DiSSCo

Distributed System of Scientific Collections

INFORMATION DAY

Distributed System of Scientific Collections

naturhistorisches museum wien

nhm

Vienna, AT, 5 December 2019

DiSSCo
Distributed System of Scientific Collections

CETAF
CONSORTIUM OF EUROPEAN TAXONOMIC FACILITIES

Natural Science Collections support discovery and modelling of all life on earth

DiSSCo
Distributed System of Scientific Collections

CETAF
CONSORTIUM OF EUROPEAN TAXONOMIC FACILITIES

DiSSCo provides access to biodiversity data at the scale and precision required

That's what counts

DiSSCo by the Numbers

1,500,000,000

specimens

119

participating institutions

5,000

full-time scientists

21

countries

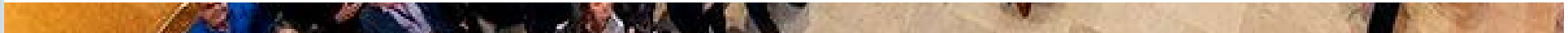
> 100 collaborative projects
> 6,000 scientific visitors pa
> 3,000 publications pa
> 10 million public visitors pa
> 25 million web visitors pa

Data containers
Reliable reference
Irreplaceable uniqueness
For multiple and cross-cutting issues

DiSSCo
Distributed System of Scientific Collections

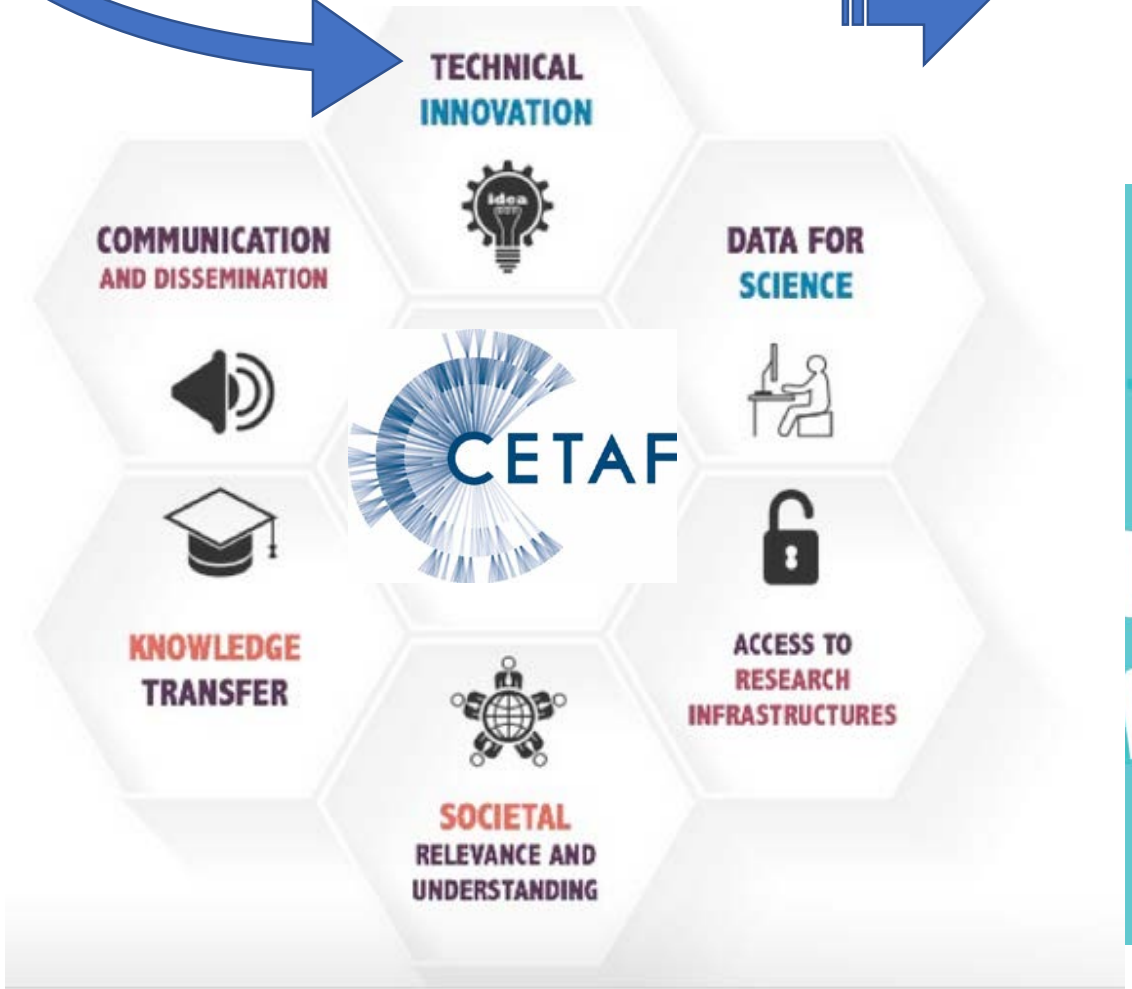
CETAF
CONSORTIUM OF EUROPEAN TAXONOMIC FACILITIES

Successful initiatives relies on the strong community behind and their collaborative work



CETAF

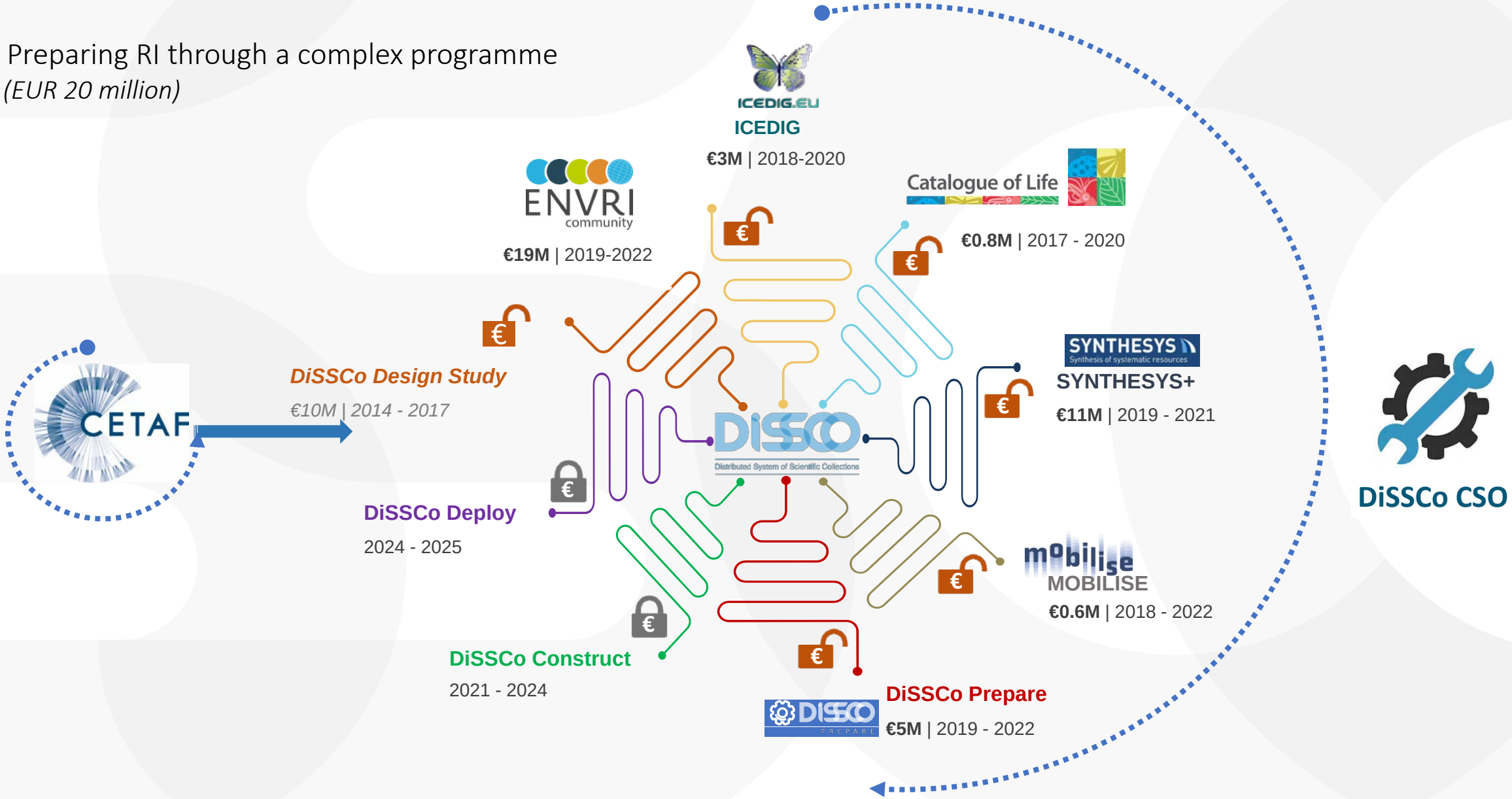
COMMUNITY



INITIATIVES - PROJECTS

Preparing RI through a complex programme

(EUR 20 million)



@catalogueoflife

www.catalogueoflife.org

Catalogue of Life

DiSSCo Distributed System of Scientific Collections - TAXONOMIC BACKBONE

Catalogue of Life+

CoL+ will provide the taxonomic backbone for unified platform

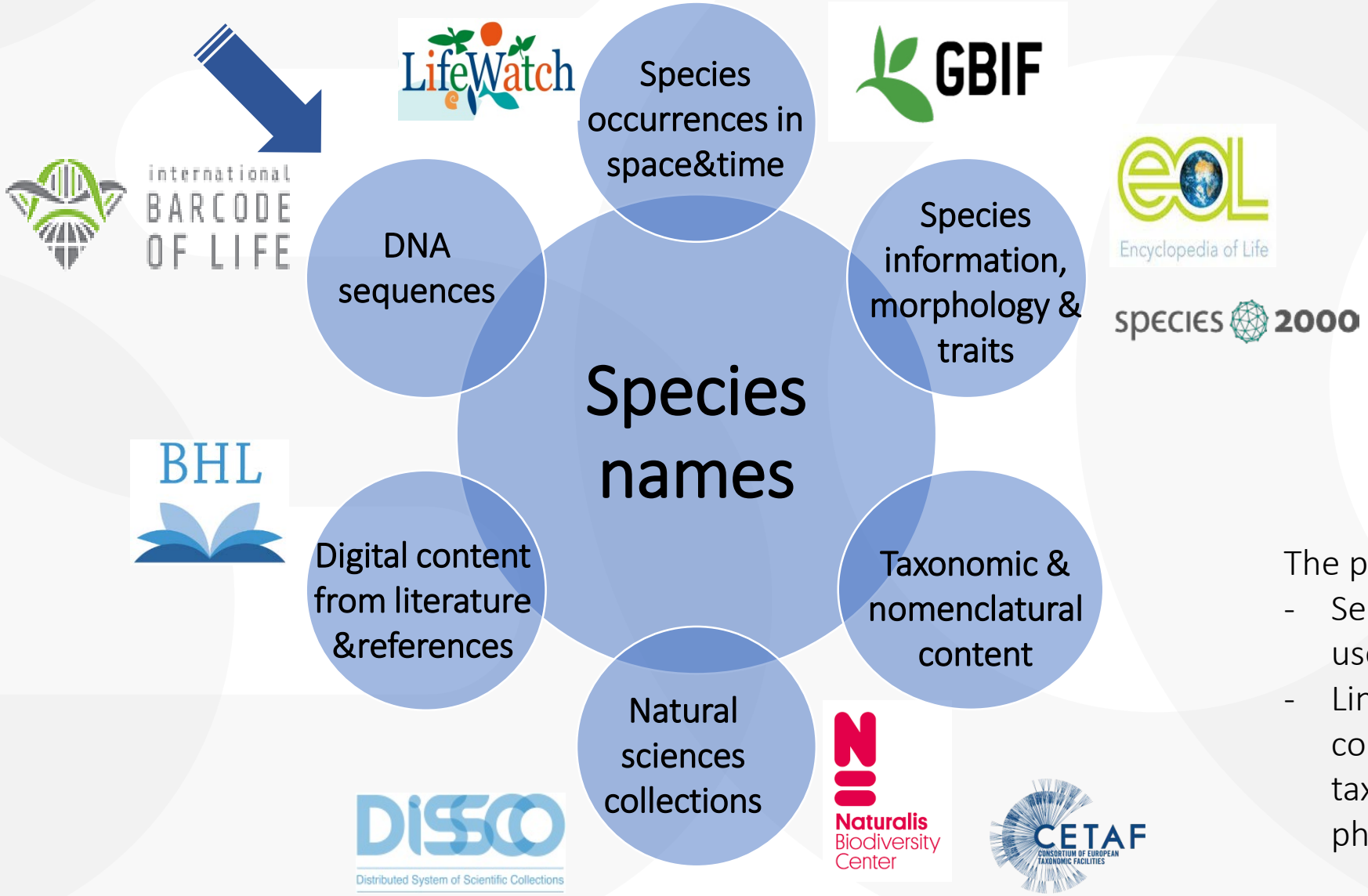
CoL+ aims to:

- create an **open, shared, and sustainable consensus** taxonomy and nomenclature foundation to serve the proper linking of data in the global biodiversity information initiatives
- stablish a clearinghouse for nomenclature and taxonomy to reconcile sources
- Build a comprehensive and authoritative global index of species (integrated species checklist and taxonomic hierarchy)

GBIF

Catalogue of Life

SPECIES 2000



The project works on

- Serving institutional users (1st phase)
- Linking with taxonomic community to feed in taxonomic data (2nd phase)

@ENVRIcomm

www.envri.eu

DISSCO - CLUSTER SERVICES

Distributed System of Scientific Collections

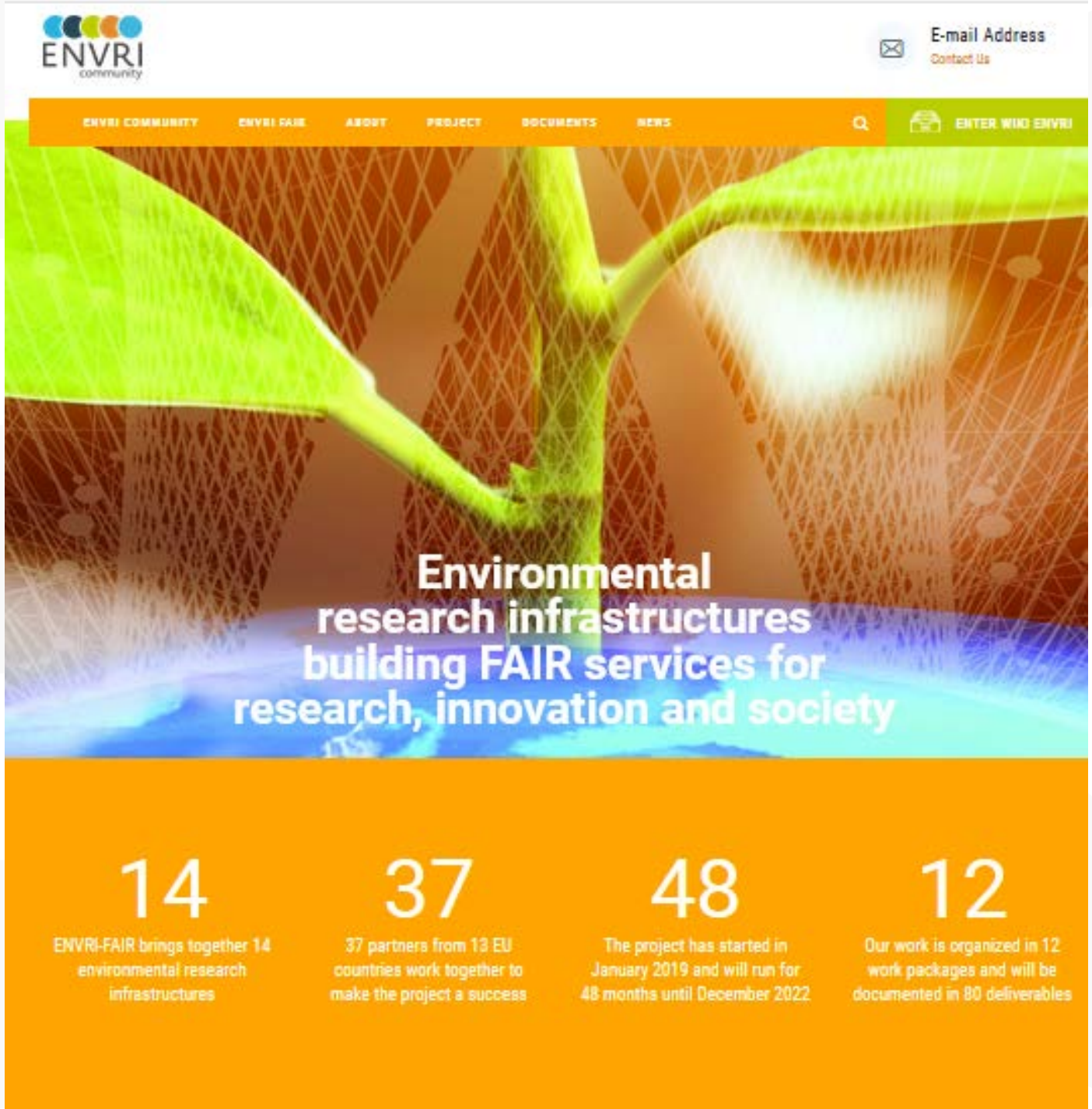
Environmental Research Infrastructures

ENVRI-FAIR is the connection of the Cluster of ENVRI to the EOSC

ENVRI+ objectives comprise:

- community policies and standards on all steps of the data life cycle
- data services compliant to the FAIR principles
- prototypes for testing pre-production services at each RI
- thematic data services and tools provided by the ENVRI

H2020-INFRAEOSC-4-2018-2 – Grant Agreement 824068
Funded by the Horizon 2020 Framework Programme of the European Union



Reliable predictions of environmental change must be based on trustworthy, well-documented observations which capture the entire complexity of the Earth system and the manifold interactions between the atmosphere, the land and the ocean, encompassing impacts both from and onto life in all its forms.

ENVRI-FAIR will set technical preconditions for a virtual, federated machine-to-machine interface (ENVRI-hub) for accessing to environmental data and services

@mobilise_action

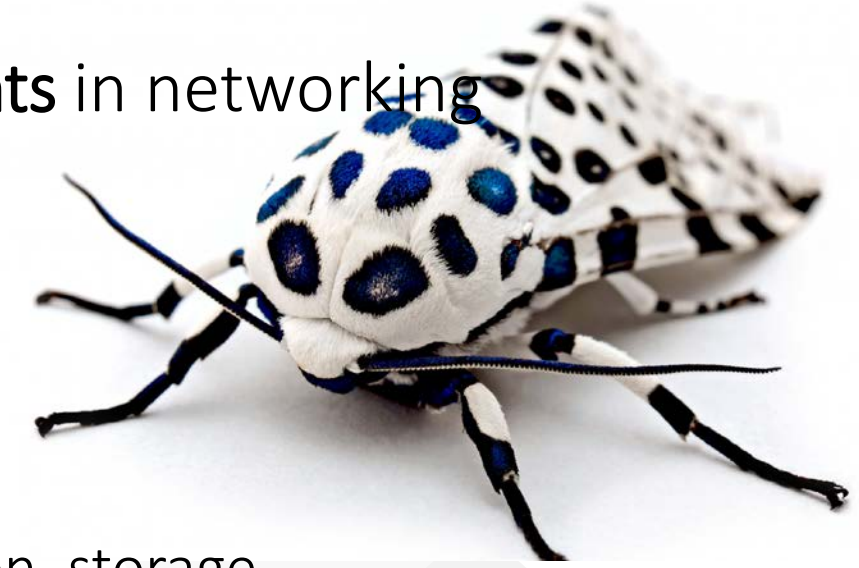
www.mobilise-action.eu

DISSCO Distributed System of Scientific Collections - COLLABORATIVE WORK

MOBILISE – CA 17106

MOBILISE for data, experts and policies in Scientific Collections

33 countries, 500 K€, 4 years and over 100 participants in networking and exchange



- Identifying **standards, processes and workflows, policies and technological gaps**
- Evaluating, **harmonising** and promoting those for acquisition, storage and publication of bio- and geodiversity data
- Creating an inclusive, **bottom-up and responsive network** of experts on bioinformatics

- community uptake
- comprehensive knowledge base
- knowledge and technology transfer

Training Schools

1st held on Digitization and Data Management Challenges of Small Collections

2nd will be held in February 2020 in Warsaw, PL.

Short Term Scientific Missions

For **early caries scientists, collection and data managers, collection curators and stewards from smaller institutions** and institutions in countries that do not have extensive facilities or well-developed policies for data mobilisation, digitisation, data practices and curation

1ST MC1
Brussels, BE, 2 October 2018

2ND MC2, WGs and Training School
Sofia, BU, 12-15 March 2019

BULGARIAN ACADEMY of SCIENCES 1869

3RD MC3, WGs and Training School
Warsaw, PL, 10-15 February 2020

Centrum Nauk Biologiczno-Chemicznych Uniwersytetu Warszawskiego

@ICEDIG_eu

www.icedig.eu

ICEDIG.EU

DiSSCo Distributed System of Scientific Collections

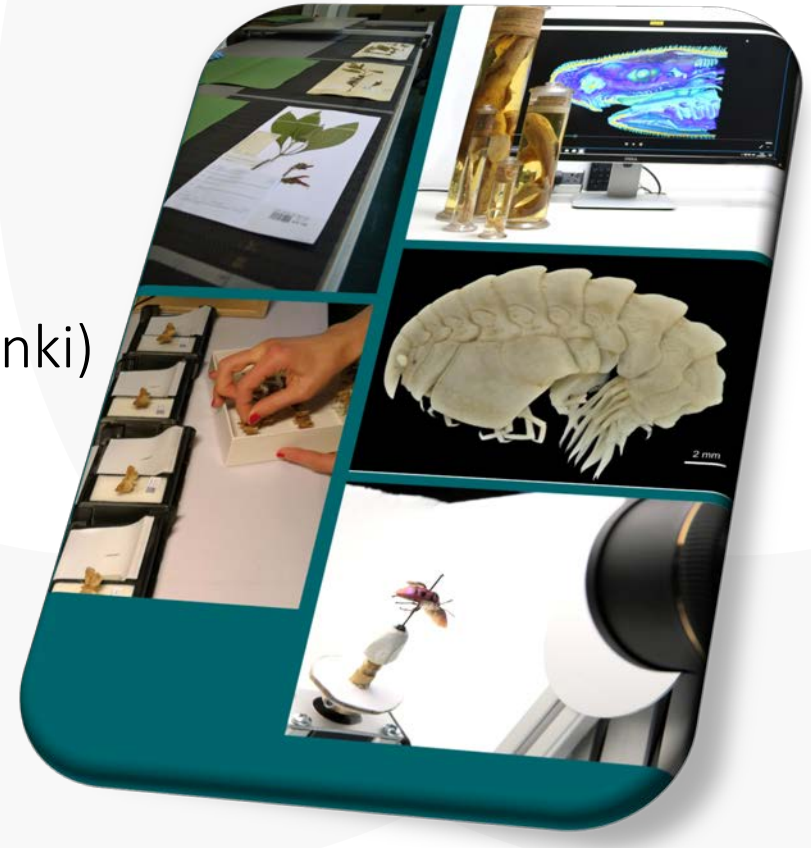
- DESIGN STUDY

ICEDIG – Innovation and Consolidation for Large-Scale Digitisation of Natural Heritage

ICEDIG.EU

ICEDIG is the design study for DiSSCo

The project aims at refining the **technical, financial, policy and governance aspects of DiSSCo RI**

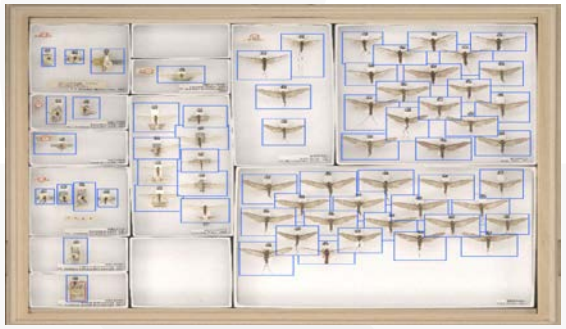


- **Partners:** 12 partners from 7 European countries (NHM Helsinki)
- **Duration:** 27 months (Jan2018-March2020)
- **Budget:** 3Mio €

H2020-INFRADEV-2016-2017 – Grant Agreement No. 777483
Funded by the Horizon 2020 Framework Programme of the European Union

Recent Outputs

State of the art in Digitization efforts

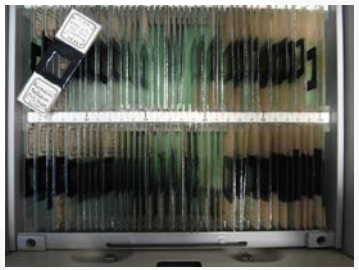


Pinned Insects

3D Capture

Liquid Samples

Skins and other vertebrate material



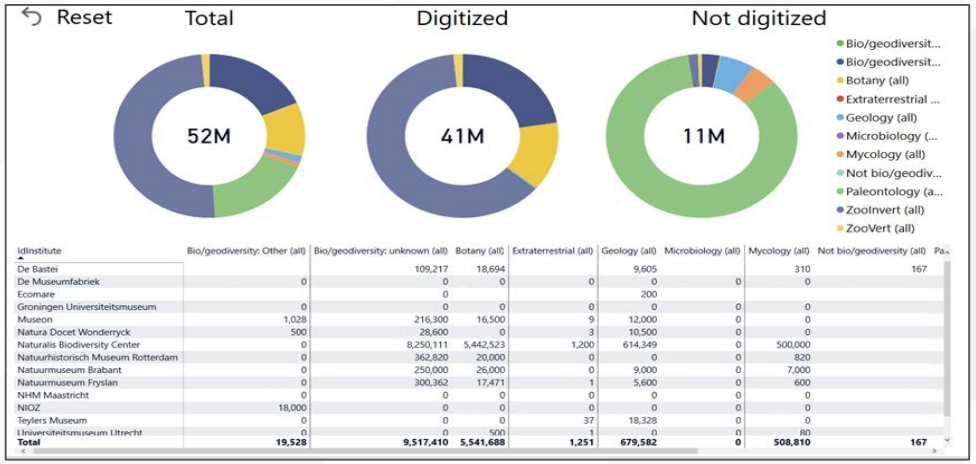
Microscopic Slides

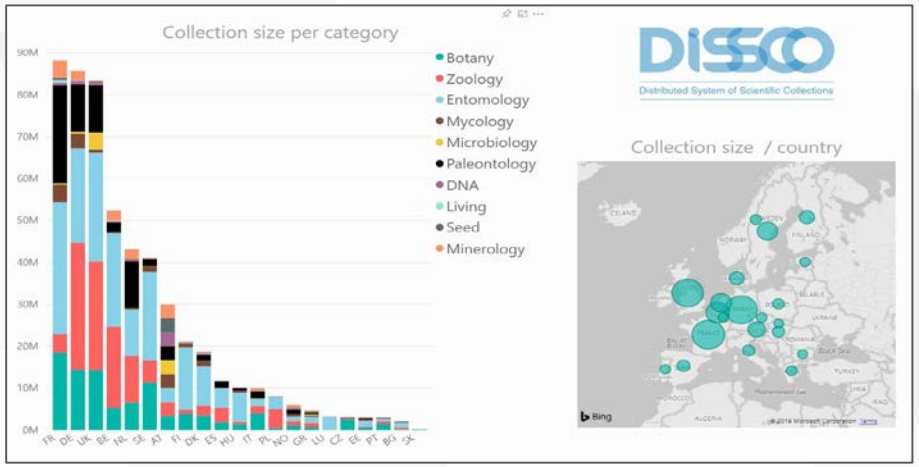
Digitization Techniques, methods

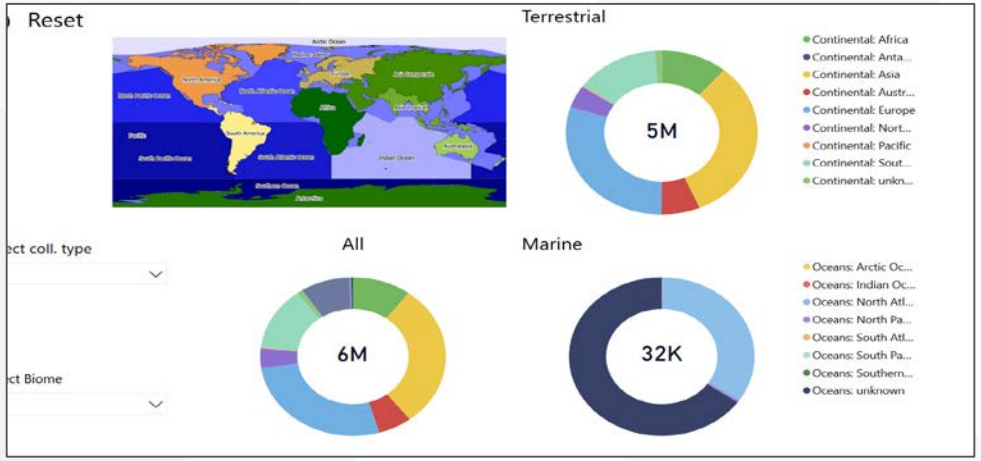
Crowdsourcing, data quality and data standards...

Training needs...

...as well as digitisation infrastructure design, open access, policies and standards







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.

Digitization Dashboard → Instrumental mechanism for decision-taking

@synthesysEU

https://www.synthesys.info

DiSSCo Distributed System of Scientific Collections - UNIFY and INTEGRATE

SYNTHESYS+ of Systematic Resources

SYNTHESYS+ works to unify and integrate standards and pathways

The project aims to produce an accessible, integrated European resource based on a shared **management, preservation, and access**

- **Partners:** 32 partners from 15 European countries (NHM London)
- **Duration:** 48 months (2018-2020)
- **Budget:** 10 Mio €

H2020-INFRAIA-1-2018-2019 – Grant Agreement 823827
Funded by the Horizon 2020 Framework Programme of the European Union

TA Transnational access

SYNTHESYS+ Synthesis of Systematic Resources a DiSSCo project

Transnational (physical) Access to collections

- Provide funding for scientists to undertake **short visits to collections**
- **Open collections, staff expertise and analytical facilities** so that they become available for users, at any one of the 21 partner institutions

First Call closed in April '19

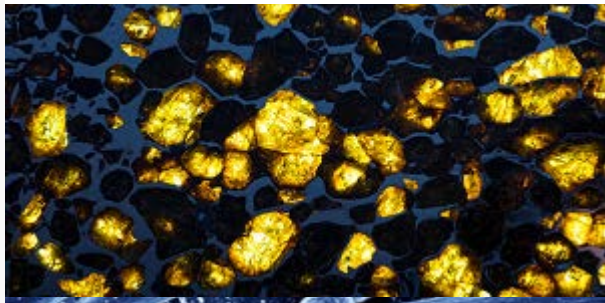
- 586 projects submitted, 7402 user days requested
- 74 non-EU applications
- Visits taking place throughout May

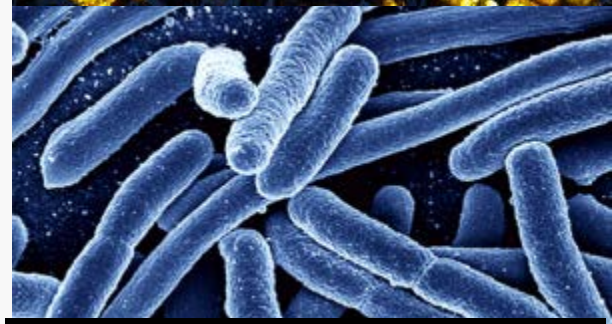
VA Virtual Access

SYNTHESYS+ Synthesis of Systematic Resources a DiSSCo project

Virtual (digital) access to collections

- Remove reliance on physical access by piloting digitisation workflows for DiSSCo
- Facilitate prioritising of DoD (Digitisation on Demand) and provide funding for digitisation of one or more collections





Call 1 of Virtual Access will run in Spring 2020

Right Now:

Soft ‘ideas’ Call to open discussion between researchers and institutions to shape proposals

More info at https://www.synthesys.info/virtual-access.html

JRA Joint Research activities

SYNTHESYS+ Synthesis of Systematic Resources a DiSSCo project

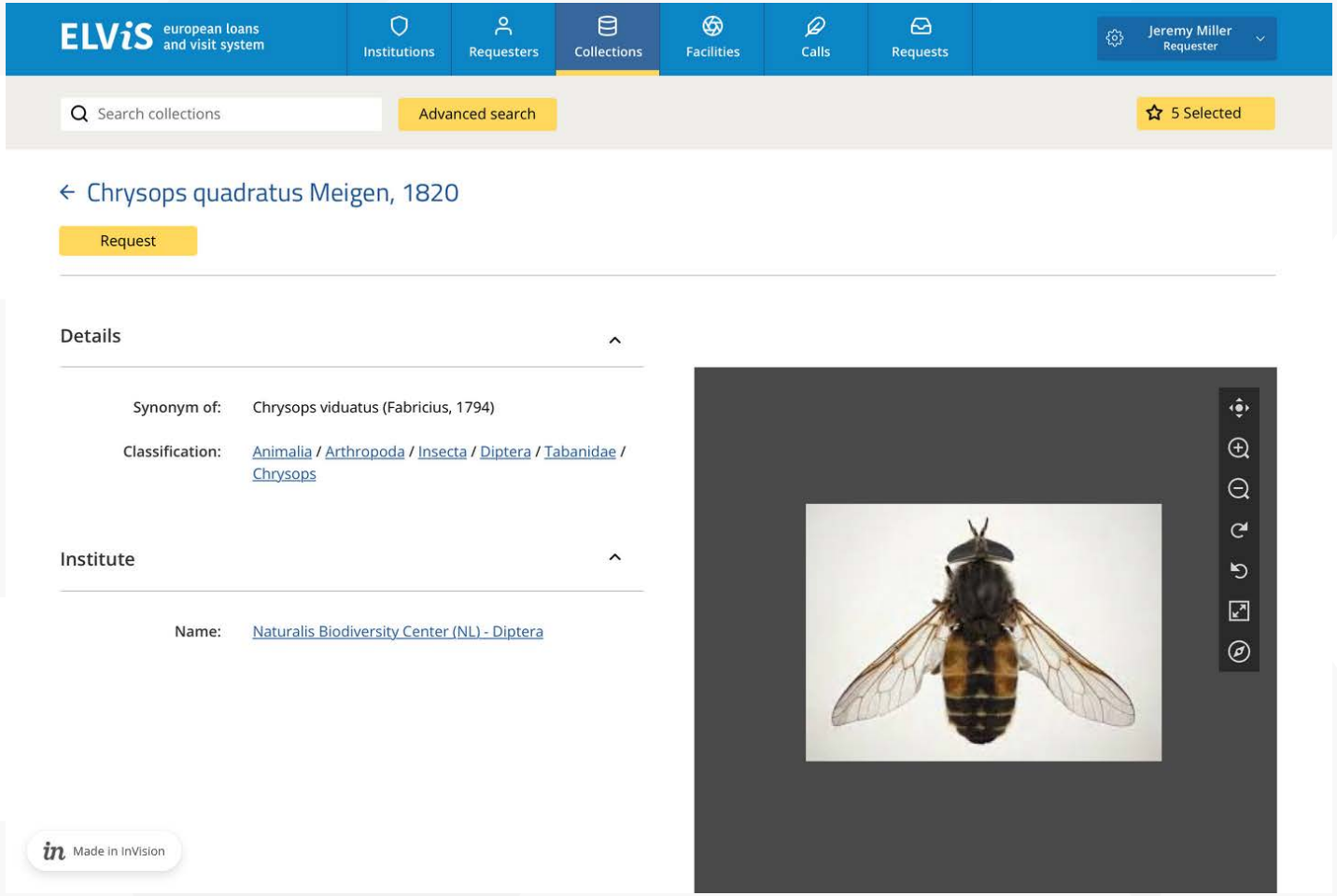
Tools and methods for optimization of access, digitization on demand and specimen data refinery

ELViS

European loans and visit system

ELViS support loans, visits, applications for Access, and track outputs. Smoother, faster, and better access to natural history collections across Europe.

Register now



Performance

Readiness

Specialisation

Priorities

NHMW

In SYNTHESYS-previous iterations researchers and amateurs from over 40 countries spent approximately 9,200 visitor days in the research departments and libraries.

Thanks to national projects (as Global Plants Initiative, REFLORA,the Virtual Herbaria portal and others), digitization of botanic collections is a well recognized reference. NHMW provides virtual access to the digital Herbarium which is used by more than 37 institutions from Afghanistan to El Salvador with up to 1,300 users per day

naturhistorisches museum wien

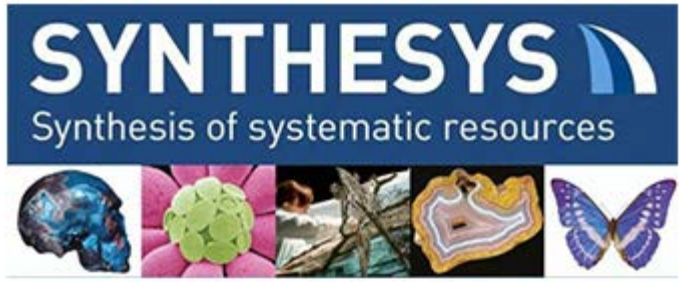
In SYNTHESYS+
> 25 PMs
> 420 K€

NA Networking activities

SYNTHESYS+ Synthesis of Systematic Resources a DiSSCo project

- Management (NA1)
- Training and support – CETAF (NA2)
- Molecular standards and processes – GGBN (NA3)
- Digital standards and processes – TDWG (NA4)
- Internationalisation – GBIF (NA5)

→ Common digital agenda



@DiSSCoEU

https://www.dissco.eu

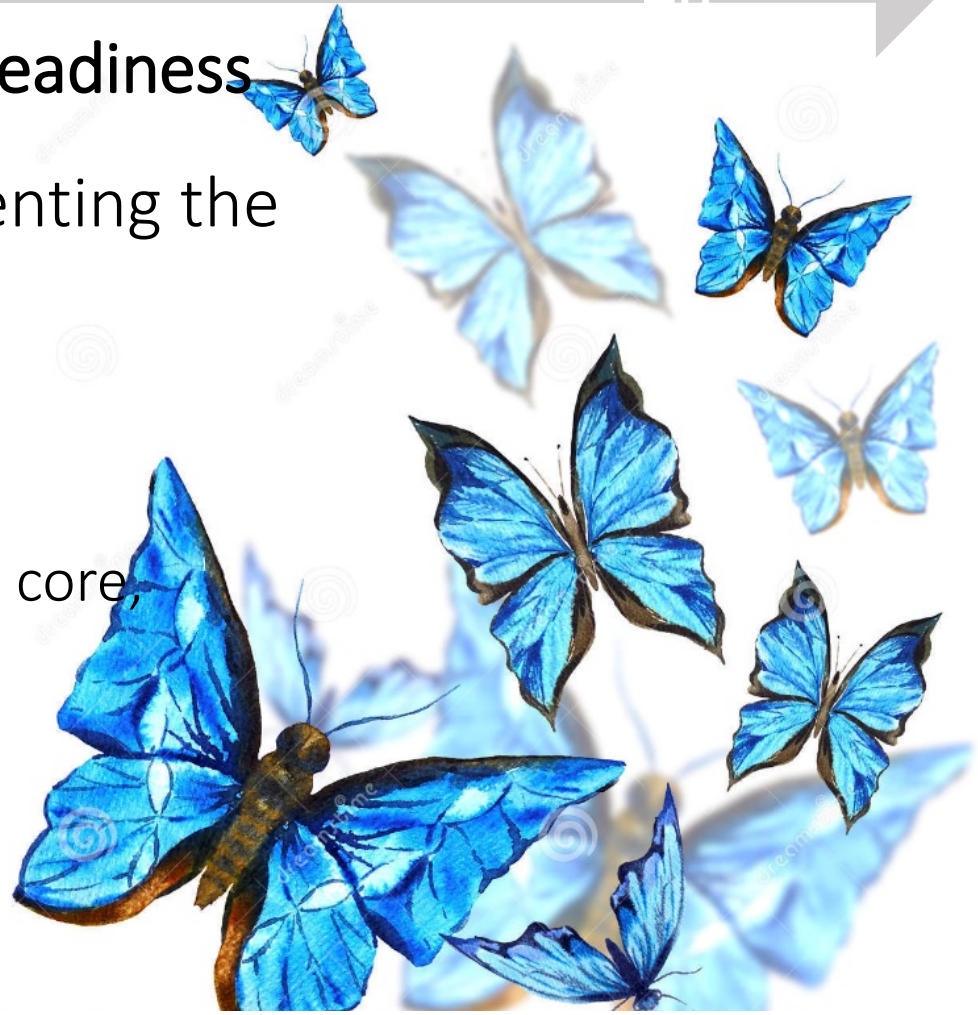
DiSSCo - MASTER PLAN

Distributed System of Scientific Collections

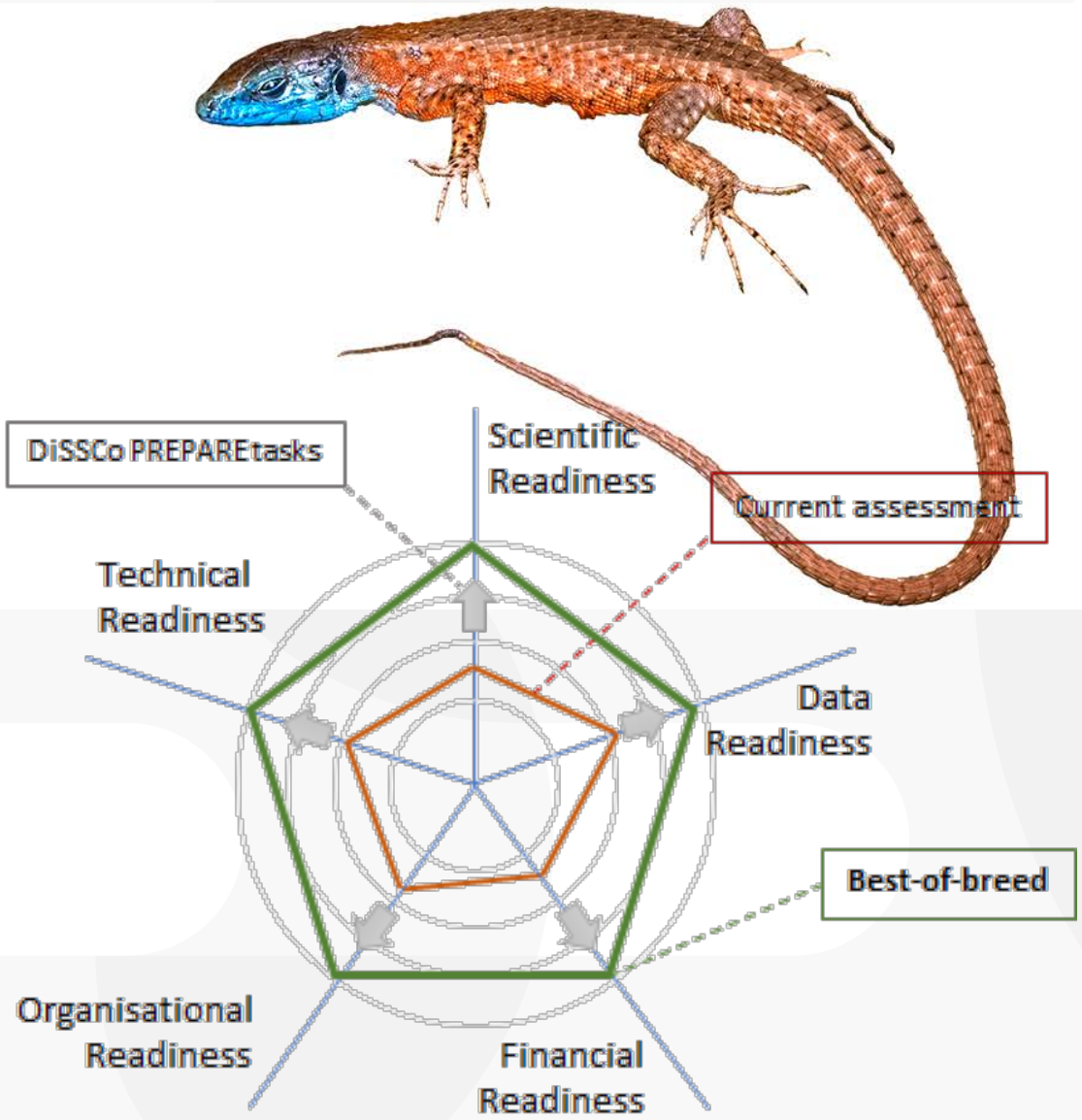
DiSSCo PPP – Preparatory Phase

DiSSCo Prepare will provide the Master Plan

It will facilitate achieving the necessary **level of readiness (IRL)** and will set up the **Master Plan** for implementing the construction and further operation



- **Partners:** 31 partners from 21 European countries (15 core, 4 technical and 12 National representatives)
- **Duration:** 3 years (2020-2022)
- **Budget:** 4,9 Mio € (incl. EU funds of 3,9M€)



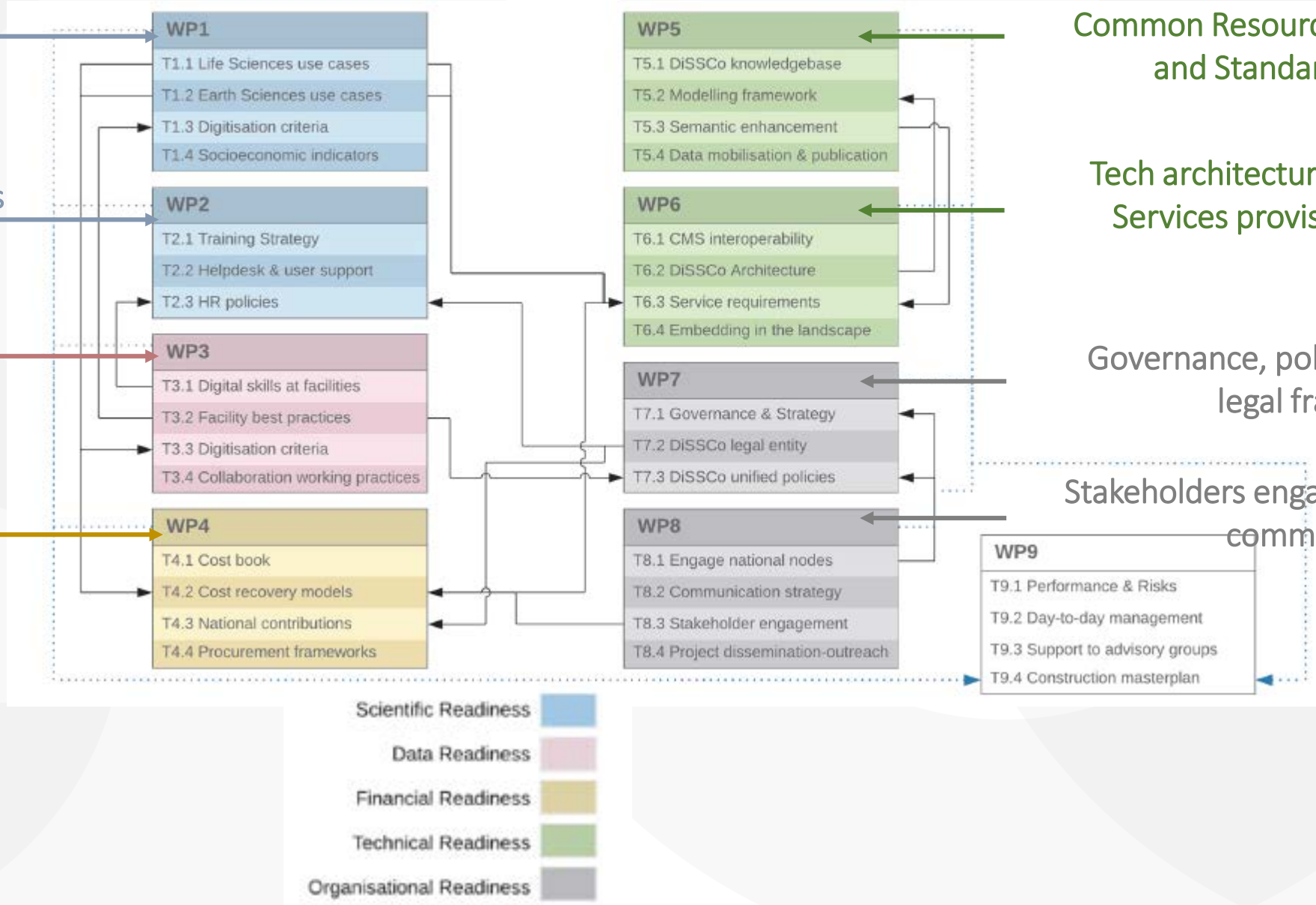
Dimension	Acronym	Definition
Scientific Readiness	SR	Capacity of the RI to respond to/adjust against current and anticipated user needs
Data Readiness	DR	Capacity of the RI data producers and stewards to serve FAIR data
Technological Readiness	TR	Capacity of the RI to meet the functional requirements of its user audience through comprehensive and sustainable technological solutions
Financial Readiness	FR	Capacity of the RI to put in place and implement a comprehensive business model
Organisational Readiness	OR	Capacity of the RI to set and implement fit-for-purpose governance and management policies as well as strategic and operational plans

Users needs & Socio-economic impact

HRs, Training and users support

Capacity enhancement

Business Framework

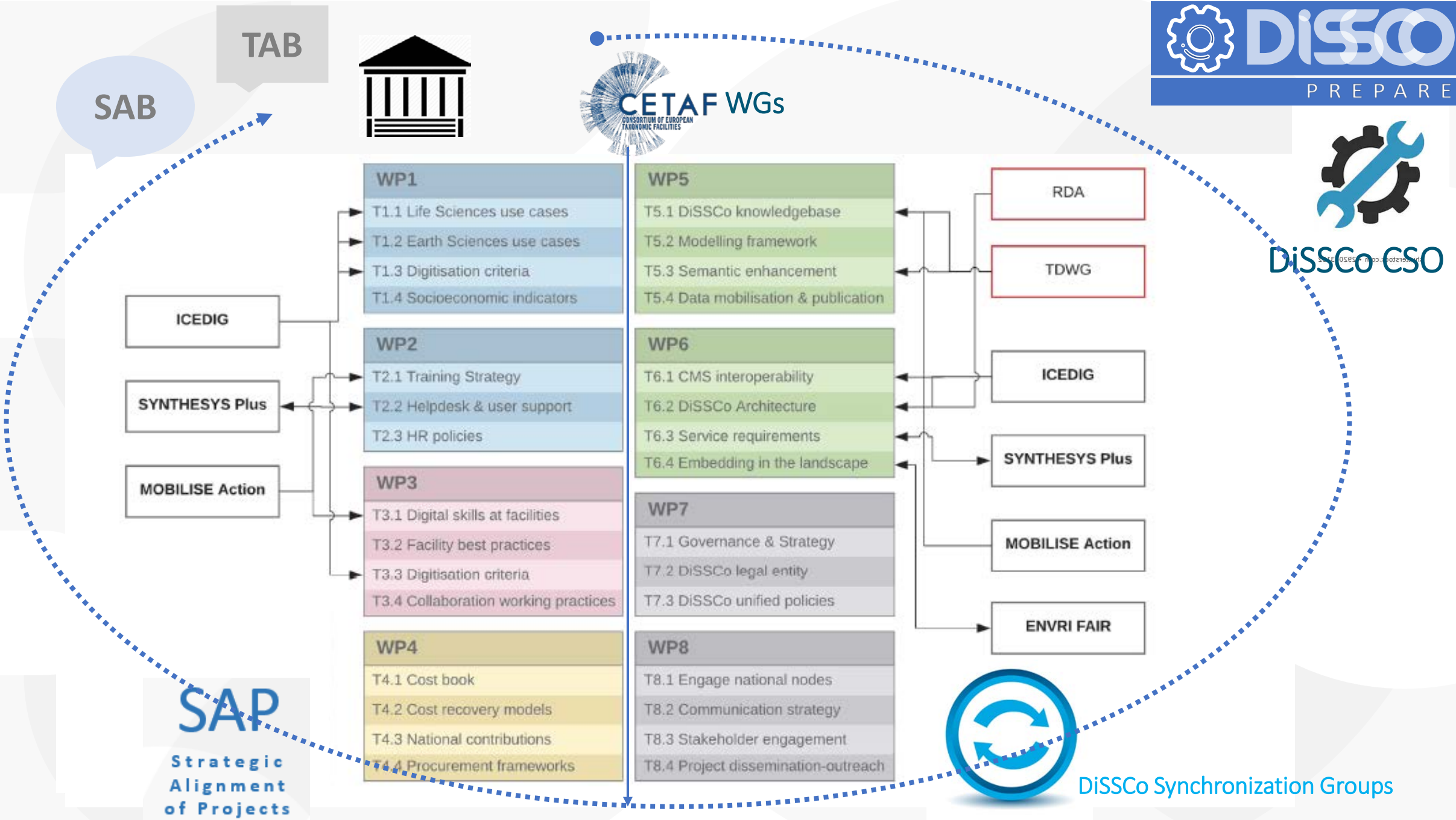


Common Resources and Standards

Tech architecture & Services provision

Governance, policy & legal frames

Stakeholders engage & community


SAB
TAB
CETAF WGs
DiSSCo PREPARE
DiSSCo CSO
WP1
T1.1 Life Sciences use cases
T1.2 Earth Sciences use cases
T1.3 Digitisation criteria
T1.4 Socioeconomic indicators
WP2
T2.1 Training Strategy
T2.2 Helpdesk & user support
T2.3 HR policies
WP3
T3.1 Digital skills at facilities
T3.2 Facility best practices
T3.3 Digitisation criteria
T3.4 Collaboration working practices
WP4
T4.1 Cost book
T4.2 Cost recovery models
T4.3 National contributions
T4.4 Procurement frameworks
WP5
T5.1 DiSSCo knowledgebase
T5.2 Modelling framework
T5.3 Semantic enhancement
T5.4 Data mobilisation & publication
WP6
T6.1 CMS interoperability
T6.2 DiSSCo Architecture
T6.3 Service requirements
T6.4 Embedding in the landscape
WP7
T7.1 Governance & Strategy
T7.2 DiSSCo legal entity
T7.3 DiSSCo unified policies
WP8
T8.1 Engage national nodes
T8.2 Communication strategy
T8.3 Stakeholder engagement
T8.4 Project dissemination-outreach
ICEDIG
SYNTHESYS Plus
MOBILISE Action
RDA
TDWG
ICEDIG
SYNTHESYS Plus
MOBILISE Action
ENVRI FAIR
SAP
Strategic Alignment of Projects
DiSSCo Synchronization Groups

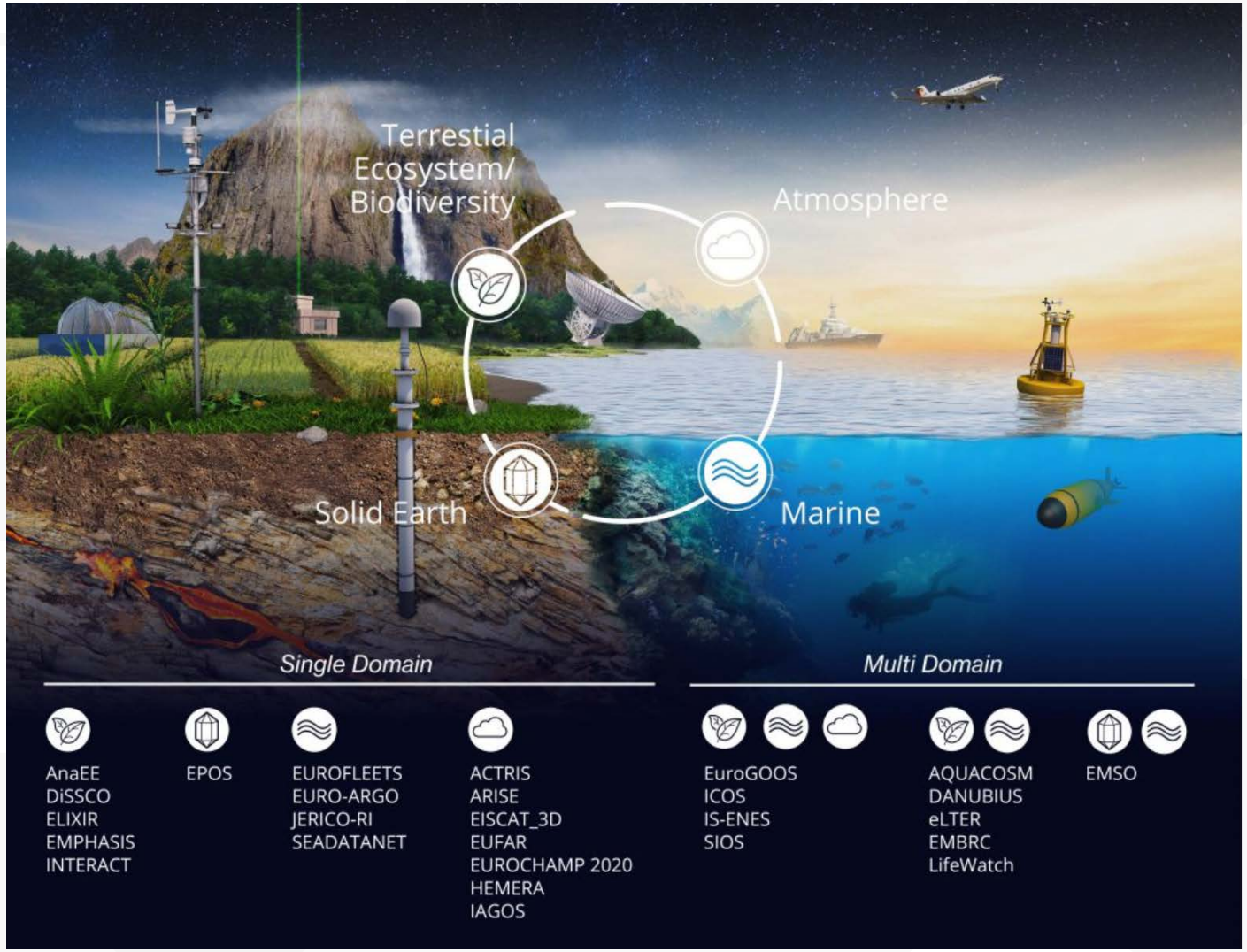
Effective national participation

- Continue building a national consortium
- Call for Applications for membership of the DiSSCo GA

  → Launched in coming days
  Submissions by 14 February 2020

- Kick-Off Meeting
- General Assembly

  → Helsinki, FI, 27 and 28 February 2020



In the DOMAIN

Collaboration via:

- Fora (BEERi)
- Projects (ENVRI-FAIR)

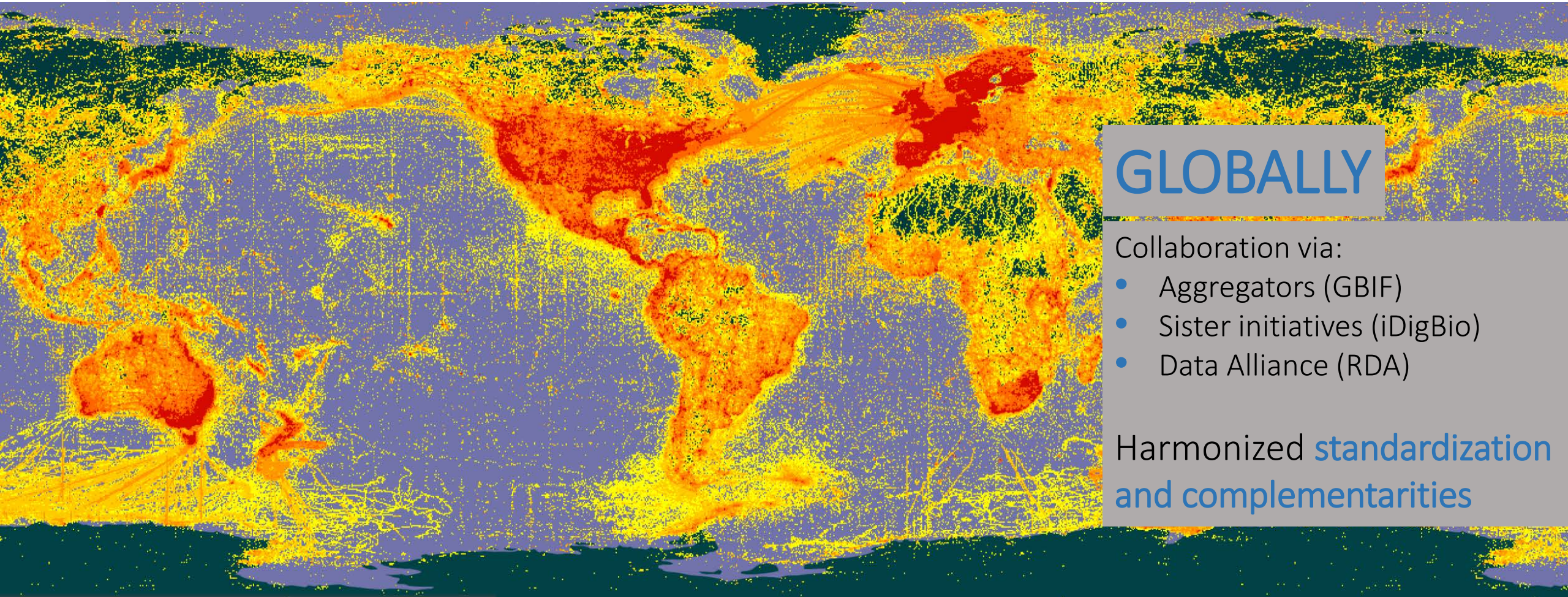
Linkage for leverage and multi-purpose services

OUT OF THE BOX

In **Cultural Heritage**

- Other RIs (E-RIHS, DARIAH)
- Repositories (Europeana)
- Modelling tools (Time Machine)

Creating a shared think tank for Joint developments



GLOBALLY

Collaboration via:

- Aggregators (GBIF)
- Sister initiatives (iDigBio)
- Data Alliance (RDA)

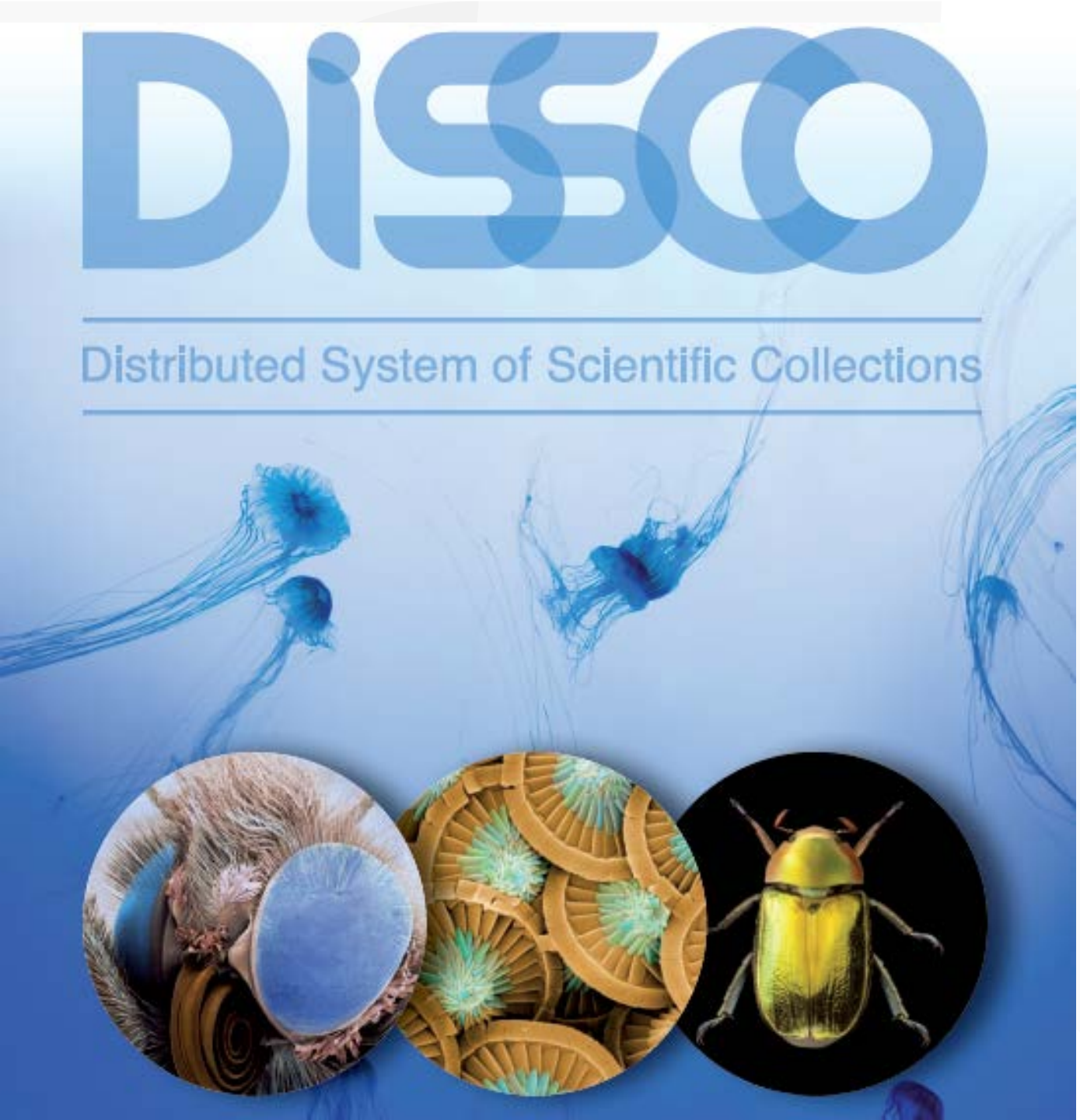
Harmonized standardization and complementarities

NETWORKING

Via CETAF and COST Actions (as MOBILISE and BioMONITORING):

- In the Working Groups
- At relevant International (IPBES,CBD, GTI, CSP)
- To developing a joint research agenda
- To provide resources (CETAF stable identifiers), best practices (e-publishing) and policies and papers (Bratislava Declaration)
- To build required services for the community (tools, training)

Strengthening the community to be an independent and sound **scientific voice** in a diversity of areas



Thanks for your attention!

Ana Casino
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DiSSCo Deputy Coordinator

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CETAF
CONSORTIUM OF EUROPEAN TAXONOMIC FACILITIES

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