Contribution ID: **121** Type: **Presentation**

Development of the new Research Infrastructure for Europe's Natural Science Collections using novel building blocks in EOSC

Thursday, 11 October 2018 14:45 (15 minutes)

DiSSCo, a Distributed System of Scientific Collections, is a Research Infrastructure (RI) included in the ESFRI 2018 Roadmap with over hundred self-sustaining partners in Europe aiming at providing unified physical and digital (data) access to the approximately 1.5 billion biological and geological specimens in collections distributed across Europe. DiSSCo will transform the currently scattered provision of collection data across the continent into one set of services providing unified specimen data at the scale, quality and FAIRness ((Findable, Accessible, Interoperable, Reusable) required for excellent research. It will repackage specimen data as Digital Specimen Digital Objects (DSDOs) to integrate and link these with data from other domains in the future Internet of FAIR Data and Services (IFDS) supporting the European Open Science Cloud (EOSC).

In the European landscape of environmental Research Infrastructures, the effectiveness of services that aim at aggregating, monitoring, analysing and modelling geo-diversity information relies on the primary description of the bio- and geo-diversity. It also relies on the availability of this primary reference data that today is scattered and disconnected. Many RIs in environment and other fields have links to biodiversity, and biodiversity loss is many times mentioned as one of the biggest societal challenges. DiSSCo provides the required bio-geographical, taxonomic and species trait data at the level of precision and accuracy required to enable and speed up research towards achieving the Targets of the Sustainable Development Goals for Life on Earth, Life below Water and Climate Action.

Novel building blocks in EOSC are required for the development and successful operation of DiSSCo to deliver data at the economies of scale and scope needed. Examples of such building blocks are portable research data packaging formats, a distributed file system like IPFS (InterPlanetary File System) that can scale, verification and audit mechanisms to control FAIRness and what needs to be stored, plus novel index, discovery and linkage mechanisms. RDA (Research Data Alliance) and groups like C2Camp (a Go-FAIR Implementation Network) are already working on recommendations and guidelines and test implementations in this area towards an infrastructure of Digital Objects, but further development of TDWG standards, practices developed in the CETAF, Consortium of European Taxonomic Facilities network and novel technological approaches for e.g. large scale digitisation are also needed to deliver data at the economies of scale and scope needed.
In the presentation, we:

- discuss technical barriers for interoperability and possible action lines to overcome these including practices and technologies to underpin the FAIR data principles;
- outline the unified DiSSCo API (Application Programming Interface) services to provide data suitable for thematic services in environmental Research Infrastructures like LifeWatch, eLTER (European Long-Term Ecosystem and socio- ecological Research Infrastructure) as well as RIs in other domains such as E-RIHS (European Research Infrastructure for Heritage Science) in the field of social sciences;
- explain the DiSSCo strategy to align project outcomes and standards development towards a common unified research infrastructure.

Type of abstract

Presentation

Summary

DiSSCo, a Distributed System of Scientific Collections, is a Research Infrastructure providing unified access to biological and geological collections in Europe. It will deliver specimen-derived information at the scale, quality and FAIRness (Findable, Accessible, Interoperable, Reusable) required for excellent research. Specimen data will be repackaged to integrate and link with the Internet of FAIR Data and Services supporting the European Open Science Cloud. This presentation will discuss challenges and opportunities in creating novel

building blocks required for development and successful operation of DiSSCo to generate and deliver data through EOSC services at the economies of scale and scope needed.

Primary authors: Mrs CASINO, Ana (CETAF); KOUREAS, Dimitris (Naturalis Biodiversity Center); ADDINK, Wouter (Naturalis Biodiversity Center)

Presenter: ADDINK, Wouter (Naturalis Biodiversity Center)

Session Classification: Thematic Services

Track Classification: Area 5. Digital Infrastructures for EOSC and/or EDI