



# DiSSCO

Distributed System of Scientific Collections



DiSSCo Information Day  
25 Nov 2019  
Vienna, Austria

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

Europe: the global leader

55% of the world's assets with rich historical and global distribution



*European  
Collections:*

1.5 billion specimens

80% of world's species

5,000 Full Time Scientists

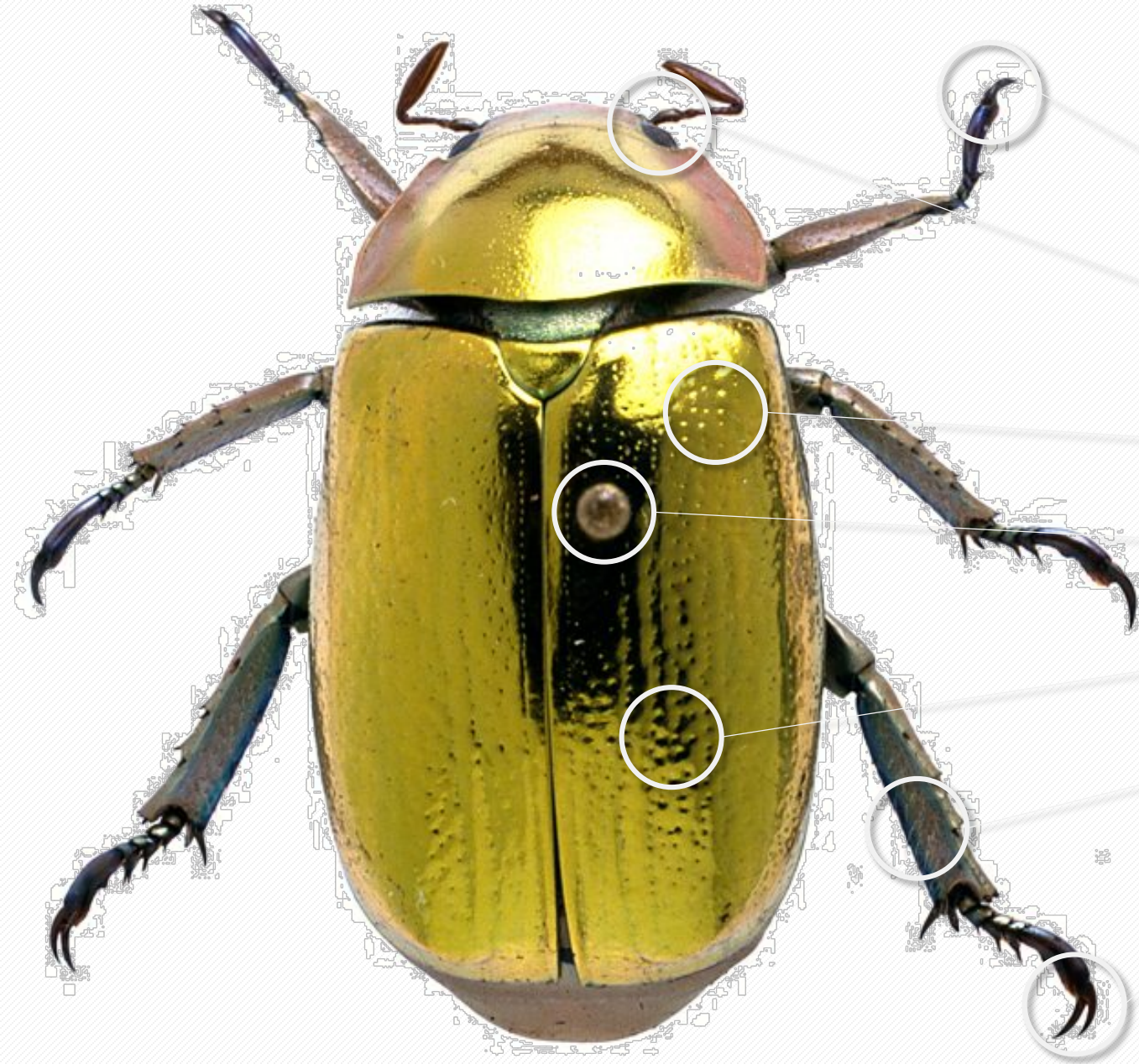
25,000 scientific visitors pa

10 million public visitors pa

25 million web visitors pa



# What's in a Museum specimen?



Genomic data



Biochemical data



Morphological data



Geographical data



Taxonomic Information



Species Interactions data



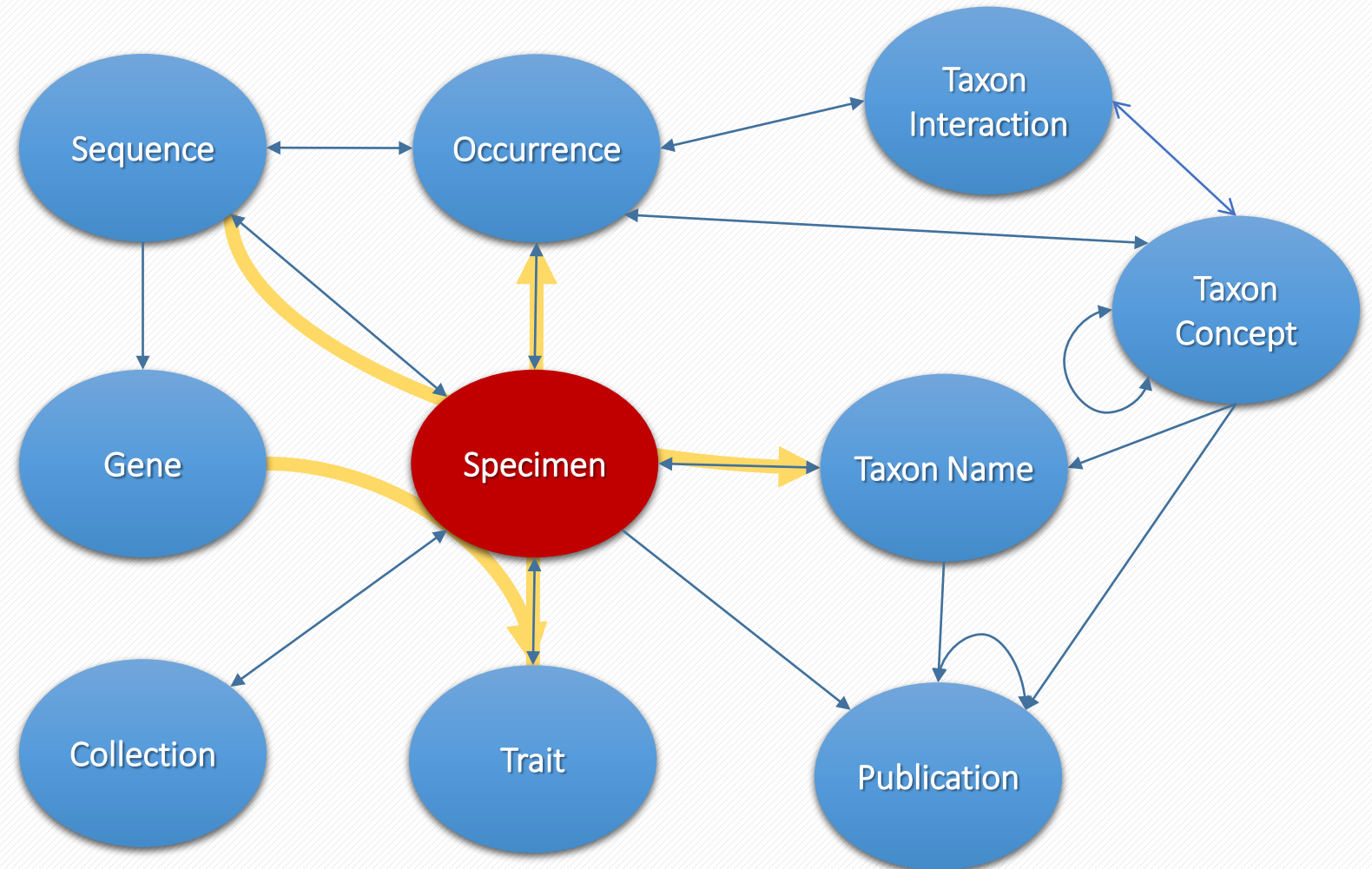
Ecological data



All data classes **unambiguously linked** to the **physical objects** they derive from



# Specimens at the centre







# Case study – Invasive Alien Species

UN Sustainable Development Goals (Target 15.8)

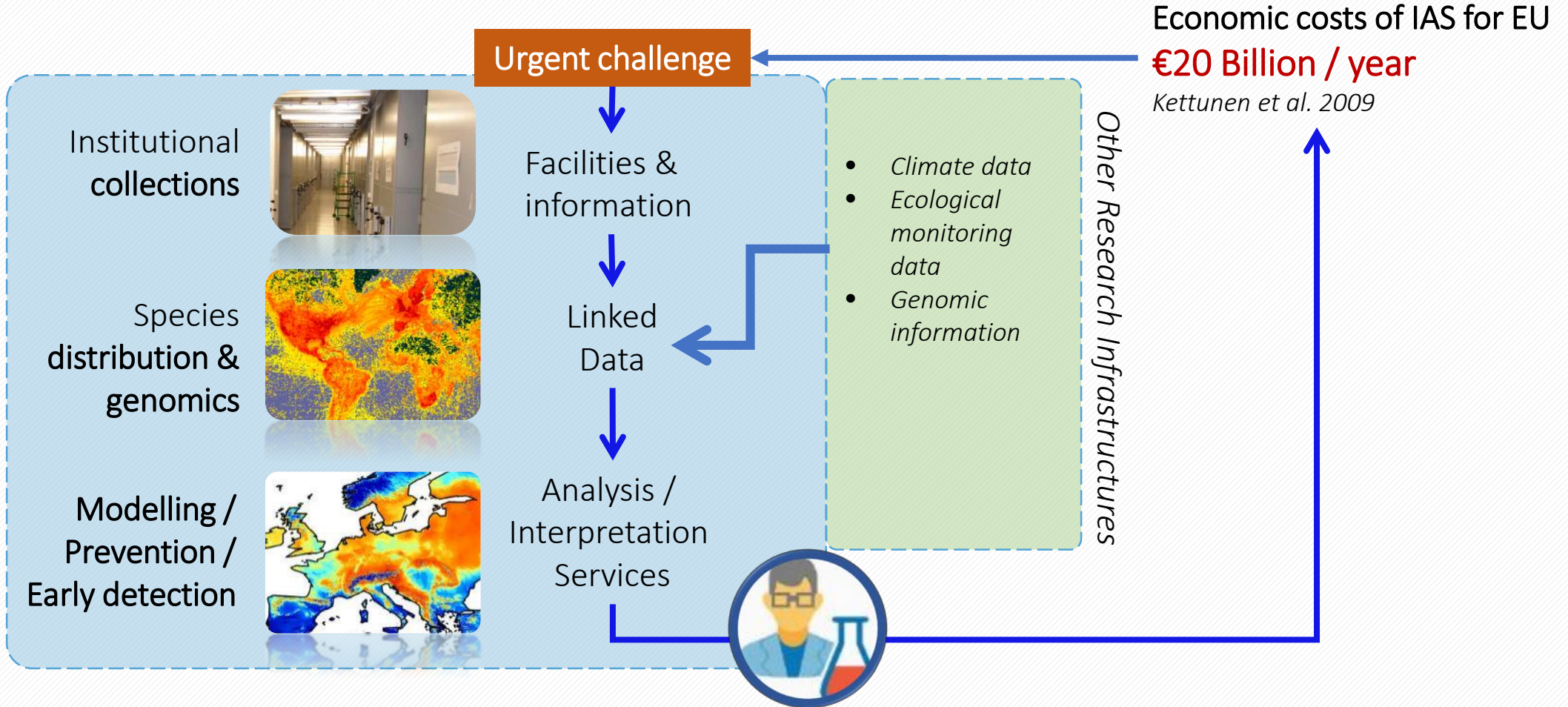
EXAMPLE: Alligator Weed

(*Alternanthera philoxeroides*)

Negative impact on native species, ecosystem services and infrastructure



DISCO  
Distributed System of Scientific Collections



A diagonal banner across the slide shows several insect specimens, likely butterflies, mounted on white cards with handwritten labels. The labels contain text such as "Lycrap", "cyan", "m. esalv.", "Huxley", and "5".

**120** National Facilities  
**21** Countries

- **Largest ever** formal agreement between natural science collection facilities
- **Centralised shared governance** model already in place
- **Synchronisation** of facilities at access, data and policy level

## a new business model: **ONE EUROPEAN COLLECTION**

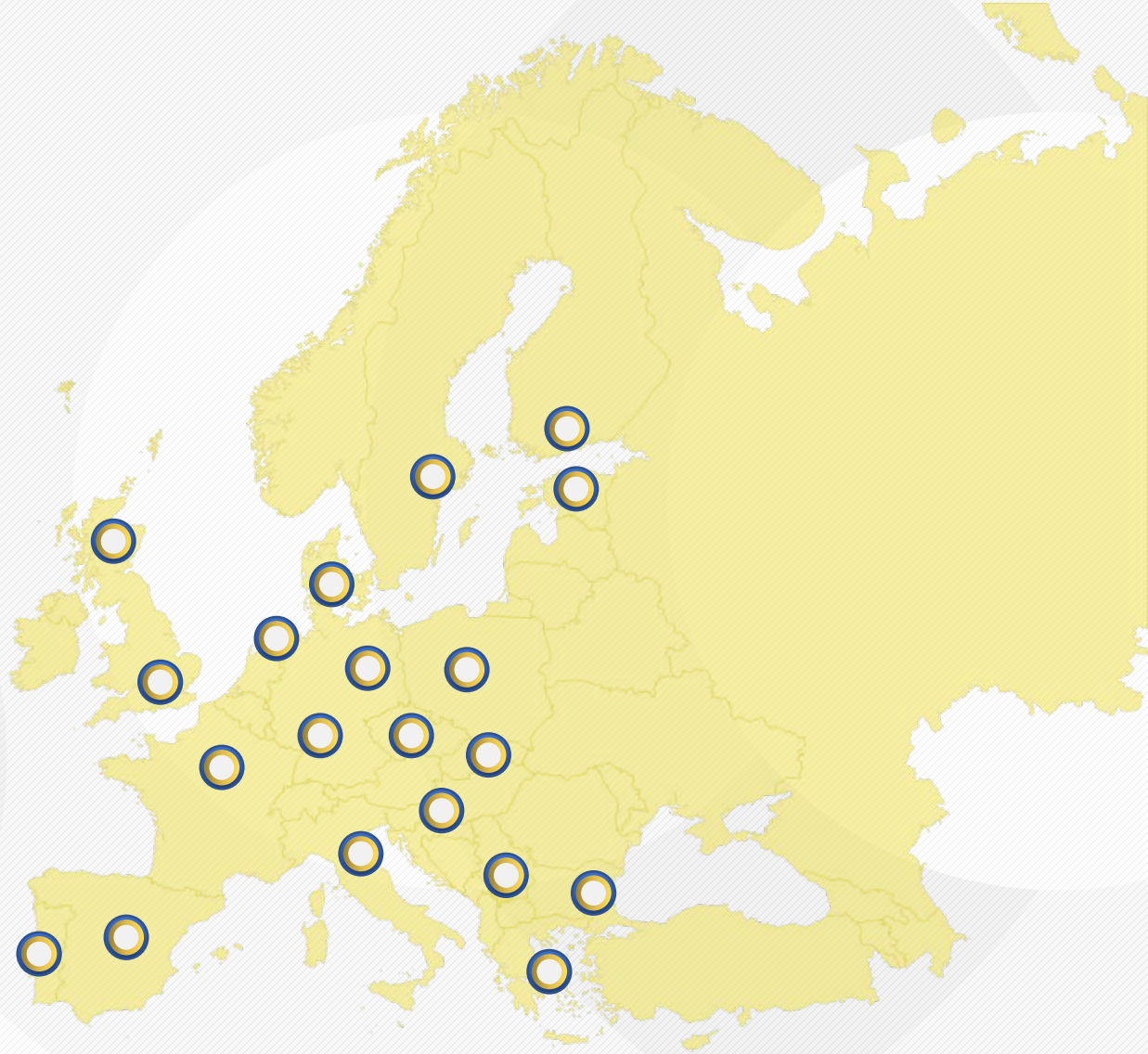
- One European Collection of scientific assets
- Common Collections development strategy
- Economies of scope and scale
- **Monitoring impact** of collections (documenting ROI)
- **Specialisation strategies** (e.g. in alignment with national priorities, e.g. Smart Specialisation Strategies)
- **Joint Research Agendas**

**Measurable**  
scientific, financial & organizational benefits  
for each of the participating institutions



## Not all collections are at the same maturity level

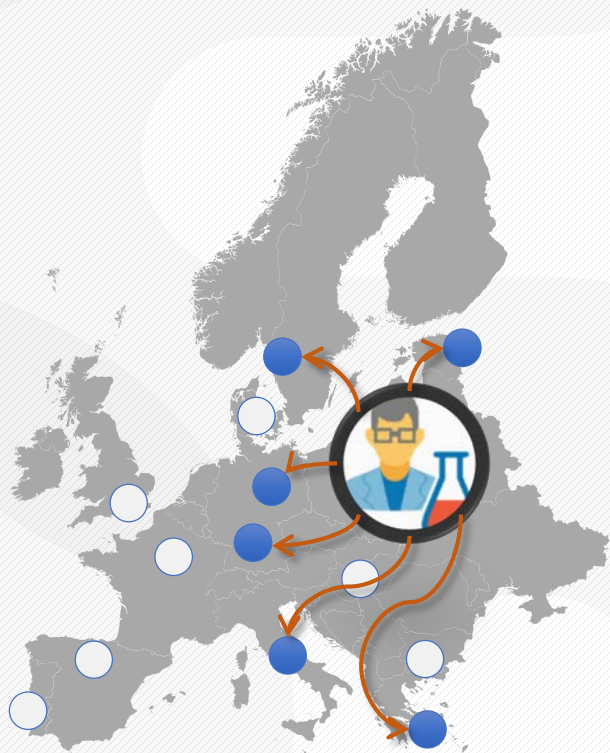
- Difference priorities – digitization levels
- Different funding sources and business models
- Different policies / practices / workflows



# Streamlining access to European collections

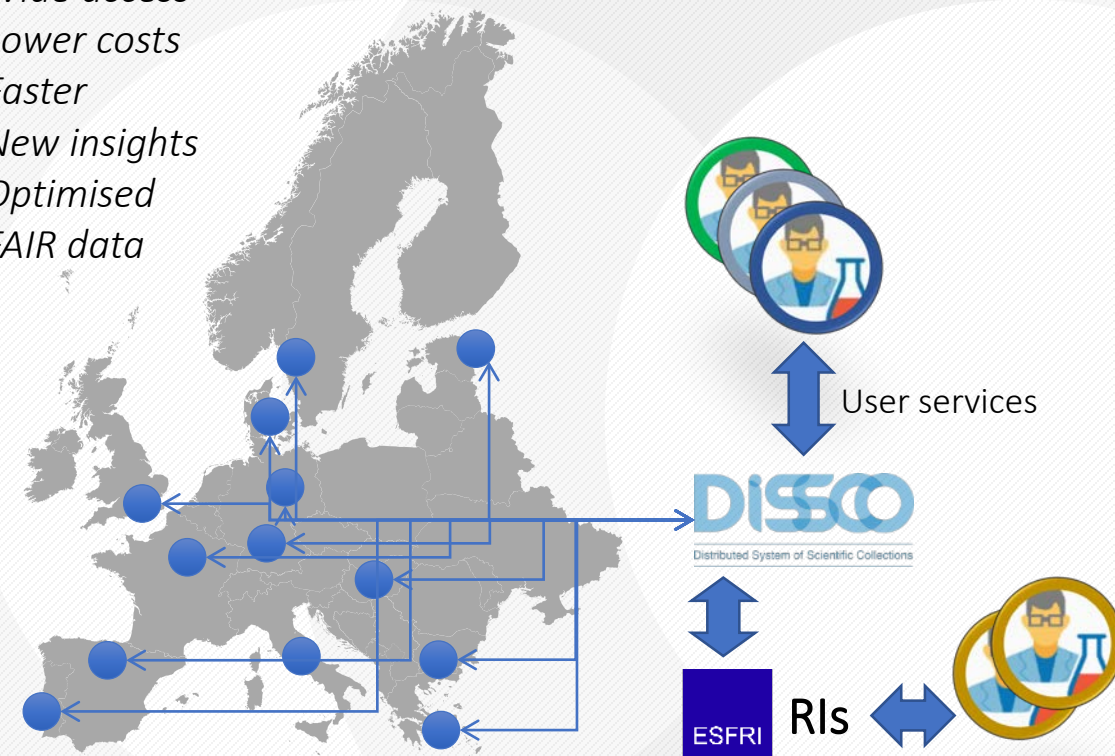
## Current model

*Slow*  
*Expensive*  
*Inefficient*  
*limited*



## Integrated RI model

*Wide access*  
*Lower costs*  
*Faster*  
*New insights*  
*Optimised*  
*FAIR data*

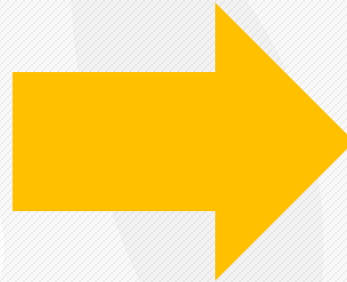


*The first mass scale initiative to re-unite and serve genomic, chemical, geographical, morphological and taxonomic information and link it to collections objects*










# Creating digital curation spaces

## Physical Object



## Digital Surrogate FAIR Digital Object

-  Genomic data
-  Biochemical data
-  Morphological data
-  Geographical data
-  Taxonomic Information
-  Species Interactions data
-  Ecological data



An actionable knowledge unit

# Added value of DiSSCo

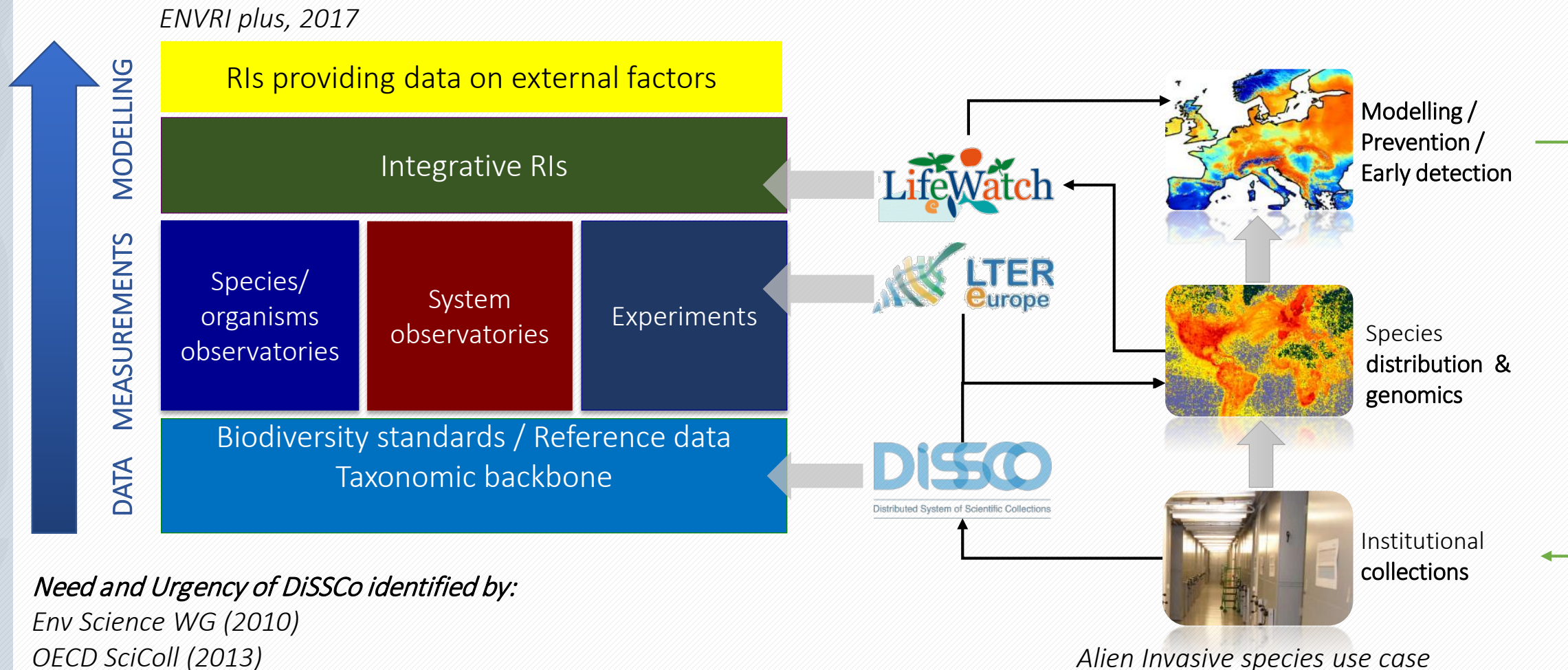


<i>Without DiSSCo</i>	<b>With DiSSCo</b>
<i>Disconnected information sources</i>	<b>Linked and open information</b> with semantic annotation
<i>Slow and fragmented access</i>	<b>Coordinated physical and virtual access</b> through a single entry point
<i>Bio- and geo-diversity data invisible to other RIs</i>	<b>Cross-disciplinarity</b> facilitated through RI systems interoperability
<i>Provenance and quality difficult to ensure</i>	<b>Provenance and quality assurance</b> embedded in services/processes
<i>Big data science questions unresolvable</i>	<b>Bio- and geo-diversity data brought to the big data pool</b>
<i>Institutional based digitisation activities</i>	<b>Coordinated digitisation</b> programmes: One EU collection
<i>Disconnected efforts</i>	<b>Coordinated investments</b> - Economies of Scale





# DiSSCo services to other infrastructures



*Need and Urgency of DiSSCo identified by:*

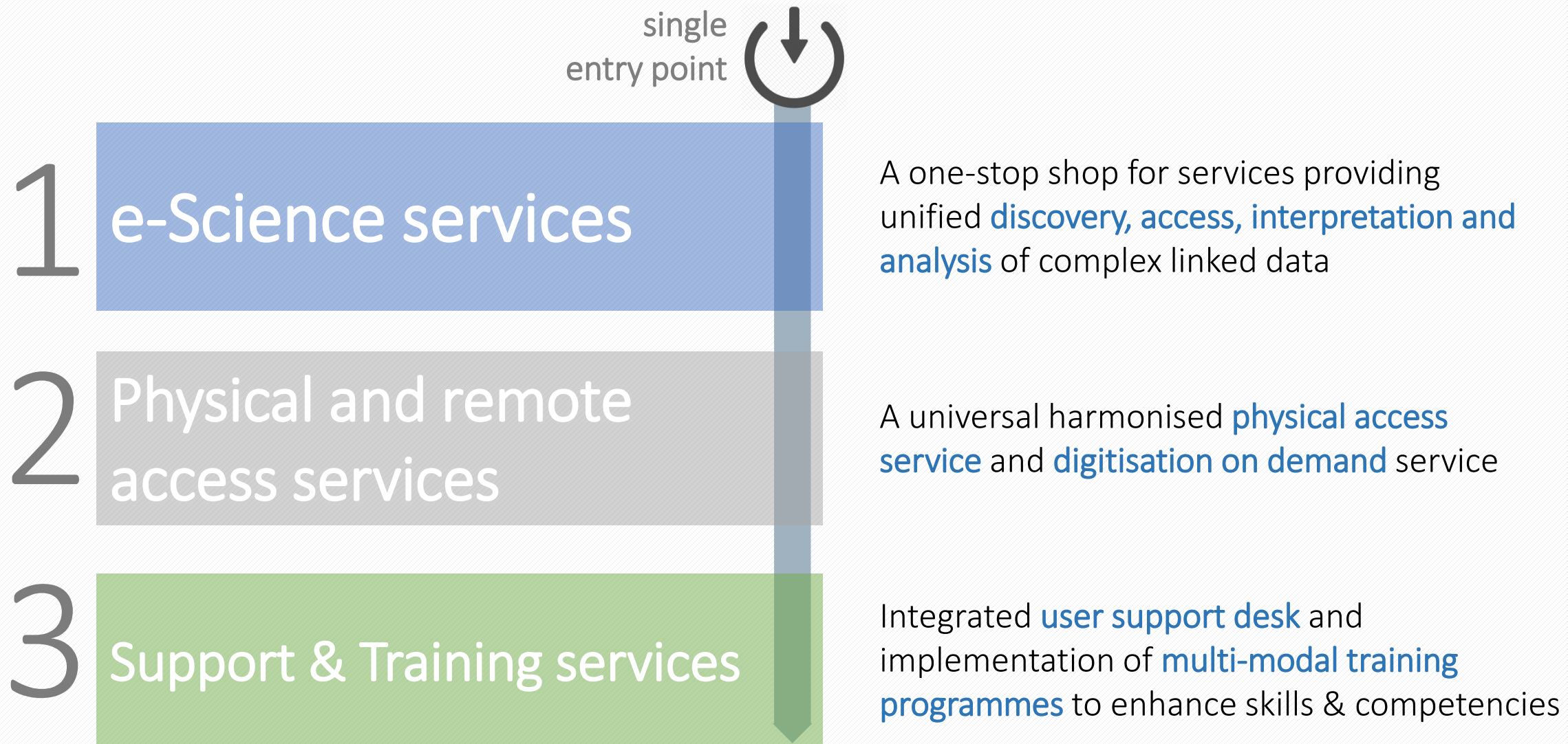
*Env Science WG (2010)*

*OECD SciColl (2013)*

*ESFRI roadmap (2016)*

- DiSSCo delivers services on bio- and geo- diversity reference data to other RIs (especially in the Environmental domain).
- DiSSCo occupies a foundational layer in the Research Infrastructure landscape

# DiSSCo service portfolio by 2025





# First products

European Loans and Visits system (ELViS) –

Streamlines physical and digital access and monitors outputs of access events

[login](#)  
[Forgot your password?](#)

## 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](#)



### Digital Specimen

## Scotopteryx luridata plumbaria (Fabricius, 1775)

### Catalogue Data

id: 20.5000.1025/71a37bc0fb81602b141c  
creationdatetime: 2019-08-06T07:55:11.127Z  
creator: 20.5000.1025/60c6d277a8bd81de7fdd  
midslevel: 2  
Institution code (GRSciColl): NHMUK  
Physical specimen identifier: BMNH(E)1613533

### Basic Data

### Regular Data

### Extended Data

The information is organised in line with the Minimum Information Standard about Digital Specimen (MIDS)



# Simple DiSSCo implementation timeline



Governments political and financial commitments

Optimum Implementation Readiness Level (IRL)

Infrastructure in place

Legal entity in place

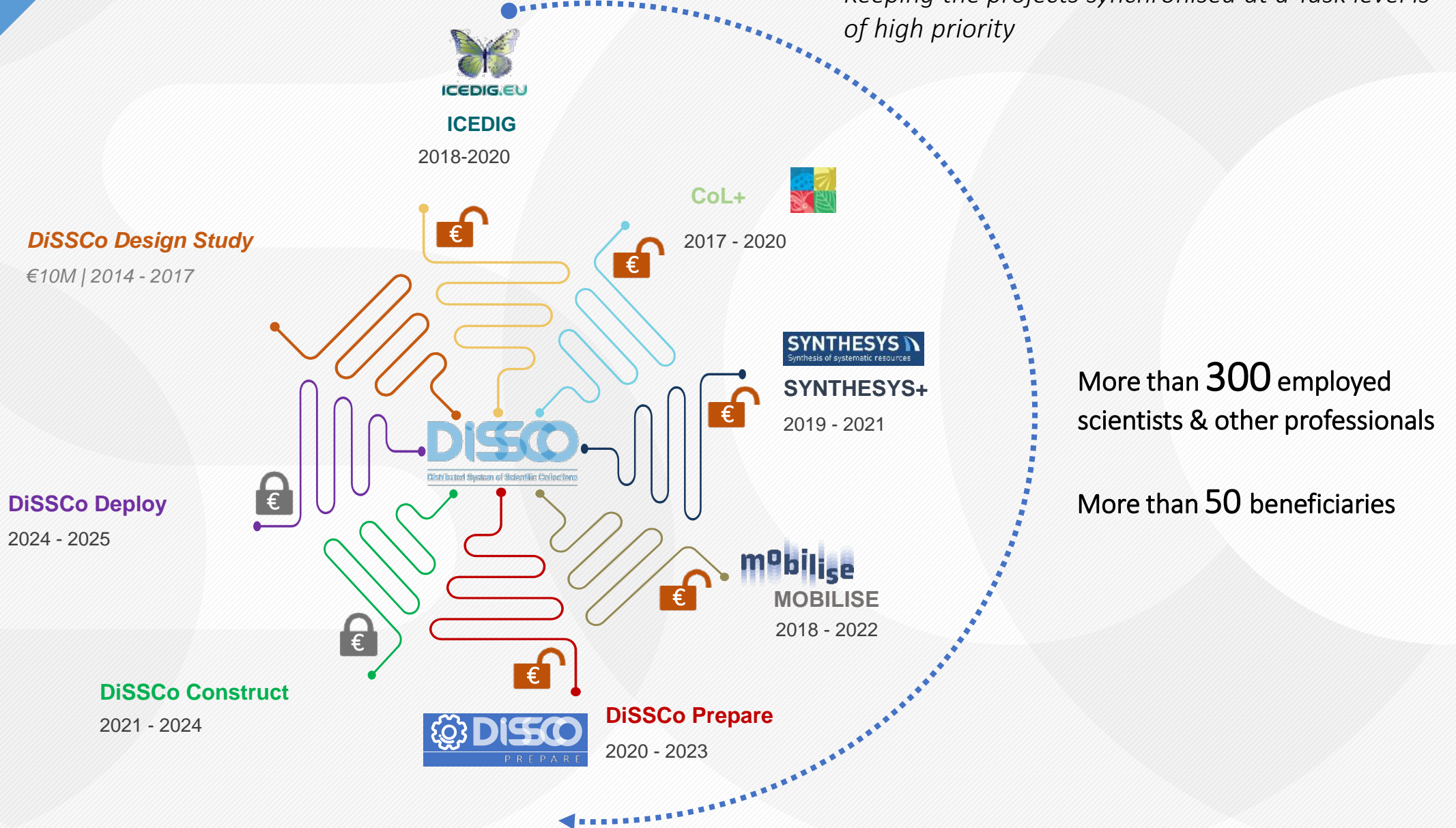
Full Service portfolio



# Preparatory Phase

Preparing through a complex programme

*Keeping the projects synchronised at a Task level is of high priority*





# DiSSCo Funding Framework



Institutional funding



funding without critical dependencies



European Commission



Potential funding without critical dependencies



National funding



Contributing funding

*14 countries already committed*



One world – One collection

Find out more at [www.dissco.eu](http://www.dissco.eu)