

ORION

Deliverable 2.1.

Scheme for data collection



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1.0	CEITEC	CEITEC first draft
2.0	All partners	Comments and improvements added



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Executive summary

Deliverable D2.1. includes information on the scheme to collect existing data that are relevant for WP2.

As the first task of WP 2, a self-assessment among the participating RFPOs in ORION will be undertaken (task 2.1). The self-assessment targets Open Science and RRI knowledge and practices, and will be carried out through an open interview, designed by CRECIM, with the directors of these institutions. The gathered information through these preliminary interviews will serve as a baseline for creating institutional self-assessment questionnaires to carry out with different groups/collectives at participating RFPOs. The survey among RFPO staff should show the recent situation, knowledge and attitude towards Open Science and RRI within the organisations. This exercise will also serve to carry out preliminary benchmarking among participating RFPOs.

The second task of WP2, task 2.2, has several components. On one side, we will carry out a theoretical review to map current areas of interest regarding Open Science and RRI principles available in academic literature. At the same time, we will review empirical research of existing public surveys on perceptions of science across Europe. The ORION questionnaire will be then prepared based on information obtained through both reviews and an external company will be subcontracted to carry out the telephone interviews with a representative sample in six European countries.



Task 2.1. Self-assessment data collection and questionnaire

CRECIM will lead the self-assessment process in participating RFPOs. This process will be well structured in two main phases, and shall target different groups of staff. The self-assessment and following benchmarking will inform each partner about state-of-the-art of Open Science and RRI knowledge and practices in the consortium, to better design and implement co-experiments and training in the project. Data from this phase will also be used to compare the situation regarding Open Science and RRI in the consortium both before and after the project, in order to analyse progress in the field and changes in culture in RFPOs.

Interviews with leading persons

The first step of the self-assessment will include initial semi-structured interviews with Directors and project's leading persons at all involved RFPOs and also some selected, volunteering EU-LIFE partners. Each interview is going to be about the concept of Open Science and RRI as presented in the literature, as well as related current knowledge and practices at participating funding and research institutions. In particular, the interview protocol will address the three main dimensions generally linked to Open Science:

1. Open Access, including both issues related with open publication and open data for the scientific community and others.
2. Open Science to the public, as public engagement and participation in the research enterprise.
3. Open the Research Engine, understood as open funding (exploring new forms of funding) and openness to industries, companies, and other public and private institutions not usually related with science.

For each of these aspects, the interview protocol ([See Annex 1](#)) includes questions on the understanding of the leading person, the state of the art (current situation of each RFPO), together with advantages and problems according to the leading person. The interview protocol has been structured including various formulations of each question (in order to be able to rephrase when necessary) and also deepening questions in order to get more data on each topic.

The interview protocol also includes an introductory paragraph explaining the content, structure, length and present and future use of the gathered data for every respondent to get full knowledge of what is the purpose and requirements of the interview. Each leading person will be contacted, either directly or via the ORION partner contact person, in advance by email. In order to ensure that every interviewed person have full knowledge of the structure and purpose of the



interview, an explanatory email (See Annex 2) and a consent form to be read and signed (See Annex 3) will be sent in advance. Acknowledgement of receipt of this email and signed consent form has been considered a pre-requisite to the organisation of the interview.

Interviews are going to be done either in face to face (when possible) or in on-line form (via Skype) in English with the exception of one, done in Catalan for being the mother tongue of both interviewer and interviewed. In all cases interviews are going to be audio recorded. In the case of on-line interviews it will also be video recorded.

During the interview, interviewed leading persons are going to be reminded again the structure and purpose of the interview at the beginning of it. In all cases the interviewer is going to be the same, an expert researcher in social-sciences that is partner of the ORION project. She is going to present herself in all interviews trying to establish a climate of a semi-formal conversation rather than a formal interview. To ensure that all ethical requirements are met, interviewed leaders are requested again permission to record the interviews. By the end of the interview, they will also be asked to express any further question or doubt they could have. They will also be told they will receive a brief summary/report of their opinions as expressed in the interview and required to add comments to it if necessary.

The gathered data will be analysed, including summary of viewpoints and transcription of important paragraphs with fidelity. The state of the art, main understanding and balance of problems vs benefits will be reported for each RFPO to be able to do internal benchmarking at the beginning of the project. This analysis will also be helpful to be compared with similar data gathered by the end of the four years project in order to self-assess project impact.

On-site questionnaire for RFPOs staff (employees/researchers)

The analysis of the interview reports on each of the three main meanings of Open Science and RRI topics will provide a better knowledge of Open Science and RRI Tools at each participating RFPO according to their leaders. To have a more complete picture of the state of the art and culture of Open Science and RRI in each of the RFPOs, however, other viewpoints need to be gathered. With this purpose in mind, both the leaders interview protocol (Annex 1) and the analysis of their answers/viewpoints will be used to prepare an on-line, on-site short questionnaire addressed to different representatives at the RFPOs. This questionnaire will be more targeted and specific, including mostly closed questions (with options elaborated from the literature in the field and also leaders answers) but also some open item to get detailed data.

CRECIM will prepare a first version of this questionnaire and distribute it across the participating institutes for an initial piloting with one person at each institution. If it



is possible, the questionnaire would be in English, with translation to national language only if necessary.

To implement the questionnaire, each ORION leader in each RFPO will select the different working profiles that represent better the demographics of each institution, such as junior and senior researchers, research group managers or IP, technicians and PhD's, among others. Depending on the size of each RFPO and its particular demographics, different numbers of these professionals will be selected in each institution, taking into account the following criteria:

1. The view of all relevant profiles should be included, if necessary inviting particular profiles.
2. The number of people filling the questionnaire for each profile should be proportional to the number of people in each profile in each RFPO (for example, if there are twice as many PhD students than IP researchers, the numbers of respondents should also be 2 to 1 for PhDs than IP researchers). If there are more respondents from one profile than necessary, a normalisation of data would be used (either inviting targeted profiles or randomly not including some profile answers).
3. No less than 10 people should be targeted at each institution.
4. All respondents would be volunteers invited to participate.

To ensure that ethical requirements are met, both the questionnaire and the email to circulate it will include explicit details regarding the purpose of the data gathering exercise, the requirements of its implementation and the use it will be given to this data. The questionnaire would be anonymous.

CRECIM will analyse the collected data from every institute and prepare a detailed analysis/report to be shared and validated by each partner institution.

Benchmarking

By the end of this process of data gathering and analysis, it would be possible to elaborate an internal report including:

1. A set of reports on the state of the art, understanding and opinion of Open Science and RRI of each participating institution, according to its leader and other working profiles.
2. A benchmarking report comparing the state of the art, understanding and opinion of Open Science and RRI across the different RFPOs.

The internal reports will be circulated among ORION WP leaders and the leaders of each participating RFPO for validation of findings, with each institution receiving only its report.



The benchmarking report will be circulated among ORION project leader, WP leaders and the leaders of each participating RFPO for validation of findings and final comments.

All this data will be used in WP5 for the internal evaluation of the project, by organising a pre- and post- comparison of the Open Science and RRI culture in each RFPO at the beginning and by the end of ORION project.

Timeline

Preparation and peer-review of initial questionnaire (open answers)	30.07.2017
Interviews with directors of RFPOs	31.09.2017
Analysis of answers, preparation of closed questionnaire, selection of profiles and piloting	31.11.2017
Questionnaire implementation and analysis	30.01.2018
Validation and gathering of extra data (interviews and questionnaires)- if needed	28.02.2018
Benchmark - report	31.05.2018



Task 2.2 – Public opinion data collection and survey

The ORION questionnaire development

The first step in the development of the questionnaire for the survey is conducting review of existing knowledge which is going to be delivered by Masaryk University/CEITEC and Vetenskap & Allmänhet, VA, (lead) teams.

The review is going to be conducted in two areas with two specific purposes:

1. The first theoretical review is going to map current areas of interest regarding Open Science and RRI principles in available academic literature. This review should identify a broad range of questions and findings which have been addressed and researched before, as well as the gaps in knowledge which could be of interest for the project members. A list of studies addressing relevant questions related to Open Science will be made and offered to project partners, especially for the purpose of WP3 and WP4 planning and realization. This review will offer an up-to-date overview of the state of the art in the field of Open Science research.
2. The second review will focus on identifying items and topics addressed in previous surveys about public perceptions of science across Europe. This review will show what specific questions have already been asked in previous surveys, and summarize the main findings from these surveys.

All project members from all relevant WPs (mainly from WP3 and WP4) will be asked to review and build upon the above mentioned reviews to:

- a) identify areas for research in Open Science and RRI that have already been targeted, considered important for further research, and/or which can be relevant for ORION;
- b) identify already existing knowledge about public perception of science, and identify new questions that are relevant for ORION's other WPs;
- c) familiarize with the measurements used in survey designs and assessment.

CEITEC and VA will draft the first version of the ORION questionnaire with inclusion of specific items concerning public engagement in ORION and crucial background variables. The choice of final items/questions is going to be based upon collective discussions among all project partners to reach a final consensus.



The ORION questionnaire implementation

The survey is planned to be conducted in all six involved countries (Spain, Germany, UK, Italy, Czech Republic, and Sweden). In line with the project plans, the data will be collected by an external market research company. Three major companies in the field of public surveys will be contacted and their proposed survey designs will be reviewed, ensuring a sound methodological approach and a representative sample of the population in each country. Upon consideration, one company will be selected for contract, based on the most suitable proposal for the survey purposes.

The implementation of the survey is planned as follows:

- a) the data will be collected via telephone interviews using RDD (Random-Digit Dialing) technique, to ensure the representativeness of the sample.
- b) the proportion of landline/mobile dialing will be adjusted to best represent the proportion of usage of landlines/mobiles by general population in each country.
- c) the goal is to collect data from 1,000 respondents aged 16–79 years old in each country.
- d) each interview is aimed to last about 10 minutes with a verbal informed consent at the beginning to fulfil ethical standards
- e) the company will weight data according to target populations by gender, age and region; the questionnaire will also include measurement of education to adjust for this factor since it is considered a very important background variable for public perceptions of science.

Masaryk University - CEITEC and VA teams will analyze the data and deliver a summarizing report. The analysis of collected data will yield new knowledge about how the general public perceive public engagement with science and prevailing preferences in this area. Further, differences in these perceptions and preferences based on country, age, gender, education, and other crucial explanatory variables will be examined in the analysis and consequently included in the final report. The final report will feed new insights to design specific project's tasks, mostly in WP3 and WP4.

Timeline

Theoretical review of literature and review of empirical research	30.09.2017
Draft of the questionnaire	31.10.2017
Decision on the subcontracting	31.10.2017
Data from public survey collected	31.12.2017
Data from public survey analyzed	30.04.2018



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Annex 1

INTERVIEW PROTOCOL FOR DIRECTORS OF RFPOs AND KEY LEADERS IN THE PROJECT

This interview aims to explore the **meaning given to the concept of Open Science** and to assess the **State of the Art** regarding Open Science at ORION participating RFPOs (Research Performing and Funding Organisations), as represented by their Directors and leading persons in the project.

In particular, the research protocol wants to address the three main dimensions generally related to Open Science and to the six dimensions of RRI:

Open Science

- Open Access, as open publication, open data/metadata and methods/software
- Open Science to the public, as public engagement and participation.
- Open the Research Engine, as open funding and openness of research strategy to multiple stakeholders.

RRI

- Open Access
- Gender equality
- Governance
- Public engagement
- Science education
- Ethics

For the sake of brevity, along the interview we will refer to “Open Science” as an umbrella concept that includes both the three dimensions associated with Open Science together with the RRI pillars directly related to them.

The interview is structured in three main blocks:

- I. PERSONAL OPINION on Open Science/RRI: *What does Open Science mean to me (as researcher and/or director of....)?*
- II. STATE OF THE ART of Open Science/RRI at my institution: *What is our starting point in Open Science/RRI? What are we doing in Open Science/RRI at the moment?*
- III. FUTURE of Open Science at my institution: *What do we expect to do in four-year time regarding Open Science? What are next steps for us?*



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PERSONAL OPINION Open Science

As you might now, Open Science is a perspective gaining momentum in the research and policy agenda. In this interview we want to grasp the different meanings that different actors are giving to Open Science.

Dimension	Leading question /reformulations	Subquestions (deepening)	Aspects mentioned	Missing aspects
Meaning given	<ul style="list-style-type: none"> - What comes to your mind when you hear the concept "Open Science"? What is suggested to you by the term "Open Science"? - If you were to define "Open Science" to a fellow researcher what would you tell her/him? - When discussing Open Science often people refer also to XXXX, what do you think about this aspect? 	<ul style="list-style-type: none"> - To whom specifically should science be opened? - Why should science be opened? - In which ways should science be opened? - To what extend should science be opened? - ... 	<ul style="list-style-type: none"> <input type="checkbox"/> Open Access <input type="checkbox"/> Open publication <input type="checkbox"/> Open Data <input checked="" type="checkbox"/> Open to the general public <input checked="" type="checkbox"/> Open to the affected public <input checked="" type="checkbox"/> Open to funders <input checked="" type="checkbox"/> Open to industries <input checked="" type="checkbox"/> Open to policy stakeholders <input type="checkbox"/> Integrity / ethics <input type="checkbox"/> Inclusiveness (gender) 	
Knowledge	<ul style="list-style-type: none"> - When have you heard about Open Science for the first time? In which context? It is an old or a new concept for you? - Do you think researchers and 	<ul style="list-style-type: none"> - What have been the channels through which info about Open Science has arrived to you? - What info/knowledge is 		



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	<p>managers, like yourself, have received enough information about Open Science?</p> <ul style="list-style-type: none"> - Do you consider researchers and managers, like yourself, have enough knowledge about Open Science at the moment? 	<p>missing for you at the moment? What would be of help?</p> <ul style="list-style-type: none"> - Do you think more info/training is needed in Open Science? Regarding what? 		
Empowerment	<ul style="list-style-type: none"> - What's the role of research managers like yourself in this process? - Who are main actors in Open Science? 	<ul style="list-style-type: none"> - Who is the main responsible actor for Open Science? - Who can make Open Science a reality? 		
Drawbacks / Difficulties	<p>[You have already referred to X...]</p> <ul style="list-style-type: none"> - Can you elaborate [more] on drawbacks or difficulties related to Open Science? - What would be needed for less drawbacks in Open Science? 	<ul style="list-style-type: none"> - Are there some important difficulties / barriers? To whom? Why? - 	<p>Hot topics:</p> <ul style="list-style-type: none"> - fundamental Science - quality of research / objective indicators - role of reviewers / evaluators - lack of resources - time pressure - researchers' career <p>...</p>	
Benefits	[You have already mentioned X...]	- Are there important		



/Potential	<ul style="list-style-type: none"> - What are [other] potential benefits of Open Science? - What would be needed for more benefits of Open Science? 	benefits? To whom? Why?		
Comparison benefits/risks	-	Do you think benefits <i>outstand risks</i> or <i>risks</i> outstand benefits ?	-	



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STATE OF THE ART of Open Science at my institution:

Open Science as a perspective is rather new in the research agenda. However, some research centres are already participating in some activities that could be related with it. In this part of the interview we want to identify what the starting point of your institution is regarding Open Science.

Dimension	Leading question /reformulations	Subquestions (deepening)	Aspects mentioned	Missing aspects
Starting Point (Actions)	<ul style="list-style-type: none"> – What is the starting point of your institution (NAME) in Open Science? – Are you already participating in any Open Science activity/action at the moment? 	<ul style="list-style-type: none"> – Could you share some details regarding these actions? – What about actions of outreach? Are there any publication policy being promoted?... (see list) 	<ul style="list-style-type: none"> <input type="checkbox"/> Outreach / Public engagement <input type="checkbox"/> Dissemination <input type="checkbox"/> Open Access /Publication policy <input type="checkbox"/> Open Data/public data management & infrastructure <input type="checkbox"/> Relation with founders <input type="checkbox"/> Relation to industries <input type="checkbox"/> Research integrity <input type="checkbox"/> Collaborations across institutes, disciplines, countries <input type="checkbox"/> Gender equality <input type="checkbox"/> Science education 	
Starting Point (Documentation)	<ul style="list-style-type: none"> - Is there any documentation/ plan/ policy at NAME already referring to Open Science? 	<ul style="list-style-type: none"> – What are main guiding documents in your institution? Do you recollect they refer to Open Science at some point? 	(document list)	
Starting Point (perception)	<ul style="list-style-type: none"> - As all new things, Open Science could be perceived 	<ul style="list-style-type: none"> Do you expect also other views? What? By 	Main positions: <ul style="list-style-type: none"> – Exciting opportunity 	



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	<p><i>in different ways, such as with excitement, indifference, worriedness, ...</i></p> <p><i>If you had to predict what would be the main view hold by researchers in your institution about Open Science, what would you say?</i></p>	<p><i>whom?</i></p> <p><i>Why do you think these would be the views on Open Science at your institution? Do you have any evidence on this? Have something been already discussed, published, etc?</i></p>	<ul style="list-style-type: none"> – <i>More or less positive</i> – <i>An unimportant bureaucratic burden</i> – <i>worrying new perspective</i> – <i>A threat to Science</i> <p style="text-align: right;"><i>A</i></p>	
Institute Culture	<ul style="list-style-type: none"> - <i>Taking all what you have mentioned into account, do you think Open Science is in the culture of your institution? To what extend? In which way?</i> - <i>Open Science refers to a broad variety of topics, such as Open Access to results and data, Openness to the public for active participation, Openness to new founders and funding types, ...</i> 	<ul style="list-style-type: none"> - <i>What would be necessary for Open Science to become more part of the culture of NAME?</i> - <i>Which of these aspects do you think would more easily become part of the culture of your institution?</i> - <i>Which of these aspects do you consider more problematic to become part of the culture of your institution?</i> 	-	



FUTURE of Open Science at my institution:

Whatever your starting point, Open Science is a perspective that likely you will be addressing more actively in the future. In this part of the interview we want to identify what you think would be next steps in Open Science at your institution.

Dimension	Leading question /reformulations	Subquestions (deepening)	Aspects mentioned	Missing aspects
Next steps (Actions)	<ul style="list-style-type: none"> – Are there any actions already planned in your institution for the near future for promoting Open Science? – Are you planning to start acting on any particular aspect of Open Science in the next four years? 	<ul style="list-style-type: none"> – Which one? Why this one? – Which aspect? Acting in which way? 	<ul style="list-style-type: none"> <input type="checkbox"/> Outreach <input type="checkbox"/> Dissemination <input type="checkbox"/> Open Access /Publication policy <input type="checkbox"/> Open Data/public data management <input type="checkbox"/> Relation with founders <input type="checkbox"/> Relation to industries <input type="checkbox"/> Research integrity <input type="checkbox"/> Collaborations across institutes, disciplines, countries <input type="checkbox"/> Gender equality <input type="checkbox"/> Science education <input type="checkbox"/> ... 	
ORION next steps (Expectations)	<ul style="list-style-type: none"> – As an ORION partner, your institution would be doing something in Open Science in the next four years: what would you like to gain from this Project? – what do you think will come out of it? 	<ul style="list-style-type: none"> – In which ways do you think ORION will contribute to your institution? 	<ul style="list-style-type: none"> <input type="checkbox"/> Main action of Project related to institution <input type="checkbox"/> Others 	



Future Agenda	<ul style="list-style-type: none"> – <i>To what extent would you say Open Science would be in the future agenda of NAME?</i> 	<ul style="list-style-type: none"> - <i>In which ways? Why?</i> - <i>What would be necessary for this to happen?</i> 	Hot topics: <ul style="list-style-type: none"> - leaders role - investment - training - ... 	
Desirable Future	<ul style="list-style-type: none"> – <i>Is Open Science a desirable future? What would be my desirable scenario for Science, regarding its openness?</i> 	<ul style="list-style-type: none"> - <i>In which ways is Open Science a desirable future? In which ways is it not? Why?</i> - <i>What could make yourself/researchers hold a more positive view regarding Open Science?</i> 	Hot topics: <ul style="list-style-type: none"> - Science has more important problems - Science cannot be completely open (privacy, IP, other?) - ... 	



Annex 2

Dear Director,

Our institution....., as a member of ORION consortium, is participating in a study about the institutional transformations consistent with Open Science and RRI. One of the main actions of the study consists on a set of interviews with the directors of institutions involved in the project, which should be realized by teleconference during this month (July 2017). These interviews represents a first step both to define the starting point of the consortium and also to design a future closed and larger-scale questionnaire that will be implemented next autumn.

These interviews will be conducted by Dr. Digna Couso, Director of CRECIM (Science Education Research Centre at UAB) and responsible of the evaluation of the project, who already attended to EU LIFE meeting last 18th may. Actually, these interviews have to be understood as an informal conversation that does not require previous preparation by the interviewed. For the project research purposes, the conversation will be recorded and transcribed, always assuring confidentiality during all the process. Attached you will find a consent form for you to agree with this procedure.

In order to find the time for the interview, Dr. Couso has exposed possible available dates for the teleconference [<https://beta.doodle.com/poll/9z46ycc3yfnxt92h#table>]. In case other dates are needed, do not hesitate to contact her directly at digna.couso@uab.cat

(include any closing statement suitable in your institution)



Annex 3

CONSENT FORM to conduct interview on Open Science

Open Responsible research and Innovation to further Outstanding Knowledge (ORION)

You are being contacted as Director of a partner institute of ORION, the European research project about Open Science. This research project is being coordinated by Dr. Michela Bertero from Centre for Genomic Regulation and funded by the European Commission. One of the main tasks to carry out in this project is to conduct a set of interviews to define the current situation regarding policies and procedures on Open Science of research institutes and funding agencies belonging to ORION consortium.

The interview will be conducted by Digna Couso, Director of the Research Centre on Science and Mathematics Education (CRECIM) and internal evaluator of the ORION project. This interview will be an informal conversation on Open Science and RRI. As such, it is not necessary that you prepare the interview beforehand, as we will be asking about your personal opinion and the starting point of your institution. For the project research purposes, the conversation will be recorded and transcribed, always assuring confidentiality during all the process.

The information gathered will be used to know the perceptions and actions of each institution regarding Open Science and RRI before and after ORION project in order to evaluate the impact of the project in the different institutions. This analysis will be published in an official Evaluation Report of the ORION's project, including benchmarking.

We want to highlight that all results from this process will be open to the public but totally anonymous (never giving personal or institutional names in public documents). Names of the institutions will only be shared internally within the ORION consortium, so you will be able to receive feedback about the status of your institution if you are interested in having it.

Please, check that you agree with the following statements:

1. I confirm that I have read and understand this consent form for a personal interview in the context of the ORION project ☐

2. I agree for the data obtained in the above-mentioned interview to be used confidentially to analyse the impact of the ORION project. ☐

Name of the Institute

Name of the Director

