Implementation

The DiSSCo preparatory and construction phases are planned between 2018 and 2024.

ROADMAP

2018-2022:
Preparatory phase (Innovation and Consolidation programmes):
Innovation programme: Refinement of technical design; deployment of pilot portal and service test beds; update of business plan; contact- building with industrial stakeholders; technical innovation for mass scale digitisation, automation, robotics, and data models.
Consolidation programme: Refinement of governance structure; preparation for setting-up of legal entity; communication and capacity building; update of business plan; harmonisation of nodes policies and processes (incl. access and training); site selection and staff recruitment; development of national-level collection and investment strategies.

2019-2024:
Construction phase/programme: Implementation of national/regional investment plans for infrastructure upgrades and large scale digitization programmes; application of joint DiSSCo programmes and policies, quality control and risk management; establishment of regional/thematic hubs; active membership; construction of the DiSSCo Hub (incl. all services).

2024-2025:
Deployment phase: Transition from preparatory phase to the fully operational governance structures; staged start of operations.

2025 onwards:
Operational phase: Full deployment of operations and services; first full evaluation process, review of organisation and business model; full scale operations.

Maturity and sustainability

The current network of participating nodes is comprised of 19 European countries. All of the participating facilities have secured long-term governmental support.

DiSSCo is built on top of a strong and cohesive European network of Natural Sciences collections-based organizations (CETAF) and benefits from the accumulated experience of several EC-funded projects such as SYNTHESYS I-III, EDIT, ViBRANT or pro-iBiosphere. Together, this cumulative experience provides a robust corpus of reports and studies that drives the development and operation of the new Research Infrastructure (RI).

DiSSCo is uniquely placed among other distributed RIs, as all of the participating facilities have secured long-term support through governmental statutory funding and already successfully operate in the context of regional and/or national strategic priorities.

Governance in DiSSCo will follow a hub-and-spoke model (see figure), whereby different distributed nodes are coordinated by a central office. Resources are allocated to both the headquarters as well as the different partners in support of the implementation phase and operational aspects of the entire Research Infrastructure.

For more information: DiSSCo Coordination Team
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This leaflet is intended for conceptual and positioning evaluation of the DiSSCO initiative by national federal and regional authorities, including governmental departments, and research councils.

Building the future of Europe's Natural Science Collections
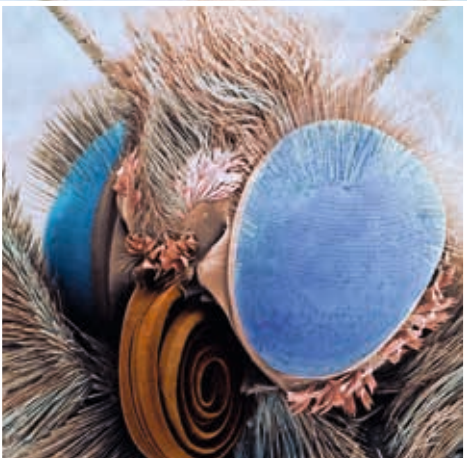
DiSSCO
Distributed System of Scientific Collections

Our mission
To unify European natural sciences collections, effectively transforming a scattered and fragmented access model to a central facility with an integrated data-driven pan-European research infrastructure.

- **1.5 billion specimens** held in European facilities
- **80% of global biodiversity** described held by European collections
- **100 collaborative projects**
- **5,000 scientists**
- **15,000 visiting scientists** annually
- **3,000 scientific publications** annually
- **10 million public visitors** annually
- **25 million web visitors** annually
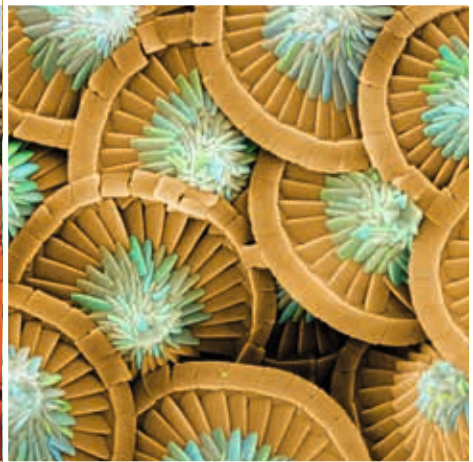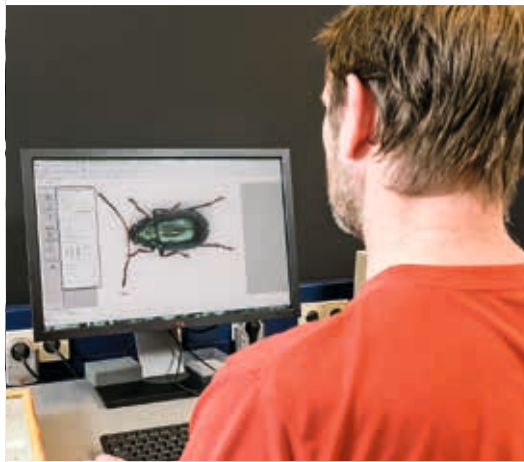
User communities and scientific rationale

DiSSCo provides a holistic approach to tool-up scientists, society, policy makers and industry with mass, linked and precise data, expertise and high speed services to address complex challenges based on the European Natural Science Collections as a scientific cornerstone.

In the past decades, great changes and advances of digital, genomic and information technologies took place, which enables natural science research to provide new discoveries, ask for new collection types and attributes and develop new approaches to face the changing world around us. As the volume and diversity of information deriving from natural science collections is exponentially increasing, so is the need for adequate infrastructures that requires a holistic approach to effectively underpin the entire research lifecycle and provide access to mass, linked and precise data.

Users communities

- Research communities and individual researchers in Environmental/ natural sciences (incl. taxonomists, ecologists, bio-informaticians, conservationists, ethno-botanists, geneticists, chemists);
- Virtual research environments (VREs) operators and stakeholders;
- Citizen scientists and naturalists and coordinators of citizen science projects in biodiversity;
- Object/Data holders (partners to the project, external repositories, potential users of other domains);
- Aggregators of taxonomic data (e.g., GBIF, EOL) and Indexing agents (e.g., CoL, IPNI, ZooBank)
- Policy and decision-makers in governmental and non-governmental organisations;
- Education organisations including vocational and academic teachers and students;
- Industry stakeholders including service providers, industrial devices/ technology producers;
- European Research Infrastructures (incl. LifeWatch, ELIXIR, MIRRI, EPOS, E-RIHS).

Objectives and Services

DiSSCo provides a central entry point for unified access to the digital collection services, the experts community and support, through the European Open Science Cloud. It also paves the path to physical access to the collections and resources of the distributed facilities.

DiSSCo provides a set of four service classes available for a wide range of users:
 (i)   Physical (transnational) and digital (virtual) access to collections;
 (ii) Joint research programming for data-driven scientific innovation;
 (iii) Training, support and engagement, and
 (iv) Policy harmonisation.

Key high-level objectives

- Bring scientific collections to the information age, investing in a linked open data approach;
- Articulate a balanced multi-modal access to collections;
- Improve researchers' capacity to use collection information to tackle complex scientific challenges;
- Support the interplay of social and cultural aspects of collection data;
- Develop and implement targeted joint research agendas;
- Identify collection data at European level and improve curation efficiency;
- Build and support paths to industrial innovation;
- Enhance digital skills and competencies, tooling-up researchers to navigate the big data domain; and
- Engage with society, providing alternative ways of benefiting from the national investments to collections.

Position in the landscape of European Environmental RIs

DiSSCo fills a significant gap in the landscape of the European environmental research infrastructures as provider of quality reference data, supporting the operation and scientific focus of other major research infrastructures and their users.

In the European environmental RI landscape, different projects and landmarks describe services that aim at aggregating, monitoring, analysing and modelling geo and bio-diversity information. The effectiveness of these services, however, is based on the quality and availability of primary reference data that today is scattered and incomplete DiSSCo provides the required taxonomic, bio-geographical and species trait data at the level of precision and accuracy required to enable research for tackling grand societal challenges.

In the wider European RI landscape DiSSCo acts as the provider of quality reference data, supporting the operation and scientific focus of environmental RIs and their users in providing a solid foundation for monitoring and modelling the geo- and bio-sphere.

Modelling	RIs providing data on external factors		
	Integrative RIs		
Measurements	Species/organism observatories	System observatories	Experiments
Data	Biodiversity Standards / Reference Data / Taxonomic backbone ← **DiSSCo**		

Decisions are taken centrally, implementation and resources are handled in a distributed manner.