



BIO
DIVERSITY
NEXT



Background:
NSCs and
dashboards



Summary



The Dashboard within

DISCO

Distributed System of Scientific Collections



SYNTHESYS+
Synthesis of Systematic Resources a DiSSCo project



**Collections digitisation and assessment
Dashboard**
A tool for supporting informed decisions

SI22 - DiSSCo as a model for regional development of RIs
Leiden, NL, 24 October 2019

Informed decisions & tools



Distributed System of Scientific Collections

Informed decisions on WHAT? for WHOM?



Distributed System of Scientific Collections

Background



Distributed System of Scientific Collections

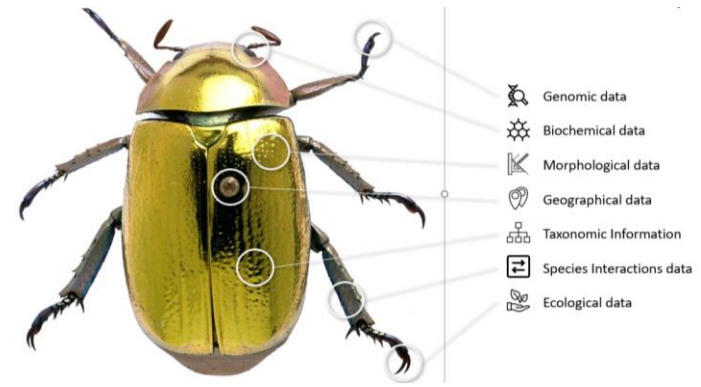
The **value** of Natural Science collections

DATA CONTAINER. Specimens are rich in **multiple types of data** (DNA, geochemical, taxonomic, molecular).

RELIABLE REFERENCE. Huge **archives** and reference libraries of past and present biodiversity and geo-diversity from all over the world (rocks, minerals, fossils, botanical, zoological, microbial).

IRREPLACEBLE UNIQUENESS. Many collections contain **unique specimens** that can no longer be collected or are extinct.

MULTIPLE AND CROSS-CUTTING USES. Cultural Heritage, Economic, Evolution history, Education, Research and Industry. Useful to different **user categories** for also **multidisciplinary purposes**



Fragmented Landscape of NSCs

DISCONNECTION. NSCs are scattered geographically, lack of harmonisation and agreed standards, differing developments.

UNDISCLOSED RICHNESS. Many collections have not been utilised to their full potential

PARTIAL KNOWLEDGE BASE. Additionally to the deficiency of resources dedicated to taxonomic work, researchers who are trying to answer big questions are still not aware of collections that may facilitate their research outside their Institution and closely related environment.

Chicago Field Museum

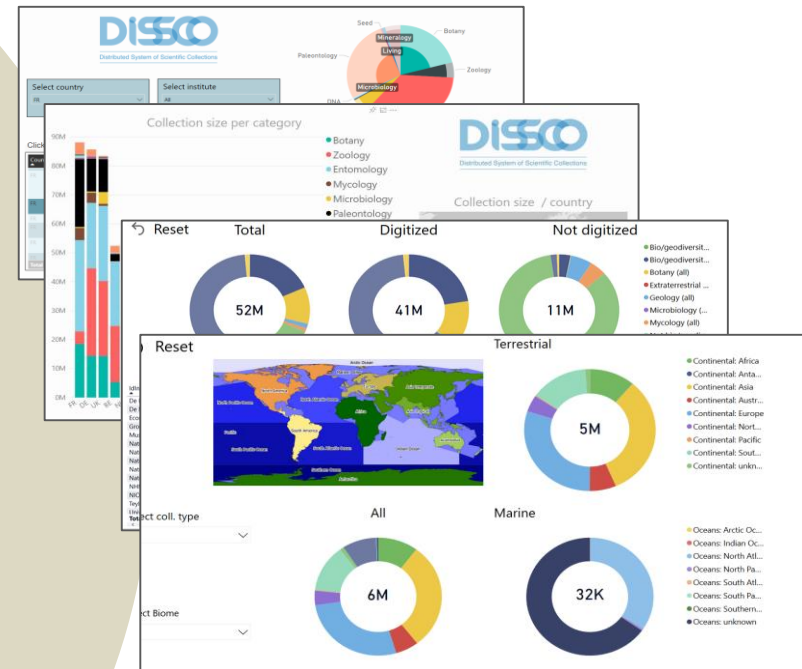


Unification mechanisms

VISUAL TOOL. A dashboard is an **online tool** that gives a summary of key information relating to progress and performance towards a certain aim (Herrington 2006).

GRAPHICAL DISPLAY. It displays different types of data using appropriate graphs and maps.

GRADIENTS. It can consist of multiple pages that granulate data from high level disclosure to more detail



The Dashboard within



Context/Infrastructure



Overarching umbrella



Research Infrastructure (RI) for digital unification of NHC and integrated knowledge base.



For more information about related projects and communities involved see <https://www.dissco.eu/>

Related Projects

Design project towards DiSSCo



- **Blueprint** to address the technical, financial, policy and governance infrastructure

- In WP2, **Deliverable for a pilot design of a Collections Digitisation Dashboard** for the harmonisation of institutional collection information


Builds the foundation for the DiSSCo infrastructure



- **IMPLEMENTATION MECHANISMS** for facilitating the accessibility of digitised natural science collections and the prioritisation of digitisation efforts

- **Included Components: Loans system (ELViS) and Digitisation dashboard.**

Enhancing the ICEDIG Dashboard



ICEDIG.EU
Innovation and consolidation for large scale digitisation of natural heritage

Grant Agreement Number: 777483 / Acronym: ICEDIG
Call: H2020-INFRADEV-2017-1 / Type of Action: RIA
Start Date: 01 Jan 2018 / Duration: 27 months


REFERENCES:
Deliverable D2.3 / [R] / [PU]
Work package 2 / Lead: Naturalis
Delivery date [M14]

Design of a Collection Digitisation Dashboard


Deliverable D2.3

Version: 1.0
Date: 31 March 2019

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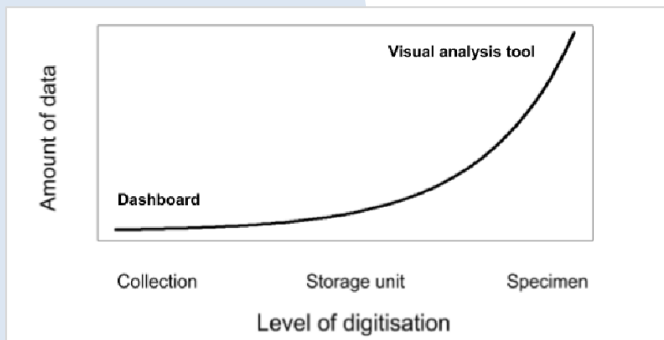


Financed by the Horizon 2020 Framework of the European Union
H2020-INFRADEV-2017-1
Grant Agreement No 777483



ICEDIG.EU

- **Incorporate and integrate different data assessment tools:** Collection Self-Assessment Tool, Join/Move the Dots, One World Collection, CETAF Passports.



SYNTHESYS+
Synthesis of Systematic Resources a DiSSCo project

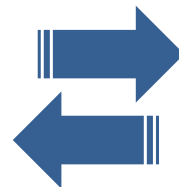
**Enhancement
for SYNTHESYS+ dashboard**

Network Activities (NA2)

- Offer **dynamic visual overview** of the state of NSCs across Europe
- Display **unified and quality controlled data** at a scalable and granulated level that is useful for different use cases (Decision making in policy, digitisation prioritisation, allocation of funding, facilitating research etc).
- Link to a **authoritative and reliable data source** (such as CETAF registry of collections, etc.)
- A component of the **ELViS Platform** to facilitate access and support requests for Digitisation on Demand (DoD)



Joint Research Activities (JRA1)



ELViS european loans and visit system

Improving collections management and fostering enhanced use of extracted data



How will it be enhanced?

*Built using Microsoft BI
Contains biological and palaeontological collections*



Display of high level collection data for communication purposes, digitisation planning and discovery tool

- **Classification Schemes** – Describe NSCs at a meta data level (Country, Institute, Size of collection, Taxonomic type, Storage, Geographic level, Stratigraphic level and Digitisation status).
- **Six user types identified** – Survey of use stories
- **Data collection** – Surveyed amongst DiSSCo Members

- **Classification Schemes** – Refine ICEDIG classification schemes, add tiers (Storage, preservation, MICs and MIDS, and **improve metrics**).
- **Discovery layers and views**, may display data aggregated from a number of sources (and *vice versa*)
- **Automated data collection** from registries to provide regularly updated data.

*Universal understanding
Standardised dimensions
User-driven approach*

Vision

How will the dashboard facilitate decision making and biodiversity needs?



Distributed System of Scientific Collections

Accurate and reliable data

STABLE AND PERSISTENT – involvement of natural science expertise across Europe to define use cases and data standards - *responding to multi-disciplinary scientific purposes and leading to new discoveries and innovations*

AUTHORITATIVE AND INDEPENDENT – Unbiased and unambiguous, without any political constraint – *accurate and factual decision making*

COMPREHENSIVE AND UPDATED – Connected to authorities registries such the CETAF registries will allow regular updates – *helping understand regional and global challenges*

Surgical tape



Adhesives



Hydrophobic surfaces



FAKE



Knowledge-base for targeted audiences

Granularity and Manageable data to fit different needs

SCIENCE. By default, the normal users of the NSC's data.

SOCIETY. A very diverse, objective-oriented community of users, related to a wide realm of interests including education, citizen science, civil groups, media.

POLICY. Governmental representatives need reliable and persistent tools to make informed decisions and develop measures, policies and regulations on thorough grounds



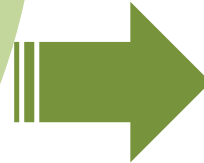
Open and Sustainable Service

The DiSSCo CDD will thus become an **instrumental** mechanism for decision-taking

It will be embedded into, among others, the clustering initiative of products and services provided to [EOSC](#) by the [ENVRI-FAIR](#) project in the environmental domain.



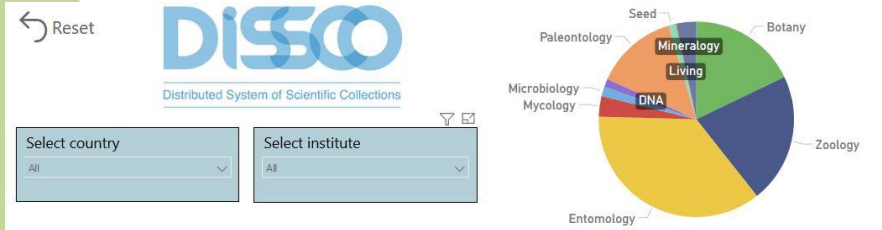
WE PROVIDE



to back up informed decisions for policies and regulations that will impact life in nature

Attractive display

Comprehensive information AT A GLANCE!



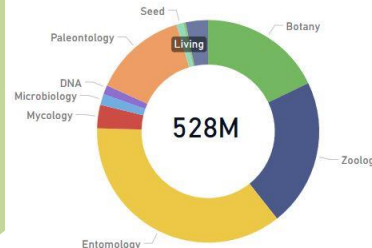
Click on institute name to show proportional contribution

Country	Institute	Collection (total)	Botany	Zoology	Entomology	Mycology	Microbiology	DNA	Paleontology	Seed	Living	Mineralogy
AT	Naturhistorisches Museum Wien	3,000,000	3,333,000	3,333,000	3,333,000	3,333,000	3,333,000	3,333,000	3,333,000	3,333,000	0	3,333,000
BE	Agentschap Plantentuin Meise	4,000,000	3,551,000	0	0	206,000	0	19,000	0	19,000	206,000	0
BE	Instituut voor Natuur – en Bosonderzoek (INBO)	25,000	0	0	0	0	0	0	0	0	25,000	0
BE	Royal Belgian Institute of Natural Sciences	38,000,000	204,000	14,505,000	18,591,000	0	0	204,000	2,247,000	0	0	2,247,000
BE	Reval Museum for	8,640,000	80,000	1,542,000	6,800,000	0	0	0	18,000	0	0	197,000
Total		527,960,000	94,396,000	113,317,700	190,518,000	17,999,000	8,385,000	7,027,000	72,034,000	5,250,845	1,739,160	17,283,000

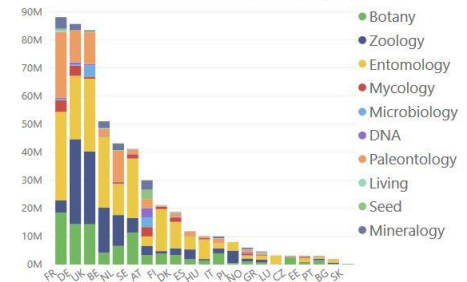
Disclaimer: Numbers per collection category are derived from percentages classes.



Collection size per category



Collection size per category



Summary



Distributed System of Scientific Collections

In the DiSSCo infrastructure the **Collections digitisation and assessment dashboard** will be a window to facilitate the **discoverability of NSCs** as well as an assessment tool to **prioritise digitisation** efforts and best practices.

The CDD will provide **information condensed** in one view to enable taking **decisions both fast and informed**, based on accurate, reliable and persistent data on biodiversity-related issues at a global scale.

The CDD based on **harmonisation** of data **standards, best practices** and meaningful **metrics** will provide information without geographical or political constraints and will facilitate **further analyses and assessments**.



From OBJECTS to VISUALS
From DATA to DECISIONS



Scientists believe it
was the egg and not
the chicken that
came first.

The first chicken egg was laid
by a bird that was not a
chicken



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Thank you for your attention!

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