design and low cost device using arduino for the measurement of urban heat islands -IDE of Caceres. Free and proprietary software -Vector cartography for mobile -Tool for the pre-design of climate control solutions for open spaces to recover life on the street -Web application for energy modeling and evaluation of buildings or districts

Figure 6: Agenda of XIII Iberian Conference on Spatial Data Infrastructures

Outcomes:
The biggest learning from this event was to identify that usability is the great opportunity at the door of open data ecosystems. Spatial data infrastructures are one of the most valuable spaces within the open data universe and their results are tangible in many areas of citizens' daily lives. At the same time, platforms for accessing geographic data are difficult to use for ordinary citizens and are relegated to a limited group of technical users.

During the multiple presentations at the JIIDE, experts agreed on recognising the public value of spatial data infrastructures as open data and acknowledged the mistake that has sometimes been made of trying to separate geo-data infrastructures from the rest of open data.

The need to make portals more accessible to citizens was systematically discussed during the event's panels. The ESR had the opportunity to ask the panellists directly about the specific plans they have in mind to realize this aim of making geo-portals more usable. However, so far it seems mostly a declaration of good intentions (which is a favourable and necessary first step) but it was not clear what

would be the roadmap, methodologies and investments in human and technological resources in usability that would underpin these good intentions. Two decades ago, Jakob Nielsen, who is one of the fathers of web usability, postulated the empirical best practice that every web project intended for the public should allocate around 10% of project's budget to usability. This kind of investment does not seem to be on the radar until now.

In this sense, the great opportunity lies in translating our research project into guidelines, tools and frameworks that help to materialize this objective of greater usability that is present in the top of mind of the managers of geographic information infrastructures.

Career impact:
Participating in the Iberian Conference on Spatial Data Infrastructures was not only an opportunity to learn about the state of the art of geospatial open data initiatives in Spain and Portugal, it was also an opportunity to connect with the professionals in charge of these initiatives to communicate the sustainability vision of the ODECO project. From this participation, we have decided to present a keynote at the 2024 conference on UX research for spatial open data infrastructures.

Pictures of the event

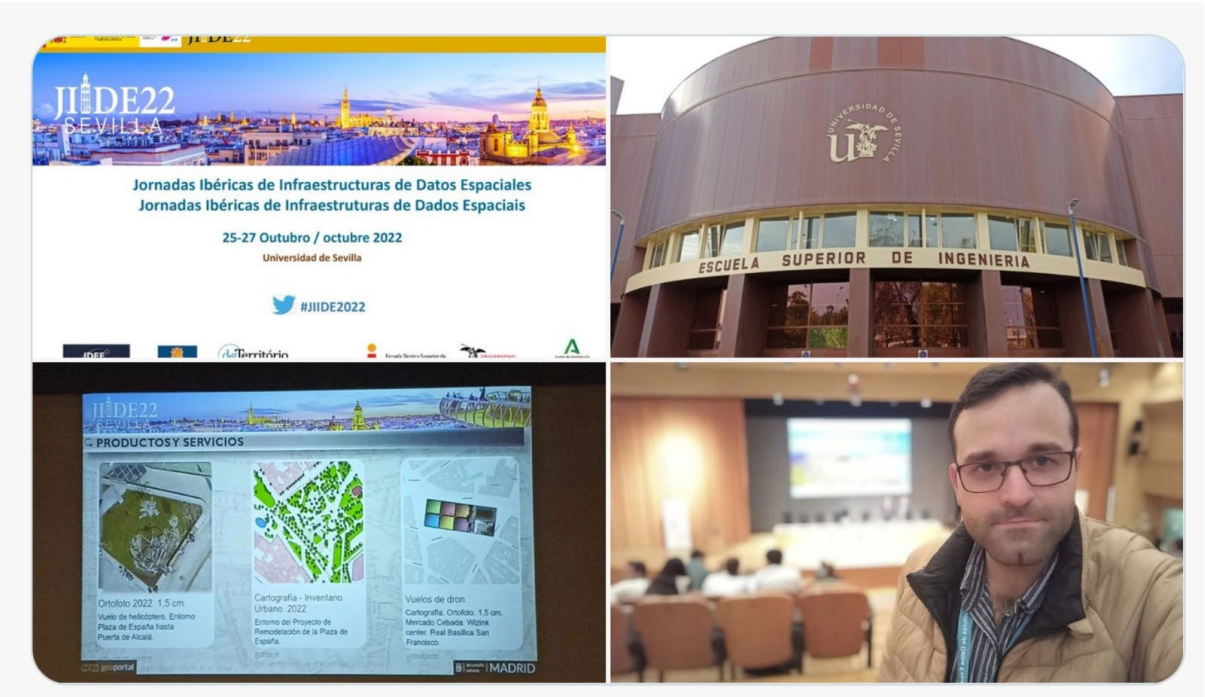

Figure 7: Event recap with pictures of the event.

3.4. 7eData (Abdul Aziz)

Title of the event: Closing event of the secondment *at 7eData*

Date of the event: 8th November 2022

ESR(s) involved: Abdul Aziz (Universidad de Zaragoza)

Partner organization: 7eData

Objectives of the event:
Presentation of the overall outcome of the secondment

Participants:
- A team of Professionals of 7eData.
- ESR2.
- 7eData supervisor.
- ESR2 academic supervisor.
- 2 PhD students of IAAA Lab University of Zaragoza.

Agenda:
Detailed presentation of the work done during the secondment

Outcomes:
Abdul started his secondment at 7eData with a very great welcome by the host organisation. They provided him with all the necessary information including their working style and platform they are working on. This process began with compiling a list of all the software that 7eData offers, as well as a list of the software that its competitors provide, and then providing a short explanation of each. The list was validated with 7eData employees. The ESR explored different databases in the domain of agriculture to current data products, interpreted in the widest possible meaning, applied to each software product.

Here is the list of such databases:
- SGA PAC Aragon (Relación entre parcelas PAC, códigos catastrales y SIGPAC en Aragón).
- Land cadastre.
- ROPO database (Registro Oficial de Productores y Operadores de medios de defensa fitosanitaria).
- ROMA database (Registro Oficial de Maquinaria Agrícola).

FAIR principles used as a framework for evaluating the following factors to establish the extent of available agricultural data:

Findability: How easy is it to locate (by which data portals, search engines, or registries)?
Accessibility: Is there any way I can get the data set? How do I get an entry, what format, API, or method do I use? Where can I get the metadata?
Interoperability: How thoroughly defined is interoperability? Is there a need for data cleansing?
Reusability: Can we reuse this? What are the legal limitations on doing so? Does it improve the worth of the program if it is reused?

Besides, the ESR also explored some interesting projects in the field of agriculture which are informative and helped me to understand better about the products used in the agricultural domain and gathering information regarding the software products. Examples of such projects are:

Foodie: (Farm Oriented Open Data in Europe) A research project started in 2016 and ended in 2017 (https://www.foodie-project.eu). The main concept is to (re)use open data in the agriculture domain to create new applications that provide value added to the stakeholders.
GODAN (Global open data for agriculture & nutrition) Geo Data, Weather Data & Market Data: GODAN supports the proactive sharing of open data to make information about agriculture and nutrition available, accessible and usable to deal with the urgent challenge of ensuring world food security. The initiative focuses on building high-level support among governments, policymakers, international organisations and business. GODAN promotes collaboration to harness the growing volume of data generated by new technologies to solve long-standing problems and to benefit farmers and the health of consumers.
AGRIS: AGRIS is a global public domain database with more than 12 million structured bibliographical records on agricultural science and technology AGRIS is supported by a community of data providers, partners and users. AGRIS provides bibliographic metadata that has been ingested from the community. Metadata is gathered by (a) data harvesting from clients or (b) user submissions to AGRIS. AGRIS's mission is to provide a service that is responsive to the demands of its worldwide users by encouraging participation in the creation of the AGRIS core knowledgebase.
AGINFRA (http://www.aginfra.eu/) (http://plus.aginfra.eu/) Accelerating user-driven e-infrastructure innovation in Agriculture & Food The goal of AGINFRA+ is to offer a sustainable route addressing neighbouring but not completely linked user groups surrounding Agriculture and Food by using key e-infrastructures like EGI.eu, OpenAIRE, EUDAT, and D4Science in the process of evolving the AGINFRA data infrastructure.
SemaGrow (http://semagrow.github.io/) (https://www.semagrow.eu/)(SPARQL federated Query Processor) Data integration made easy During 2012-2015 Semagrow development was partially funded by the Seventh Framework Programme of the European Commission under Grant Agreement 318497. Semagrow provides a unified SPARQL endpoint that aggregates information from disparate sources and conceals heterogeneity in terms of both syntax (by federating non-SPARQL endpoints) and semantics from client applications (transparently mapping queries and query results between vocabularies).

During the secondment, the ESR worked on the optimization of the data (at 7eData) with respect to the provenance and standardisation related to the re(use) of the data. Additionally, he explored automatic harvesting of the data by aGROSlab (latest and most prominent product of 7eData), explored dataset with agricultural parcels and assessed the availability of software products and data products relevant for the agricultural domain. Furthermore, as an outcome Abul also prepared a report containing the question answers with 7eData professional team regarding the user needs with the types of the users (which is also part of the ODECO Work Package 2), data providers, data consumers, data availability, targeted audience, tools and the role of open data in agriculture. Lastly, here are a few aspects/elements of open data that are always useful in the agriculture domain.

Messy Data.
Fused Data.
Filtered Data.
Validated Data.
Enriched with the proper metadata to become more discoverable/findable.
Allow interoperability.

The above aspects are important because it is significant to deal with making data open as it makes possible to obtain, clearly interpretable information and linked datasets that provide different

perspectives on the same subject. Moreover, it is imperative that each source of data is verified to ensure accuracy and quality of the data before use with obtaining and integrating data from many sources without compromising its original meaning.

Career impact:
As Abul was working very closely with the 7eData team, it was an opportunity for him to expand his professional network and enhanced the collaboration skills. He also improved his technical skills and knowledge in the field of agricultural open data as his core task was to assess and handle various agricultural databases and evaluating them using FAIR principles. Moreover, Abdul enhanced his research and analytical skills through his involvement in optimizing data with respect to provenance and standardization, which are critical skills in data science and research.

In addition, Abdul evaluated agricultural software products and investigated autonomous data collecting as part of a substantial project he was a part of during his secondment. He was able to refine his reporting and project management skills by writing a detailed report on user requirements, data accessibility, and the function of open data. Finally, he gained a better grasp of the significance and challenges of open data in agriculture through my professional secondment experience. To make data more discoverable and interoperable, he investigated crucial components such as messy data, fused data, filtered data, verified data, and metadata enrichment.

Pictures of the event

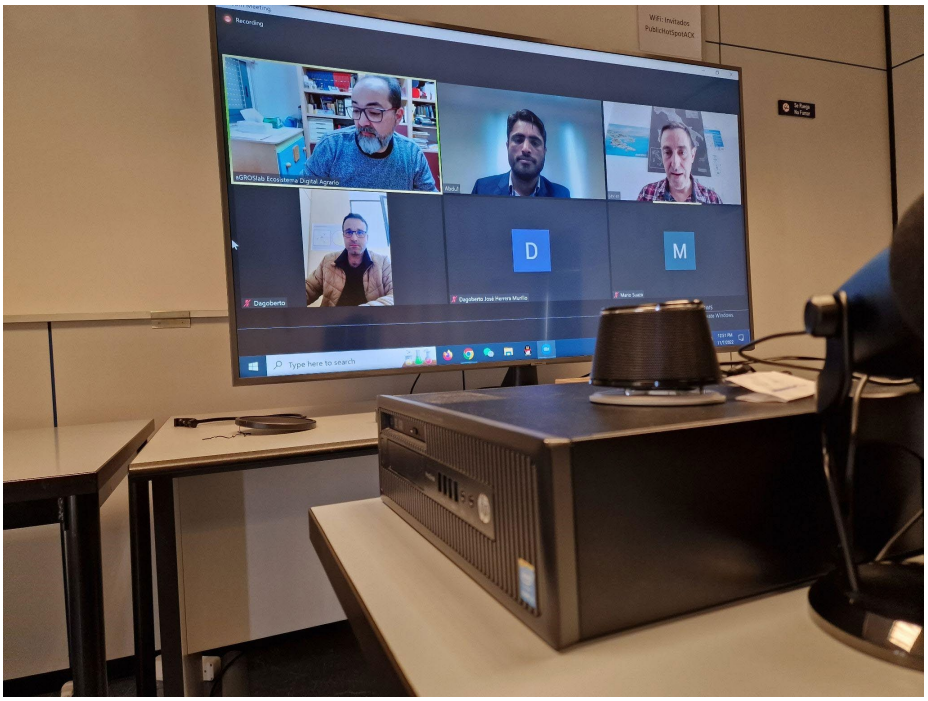

Figure 8: Online participants to the event.

Figure 9: Opening slide of Abdul's presentation.

Figure 10: Abdul presenting his research.

4. 2024 events

In this chapter, we report on five dissemination and public engagement events with partner organizations that were organized by the ODECO researchers during the first half of 2024.

4.1. City of Rotterdam (Davide Di Staso)

Title of the event: Workshop Serious Game Jam

Date of the event: April 9th, 2024, April 23rd, 2024

ESR(s) involved: Davide Di Staso (TU Delft)

Partner organization: City of Rotterdam

Objectives of the event:
To understand game-making as an approach to visualise open data.

Participants:
- Lærke Christiansen, TU Delft, PhD Candidate, facilitator.
- Approx. 45 employees of City of Rotterdam covering various functions.

Agenda:

April 9 2024	
9:30	Introductory presentation
10:00	Participants make their event badges and pick roles (artist, game designer, etc.)
10:20	Social issue brainstorming – participants fill a sheet about the issue they want to address
10:30	Participants present their social issue to others in order to gather a team
10:50	Participants split into teams of 4
11:00	Fill pre-test survey for research purposes
11:10	Brainstorming about the title, genre, art style, game mechanics to be implemented
12:30	End
April 10 2024	
9:30	Introductory presentation
9:45	Coding of the games
12:00	Participants finish coding, play each other's games and vote for the best ones
12:10	Fill post-test surveys
12:15	Winner is announced
12:30	End

Table 3: Agenda of the Serious Game Jam Workshop.

Outcomes:
Davide collected data about video game-making as an approach to visualise open data. He conducted observations, analysed the games made by participants, collected pre-test and post-test surveys. Data collected through this event will be included in his doctoral dissertation and in submissions to scientific conferences. This was also an opportunity to improve his skills as a facilitator.

Davide discovered that video game-making is a surprisingly accessible way of visualising data about social issues. During the event, participants were asked to pick a social issue that interests them (e.g.

biodiversity), and brainstorm available open data that can be used to describe it. Davide observed that participants felt engaged and motivated. Participants' presentations were particularly insightful, as we could all learn about important social issues in Rotterdam and in The Netherlands, such as young people getting into debt, the impact of house gardens on the city's biodiversity, and others.

One group of participants kept working on their video game after the event and published it online. For the employees of City of Rotterdam, this event offered an introduction to computer programming, as well as a teambuilding opportunity.

Career impact:
This event allowed Davide to show his approach to the digital innovation teams at City of Rotterdam. Employees at the partner organisation discovered a new resource for building digital skills, reusing open data, and teambuilding. This could lead to future collaborations with City of Rotterdam. Additionally, this is useful for his future career, as he will be able to show that his newly developed approach was used at an important institution in The Netherlands.

Pictures of the event

Figure 11: Participants to the Serious Game Jam Workshop.

4.2. Esri (Ashraf Shaharudin)

Title of the event: Business Models of Open Data Intermediaries - Insights from Practice (webinar)

Date of the event: 29 May 2024

ESR(s) involved: Ashraf Shaharudin (TU Delft)

Partner organization: Esri

Objectives of the event:
To present and invite a discussion on the role of open data, the archetypes of their current business models, and the illustrative case of Esri's open data intermediation business model.
To obtain feedback and additional information from the partner organisation (Esri) as well as open data practitioners and researchers on the preliminary research findings.
To promote ODECO's research to international audience through a webinar that can be attended by anyone around the world.

Participants:
- Ashraf Shaharudin – PhD researcher at TU Delft, Netherlands – key presenter and main planner of the webinar.
- Dr Bastiaan van Loenen – Associate Professor at TU Delft, Netherlands – moderator and co-planner of the webinar.
- Dr Michael Gould – Global Education Manager of Esri and Professor of GIS at Universitat Jaume I, Spain – discussant of the webinar.
- Dr Line Hvingel – Consultant, Climate & Cross-Municipal Cooperation at KL, and Project Manager of GeoFA, Denmark – discussant of the webinar.
- Jan-Willem van Eck – Chief Research Officer at Esri Netherlands – co-planner of the webinar.
- Sigwela Augustin – Education Coordinator at TU Delft, Netherlands – co-planner and technical coordinator of the webinar.
- Meike Haan – Student Assistant at TU Delft, Netherlands – technical assistant of the webinar and post-event video editor.
- 25 online attendees including researchers and practitioners from Netherlands, Greece, Czech Republic, Italy, Sweden, Spain, Germany and Denmark; 4 attendees onsite.

Agenda:

11.00 - 11.20 AM	Presentation by Ashraf Shaharudin
11.20 - 11.30 AM	Reflection by Dr Michael Gould
11.30 - 11.40 AM	Reflection by Dr Line Hvingel
11.40 – 12.00 OM	Discussion and Q&A

Outcomes:
The webinar was an outlet for Ashraf to obtain feedback on his ongoing research, particularly on Esri's open data intermediation business model, from practitioners. It was also an opportunity to promote Ashra's research and ODECO project in general. The ensuing discussion after Ashraf's presentation was positive and stimulating. Dr Michael Gould, who is a representative of Esri, considered the research conducted by Ashraf on Esri's business model insightful. He also provided additional information such as Esri's commitment to promoting FAIR (findable, accessible, interoperable, and reusable) data principles. Dr Line Hvingel, who represents the public sector, sparked the conversation about how open data intermediaries could help balance the disproportionate financial costs borne by the public sector in providing open data and the benefits reap by the private sector.

The webinar was promoted online through data.europa.eu website (link) and social media as well as physical posters and direct emails to relevant stakeholders. The recording of the webinar is available online, which hopefully, could encourage further discussion as well as visibility of Ashraf's research.

Career impact:
The webinar stimulates networking opportunities for Ashraf. Having two practitioners who have long been working around (open) data and geographic information systems (GIS) agree to be the discussant of the webinar indicates the promising contribution of Ashraf's research to practice. In addition, some of the webinar participants are those who work in the public sector or industry. This webinar, thus, presents an opportunity for Ashraf to continue to leverage and develop the visibility and network established with practitioners even after his PhD.

The webinar also honed Ashraf's skills in event organization—from planning the event, reaching out to relevant stakeholders who could help with the event organization, considering alternative plans in case certain things happen (e.g., unforeseen technical issues), and devising communication/dissemination strategies. In addition, as this webinar was targeted to those outside academia, Ashraf (with advice from his supervisor) had to consider presenting his research in ways that are easily relatable and understandable by non-academics. These skills are essential for Ashraf's career, whether in academia, industry, the public sector, or the non-profit sector.

Pictures of the event

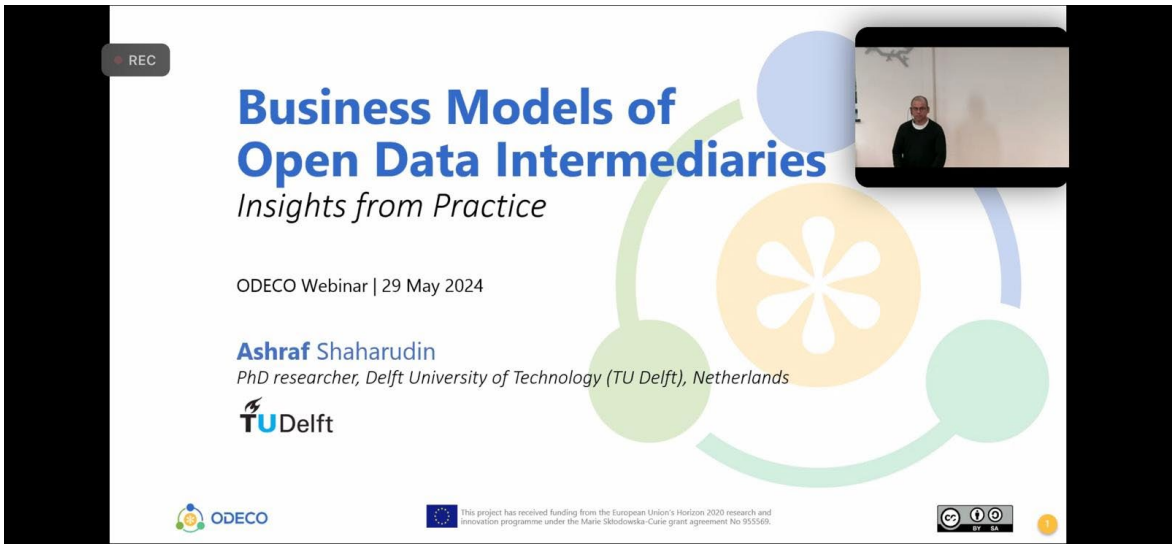

Figure 12: The online view of the webinar.

Figure 13: Ashraf presenting his research.

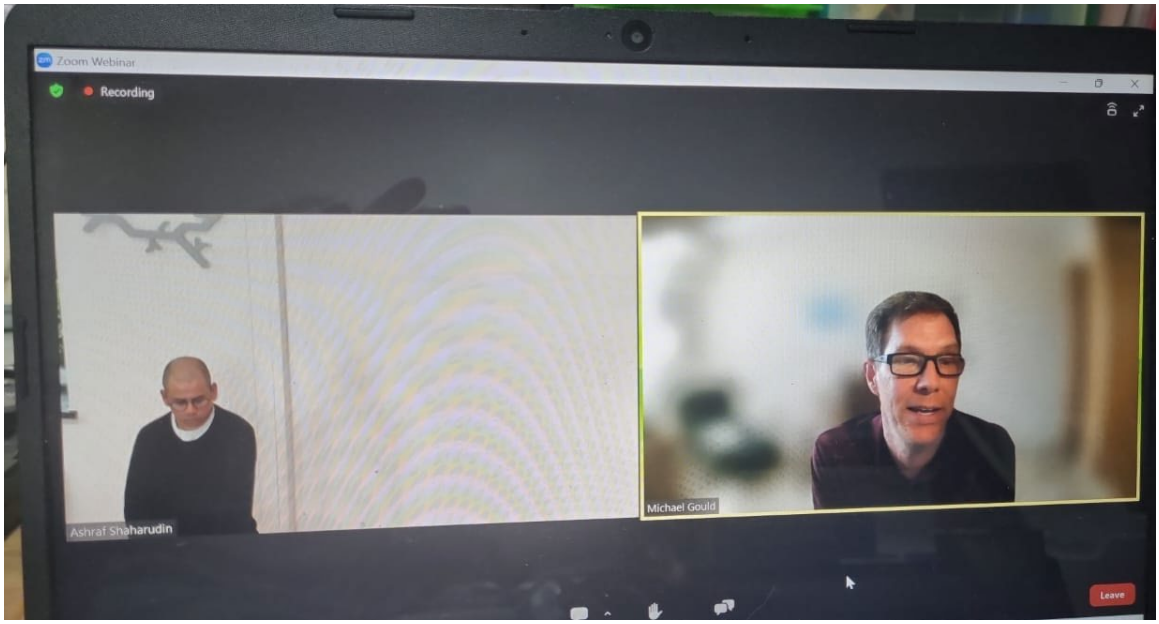

Figure 14: Michael Gould reflecting on Ashraf's research as a discussant.

4.3. Open Data Institute (Silvia Cazacu-Bucica)

Title of the event: ODI Show & Tell

Date of the event: 30th May 2024

ESR(s) involved: Silvia Cazacu-Bucica (KU Leuven)

Partner organization: Open Data Institute (ODI)

Objectives of the event:
The overall objective of the 'ODI Show & Tell' event is to connect people working in different teams of the organisation by giving people a space to raise awareness, gather feedback and collaborate on areas of mutual interest.
The specific objective of the event was to present the work of Silvia Cazacu to the wider organisation and to help her advance her research by receiving input from colleagues who were not involved directly in the project.

Participants:
- Silvia Cazacu – PHD researcher at KU Leuven, Early Stage Researcher at ODECO and research fellow at the ODI.
- Lewis Prentice – PhD researcher at Leeds Beckett University, research fellow, the ODI.
- Jared Keller – Principal Investigator at the ODI.
- Gefion Thuermer – Head of Research at the ODI.
- Joe Massey – Senior Researcher at the ODI.
- Thomas Carey-Wilson - Researcher at the ODI.
- Neil Majithia – Researcher at the ODI.
- Ed Evans – Senior Consultant at the ODI.
- Darren Temple – Consultant at the ODI.
- Jhilla Khodaie – Delivery Coordinator at the ODI.
- Awa Mohamed – Office Manager at the ODI.
- Kanika Joshi – Sustainability Lead at the ODI.
- Lou Lynch – Design at the ODI.
- Charlotte McLeod – Strategic Communications at the ODI.

Agenda:
15:30 – 15:40 General announcements, introduction, event agenda
15:40– 16:15 Presentation "Exploring how data culture is formed in organisations" and discussion, Lewis Prentice
16: 15 – 16:50 Presentation "What is the value of Datopolis, the game-based tool for supporting critical data literacy? A post-evaluation (design) study" and discussion, Silvia Cazacu
16:50 – 17:00 Closing

Outcomes:

This event gave Silvia the opportunity to present and receive feedback on the ongoing research she is conducting about the value of Datopolis, the ODI open data board game, as part of her ongoing secondment. She was able to ask the colleagues from the other ODI teams for help with recruiting participants and improving the data collection and data analysis process. Furthermore, it helped her promote her research and find new connections with other topics of interest for the ODI, such as data culture, ethics and fairness.

Career impact:

By presenting her research at this event, Silvia significantly expanded her network with experts from the open data domain, fostering potential future collaborations and mentorship opportunities. Moreover, she honed her presentation skills by addressing and receiving feedback from a mixed audience of academics and industry leaders in open data, enhancing her ability to communicate complex ideas effectively. Additionally, the feedback she received provided valuable insights that helped refine her research methodology and approach, contributing to the overall quality and impact of her work. Engaging with diverse perspectives on open data topics also broadened her understanding and inspired new directions for her research, positioning her as a well-rounded and innovative researcher in the field. This event, therefore, was not only a platform for sharing her work but also a significant stepping stone in her professional growth and development within the open data community.

Pictures of the event

Figure 15: A snapshot from the slide deck used during the presentation.

Figure 16: Silvia in front of the ODI office building.

Figure 17: The Datopolis game.

4.4. GFOSS (Mohsan Ali)

Title of the event: Open Data Products and Open-Source Technologies

Date of the event: Tuesday 4 June, at 10:30 2024 at EELLAK

ESR(s) involved: Mohsan Ali (UAEGEAN)

Partner organization: GFOSS

Objectives of the event:
This event was a multi-objective event to introduce the participants with:

- Open data ecosystems and what we are doing in ODECO.
- Open data products development?
- Role of Open Data Interoperability in the development of Open Data Products.
- Leveraging Modern open-source technologies in the development of Open Data Products.

Participants:

- Panagiotis Skarvelis
- Dimitris Kalogeras
- Nina Gialoussi
- Mohsan Ali
- Ioanna Moura
- Foivos Karounos
- Katerina Zoi
- Yiannis Kotsis Giannarakis
- Petros Stefaneas

Agenda:
In a one-hour hybrid session the following topics were addressed:

- Open Data Ecosystems
- Utilizing technologies to develop Open Data Products
    - LLMs, GreekBERT, and MindsDB
- How to make these open data products interoperable?
- Resource constraints
    - Time and space
    - Hardware (GPUs and Disks)

Outcomes:

The outcomes of this event and overall secondment are:

- Developing an application using open data.
- Developing APIs to feed data into large language models to understand interoperability.
- Presentation and communication skills.
- Collaboration with teams.
- The results are distributed and contributed to the GitHub repository (e.g. Version control).
- Application development skills.
- You can manage the server using FileZilla and SFTP protocols.
- The application development process integrates open-source technologies such as MindsDB, LLMs, and GreekBERT.

Career impact:

This event, as well as the overall secondment, have had an important impact on Mohsan's career. One of the major impacts is that he learned how open data can be used in the development of large-language models through the pipelining of the open data. Next, he utilized open-source technologies to create applications that rely on open data sets. Furthermore, he learned how he could collaborate with multi-professional teams (data, software, and hardware). Ultimately, the fact that he had already committed several contributions to the GFOSS project to the GitHub repository proved immensely beneficial for his career.

Pictures of the event

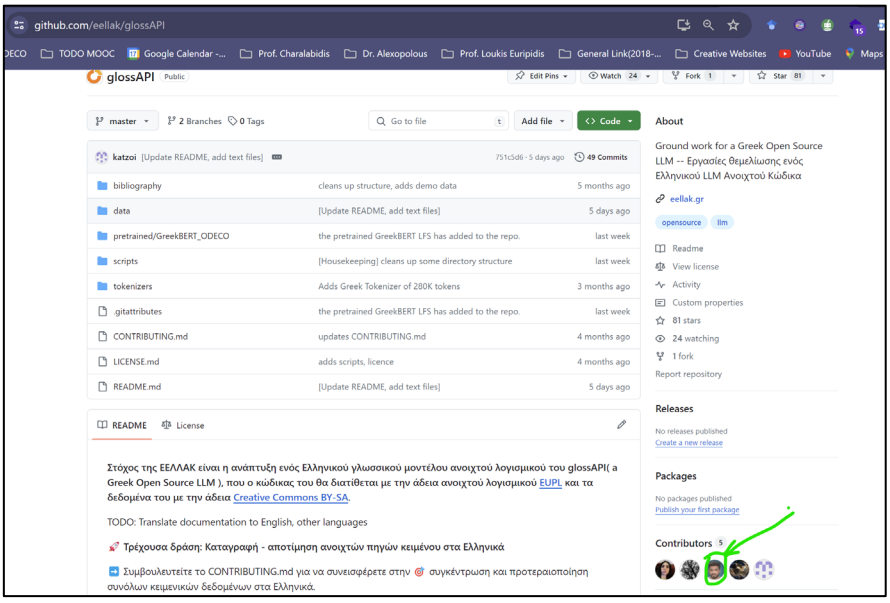

Figure 18: Screenshot showing Mohsan's contribution to the GlossAPI- project in GitHub.

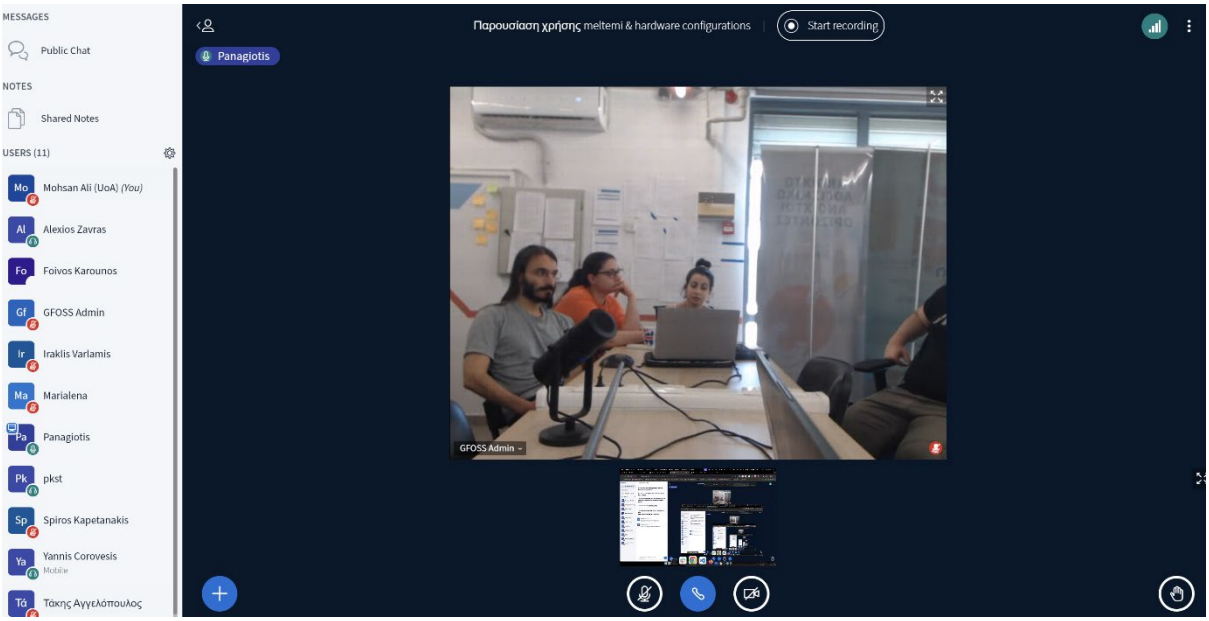

Figure 19: Screenshot of the online meeting.

4.5. Regione Marche (Umair Ahmed)

Title of the event: Outreach Event on Open Data and AI Applications

Date of the event: 12 June 2024

ESR(s) involved: Umair Ahmed (UNICAM)

Partner organization: Regione Marche

Objectives of the event:
The outreach event had the following objectives:
To present the concept and importance of open data, the current state of open data initiatives, and the specific activities and proposals undertaken during the secondment at the Marche Regione Office.
To highlight the potential applications of large language models (LLMs) in enhancing data management and accessibility.

Participants:
Experts from Regione Marche

Agenda:

Time	Activity
9:30 - 9:45	Welcome and Introduction
9:45 - 10:15	Explanation of Open Data and Its Importance
10:15 - 10:30	Current State of Open Data
10:30 - 10:45	Break (15 minutes)
10:45 - 11:15	Activity: Metadata Generation Using LLMs
11:15 - 11:45	Activity: Improving Tourism Ontology Structure
11:45 - 12:15	Proposals: Legacy Data Conversion using LLMs and Chatbot Development
12:15 - 12:30	Q&A and Discussion

Table 4: Agenda of the Outreach Event on Open Data and AI Applications

The event began with a brief welcome message and an introduction to the agenda. Next, an in-depth explanation was provided on what open data is, its significance in fostering transparency, innovation, and public engagement, and the various sectors that benefit from open data initiatives. The first session ended with a presentation covering the current trends, challenges, and opportunities in the realm of open data, focusing on global and regional perspectives and how different regions are leveraging open data.

After the break, Umair presented his secondment activities and the proposals that were implied by them. First, he gave an overview of the project focused on generating metadata for Ancona's open data portal using large language models (LLMs). Next, he discussed his efforts to enhance the structure of the tourism ontology for the Regione Marche office.

Two proposals for future activities were presented:

Using LLMs to convert legacy data into more structured and accessible formats (ontological structure).
Developing a chatbot for the Ancona data portal using Retrieval-Augmented Generation (RAG) to assist users in navigating and using the data portal more effectively.

An interactive session allowed participants to ask questions and discuss the benefits of the solutions proposed during the secondment, highlighting how these initiatives can lead to improved data management, user engagement, and overall efficiency.

Outcomes:

The event provided valuable insights into the innovative use of AI and open data to enhance regional data infrastructure. Participants to the event gained an understanding of the potential benefits and practical applications of large language models (LLMs) in public data management.

Career impact:

This secondment had a significant impact on Umair's career. It provided him with a unique opportunity to experiment with real-life organizational data that people are actively using. Umair was able to test his research in a practical setting, gaining valuable insights into the challenges and opportunities of applying large language models (LLMs) to enhance data management and accessibility. This hands-on experience has not only enriched his understanding of open data initiatives but also strengthened his ability to translate theoretical research into practical, impactful solutions. The skills and knowledge gained during this period will undoubtedly contribute to his professional growth and future endeavours in the field of data science and AI applications.

Pictures of the event

Figure 20: Umair presenting a proposal on developing a chatbot using Retrieval-Augmented Generation (RAG).

Figure 21: Participants to the event.

4.6. Inno3 Consulting (Ramya Chandrasekhar)

Title of the event: Open data and AI – Reflections on re-use of publicly-available data for AI training datasets

Date of the event: 21 June 2024

ESR(s) involved: Ramya Chandrasekhar (CNRS)

Partner organization: Inno3 Consulting

Objectives of the event:
During her secondment, Ramya worked with Inno3 to do desk-based research as well as interview clients and collaborators of Inno3 on the following topic of ' what are the legal issues in re-use of publicly-available data into AI training datasets, and what role can open data licenses play in addressing these issues?' She organised a seminar at the end of her secondment, to present preliminary findings from her data collection and obtain feedback from the participants.

Participants:
- Benjamin Jean, Founder and Managing Director of Inno3.
- Celya Gruson-Daniel, Research Director at Inno3.
- Clemence Lascombe – Research Director at Inno3.
- Arthur Hamonic – Consultant at Inno3, specialising in open licenses.
- Vincent Bachelet – PhD researcher and Consultant at Inno3, specialising in open licenses.
- Camille Moulin – Senior consultant at Inno3, specialising in open source software.
- Nicolas Breitner – Senior consultant at Inno3.
- Hugo Nury – Intern at Inno3.
- Karine Salazar – Intern at Inno3.
- Melanie Dulong de Rosnay – Supervisor of ESR 4.

Agenda:

11:00 to 11:10	Introductions
11:10 to 11:30	Presentation by Ramya
11:30 to 12:30	Open discussion and next steps

Outcomes:
The seminar helped Ramya to obtain feedback from Inno3 on the role of open data licenses in encouraging responsible re-use of publicly available data into AI training data. The participants offered substantive insights, shared resources, and offered names of other interviewees that Ramya could reach out to for further interviews. They also provided feedback on how to improve her interview questionnaire design, and how to balance between structured and semi-structured interviews. Inno3 also expressed their interest in converting the presentation into a written report with the research findings, which will be disseminated on Inno3's communication channels.

Career impact:
Ramya was able to make new connections with members of the open data community in France – both through employees of Inno3 as well as clients and collaborators of Inno3 that she interviewed. Ramya was also able to get valuable scientific feedback on her research project – open data licenses for responsible AI training.

Pictures of the event

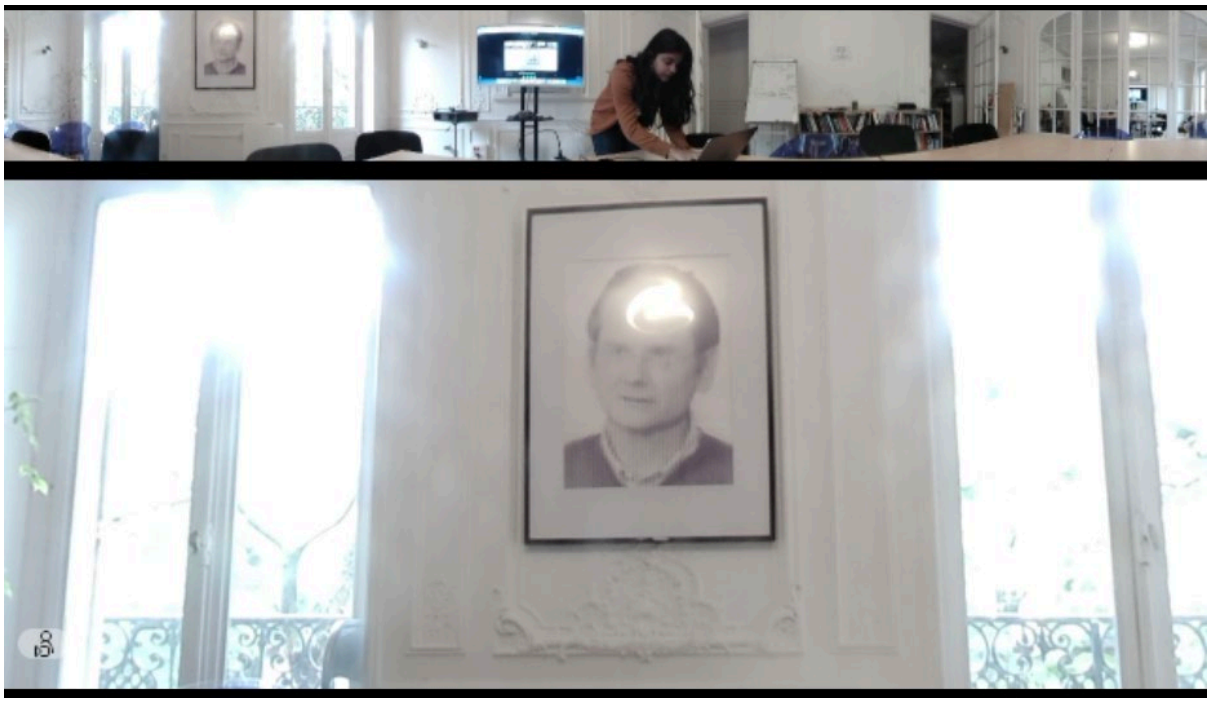

Figure 22: Ramya setting up the seminar, in front of a picture of Lawrence Lessig, the co-founder of Creative Commons.

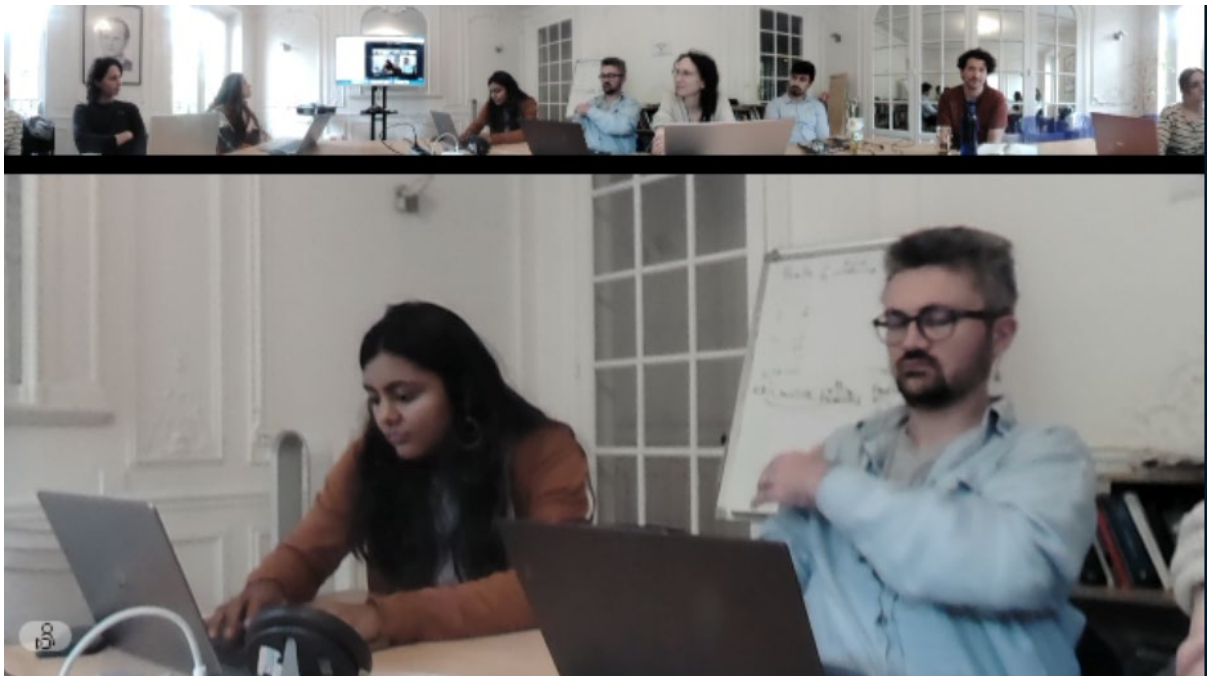

Figure 23: Roundtable discussion after the seminar.

5. Other events with a partner organization

On 12 and 13 December 2023, an additional event took place with the Danish Agency for Data Supply and Infrastructure, one of the partner organisations of ODECO. Although this event did not take place in the context of a non-academic secondment, several ODECO researchers was actively involved in the preparation and organisation of the event. In this chapter we briefly report on this event.

5.1. Danish Agency for Data Supply and Infrastructure (María Elena López Reyes and Ashraf Shaharudin)

Title of the event: "Data Ecosystems and Spatial Data Infrastructure (SDI) – Facilitators for Data Value Creation" (workshop)

Date of the event: 12-13 December 2023

ESR(s) involved: María Elena López Reyes (AAU) and Ashraf Shaharudin (TUDELFT)

Partner organization: Danish Agency for Data Supply and Infrastructure

Objectives of the event:
The workshop aimed at generating insights into data ecosystems (DE) in the context of spatial data infrastructure (SDI), identifying concepts and challenges to uncover relevant research topics, encouraging the development of best practice recommendations, and spurring collaboration on use cases across domains and sectors.

The workshop aimed at generating insights into data ecosystems (DE) in the context of spatial data infrastructure (SDI), identifying concepts and challenges to uncover relevant research topics, encouraging the development of best practice recommendations, and spurring collaboration on use cases across domains and sectors. In particular, it was dedicated to identifying the pros and cons of transitioning from SDIs to DEs through the presentation of technical reports and practical use cases, followed by discussions among participants on relevant key questions during breakout sessions.
The almost 30 participants, from eight different countries, discussed in three topical sessions relevant issues revolving around the developments from spatial data infrastructure to spatial data ecosystems:
Topic 1: Moving from spatial data infrastructure (SDI) to data ecosystems.
Topic 2: Value creation for all stakeholders – from supplier-driven to demand-driven.
Topic 3: Development of data ecosystems – new business and financial models.

Each session started with presentations providing different views on the topic, followed by discussion in small groups. The results of the group discussions were then shared plenary with the rest of the group. A list of important terms and concepts within the SDI and data ecosystem area was shared with all participants to guide a common framework of understanding for the workshop participants during the workshop.

Participants
The workshop brought together the views from actors from the local and national authorities of Norway, Sweden and Denmark, European organisations such as the EC Joint Research Centre and The Alexandra Institute, and researchers working from various domains such as spatial data, energy transition and building infrastructure. The full list of participants was as follows:

Participants WS on Data Ecosystems and SDI, Copenhagen 12th and 13th of December 2023
Bastiaan van Loenen, Scientific Coordinator ODECO, TU Delft
Frédéric Cantat, IGN France, EuroSDR
Joep Crompvoets, Professor Information Management in the Public Sector, KU Leuven
Mads Bjørn-Møldrup, Chair of the Danish Association for Geographic Information, Geoforum
Ulla Kronborg Mazzoli, Chief Advisor, Danish Agency for Data Supply and Infrastructure
Sine Valbjørn Schlüter, Head of Department, Danish Agency for Data Supply and Infrastructure
Thorben Hansen, CEO, Geoadvice
Bent Hulegaard Jensen, Associate Professor, Aalborg University (AAU)
Lennart Hansen, Managing Director, LIFA
Nils Mulvad, CEO Kaas & Mulvad and co-founder of DAFAGO
Peter Knudsen, Senior Consultant, Danish Basic Data, SDFI
Line Hvingel, Project Manager, KL (Local Government Denmark)
Birger Larsen, Professor AAU (ODECO)
Serena Coetzee, Professor, Department of Geography, Geoinformatics and Meteorology, University of Pretoria, South Africa
Alexander Kotsev, Team leader / EC Joint Research Centre (JRC)
Lars Hägg, Senior Business Architect, The Swedish mapping and cadastral authority
Stig Fredslund Kjeldsen, Special Advisor at the Danish Energy Agency
Karoline Arnfinnsdatter Skaar, The Norwegian Mapping Authority
Lars Bodum, Associate Professor, Aalborg University (AAU)
Lea Schick, Research & Innovation Manager at Alexandra Institute
María Elena López Reyes, PhD Fellow at the ODECO
Ashraf Shaharudin, PhD researcher, ODECO
Karolina Pantazatou, PhD Lund Universitet
Clarisse Kagoyire, PhD Lund Universitet
Ida Storm, PhD Lund Universitet
Morten Lind, Consultant at Septima
Lise Schrøder, Associate Professor, Aalborg University (AAU)
Nanna Haderup Barndorff, Head of Department, Danish Agency for Data Supply and Infrastructure

Table 5: List of participants of the workshop.

Workshop program

Time		Title/Subject	Duration
12:00	**Lunch**	**At the venue**	30
12:30	Head of Department, Sine Valbjørn Schlüter	Welcome, practicalities, scope and expectations	10
Topic 1: Moving from spatial data infrastructure (SDI) to data ecosystems			
12:40	Alexander Kotsev, Team leader / EC Joint Research Centre (JRC)	Beyond SDI - Evolution towards the Common European Green Deal Data Space	20
13:00	Serena Coetzee, Professor, Department of Geography, Geoinformatics and Meteorology, University of Pretoria	Challenges and opportunities for spatial data infrastructures in the emerging and evolving geospatial ecosystem	20
13:20	Lea Schick, Research & Innovation Manager at Alexandra Institute	Data Spaces – EU's visions for alternative data exchange infrastructures	20
13:40	Short break		
13:45	Intro to breakout session		
13:50	Break-out session	Topic 1 Moving from spatial data infrastructure (SDI) to data ecosystems	*40*
Topic 2: Value creation for all stakeholders - from supplier driven to demand driven			
14:30	Karoline Arnfinnsdatter Skaar, The Norwegian Mapping Authority	Reference Frames: The foundation of Spatial Data Infrastructure	20
14:50	Lars Hägg, **Senior Business Architect**, The Swedish mapping and cadastral authority	Building a digital infrastructure for local data on a national level	20
15:10	Line Hvingel, Project Manager, KL (Local Government Denmark)	Trying to grasp the role of being the owner of open public data	20
15:30	Break		

Figure 24: Agenda of the first day of the workshop.

Time			Duration
8:00	Breakfast	There will be breakfast at the venue from 8:00	60
9:00	Welcome day 2	Recap and practicalities	10
Topic 3: Development of data ecosystems – new business and financial models			
9:10	María Elena López Reyes, PhD Fellow at the ODECO	Navigating the Ecosystem Perspective to Maximise the Value of Open Government Data	20
9:30	Ashraf Shaharudin, PhD researcher, ODECO	Designing Sustainable Business Models for Open Data Intermediaries	20
9:50	Break		
10:10	Stig Fredslund Kjeldsen, Special Advisor at the Danish Energy Agency	A data space approach to a green, coherent and energy efficient utility sector	20
10:30	Peter Knudsen, Senior Consultant, Danish Basic Data, SDFI, Nils Mulvad, CEO Kaas & Mulvad	DAFAGO – Danish forum for private sector working with Basic Data and other public data	20
10.50	Short break		
10.55	Short intro to breakout session		5
11:00	Break-out session	Topic 3 Development of data ecosystems – new business and financial models	45
11:45	Wrap up and feedback	Plenum feedback and sum up results and findings	30
12:15	Thank you all and see at lunch	Have a safe trip home	
12:15	Lunch	Just around the corner from the venue	

Figure 25: Agenda of the second day of the workshop.

Career impact:

Engaging in the activity within the (European) spatial data community provided the opportunity to interact with a, in terms of experiences with implementing open data, advanced community. The event also provided updates on, for their research, recent relevant developments such as the European Data Spaces as part of the European data strategy. The experiences from practitioners helped the ESRs realise that their research needs to consider practical barriers and opportunities in order to be impactful: as the ESRs wrote in the blogpost on this event: "Our general impression of the workshop is that the SDI community is a highly experienced data community, and open minded yet have their feet on the ground – which was very refreshing to experience." In addition to the blogpost, and presenting for a highly knowledgeable and critical audience, the ESRs co-edited the workshop report "Data Ecosystems and

Spatial Data Infrastructure - Facilitators for Data Value Creation" providing them experience in editing academic work.

Pictures of the event

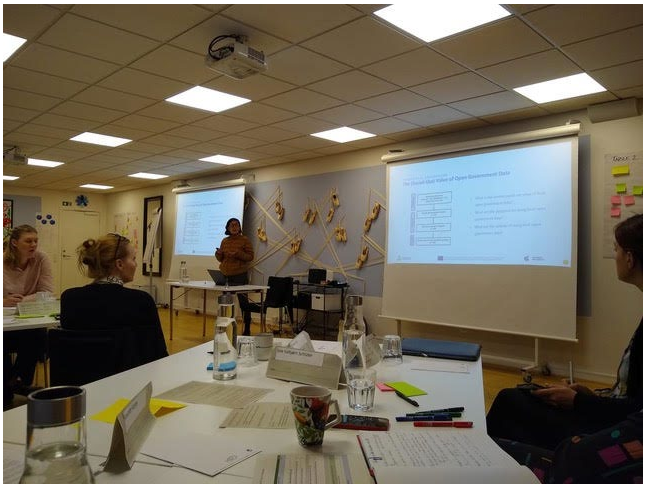

Figure 26: Presentation by María Elena López Reyes.

Figure 27: Presentation by Ashraf Shaharudin.

6. Conclusion

The dissemination of results to non-academic organizations, as well as active collaboration with public, private and other organizations, are important components of the ODECO project and training programme. Through a series of secondments at non-academic organizations, the ODECO ESRs were exposed to non-academic environments involving people and organizations actively dealing with open data and open data ecosystems. The organization of dissemination and public engagement activities as part of these secondments provided the ESRs with the opportunity to disseminate their results and findings to an audience of interested experts and other stakeholders. Additionally, these activities enabled the ESRs to actively involve these stakeholders in designing and executing their research, which increased the relevance of their research and results.

In this report an overview is provided of a first set of dissemination and public engagement events organized by the ODECO ESRs in collaboration with the non-academic partner organizations. In the coming months, additional secondments will take place and more events will be organized. The 11 events reported so far well demonstrate the diversity of organizations targeted and engaged, in terms of sectors (public, private, non-profit), countries (Denmark, Italy, Greece, Spain, the Netherlands, the UK) and domains. The types of events organized are also diverse, ranging from intensive brainstorm sessions in smaller groups and interactive online webinars to presentations of research results to a wider audience.

Each of these events had important outcomes and provided significant benefits to the ESR concerned research and their career. The events allowed the ESRs to present their research to practitioners in the field, which provided them with valuable feedback about the relevance of the research, and how to enhance it. The ESRs were trained in presenting and explaining their work to professionals with different backgrounds and different levels of knowledge (about open data). Moreover, the ESRs were introduced and actively engaged in open data practices 'in the field', and could experience the day-to-day practices and processes of organizations working with open data.

Overall, the secondments and the associated dissemination events were considered by the ESRs as highly valuable in enhancing their career perspectives and future employability. In reporting on the impact of the secondments and events to their career, the ESRs provided evidence about both short term and long term impacts, related to the development of different types of skills, which include skills related to open data (research and practice) but also soft skills, on collaborating with other people, presenting research findings and translating research findings into practical results. In terms of dissemination of results, the reports show how results of the ODECO project, were shared with more than 150 professionals from more than 20 different organisations. In this way, the events organised as part of the secondments can be considered as one of the most successful dissemination actions of the project.