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Huma-Num IR*, 10 Years of Building a Research Infrastructure at the European level.

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What exactly is a research infrastructure for Social Sciences & Humanities? A decade ago, it was a concept that did not yet exist, it had to be invented. The IR* Huma-Num,¹ France's national research infrastructure for digital humanities, chose to develop a research infrastructure by relying on the contributions and needs of its communities.

Indeed, while a key factor, an infrastructure cannot be reduced to providing technological services, but must include the expertise of communities and their involvement in its construction. In order to do that Huma-Num has been supporting groups of people working on the same scientific object at a national level, called a "Consortium Huma-Num", with the aim of obtaining feedback, tools and guidance from them.

However, it quickly became apparent that the development of Huma-Num could not be conceived without taking into account the experiences of other countries, particularly in Europe. This has led Huma-Num to become heavily involved in the construction of European infrastructures in SSH, notably DARIAH,² but also CLARIN³ and OPERAS.⁴

¹ <https://www.huma-num.fr>

² <https://www.dariah.eu>

³ <https://www.clarin.eu/>

⁴ <https://operas-eu.org>

With the aim to showcase this work and all the benefits it brings, as part of its 10-year celebrations, Huma-Num organized an international event⁵ on Monday September 25 and Tuesday September 26, 2023 at the Campus Condorcet⁶ in Paris.

Beyond the experience of Huma-Num, the main purpose of this event was to present the construction of national infrastructures for SSH in various European countries, and assess the impact of European infrastructures on their development.

The first day was mainly devoted to a special event organized by the CNRS to celebrate Huma-Num's 10th anniversary, in the presence of the CNRS President Antoine Petit, representatives of the ministry of research and the president of Campus Condorcet. To open the event, Huma-Num presented its strategy for engagement with Europe, and how this engagement helped the national research infrastructure develop and better serve its stakeholders. Huma-Num described how it developed a socio-technical research infrastructure, with a heavy community-based component that allows it to effectively meet the needs of the SSH research community in France and integrate their feedback into hardware and service provision. This commitment to meeting the needs of the community led naturally to an engagement with European networks, in order to give visibility to French research, to see what best practices could be learned, and notably to participate in the construction of EOSC. Huma-Num was directly involved with six different European Projects (Horizon 2020/Horizon Europe) over its first ten years, which had benefits for Huma-Num in terms of greater visibility, increasing cooperation with European and national partners, and better understanding of the European research environment. The presentation ended with Huma-Num's long involvement with DARIAH-EU, and how the two infrastructures grew together in mutually beneficial ways and concretely how DARIAH helped Huma-Num better serve its national community through knowledge exchange, involvement in project consortia and access to new tools and services such as the SSH Open Marketplace.⁷

In keeping with the theme of European cooperation, a round table was organized to discuss the different policies and strategies for organizing SSH infrastructures in France by Fabrice Boudjaaba, Spain by Francisco Javier Moreno Fuentes, Italy by Ricardo Pozzo and Belgium by Chris De Loof. These national perspectives were complimented by a broader European vision provided by Jennifer Edmond, former director of DARIAH. The key takeaways of this roundtable are that, even if each country has a vision of its national organization driven by a political view (eg. Belgium) or a more cultural view (eg. Italy), it must be complemented by a more holistic, European vision (eg Spain) if it is to be truly effective. Panelists agreed as well

⁵ See program here: <https://hn10years.sciencesconf.org/resource/page/id/1>

⁶ <https://www.campus-condorcet.fr/>

⁷ <https://marketplace.sshopencloud.eu/>

that building an effective and impactful research infrastructure should be based on the “4S principle” enumerated by Edmond: “Stability, Sustainability, Services & Strategy”.

For the second day, in addition to presenting France’s experience, Huma-Num invited four of its European research infrastructure peers, representing Portugal, Germany, Italy and Finland, to give feedback on their own process, challenges, and successes of building a national research infrastructure, before holding a round table to discuss national organization together. Next, representatives from three ERICs (European Research Infrastructure Consortium) DARIAH, CLARIN and OPERAS - spoke about their policies towards lifting up national research infrastructures and their communities and discussed their impact at national level. Finally, the session ended with all the day’s presenters on the stage, to address the big question: **what does Europe have to offer national research infrastructures? How do European and national infrastructures interact with one another, and how do they help each other grow and develop?**

These exchanges led to a myriad of fruitful discussions, the conclusions of which are summarized below. Indeed, while each country develops their research infrastructures around common missions of research support, service provision, and valorization of research results, these broad categories differ based on national priorities. National research infrastructures serve two major categories of stakeholders - the ministries and funding agencies that define priorities and strategies that define their missions, and the research communities that use the research infrastructures. While these two tend to align in the broadest sense, their specific needs sometimes differ - and research infrastructure, be they national or European, often serve as intermediaries, representing and responding to both and ensuring that both parties have their needs and directives met.

Furthermore, the utility of European infrastructures for national research infrastructures was established in the ways in which they can help nationals best engage with the European Research Area, notably EOSC, facilitate integration in European networks of expertise. and provide greater access to development funds. ERICs such as DARIAH and CLARIN help provide gateways to engagement with EOSC, both by helping to transmit knowledge of new European initiatives and how best to take advantage of them (eg. EOSC and the Data Spaces initiative⁸), but also by representing the needs of national research infrastructures to what can otherwise be a dauntingly large structure. Last, but certainly not least, engagement with Europe can help secure funding for national research infrastructures, either through European grants such as the Horizon Europe program, or through showing national funding agencies that their work is sanctioned, encouraged, and in a way guaranteed by European research infrastructures.

⁸ <https://digital-strategy.ec.europa.eu/en/policies/data-spaces>

European and national research infrastructures also are witnessing a transition from focus on hardware, and service provision to that of a “knowledge infrastructure.” Indeed, at all levels the representatives highlighted the importance of the human component - perhaps not surprising for humanists - but nevertheless, it is the people behind these research infrastructures, their knowledge and networks, which provide a real richness and value to the research community. Furthermore, it is that community itself, upon which research infrastructures must rely. The most successful research infrastructures have robust and ongoing relationships with research projects researchers, to ensure that their tools, services, and training sessions best align with the current practices and needs of the research community.

European research infrastructures can also help to bridge an all too common divide between institutions attached to research ministries and those attached to cultural ministries. By providing an arena where these institutions can meet, and exchange, in a way that is sanctioned by the participating ministries, panelists noted how Europe can help enable connections that are otherwise difficult. One particular area of success is the Collections as Data initiative, which is an international initiative meant to enable greater access to cultural heritage collections to researchers in need of data.

Cooperation between European and national research infrastructures can also help overcome challenges for national research infrastructures. This is especially so, as engagement with the European Research Area remains a fundamental strategic priority for ministries. It can also allow for national research infrastructures to propose more relevant assessment standards, such as is seen with the ESFRI Landmark Evaluations.⁹ Finally, during discussions of national situations - remember, as previously stated, each national situation is necessarily adapted to its own local context, research practices, and strategy - it emerged that exchanges with ministries are sometimes difficult, essentially because the objectives are not always in phase: in that regard, european infrastructures could help foster national dialogue based on a European vision.

Finally, after these discussions, panelists came to the conclusion that it is necessary to continue to have regular exchanges between national infrastructures, such as the HumaNum 10th Anniversary event, to continue to exchange best practices and engage in conversation about similar challenges. These meetings, of course, could be facilitated by European infrastructures, which already serve to federate and unite national research infrastructures, providing a fertile ground for networking and knowledge exchange. We look forward to more exchanges!

⁹ <https://www.esfri.eu/monitoring>

Link to presentations:

National Infrastructures

France

[Presentation of the IR* Huma-Num's European Strategy](#), how it helped the infrastructure grow and meet the needs of the French research community by taking advantage of the opportunities for collaboration and harmonization offered by the European Research Area, particularly with DARIAH-EU.

Portugal

[Presentation of the ROSSIO infrastructure](#), a national infrastructure for Portugal that is based on making cultural heritage documents accessible to researchers and to the general public.

Germany

[Presentation of DARIAH-DE Text+](#) - Looking back at over a decade of research infrastructure building in Germany, including the challenges of making a wide and diverse community feel welcomed and navigating changing funding mechanisms.

Italy

[Presentation of Humanities and cultural Heritage Open Science Cloud \(H2IOSC\)](#) - a developing technical infrastructure based on distributed data centers in Italy.

Finland

Two presentations on the construction of the DARIAH-FI national research infrastructure, the first demonstrating [how to build the DARIAH-FI Community through engagement](#) & the other focusing on [the role of cultural heritage institutions and cultural heritage data](#) in the national infrastructure

European Research Infrastructure Consortia

[DARIAH](#), A research infrastructure that enhances and supports digitally enabled research and teaching across the Arts and Humanities

[CLARIN](#), CLARIN is a digital infrastructure which provides easy and sustainable access to a broad range of language data and tools to support research in the humanities and social sciences, and beyond.

[OPERAS](#), OPERAS is the Research Infrastructure supporting open scholarly communication in the social sciences and humanities (SSH) in the European Research Area.

See also:

[Web Site of the event](#)

The French-language Summary of the Official CNRS 10th Anniversary Event :
Olivier Baude, Nicolas Larrousse. L'infrastructure de recherche Huma-Num IR* : 10 ans de
construction collective. 2023. ⟨halshs-04380901⟩ - <https://hal.science/halshs-04380901v1>

Nicolas Larrousse, Olivier Baude, Stéphane Pouyllau, Hélène Jouguet. Huma-Num, 10 years of
building an infrastructure in SSH: a revolution in practices or an evolution?. SciDataCon-IDW
Salzburg 2023, CODATA, Oct 2023, Salzburg (AU), Austria. ⟨halshs-04333382⟩ -
<https://hal.science/halshs-04333382v1>