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Workshop: National Research Portal 101: The Dos and Don'ts of Building a Sustainable Portal

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Abstract

This paper summarises the half-day workshop on national and regional portals, organised by the RIS Synergy project for the CRIS2022 conference. The goal of the workshop was to discuss challenges and opportunities of national and regional research portals with representatives of six different portals and implementation projects. In an expert panel talk, participants shared their experiences with the initiation and implementation of their national/regional portal. Moderated questions also addressed various topics such as target groups, stakeholders, technical specifications and standards. The workshop contributes to the international collaboration of research portal operators and promotes the exchange of lessons learned.

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1. Set-up and participants

This CRIS2022 conference workshop discussed the challenges and opportunities associated with the development *of* a national research information system (RIS). The workshop was coordinated – both structurally and in terms of content – by the Austrian RIS Synergy project, a bottom-up digitisation initiative implementing CRIS interfaces and producing a concept study for a national research portal. The goal of this workshop was to provide a platform for connection and engagement. Various initiatives and projects implementing national and regional CRIS portals participated in the two-part event.

Part I was conceived as a traditional paper panel with contributions from the Austrian RIS Synergy project, presenting their bottom-up approach to implement CRIS interfaces; a project presentation about CroRIS, the Croatian national CRIS; a project presentation about Hércules, an EU-funded project in Spain; and a talk about the EC Data4R&I Policy Initiative. **Part II**, then, consisted of an expert panel talk that was moderated by two RIS Synergy project members and that invited several operators of national/regional CRIS portals to the stage:

- **Sabine Neff**, who is responsible for research information systems at TU Wien, the project lead of the digitisation project RIS Synergy and manager of the interuniversity cooperative network *Cluster Forschungsdaten* (Research Data Cluster)
- **Hanna-Mari Puuska**, Director of Services for Information Management and Data Analytics at CSC (IT Center for Science), representing the Finnish Research Hub (Research.fi)
- **Ils De Bal,** Programme Manager of the Flanders Research Information Space (FRIS), representing the regional CRIS of Flanders
- **Ognjen Orel,** Chief Information Officer of Srce, the University Computing Centre in Zagreb, who leads the development and implementation of the Croatian CRIS system CroRIS
- **Jan Erik Garshol,** a project lead and product owner at Sikt, the Norwegian Agency for Shared Services in Education and Research, introducing the project for the Norwegian Open Research Information System (and Archive) that will supersede the current systems Cristin and Brage
- **Ricard de la Vega,** Computing and Applications Manager at Consorci de Serveis Universitaris de Catalunya (CSUC), a consortium of Catalan universities sharing and developing services and infrastructures such as the Catalan Research Portal PRC

These experts brought together various perspectives from different implementation and operational phases. Before the conference, the invited panellists were asked to participate in a survey, which included questions about the initiation phase of the implementation projects; portal operators; and the main goals and target groups of the portals. The results were used to prepare a moderated discussion tailored to the panellists' expertise and to the specifics of the individual portals. The table below summarises the panellists' answers and shows both the similarities and differences in operating national/regional portals:

Table 1. Survey results of expert panel participants (preparation for panel).

Portal name	Country or region	Initiative	Operator	Objectives	Target groups
RIS Synergy	Austria	Universities and funding organisations	N/A	Representing national research input and output according to international standards (CERIF) Saving resources and increasing the competitiveness of researchers through qualitative support Implementing the once-only principle	researchers research organisations funding agencies government industry the general public
Research.fi	Finland	Ministry of Education and Culture	CSC - IT Center for Science	Information on researchers, publications, data, projects, and infrastructures in one place Less reporting & administrative work as information flows between services Results of both publicly and privately funded research openly accessible	researchers research organisations funding agencies public administration media, business, and citizens
CroRIS (Croatian Research Information System)	Croatia	Government	University Computing Centre	A reliable source of truth for research data (institutions, researchers, projects, funding, equipment, services, research results, publications, etc.) A base for informed decision-making on all levels (faculty, university, national) An interoperability hub to other national and international systems (OpenAIRE, ORCID, WoS, Scopus, etc.) promoting open science	researchers funding agencies decision-makers and policy-makers the general public
Portal de la Recerca de Catalunya (Catalan Research Portal)	Catalonia	Catalan Government	Consorci de Serveis Universitaris de Catalunya (CSUC)	Centrally displaying and disseminating information about research activities in Catalonia and thus making open access to scientific output easy Simplifying management processes and supporting their evaluation	researchers the international scientific community industry financial organisations the general public

Portal name	Country or region	Initiative	Operator	Objectives	Target groups
Researchportal.be (Flanders Research Information Space)	Flanders (Belgium)	Flemish Government	Department of Economy, Science and Innovation	Disseminating available knowledge efficiently between research and business communities to accelerate the innovation chain FRIS as monitoring tool to increase strategic intelligence by providing quality information about research (giving the government insight into how available funds are spent and the results of investments in scientific research) Decreasing administrative burden: information of research in FRIS can be used for automatic reporting accountability of public research funds	research community industry/SMEs the general public
Norwegian Open Research Information System and Archive (pending)	Norway	The Ministry of Education and Research	Sikt (Norwegian Agency for Shared Services in Education and Research)	A national repository (instead of several institutional repositories) with CRIS-functions	N/A

As the survey showed, many portals are maintained by central operators, such as CroRIS being run by the central institution for Croatia's A&R e-infrastructure SRCE, Research.fi being managed by the Finnish IT centre for science, and the Catalan Consortium CSUC that is responsible for the Catalan Research Portal. The RIS Synergy project has yet to determine an operating model as part of their concept study for an Austrian national research portal. The survey also revealed that by and large, the various portals share similar target groups and objectives.

2. Result

2.1. Panel Talk

The expert panel talk was divided into four thematic blocks and structured by several questions that the panel experts were provided with beforehand for preparation. Questions were partly posed to specific participants regarding the portal or project they represented, and partly posed for open discussion, inviting all participants to contribute to the conversation. In addition to the moderated discussion, additional time was factored in for questions from the audience.

The first block focused on the initiation of the different projects as well as the operating models of the different portals in the long run. The discussion was opened with a question for each participant about the needs and goals that initially triggered the implementation of a national portal. Except for RIS Synergy, which is a bottom-up project, the portals that were represented on the panel were all initiated top down by political stakeholders. These stakeholders saw the need for a common national portal to facilitate monitoring the research carried out by national

research institutions and funded by national and international grants. Furthermore, displaying research projects and output in one place for different target groups was a key factor in implementing a national research portal for several projects represented on the panel.

The second block returned to discussing target groups of national/regional portals, thus linking the panel talk to the audience survey conducted at the beginning of the workshop (see next chapter for details). For projects that were implemented top down, the panellists named governments as key stakeholders, along with researchers as the primary target group. An in-depth discussion about how to reach further target groups, such as university administration staff, companies and the general public, revealed that these target groups need to be involved as early as possible in the CRIS development.

Next, the panellists were asked about the technical specifications of their national/regional portals, including data models, data aggregation and data exchange. All portals represented on the panel use CERIF as a data model, both portals that were built in-house as well as open-source products. However, they vary, in some cases fundamentally, in terms of setup and systems architecture. For instance, the Flemish and Catalan Research Portals function primarily as data aggregators collecting research information from institutional CRIS via data interfaces, whereas CroRIS is set up as a national database that integrates existing systems. In addition to CERIF, persistent identifiers (PIDs) were another keyword at the heart of the conversation about technical standards. All of the portals and projects present named PIDs as the basis for exchanging and presenting research information. Not only can DOIs and ORCID iDs be used to deduplicate publications and researcher profiles; they are also essential to connect different CRIS entities in the portal's conceptual model, such as linking researchers to their affiliations, or linking them to their publications.

The last round of questions focused on lessons learned during the project or the implementation of the national/regional portal. The wrap-up discussion of the expert panellists yielded seven takeaways:

- Top-down vs bottom-up: An implementation project needs both management strategies in order to be sustainable.
- The successful implementation of a national portal depends on a consortium of universities, funders and the government.
- Aligning processes is fundamental to ensure efficient data exchange between systems and institutions.
- The entire research landscape needs to be taken into account when implementing a national CRIS.
- There is no need to change working systems.
- Implementation should start small, with a few entities, and then expand.
- Any implementation project working with data must keep the GDPR in mind.

2.2. Audience survey

The expert panel talk was rounded off by interactive polls inviting the audience to participate in short surveys both before and after the moderated discussion. First, the audience was asked to consider whether their country has (or is currently implementing) a national/regional portal. The pie chart (Figure 1) shows most participants in the audience of this euroCRIS 2022 conference panel are indeed from countries that either have or are implementing a national/regional portal. Ten participants indicated no, and only five said they do not know whether their country has a portal or not.

Fig. 1. Poll results of audience survey, Question 1.

The results to the second question - *Who do you think are national/regional research portals mostly for?* - show that the majority of the audience believe that portals are for governments, followed by researchers and research support staff (Figure 2). Only 15 votes denote business partners as a target group for national/regional portals.
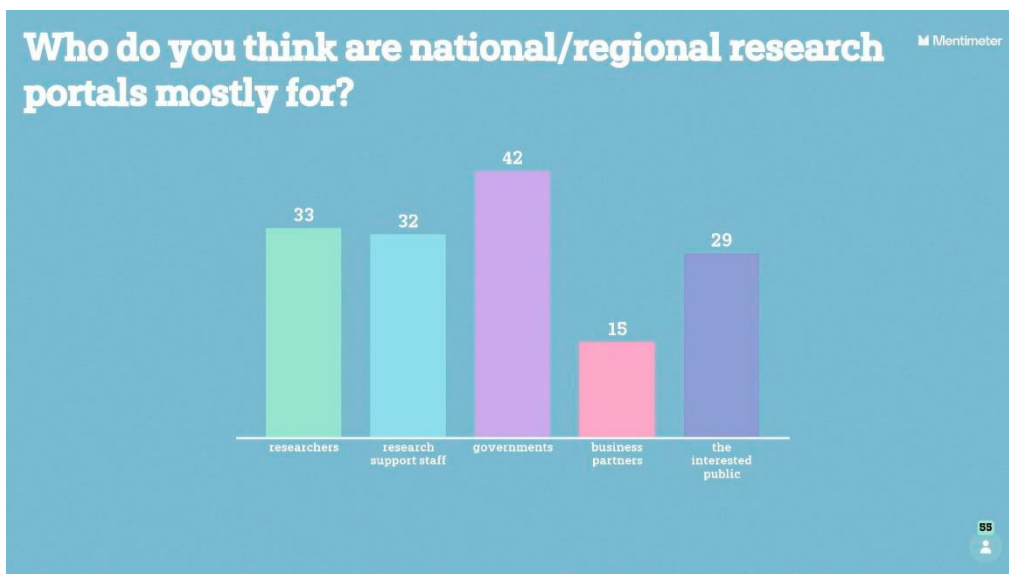

Fig. 2. Poll results of audience survey, Question 2.

The concluding survey interaction was an open-ended question: *What is the future of national/regional portals?* The audience contributed several keywords along with humorous answers (Figure 3):
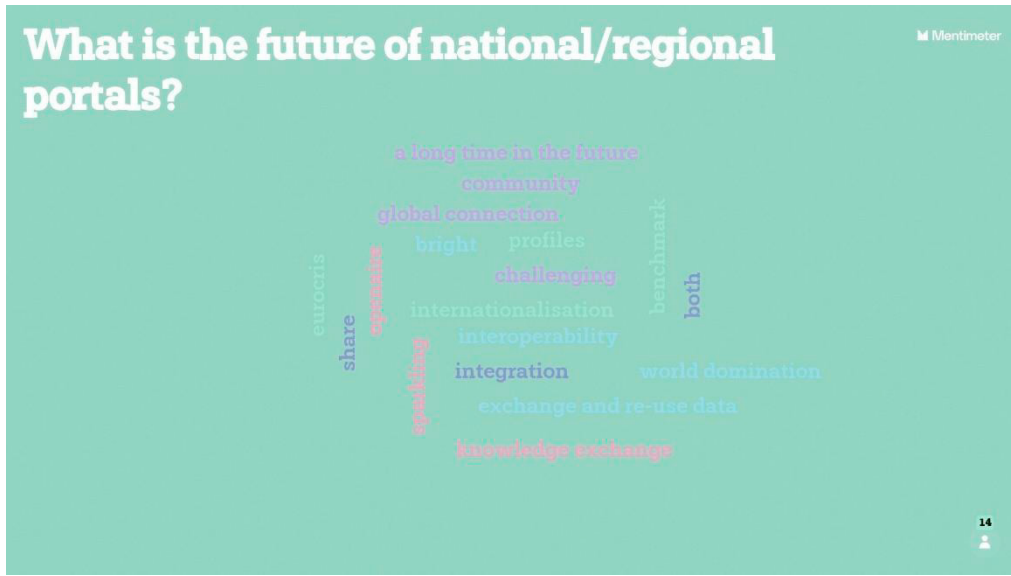
Fig. 3. Poll results of audience survey, Question 3.

These answers could roughly be categorised by either connotation (positive vs uncertain/negative) or by keywords (community, exchange, usability).

Table 2. Evaluation of poll results in response to Question 3.

Connotations - positive	Connotations - uncertain or negative	Keyword - community	Keyword - exchange	Keyword - usability
bright	A long time in the future	community	interoperability	profiles
sparkling	challenging	global connection	integration	benchmark
	world domination	euroCRIS	exchange and re-use of data	both
		internationalisation	knowledge exchange	
			openAIRE	
			share	

The evaluation in terms of connotations shows that while there is a positive outlook towards the future of national/regional portals, there is just as much *uncertainty* which, at times, may even be alleviated with humour by the survey participants. The answer "world domination", therefore, can be interpreted in two ways: one, as a comical way to deal with the uncertainty surrounding portals; and two, of course, as a serious answer with a decidedly *negative* connotation that predicts an unfavourable future for national or regional portals.

Most audience responses can be semantically subsumed under three keywords. First, poll participants stress the *communal* aspect of portals by pointing out that they serve as global connectors and can aid internationalisation. They also link euroCRIS to the future of portals, which highlights the organisation's role as a network bringing people together. The second keyword, *exchange*, comprises the largest group of collated responses. Exchanging and sharing knowledge and data thus play a vital part in the future of portals, according to poll responses. Interoperability and integration are key aspects to consider, and openAIRE is mentioned as another network relevant for the national/regional portals community. Third, the audience made evident some ways in which portals may be *used*. For example, they could be utilised as benchmarks or profiles. The answer "both" possibly indicates that both national *and* regional portals should be used.

3. Outlook

National portals not only help to establish an international infrastructure of research (information) data; they also facilitate (inter)national exchange. In the same spirit, this collaborative workshop is an excellent opportunity to lay the foundation for further networking among national portal operators. The RIS Synergy team proposed establishing a "National Portals" working group in the euroCRIS community – this would allow portal operators to stay connected and continue to exchange ideas, feedback and more throughout the year. The workshop showed that implementation projects and portal operators all face similar challenges concerning project management, decision-making (top-down vs bottom-up) and technical specifications. A euroCRIS working group on this topic would not only allow regular discussions and presentations, such as the one provided by the CRIS2022 workshop; it would also provide portal implementers and operators with a low-threshold service offering regular updates beyond conferences and publications.

The RIS Synergy team proposes that such a working group meet one to two times per quarter. Each meeting could be hosted by a different institution or project, offering them an opportunity to highlight their latest developments before participants could give additional presentations. Moreover, each meeting could be designated a specific topic (to be announced in advance), such as the use of persistent identifiers, the promotion of a national/regional portal to different target groups, or the setup of an operating model for a sustainable system. As this report on the "National Research Portal 101" workshop shows, the topic of national/regional portals generates engaging conversations, and there are no limits to discussion points or exchange.