

Chapter 1

Following SEIS Principles for Better FAIR Data Integration in EOSC

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ABSTRACT

This study aimed to compare research trends regarding SEIS principles and FAIR data principles, in support of EOSC. Articles published in specific environmental policy areas, placed in the context of EU-Neighborhood South/East Regions Dialogue, were analyzed using content analysis. The evolution of EU interoperability was numerically classified in support of SEIS initiatives, compliant with FAIR principles, and able to benefit from the building of an EOSC community. The first proposed result refers to the extent of comparability of SEIS information storage and retrieval systems principles and FAIR data principles with respect to the implementation of the INSPIRE directive in Europe. This social comparison process occurred in two dimensions, trust concerning the resource FAIR and institutional loyalty according to SEIS. The relationships between SEIS and EOSC were estimated in its evolution according to five actions (cost, time, trust, best practices, cloud), and by exposing SEIS-friendly research infrastructures whose thematic data services points to the EOSC catalogue of services.

INTRODUCTION

In the pan-European region the establishment of the Shared Environmental Information System (SEIS), builds on the experience with the implementation of the 2007 INSPIRE directive (Bareth, 2011). As a model of governance that reached cruising speed around 2019 (European Commission, 2013), INSPIRE is still an important building block for implementing SEIS. An example, the Eighth Environment for Europe (EFE) Ministerial Conference, held from 8 to 10 June 2016 in Batumi (Georgia), reported on progress in establishing SEIS in the pan-European region, setting out that all countries in Europe and Central Asia should have SEIS in place by 2021 (Aggestam, 2019). The importance of SEIS in Central

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Asia's environmental problems was also acknowledged, by the UN Economic Commission for Europe (Mangalagiu et al., 2019). As such, this procedure would be a consequence of the European Neighborhood Policy (ENP) to South and East neighbours and the Russian Federation, that exists for more than a decade now (Hřebíček & Pillmann, 2011). It is in this sense that the Ad Hoc Committee on E-democracy of the Council of Europe (CAHDE, including the EU Commission and OSCE) was set up in 2006. CAHDE ended its work in the first quarter of 2008, and its study and analysis of e-democracy issues and the involvement of citizens in the environmental field approached the idea that a sound and efficient way for implementing SEIS and INSPIRE was to anchor them on the e-Government platforms.

It is argued in this chapter that since the early 2000s, the 1998s Aarhus Convention as the basis for European and national legislation made an important step to the participation and democratization of environmental legislation. The accessibility of data on environmental risk is an effective legal protection for citizens, and a 2003 European Directive granted for the “public good” the right to access this environmental information (Nagy et al., 2007). As a way of consequence, the European Environment Agency (EEA) developed its Reportnet system as a common tool and information infrastructure for the shared European environment information system. After considering that the various legal and moral obligations require that each year each European country had to provide a total of about 25 000 individual data elements on the environment to the European Commission, Eurostat, EEA, UNEP, and OECD (Saarenmaa, 2001).

When the SEIS initiative was launched in 2008 one big question for EEA was how it would affect its Reportnet system, as SEIS considers not only classical environmental information, but also reports and policy documents. Under the umbrella of the EEA (Council of Europe), Reportnet is Eionet's (European Environment Information and Observation Network) infrastructure for facilitating and improving data submission based on environmental reporting obligations (Reportnet, 2019). And that should have resulted in the transfer of the requested monitoring information from the local, regional and national levels to the EEA using the Eionet structure. But although considerable monitoring efforts have been made as part of Eionet, these requirements are different in different EU countries and may even vary within one country (Storchak et al., 2018). The transposition delays have had a considerable impact on the levels of trust implied in the cultural barriers which made scientists unwilling to share results. But, despite solving the difficulties scientists face in producing data in a shareable form EU's INSPIRE directive is compelling researchers to publish their data, this regulatory approach has done little to prompt a significant change in cultural practices (Harrison et al., 2017).

A good example that follows the SEIS principles is the EMODnet, a European marine observation, and data network; it delivers public marine and coastal data at the EU scale across seven thematic portals. The initial Roadmap for EMODnet was released in April 2009, and it clarified examples of benefits and added value of better integration (European Commission, 2009). In particular, the principles of the Commission's SEIS reflected several conclusions concerning environmental data management as to how EMODnet should be set up. This resulted in the roadmap, as far as it provided the service categories to be covered, made possible that the legal implementation of SEIS would supply regulatory powers relevant to EMODnet. Accordingly, EMODnet is explicitly seen as a thematic contribution to SEIS; the data available through EMODnet should meet the requirements of SEIS (Meiner, 2013). Additionally, when taking advantage of the EMODnet, in the framework of the European Open Science Cloud (EOSC) initiative, it makes sense to take into account that a fit-for-the-purpose FAIR is in the course of development in EMODnet (She & Murawski, 2019). It is in this spirit that this paper focuses on the special relationship between SEIS principles and FAIR data. Examples of efforts that have been made to

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