DiSSCo PREPARE

WP7 Governance, policy & legal framework

Milestone 7.4 Governance models refinement

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Introduction

The aim of this document is to present the main results of the work done within DiSSCo Prepare to define governance models scenarios for the future legal entity of the DiSSCo RI and the description of a new third model that derives from those discussions and from the analysis of similar structures in well-established ERICs.

The models proposed here are based on previous discussions to update the DiSSCo EU MoU[1] and those governance principles that were deemed essential by the WP7 team to ensure efficiency, consistency and sustainability, during the operational phase of DiSSCo. Principles were discussed during the preparation of the Legal Entity models (T7.2) and further defined during T7.1 meetings[2].

Paired with the internal analysis of what DiSSCo may need in terms of organisational structure, this report offers a thorough analysis of the existing governance models across European research infrastructures, from which DiSSCo may extract best practices and guiding principles.

The analysis of national contribution alternatives was also part of the discussions, as a collaborative effort between WP7 and WP4 (The Business Framework). The work responded to the belief that a better understanding of the funding models would be one of the key elements for the preparation of this document[3].

However, bearing in mind the financial models requires a separate and well-conducted discussion, the team decided not to include them as part of this report.

The work led by Naturalis counts on the support of MNHN, CETAF, NHM, Luomus, and RBINS and takes into consideration, as mentioned above, the experience of consolidated ERICs (BBMRI, EPOS, DARIAH, ELI, CLARIN) and other international and EU initiatives (GBIF, ELIXIR, CETAF), as well as the advice of a legal advisor, X-Officio (in particular Dr. Ohad Graber-Soudry, former Head of Legal at the European Spallation Source-ERIC).

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[1] DiSSCo European MoU.
https://drive.google.com/file/d/13xox2V5euuglySfLX1dcs9gqzIENZDdE/view?usp=sharing
[2] Folder to the T7.1 MoM:
https://drive.google.com/file/d/1R8iP9rcOte8NcHAQcSCIedenXf9jKjWM/view?usp=sharing
[3] WP4 Milestone 4.5 will be subject for a separate consultation early 2022.

The alternative models have been developed on the assumption that DiSSCo will adopt the ERIC legal framework, following the decision taken by the 3rd DiSSCo interim General Assembly ((hereby referred to as iGA)[4] on 10-11 June 2021.

The legal basis supporting the work consists of the Council Regulation (EC) No 723/2009 of 25 June 2009 on the Community legal framework for a European Research Infrastructure Consortium[5] (hereby referred to as "the ERIC Regulation"), and the Practical Guidelines[6] for applicants issued by the Directorate-General for Research and Innovation of the European Commission, as well as publications produced by the ERIC Forum and the Organisation for Economic Co-operation and Development (OECD).

Structure

The report is structured in three main sections:

- Chapter 1 to 6: Overview of DiSSCo as a distributed research infrastructure: aims to identify the framework given by the DiSSCo specificities as a Research Infrastructure and the boundaries established by the ERIC regulation. Both of them, elements the governance's organisation has to respect;
- Chapter 7: Analysis of the key actors engaged in DiSSCo-ERIC governance: to highlight the main stakeholders with functions and responsibilities in governing DiSSCo-ERIC and to open the discussion on different roles and ways of internal organisation;
- Chapter 8: Analysis of governance models for DiSSCo-ERIC

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[4] IGA3 decision AI8: T*he iGA accepts the outcome of the report of the committee and supports the ERIC as the currently accepted model for the further development of the governance structure and related body of legal documents. However, the iGA can reconsider this decision if it becomes evident, through the development of the governance model, that the ERIC framework cannot accommodate the critical governance requirements of the DiSSCo community.*
[5] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:206:0001:0008:EN:PDF
[6] ERIC Guidelines: https://drive.google.com/file/d/1zoyXpnIeiP4gt6_4c3uj9Xv3_JvELuRQ/view?usp=sharing

Definitions

- **'Research Infrastructure'**[7] means facilities, resources and related services that are used by the scientific community to conduct top-level research in their respective fields and covers major scientific equipment or sets of instruments; knowledge-based resources such as collections, archives or structures for scientific information; enabling Information and Communications Technology-based infrastructures such as grid, computing, software and communication, or any other entity of a unique nature essential to achieve excellence in research;
- **'Third country'** means a State that is not a Member State of the European Union;
- **'Associated country'** means a third country which is a party to an international agreement with the European Union, under the terms or on the basis of which it makes a financial contribution to all or part of the Community research, technological development and demonstration programmes;
- **'DiSSCo Stakeholders'** are users and organisations which either have an interest, directly or indirectly, in DiSSCo or have some influence on DiSSCo and its services;
- **'DiSSCo User'** means anyone who uses and /or benefits from DiSSCo services;
- **'DiSSCo Centre of Excellence'**[8] (DCE)- a concept that is still under discussion within DPP - means an institution, national node, service provider node, regional node or transnational group of institutions, with proven excellence in a given domain, providing a specific service at European level to DiSSCo RI users;
- **'DiSSCo National Node'** is one or more national facilities operating in the same country. In the charts, DiSSCo NN is represented as an operational unit.

Methodology used for the preparation of Ms7.4

This chapter aims to describe the methodology followed by the team, identify the key elements of that learning process and provide supporting documentation to explain the rationale behind any information presented in this document.

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[7] Art.2 ERIC regulation.
[8] To be further addressed as part of the Specialisation plan

Task 7.1 contributes to the Organisational Implementation Readiness Level (IRL) of DiSSCo by producing reference material for a ready–to–implement an organisational model for the governance of the future DiSSCo-ERIC.

The work builds upon existing outcomes and current discussions in different DPP work packages concerning the definition of the legal entity framework and common policies (WP7), financial contributions models (WP4), DiSSCo key stakeholders (WP8, DiSSCo aspirations working group) and operation of DiSSCo Funders Forum (WP9), and in future, Stakeholders Forum (WP8/WP9).

In order to assess and recommend the most suitable internal structure and functions for DiSSCo ERIC, the following methodology was followed:

In 2020, T7.1 held three meetings[9] to set up the methodology and first activities as described in the Grant Agreement.

Concerning the organisational structure, Naturalis (task leader) shared a first draft of the scope and methodology (DiSSCo Prepare Task 7.1: Planning & Scoping document v.2)[10]. Based on that document, the team agreed upon the following (December 21, 2020):

- A task force constituted by Naturalis, RBINS, MNHN would initiate the preparatory work to be the basis for further discussions at the WP7 level and other partners from WP4 (T4.3) and WP8 (T8.1 & T8.3). The criteria for the selection was the amount of time devoted to the task. CETAF expressed interest to join and participate in the discussions from the beginning;

- To keep all partners updated on progress, a folder in Google drive was shared with access to all the information. On top of that, the team opened a notebook in Teamwork, to collect the minutes of the meetings and supporting documentation;

- For the preparation of each of the outcomes in T7.1, it was agreed to organise a continuous consultation process with DiSSCo National Nodes. This consultation process is conducted by CETAF as the leading institution of WP8 in DPP;

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[9] T7.1 MoM: https://drive.google.com/file/d/1R8iP9rcOte8NcHAQcSCIedenXf9jKjWM/view?usp=sharing
[10] DiSSCo Prepare Task 7.1: Planning & Scoping document v.2:
https://drive.google.com/file/d/1FGsZPx_Jqbh375u6R6Bg6-nAosMH0X3W/view?usp=sharing

- Outcomes will be also subject to recommendations from the Scientific Advisory Body (hereby referred as to SAB);

- Discussions on each outcome together with results from the consultation processes will be part of the agenda of the Funders Forum (hereby referred as to FF) meetings;
- Key contributions and decisions are expected to take place only at the iGA meetings;

- The methodology and activities remain flexible and adapt to the needs rising during the process to enable proper endorsement of the work by the community, provision of high-level recommendations from the FF and SAB and well-informed discussions at the iGA. To allow that, the T7.1 reorganised their timeline to better align the work with the calendar of meetings of the FF and iGA.

During the DPP AHM1[11] (session on January 18, 2021), the team agreed upon a number of core elements to include in the governance structure. Secondly, the discussion aimed to set up criteria to select and analyse existing governance models in other RIs that would facilitate the definition of DiSSCo governance structure.

On February 4, 2021, the team was extended to include all the WP7 members, including Beneficiaries that do not participate in the task, e.g. Meise Botanic Garden and started a collaboration with T4.3, national contribution models.

Naturalis also hired the services of a legal counselor, X-Officio, to support the work. The criteria for its selection was based on its previous collaboration with T7.2 in the preparation of the analysis of the legal entity models for the future RI and the sound curriculum of the company in advising RIs, mostly ERICs.

On March 4, the team agreed to work on a comparative analysis of existing models. A series of interviews were conducted with well-established ERICs to learn from their experience. Individual interviews were organised with directors or other senior executives representing BBMRI, EPOS, ELI, DARIAH and CLARIN. The list of Q&A can be found here: (*https://docs.google.com/spreadsheets/d/1fj6S4m0A1DApuaI4XZF9yXuGbhArRRVN8777H_I_NU8/edit?usp=sharing*).

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[11] AHM1 Report:
https://drive.google.com/file/d/1DJSVZLGND17lkRK9zQF8f4lsH5qV5ZBT/view?usp=sharing

The exercise provided a sound collection of lessons learned from the experience of people directly involved in the early stages of the ERIC legal entity. The research went on to compare the governance models of other initiatives such as GBIF, CETAF, ELIXIR and EOSC in an attempt to cover other legal frameworks.

After the decision taken during the iGA3 meeting, the team decided to focus on the ERIC legal framework.[12]

The team has developed alternative governance models which have been thoroughly discussed internally (WP7 members) in several meetings. In doing so, the team identified three specificities:

1. the institutional role and the role of CETAF;
2. challenges for the UK to join an ERIC; and
3. the international dimension of DiSSCo ERIC.

The team identified those as key aspects to investigate early in the process. The main concerns were a) to guarantee a meaningful role for institutions and CETAF in the governance of the RI; b) to identify specific challenges British institutions may face when joining an ERIC; and finally, c) to investigate the potential constraints an ERIC might bring in for the development of DiSSCo international dimension. The main results can be found in the T7.1 progress report v.2[13].

While the team did not find specific challenges in the two latest questions, it was clear that the institutional and CETAF roles had to be clearly embedded in the proposed models. Chapter 9 of this document shows different ways to ensure that the role of both actors, is secured and effectively implemented in the governance.

Before summer break (on July 27, 2021) the team approved a series of workshops to focus the discussions on what was specifically needed to finalise the milestone. A total of 5

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[12] IGA3 decision AI8: *The iGA accepts the outcome of the report of the committee and supports the ERIC as the currently accepted model for the further development of the governance structure and related body of legal documents. However, the iGA can reconsider this decision if it becomes evident, through the development of the governance model, that the ERIC framework cannot accommodate critical governance requirements of the DiSSCo community.*
[13] Progress report v.2
https://drive.google.com/file/d/1IKR7ABFWYJ19CmMxOxTW4OAwvZ-bLbGx/view?usp=sharing

workshops[14] were held from September to early December. The workshops focused on in-depth analysis of alternative models, and the role of key stakeholders (DiSSCo Nodes, CETAF, and Other Stakeholders).

In parallel, Task 4.3 on national contributions in cooperation with tT7.1 held a number of workshops and interviews to define possible alternative national contribution models. The objective was to feed the governance models with an overview of the financial implications.

DiSSCo Research Infrastructure

Mission and Vision[15]

The Aspirations Refinement task force, constituted by decision of the iGA during its meeting in July 2021 produced a joint definition of DiSSCo's vision and mission.

The ultimate goal of this exercise was to frame the key values, objectives and rationale in which DiSSCo would develop its entire strategy and strategic plan, as well as the RI's governance, business framework and services provision. The team formulated the following definitions:

Vision

DiSSCo Research Infrastructure states that its vision is to provide *"knowledge and evidence about nature's diversity - available to all"*.

Mission

DiSSCo embraces the mission of *"unleashing the full potential of natural history collections by bringing them together in a distributed, interoperable European infrastructure, making them physically and digitally open, accessible and usable for all forms of research and innovation."*

Bearing that in mind, the team proposes here models that aim to enable the successful implementation of DiSSCo's strategic vision and the programmes that will translate it into tangible results.

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[14] Summary of WS sessions:
https://drive.google.com/file/d/1SXvokRCLFvQ-8hZwiXn1Xg14ITaURIkl/view?usp=sharing
[15] Report of the DiSSCo aspirations refinement working group (to be reviewed during the iGA4 in March 2022)
https://drive.google.com/file/d/1n3-7u_kDKJq6D8MlIcMvS2TY3oSQWFuT/view?usp=sharing

DiSSCo as a distributed RI

DiSSCo RI will be a distributed research infrastructure. The portfolio of scientific programmes and the provision of services will be articulated through a central coordination hub and nodes (as defined in Section 7 of this document).

Mechanisms to jointly design, implement and operate DiSSCo will be developed in accordance with the specific capabilities offered by the distributed RI and mapped on its specialisation plan.

Being a distributed RI, DiSSCo guarantees both the proximity to providers of data and user communities across countries and domains and the alignment with their national priorities. Such a decentralised structure will allow to set up flexible mechanisms to adapt and refine the service provision while ensuring a better understanding of a highly dynamic landscape of end-users Thus, DiSSCo will build its scientific programme and technical development on sound ground, allowing a continuous alignment with its more immediate users and funders during operation. Furthermore, the provision of services may benefit from the existence of Centres of Excellence (specialised nodes or institutions), and actors *in loco* to follow users' experience more closely.

As a distributed RI, DiSSCo will be in the position to establish a wide range of collaborative initiatives with relevant stakeholders, leveraging cooperation at the national level and ensuring a meaningful impact.

Finally, the distribution of expertise and services will lead to an economy of scale. This means that the RI will be able to make informed decisions that guarantee the best possible use of the available resources.

DiSSCo's community

DiSSCo partners represent the main community to grant access to data and expertise, and the creation and provision of services for a wide range of end-users. In the proposal phase and now during the preparatory phase, collection-holding institutions are the main actors in the development of DiSSCo.

The financial and technical commitment of DiSSCo partners is expressed in the European Memorandum of Understanding[16]. Institutional support for the development of DiSSCo is two-fold.

Content-wise, the majority of DiSSCo partners actively participate and lead the work that is described in a number of projects run by and linked to DiSSCo during its preparatory phase (the DiSSCo programme). The objective is to allow DiSSCo to reach the necessary level of maturity in five crucial areas - data, technical, financial, legal and scientific- for its construction and operation.

The outcomes of DiSSCo projects focus on the preparation of feasible alternatives that go through consultations with DiSSCo partners and after that, with the advisory and decision-making bodies in the current phase. Active participation of the DiSSCo community triggers the identification of priorities and ultimate goals, providing an opportunity to discuss them at an early stage.

The support that DiSSCo receives from its community has also a political dimension. At a national level, the institutions focus on understanding the position that the Natural Science Collections (hereafter NSC) need to take within the overall national priorities and funding programs, including those of massive digitisation, to maximise their impact. In doing so, new channels of communication with funding agencies are being established, reaching out to actors beyond those who traditionally support collections in their countries, which encompass research infrastructures, agriculture, environment or industry.

This effort in analysis and communication has allowed institutions to leverage new opportunities that lead to success stories across DiSSCo partners (e.g. Bulgaria, Estonia, France, Denmark, Spain, etc.) and create a propitious environment to open a new narrative about the role of NSC as fundamental in the national research agenda across domains, leading to the creation of pieces of evidence that sustain informed decision-making processes.

Communication already led to the constitution of one of the key bodies in the DiSSCo organisational structure, the Funders Forum Advisory Body (hereby referred to as the FF). The FF (constituted on 9th February 2020) provides high-level recommendations from

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[16] DiSSCo European MoU.
https://drive.google.com/file/d/13xox2V5euuglySfLX1dcs9gqzIENZDdE/view?usp=sharing

partners representing national funding agencies on legal, financial and organisational matters and triggers this new dialogue in the countries that have representation at the moment (Belgium, Italy, Estonia, Portugal, France, United Kingdom, Denmark, Netherlands, Greece, Bulgaria and Slovakia).

The Scientific and technical dimensions

In the context of evaluating the governance models for DiSSCo, it is important to understand how the governance model facilitates decisions making in relation to the key scientific objectives of the infrastructure. Therefore, a short description of the scientific and technical dimensions of DiSSCo is presented here. A more comprehensive analysis of the scientific programmes of DiSSCo is being prepared and will be presented to the community.

DiSSCo Scientific premise

Support for excellent science in the bio- and geo-diversity realm

From the acknowledgement of the above-mentioned constraints and difficulties, the scientific taxonomic community built around NSCs in Europe has made enormous efforts to counterpart the lack of integration and the need for accessing collections to improve biodiversity description, to gain knowledge and to link it further to support analysis, monitoring and modelling for nature preservation. For the last decades, NSCs have joined efforts and resources, forming networks, building large European collaborative projects, and promoting new developments and approaches around their core scientific and public engagement goals. Through networking, shared training, collective projects and initiatives, the NSCs-related landscape has become better defined, the actors better engaged and the challenges more accurately known, with the mobilisation of data (and expertise), anchored on digitisation of the collections, at the core of the common work.

Over the last years, many projects, some funded by the European Commission under its different Framework Programmes, others based on national or regional initiatives, have paved the path towards a consolidated approach of the scientific community's needs and a united vision to follow. Digitisation of natural history collections is the common thread with which to weave a systematic, sustainable, and comprehensive hub of information and services. The scientific community gathered around CETAF promptly understood and jointly became aware of the need to pursue an overarching system to guide the community aspirations, drive the digital transformation that new technologies enable, and allocate the knowledge derived from NSCs with the accuracy, reliability, and sustainability needed. The

development of the digital twins of the physical objects in the NSCs, based on common standards, shared protocols, and interoperable systems, will serve science and society to provide FAIRness and open access to data, and a scaled-up structure for bio- and geodiversity-related information.

DiSSCo responds to the above calls for action by the wider community.

A data infrastructure for the future of collections

Despite recent advances in digitisation and sharing of collections-based data, driven by both institutional and national initiatives, our overall digitisation level of collections remains relatively low. Global data resources that aggregate, analyse, and serve biodiversity data, including GBIF, INSDC, BHL, TreatmentBank, CoL, PESI, GloBI and others, represent successful current investments on the path towards open and data-driven biodiversity science. Still, the collections-derived records that find their way to those aggregators suffer from issues related to their level of completeness and their quality as well as disconnection from the original scientific source, i.e. the vouchered specimen. The systemic absence of linkages between digitised, vouchered specimens and their derived digitised data classes, such as DNA sequences, literature, ecosystem and chemical data, represent major impediments to maximising the impact of NSCs. The matter mandates a different, out-of-the-box, more holistic and coordinated approach to the digitisation, mobilisation and knowledge integration linked to the NSC assets across our global collections.

DiSSCo introduces a framework for a step-change by massively improving the capacity of scientists to discover, access and analyse complex and previously disjointed information deriving from the study of the vast European natural science collections.

The main drivers for the development of a European integrated system of natural science collections include a) the need for more effective and scaled-up access to the data deriving from vouchered specimens, and b) the need for improved provenance, reproducibility and eventually better quality of biodiversity information.

As a research infrastructure (RI), DiSSCo aims to develop end-user services that contribute to issues related to a series of issues linked to scientific quality, capacity and efficiency (Table 1).

What is the issue	How DiSSCo responds
Taxonomic expertise across our local collections is declining	A community curation model is needed that will be able to pull expert resources across locations, transforming institutionally restricted information curation to a higher-value shared community curation model
Digitisation investments are scattered and not coordinated	A pan-European digitisation programme is needed to ensure optimum scientifically-driven digitisation across our European assets
Trust in mobilised digital records is declining because of quality concerns	Re-unification of all data classes derived from the study of collection objects and provide unified access to the digital twins of physical specimens along with extended provenance information
Physical and virtual access is disconnected	An orchestrated multi-modal access programme for European collections
Collections' development is fragmented, and investment decisions are taken based only at institutional or national gaps	Services that allow a birds-eye-view on the taxonomic and geographic gaps in biodiversity and geodiversity surveying and corresponding European wide policies that allow for a pan-European orchestrated collections development programme
Data deriving from the study of vouchered specimens is disconnected	A new concept of the digital specimen is at the core of the data architecture of DiSSCo. The digital specimen is an informationally enhanced and extended digital twin of a physical specimen. A digital specimen acts as a human-readable and machine-actionable knowledge unit that integrates all data deriving from the study of the physical object.
The use of collections in scientific outputs is poorly monitored	Deployment of a unified persistent identification system for digital specimens would further facilitate tracking the usage the track of individual specimens across scientific outputs.

Table 1. Issues related to current limitations that impact scientific quality, capacity and efficiency and the expected contribution of DiSSCo services.

DiSSCo Technical premise

DiSSCo will be predominantly operating as a data-driven infrastructure and will provide e-services to enhance both virtual and physical access to the collections. The data being served will be supplied directly by the institutions. For this, the governance structure needs to take into account the large variety in technical capabilities and different timelines for digital transformation in the institutions. Centralised coordination and negotiation are needed with e.g. collection management software providers to make data provision more efficient. e-Services can be provided both by a DiSSCo central hub and by service providers. Centres of Excellence also play a role in the data infrastructure, in particular in data mobilisation. A governance structure is therefore needed that can govern both the suppliers of data (the institutions providing access to their collection holdings) as well as the service providers.

From a technical point of view, one of the key factors of the success of DiSSCo as a RI will be the establishment of reliable, sustainable and trustworthy e-services. This can be established through both permanent common services and tailor-made services to current and emerging user needs. The services will be provided by nodes through establishing formal agreements (e.g SLAs) and will require monitoring performance of the technical infrastructure. A governance structure will support the services provision with bodies that can advise on user needs and strategic development as well as central coordination that monitors performance and quality of services.

Another important factor is the embedding of the DiSSCo data infrastructure in the landscape of national, European and global service providers for biodiversity and geodiversity data. This requires coordination and collaboration with service providers and infrastructures at both national and international levels.

The Legal Framework

During the first year of the preparatory phase, DiSSCo iGA decided to explore the European Research Infrastructure Consortium (hereafter ERIC) as the potential legal entity model for DiSSCo RI.

Despite the number of options available, the research done under T7.2 in DPP, highlighted the ERIC as a legal model that may respond better to RI needs. In fact, the ERIC was introduced by the EU Council to enable the establishment and operation of a research infrastructure on a non-economic basis[17] by creating an appropriate legal framework that should facilitate their establishment and operation at the level of the European Union involving Member States and other countries.

The ERIC regulation contains a number of provisions that will be part of the discussions to be taken during the upcoming two years. Those include the following:

- Membership of an ERIC must comprise at least three Member States and may include qualified associated countries and third countries other than associated countries as well as specialised intergovernmental organisations;

- The Statutes will determine the governing structure and in which manner those bodies legally represent the ERIC, together with sound budgetary principles for the exercise of its financial responsibility. This means that the ERIC is liable for its debts. In order to allow the members to find appropriate solutions regarding their liability, the option should be given to provide in the Statutes for different liability regimes going above the liability limited to the contributions of the members;

- In order to carry out its tasks in the most efficient way, an ERIC should have a statutory seat, in order to determine the applicable law, within the territory of a member of that ERIC which is a Member State or an associated country. This decision, taken at an early stage of the process for submission, should facilitate

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[17] In order to promote innovation and knowledge and technology transfer, the ERIC should be allowed to carry out some limited economic activities if they are closely related to its principal task and they do not jeopardise its achievement (Preamble ERIC regulation).

enormously the definition of a certain number of provisions, for instance, concerning employment or procurement policies;

- The entities applying for the setting-up of an ERIC (the potential hosting country and at least two other countries) will follow a two-steps application process during which a number of documents are to be agreed upon:

   (a) a request to the Commission to set up the ERIC, (b) the proposed Statutes of the ERIC, (c) a technical and scientific description of the research infrastructure to be established and operated by the ERIC, (d) a declaration by the host Member State recognising the ERIC as an international body in the sense of the Directive 2006/112/EC and as an international organisation in the sense of the Directive 92/12/EEC, as of its setting up.

DiSSCo CSO is currently refining a very preliminary roadmap towards the submission of Step 1 of the application process. The draft will be presented in early 2022 to DiSSCo partners. Milestone 7.4, DiSSCo governance model refinement, is part of this effort. A first step to enable well-informed contributions from DiSSCo partners to trigger the adoption of a final decision on the governing structure and in which manner those bodies legally represent the ERIC. Such a decision will be part of the future Statutes of the DiSSCo ERIC.

Principles of Governance & Assumptions[18]

Principles

The governance model shall:
- be instrumental for the successful operation of DiSSCo distributed research infrastructure and align with its vision, mission, values and objectives;
- ensure that the leadership of the organisation makes well-informed decisions and takes appropriate actions to deliver services in an effective and accountable manner;
- guarantee the transparent and equitable stewardship of resources;
- establish mechanisms to guarantee accountability of the governing bodies;

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[18] Based on DiSSCo European Memorandum of Understanding; DiSSCo conceptual blueprint (ICEDIG project:https://drive.google.com/file/d/1bHLrREqjaOJpbwgv-VhV4J3_jlzx7o9K/view?usp=sharing);
G20/OECD Principles of Corporate Governance 2015:A Critical Assessment of their Operation and Impact. Mathias M Siems and Oscar Alvarez-Macotela* April 2017 Final version published in Journal of Business Law 2017, 310-328

- set up a flexible governing structure able to support the most suitable contribution model at the time;
- enable meaningful participation in the decision-making process of main partners, also including institutions and CETAF;
- assure agile decision processes;
- assure alignment across the organisational structure;
- ensure a long-term and effective stakeholder participation;
- Incentive continuous development of the international and transdisciplinary dimension of DiSSCo RI;
- establish efficient and fluent communication channels with stakeholders to improve services and service provision;
- facilitate alignment with both European and national priorities, during the decision-making processes.

Assumptions

- The ERIC is the legal model for the further development of the governance structure and related body of legal documents;
- DiSSCo will follow a central shared coordination approach. The RI operates centralised services together with the nodes (national and service providers nodes). The central hub retains the authority on operational and policy aspects while other aspects in the provision of services (incl. added-value) are specified by contractual agreements;
- Central Hub takes responsibility for the coordination, administration, and communication functions. It supports the executive bodies;
- DiSSCo positions itself as part of an international endeavour to provide new services, participate in joint programs, and complement other research initiatives;
- DiSSCo's contribution model assumes that data must be "free at the point of use";
- DiSSCo RI's community of strong institutions, some of them with more than centuries of history, makes DiSSCo a specific case in the European Research Area (ERA). This specificity leads to the establishment of mechanisms to allow well-informed discussions and decisions that need to be endorsed by the community to secure its effective endorsement and further implementation.

DiSSCo Stakeholders

The team has differentiated two separate categories, internal and external stakeholders, based on their distinct roles.

Internal Stakeholders (DiSSCo National Nodes & CETAF) are the main partners of DiSSCo and represent the community behind any action carried out towards the readiness of the RI for construction and operation. This category includes facilities operating in the national nodes and the European Consortium of Taxonomic Facilities (CETAF).

Due to the importance of the internal partners, the governance models proposed here identify ways to allow them to participate in the decision-making processes, directly or indirectly. That means potential participation in the General Assembly (acting as representing entity), the executive (the Board of Directors, in Model 2) and/or the advisory level (the Nodes Committee). The internal partners constitute the basis for the DiSSCo Nodes and the DiSSCo Nodes Committee.

External Stakeholders (Other Stakeholders) include a vast number of potential partners to cooperate with to facilitate the creation, implementation and update of a wide array of services across organisations and research domains. Furthermore, it includes those who use and benefit from services, i.e. other DiSSCo end-users.
This category includes Research Infrastructures, user communities from other domains, international biodiversity-related initiatives, policy-advisory bodies and industry.

DiSSCo stakeholders will be represented in the organisational structure through the Stakeholders Forum advisory body (hereby referred to as SF). It will be constituted by representatives from DiSSCo partners in the creation and provision of services and will represent the user communities' needs outside the DiSSCo partnership (internal stakeholders). Furthermore, the SF will provide feedback on the scientific strategy and other components of the work plan.

Institutional relations

Luomus and CETAF, as partners participating in T7.1, have run a workshop to specifically tackle the participation of institutions and the community represented by CETAF in the governing bodies of DiSSCo. Due to the different elements integrated in the same workshop, it was split into two sessions, one taking place on November 22 and the second, on December 10, 2021. In the first session, examples of similar initiatives were presented, namely from ELIXIR (Susanna Repo, Head of Operations at ELIXIR) and GBIF (Tim Hirsch, Deputy Director of GBIF), to demonstrate how the articulation of nodes in distributed Research Infrastructure intends to give due response to the RI needs, the functions and responsibilities of the diversity of actors involved in the operation of the infrastructure and the delivery of its portfolio of services. Partners to 7.1 participated in discussions that have ended with shared definitions that drive the participation of institutions and CETAF (the organization representing the community of institutions) in a research infrastructure.

The institutions participating in DiSSCo are the facilities that host, preserve and curate NSC. They conduct research on top of the collections and extract data and produce knowledge. A facility[19] typically acts as a provider of services to DiSSCo, including e.g. providing natural science data to the research infrastructure, and/or a user of the services provided by the RI. What has been largely discussed and agreed upon, is that in order to provide services to DiSSCo, a facility needs to be a legally established entity.

The owners of the NSCs stand also as pillars for the implementation of the DiSSCo work programme. To operate in a consistent, coherent and also inclusive manner at a national level, institutions are to be gathered around the national node. A DiSSCo National Node (NN) is one or more national facilities operating in the same country.

The National Nodes are part of the DiSSCo research infrastructure and not necessarily of the DiSSCo ERIC. With this definition, collection-holding institutions are included but equally other entities that may not host NSC but are directly linked to provision of either bio- and geodiversity data and/or services built on top of that data, e.g. ecological institutes of biodiversity centres with direct linkage to the museum, botanic garden, or university that host the NSC. It will be upon the facilities operating in the same country to collaborate, coordinate themselves, and finally agree on shared operational bases in regard to DiSSCo. The

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[19] DiSSCo facility, an institution, member of a DiSSCo National Node, providing services.

inclusion of non-collections holding institutions in the national node may be dictated by national strategies coming e.g. from funding agencies or research roadmaps.

The NN should preferably have a defined structure with a collaborative agreement among the node members. However, the way the nodes organise themselves is an independent decision taken by the node members and can span from a very well fixed structure to a loose basic conceptual agreement.

Despite the format of its own internal governing format, a National Node has to:
- designate a Representing Organisation of the National Node (RONN);\
- delegate the RONN to represent the NN and to participate as a member of Nodes Committee (NC); and
- give consent to the RONN to act fully on behalf of the NN as regards to the DiSSCo governance decision-making processes.

From the above, the RONN stands as a pivotal component of the governance model of DiSSCo. The Representing Organisation of the National Node is the legal entity that has authority to form legal agreements with DiSSCo-ERIC on behalf of the National Node facilities. Moreover, the RONN represents the NN in the Nodes Committee (NC).

The typical functions of NN may include:
- coordinate a community of facilities at national level;
- channel information and actions within the National Node;
- promote and support the mobilisation of natural collections data;
- provide support to the development of DiSSCo services;
- facilitate participation and access of the facilities to DiSSCo services;
- encourage the participation of new facilities into the node;
- participate through RONN in the governance of DiSSCo RI as a member of Nodes Committee (NC); and
- provide services to DiSSCo.

The direct participation of CETAF in the Nodes Committee is secured by identifying the organisation as a service provider that constitutes a Node in itself. Thus, Service Provider Nodes (SPN) and RONNS are equal members at the NC. The SPN, like CETAF, will become

a direct member of the NC through a formal agreement with DiSSCo ERIC, in similar conditions as it would be for a national node..

A facility or a National Node may provide services at the national level or directly at the international level on behalf of DiSSCo. To regulate the operations concerning DiSSCo services through formal agreements, the facility should be a legal entity or act through the appointed RONN.

A facility, a National Node or a Service Provider Node (as it will be defined below), may be able to become a DiSSCo Centre of Excellence (DCE) specialised in one or more services or other tasks and disseminating information on the same.

The establishment of regional/thematic Service Provider Nodes is also envisioned to have content or geographical specialised scope.

The privilege to establish a National Node is not only limited to the DiSSCo ERIC member (Partner) countries. On the contrary, non-partner countries are also invited to do it.

To finalise the sequence of involvement in DiSSCo of both institutions (through the national node represented by the RONN) and CETAF (as service provider node), it is important to underline that both form part of the Nodes Committee on equal terms. The Nodes Committee (NC) is a body formed by the RONNs and Service Provider Nodes (SPN). It will act as an advisory body to the executive bodies of the DiSSCo RI.
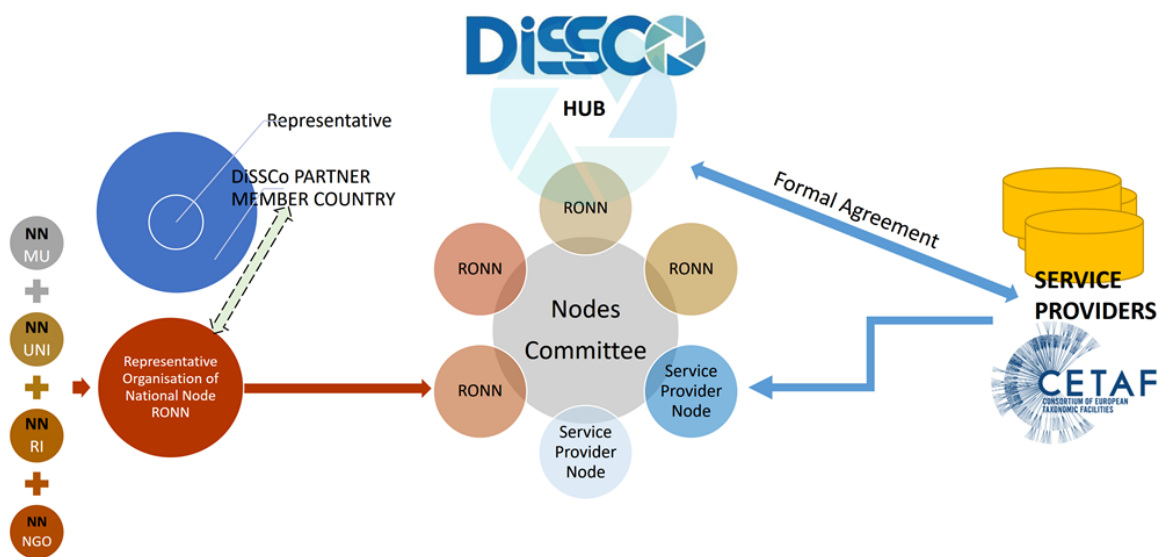
Fig. 1 Representation of the Institutional and CETAF participation in the Nodes Committee

User Community

Users are anyone who uses and /or benefits from DiSSCo services. Examples include curators, researchers, collection managers, citizen scientists, educators, policy-makers and industrial users. They can be internal (institutions contributing directly to operations and CETAF) or external to DiSSCo.

Direct users are most likely to be relevant to DiSSCo governance, however, there may also be indirect users who benefit e.g. from the access, data or outcomes provided via DiSSCo services - these are unlikely to be directly represented in DiSSCo governance but may be relevant for instance to future surveys of DiSSCo impact.

User should be recognised as a role, which is not necessarily the only relationship of a certain organisation or individual to DiSSCo. For example, industrial (external to DiSSCo) stakeholders may sometimes be users and sometimes suppliers (e.g. with technical solutions); and curators may both contribute to DiSSCo as providers of data and be users of DiSSCo data or services. Governance for DiSSCo will need to provide appropriate

representation of the user role and of other roles and consider what if any forms of separation are necessary where individuals or organisations play multiple roles.

Other Stakeholders

The Distributed System of Scientific Collections (DiSSCo) will operate within a complex landscape, in which successful collaboration with stakeholders of different kinds will be an essential element in implementing DiSSCo's mission and achieving strategic goals. Stakeholders can be relevant to DiSSCo governance in a variety of ways and roles, for example as users, suppliers, partners and peers. Short descriptions of key stakeholder groups, and of their relevance to DiSSCo governance, are set out below. DiSSCo Prepare Work Package 8 discusses the engagement of these stakeholders in greater detail, including for example DiSSCo's position in the landscape of European and global strategic research infrastructures (Figure X).

DiSSCo's users reach a spectrum of users beyond research communities and individual researchers across domains. A broad definition may also include users, providers and stakeholders engaged in the development and use of virtual research environments (e.g LifeWatch); aggregators of taxonomic/biodiversity data (e.g. GBIF, EoL) and Indexing agents (e.g. CoL, IPNI, ZooBank); other data-driven research infrastructures at EU and international level; education organisations, industry and citizen science organisations or projects.

DiSSCo's services are designed on the basis of user stories and the prioritization of user needs to be provided by the scientific community and collections-holding institutions. On top of that, services are developed in an international context where existing cooperation links communities of users across domains, increasing complexity but also enriching the final outcome. The targeted user of DiSSCo, therefore, is enlarging as DiSSCo becomes a key actor in developing cross-cutting services and tools in the pan-European arena.

DiSSCo services aim to support access to (physical and digital) collections and expertise, enabling massive digitisation and providing ways to interpret, curate, annotate and use the information of Digital Extended Specimens according to FAIR principles. To achieve this successfully, DiSSCo needs to prioritise partners to co-design, produce and extensively implement such services. Those stakeholders are key for the operation of the RI, that fall under four main categories, namely other research infrastructures, international initiatives, policy advisory bodies and industrial and commercial stakeholders.

Cooperation will be based on service level agreements (SLAs) and other contractual agreements that may define a wide array of collaborations and services provisions.

Research Infrastructures

These are pan-European facilities that provide facilities, resources and services for research communities to conduct research and foster innovation. They can be used beyond research e.g. for education, public services, industry and policy makers. They include both equipment and knowledge-based resources (such as collections) and enabling infrastructures such as software and can be single-sited or distributed.

Some research infrastructures have direct overlap with DiSSCo's research agenda and functions e.g. in relation to taxonomy and organisms, and some are of interest in relation to the broader field of open data (e.g. EOSC). Many research infrastructures can or have supplied information and best practice to support DiSSCo in this preparatory phase, for example sharing details of their own governance models. Details of DiSSCo's existing interactions with key research infrastructures are available in DPP MS8.6[20], with the stakeholder map from this work shown in Figure 2. Organisations (research infrastructures or the other initiatives mentioned below) classified as 'collaborate' or 'involve/consult' in MS8.6 are most likely to be relevant for direct involvement in DiSSCo Governance.

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[20] French, L., *et al*. (2021) Identifying Indicators for Alignment: https://drive.google.com/file/d/1YYVvzkwnVsQ790-IblQUTHW-gJxZKGAV/view?usp=sharing
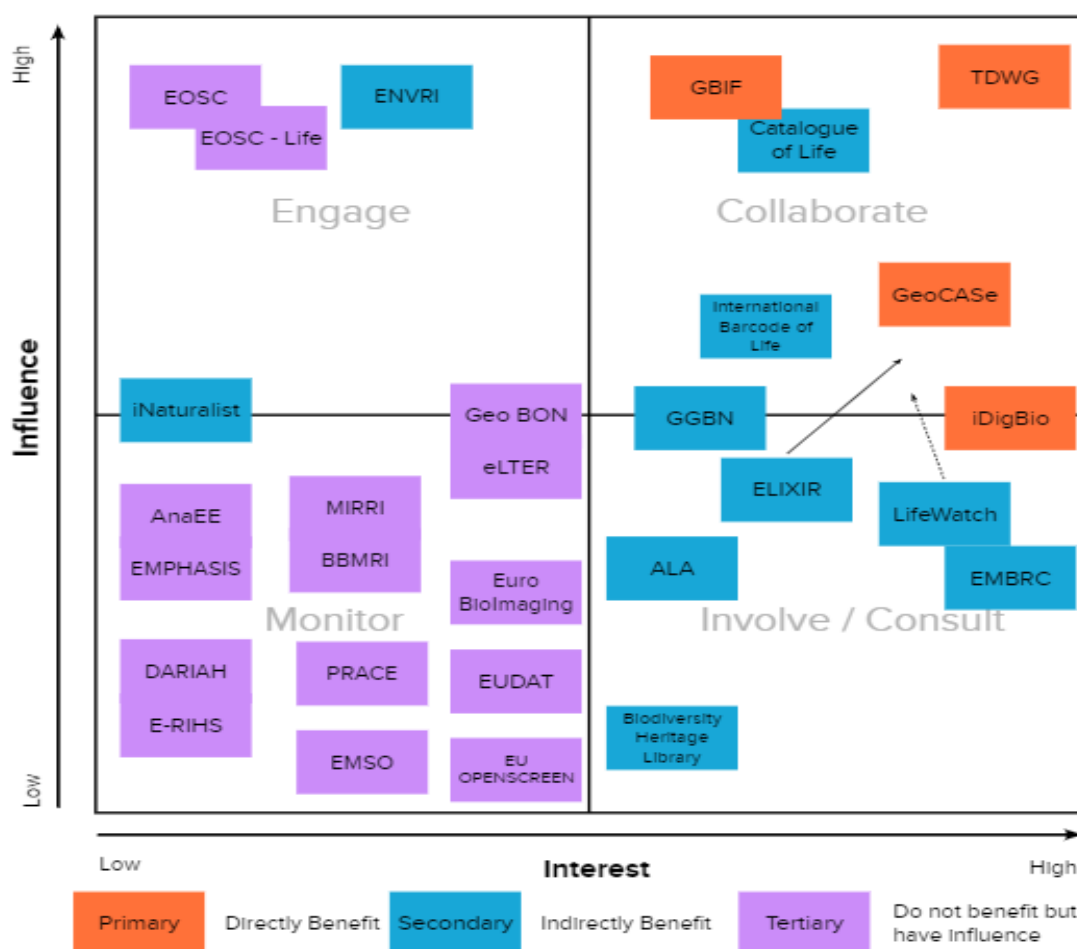
Figure 2: Example of DiSSCo Stakeholder Map from WP8, showing research infrastructure stakeholders. Stakeholders were classified based on their level of influence and interest (indicated by the position on the map), and whether they were primary, secondary or tertiary stakeholders (indicated by colour). The arrows for ELIXIR and LifeWatch indicate these infrastructures are considered likely to have more influence in future.

The ESFRI roadmap 2021 highlights the role of RIs as main actors in the development of policies relevant to society and oriented to improve the European Research Area (ERA). [21]

Other International Biodiversity Related Initiatives

As well as the pan-European Research Infrastructures and the DiSSCo node organisations, there are other infrastructures, organisations, networks and associations developed by

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[21] ESFRI Roadmap 2021 Launch Event (7 December 2021) https://www.youtube.com/c/ESFRI-EU/

partners worldwide within the biodiversity and environmental research landscape. A glossary of key infrastructures is available in DPP MS8.6.

Those relevant to DiSSCo governance may be partners of DiSSCo; organisations and networks in which DiSSCo makes a direct contribution; and/or initiatives where DiSSCo expects to be a user of or otherwise benefit from the outcomes. Examples of these other initiatives include Biodiversity Information Standards (TDWG), which develops standards for the recording and exchange of data about organisms that are central to how data sharing through DiSSCo will operate; The Global Biodiversity Information Facility (GBIF), the major aggregator of information about where and when species have been recorded and a DiSSCo partner; and the Fair Digital Object initiative (Go_FAIR) which for example coordinates training in FAIR data principles and their use.

Policy Advisory Bodies

Policy Advisory Bodies are organisations providing evidence-based analysis to governments and policy-makers at EU and international level with a focus on environment, climate, bio/geodiversity and other DiSSCo-related matters.

Societal challenges demand mechanisms to transform how society and the economy behave through well-informed decision-making processes which lead to new regulations and funding programmes, among other achievements. Policy-advisory bodies at governmental and non-governmental levels are part of DiSSCo's target stakeholders as the main vehicle to generate real impact and put collections' data and expertise at the centre of an effective change.

One of the key actors in that domain is the European Environment Agency (EEA). The EEA is an independent information source on the environment in Europe, and aims to support a transition to a sustainable society and be a lead organisation for environmental knowledge sharing and capacity building. It coordinates the European Environment Information and Observation Network (Eionet), which includes seven European Topic Centres (ETCs). Each ETC leads on a specific environmental topics, which includes Biological Diversity and Climate Change Impacts, Vulnerability and Adaptation.

European environmental policies are driven by the EU Biodiversity Strategy 2030[22], which recommended the establishment of a Knowledge Centre for Biodiversity in cooperation with the EEA. DiSSCo should ensure the service portfolio is interoperable with services and data portals provided by the EEA, and that data from DiSSCo e-services are able to address future demands of policy advisors including the EEA[23].

Industrial and Commercial Stakeholders

Industrial and Commercial Stakeholders may be relevant as users or suppliers of elements of the DiSSCo RI services or collaborate as partners with DiSSCo RI within a specific programme. They could also include individuals or organisations who don't see themselves as DiSSCo stakeholders or at least are not active partners or users, but from whom DiSSCo want to seek expertise or informal advice e.g. an overview of an industry or a sphere of technical development, to inform horizon scanning.

The role of these stakeholders in DiSSCo governance is likely to be driven by which of these relationships they fall into - i.e. whether their interaction with DiSSCo falls within procurement processes; processes to represent users; or partner engagement and governance. Whether these stakeholders are relevant to e.g. a stakeholder advisory board is likely to be highly contingent on what role they play at a given point in time.

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[22] European Commission (2020) EU Biodiversity Strategy for 2030, Bringing nature back into our lives
[23] Raes *et al.* (2020) White paper on the alignment and interoperability between the Distributed System of Scientific Collections (DiSSCo) and EU infrastructures - The case of the European Environment Agency (EEA). Research Ideas and Outcomes 6: e62361. https://doi.org/10.3897/rio.6.e62361

Governance structure and functions

Following the decision to establish an ERIC as the legal entity for DiSSCo there is a need to work towards the definition of a suitable governance/internal structure that will enable meaningful participation and involvement in the decision-making process, both at the advisory and implementation levels.

Nodes and individual organisations, as part of the bigger endeavour, the DISSCo Research Infrastructure, willing to contribute should have various opportunities to be part of the governance model of the DiSSCo legal entity.

The governance structure of an ERIC is composed of a set of bodies, rules and procedures for making decisions, for carrying out administrative, financial and managerial tasks, and for executing the scientific work programme, including managing relations with external users. The ERIC

Ideally, the governance structure of the DiSSCo ERIC should be characterised by simplicity, flexibility and transparency, so as to facilitate efficient operation. It should also reflect the fundamental values of DiSSCo, with a simple communication structure, and an emphasis on scientific collaboration rather than bureaucratic authority.

Important is to clearly define the responsibilities and boundaries between the different functions, in terms of composition, reporting lines, responsibilities and authorities. This is because the interests of the relevant institutions involved (and the individuals representing them) may differ and at times, may lead to tensions during the construction and operational phases. For the same reason, it is advantageous, to the extent possible, to have a simple governance structure by design, if possible, including mechanisms for dealing with such tensions.

A typical governance structure of an ERIC includes the following bodies:

- A General Assembly: is the highest governing body representing the collective interests of the member countries and is the ultimate decision-making body. It defines the strategic direction of the DiSSCo ERIC and sets the budget. The General

Assembly can have several categories of membership, including International Organisations, with differing rights and responsibilities.

- A Director-General (as in model 1 below) or a Board of Directors (as in model 2 below) is the executive level, in charge of implementing the decisions of the General Assembly and is responsible for the execution of the work programme. The Director-General (or the Board of Directors) should have the authority to make certain independent decisions within limits set by the General Assembly and to promote the interests of DiSSCo ERIC without seeking advance approval from the General Assembly.

- A central hub is part of the executive management of the research infrastructure, managed by the Director-General (as in model 1 below) or by the CEO (as in model 2 below) with the support of a secretariat, in charge of operating the research infrastructure. In some cases (as in Model 3 below) there is an executive board (or executive committee) which forms part of the executive management of the research infrastructure, in support of the Director-General. The central hub works closely with and under the supervision of the Director-General (or CEO) to fulfill scientific and administrative responsibilities. The staff at the central hub can provide services such as training, communication, accounting, administrative and evaluation of requests for access to the infrastructure, management of scientific calls and projects.

- Advisory committees: All of the existing ERICs have at least one or two advisory boards (and usually the possibility in the Statutes of establishing additional advisory boards), that deliver information and advice to the General Assembly and to the Director-General. These advisory boards can be scientific, administrative, or financial and are composed of persons external to the ERIC. In the case of distributed ERICs, a Nodes Committee (or similar) is established as well in order to provide a fora to the heads of the various nodes involved in the research infrastructure.

Analysis of the governance alternatives and functions

The analysis conducted suggests that there are two main forms of governance models which are suitable for DiSSCo-ERIC. Each of them takes into consideration DiSSCo specificities, in particular, emphasis is placed on providing sufficient possibilities for participating institutions as well as CETAF to have an influential role in the decision making process of DiSSCo ERIC. During the series of workshops conducted, each model was analysed in detail and a

description of responsibilities and functions for each component in the internal structure was developed, including reporting lines and roles definition.

Important to note, that during the discussions and workshops with the WP7 partners, a hybrid, third model, has emerged and it will be presented below as well. It was suggested by the legal counselor that this third (hybrid) model is the governance model that may accommodate better DiSSCo ERIC specifics. Each of the models is presented below.

DiSSCo Governance Model 1
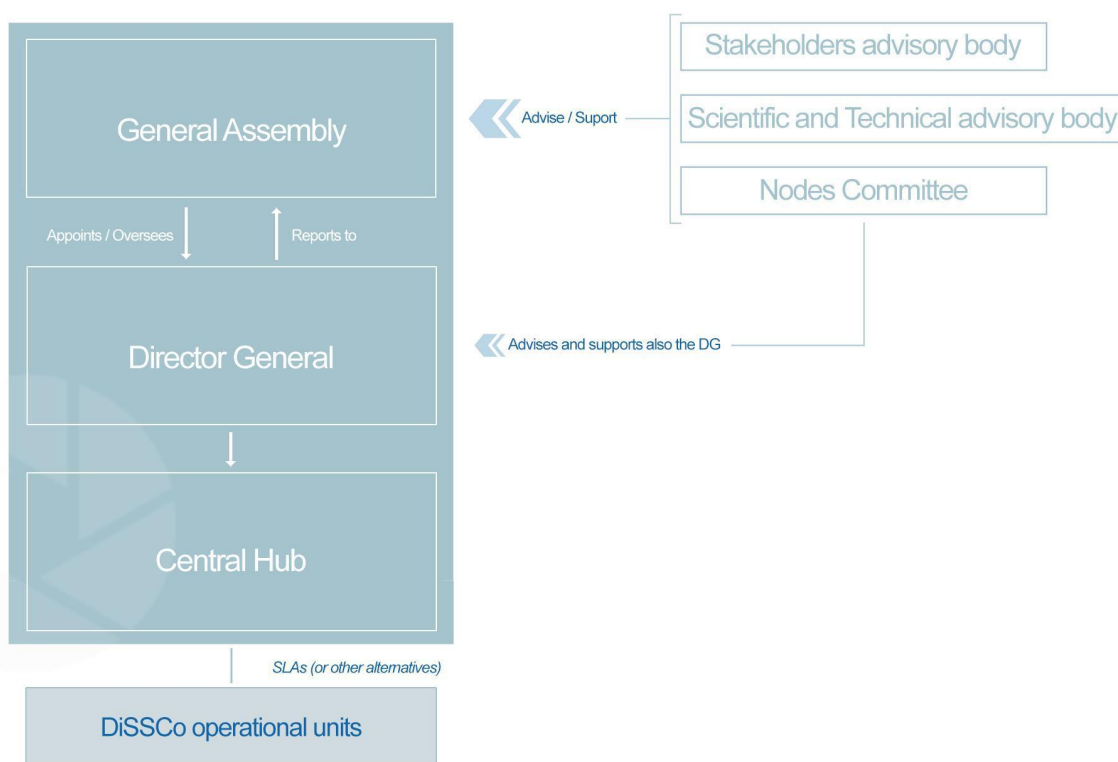
Model 1 is characterised by a two-layer internal structure: the General Assembly and a Director-General. Institutions' involvement is done mainly through their participation in the Nodes Committee (in addition to the possibility to be appointed as a representing entity in the GA by the relevant member). Model 1 creates direct links between the Nodes Committee to the General Assembly and between the Nodes Committee to the Director-General, but the Nodes Committee's role remains advisory.

In this model, the Director-General is the executive body of the DiSSCo ERIC, in charge of implementing the decisions of the General Assembly, supported by the Central Hub to operate the research infrastructure. The various advisory committees provide advice to the General Assembly, however, the Nodes Committee also works closely with the Director-General and it is expected that it will be consulted on a regular basis. This is for example the case in Elixir, as presented during the 3rd Workshop on Governance Model on 27 November 2021. Below is a description of the internal structure in model 1:

General Assembly

Composition
- Representatives of the ERIC's Members and Observers

Responsibility
- Responsible for the overall strategic direction of the research infrastructure
- Oversees the implementation of the DiSSCo programs against pre-defined objectives

Authority
- Approve the strategy and strategic plan
- Approve the work programme
- Decide on amendments to the ERIC statutes and implementing rules
- Approve the method for calculating and level of members' contributions
- Approve admission of new members and observers
- Appoint and dismiss the Director-General
- Appoint members of the advisory bodies and establish additional advisory bodies
- Adopt implementing rules
- Adopt the annual budget & annual activity report
- Approve the annual accounts audit report
- Wind-up the DiSSCO ERIC
- Decide on any other matter that is necessary to fulfill the task of DiSSCo ERIC

Director-General

Composition
- An individual person appointed by the GA

Reports to
- The General Assembly

Responsibility

- The legal representative of the DiSSCo ERIC

- Responsible for the implementation of the decisions by the GA

- Consult the Nodes Committee in the process of preparing annual work programs

Authority

- Carry out the day-to-day management of the DiSSCo ERIC following the GA directions and decisions

- Submit an annual activity report to the General Assembly after consultation with the Nodes Committee

- Submit the annual report to the European Commission

- Manage the Central Hub

- Prepare DiSSCo work and financial plan for approval by the GA

- Represent DiSSCo at national and international fora

- Any other task as may be required by the GA

Nodes Committee

Composition

- Representing Organisation of the National Nodes (RONNs) of the DiSSCo distributed facilities and Service Provider Nodes (SPNs), e.g. CETAF, that have a formal agreement with DiSSCo ERIC

Reports to

- The General Assembly / supports and advise the Director-General

Responsibility

- Advise the GA and the DG in relation to services provision

- Collect and consolidate the views of the [participating nodes] with a view to formulating relevant recommendations

- Formulates specific recommendations based on feedback provided by Service Provider and National Nodes

- Provide advice on DiSSCo's annual work program

Authority

- Ensure alignment of the policies implemented in the distributed infrastructure.

- Ensure consistency and coherency of the activities carried out at the DiSSCo distributed research infrastructure

- Contribute to and advise the General Assembly and support the Director-General in relation to the preparation of the work program and the scientific strategy activities of the nodes

- Advise on national priorities and trends
- Advise on user needs and new user communities at national level
- Additional responsibilities, such as working with the Director-General in relation to certain activities relevant to the nodes

Scientific & Technical Advisory body

Composition
- Independent experts selected on a worldwide basis, without a requirement to be based in a member or observer country

Reports to
- The General Assembly

Responsibility
- Provide advice on the scientific strategy of DiSSCo

Authority
- Advise the General Assembly on the matters of scientific, technical, and ethical nature of the DiSSCo activities
- Evaluate the scientific, technical, and ethical activities of DiSSCo ERIC and report to the General Assembly on an annual basis

Stakeholders Forum

Composition
- Representatives from DiSSCo partners in the creation and provision of services and end-user communities

Reports to
- The General Assembly

Responsibility
- Represent the user community's needs and provide feedback on the scientific strategy and elements of the workplan

Authority
- Advise on new services needs and joint service creation
- Evaluate the level of alignment of DiSSCo RI services with user's needs and the new user communities
- Monitor joint programs and formulate new collaboration.
- Advise on strategic partnership, also globally

DiSSCo Governance Model 2
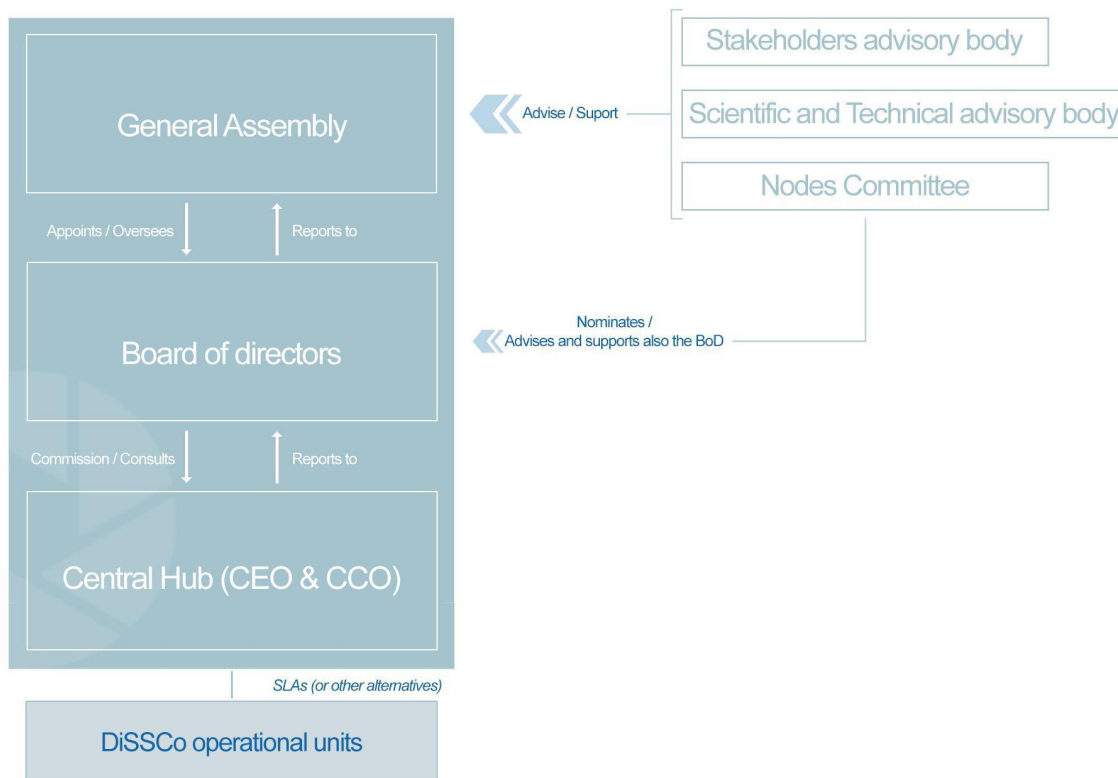
Model 2 is characterised by a three-layer internal structure: the General Assembly, the Board of Directors and the Chief Executive Officer (CEO). In this model, the General Assembly remains the highest governing body (representing the collective interests of the member countries), but the executive body of DiSSCo ERIC is the Board of Directors which is composed of the CEO together with a number of representatives of the nodes nominated by the Nodes Committee. The Nodes Committee remains as an advisory committee but it nominates the members of the Board of Directors (out of the RONNs) to be appointed by the General Assembly. There is a possibility for a permanent seat for CETAF in the Board of Directors. The CEO does not have the freedom to make certain independent decisions within limits set by the General Assembly. Instead, it implements the decisions of the Board of Directors and acts on their behalf. It must seek their approval in advance for certain actions that exceed the boundaries of his or her instructions. Below is a description of the internal structure in model 2:

General Assembly

Composition
- Representatives of the ERIC's Members and Observers

<u>Responsibility</u>
- Responsible for the overall strategic direction

<u>Authority</u>
- Approve the strategy and strategic plan
- Approve the work programme
- Decide on the amendment of the ERIC statutes and by-laws
- Approve the method for calculating and level of members' contributions
- Approve admission of new members and observers
- Appoint and dismiss members of the Board of Directors and the CEO
- Appoint members of the advisory bodies & establish additional advisory bodies.
- Adopt implementing rules
- Adopt the annual budget & annual activity report
- Approve the annual accounts audit report
- Wind-up the DiSSCO ERIC
- Decide on any other matter that is necessary to fulfil the task of DiSSCo ERIC

Board of Directors

<u>Composition</u>
- [4-6] representatives from the DiSSCo facilities, the CEO (as Chair), and an option for a permanent position (e.g., CETAF)

<u>Reports to</u>
- The General Assembly

<u>Responsibility</u>
- Responsible for the implementation of the decisions by the General Assembly in accordance with the Statutes and applicable law
- Oversees the RI operation and is responsible for the implementation of DiSSCo programs
- Consult and implement the recommendations of the Nodes Committee while remaining loyal to the interests of the ERIC and the instructions of the General Assembly

<u>Authority</u>
- Responsible for the smooth operation of DiSSCo following the GA directions and decisions
- Responsible for the development of the plan for achieving the strategic objectives, and work plan to implement the decisions of the GA

- Submit an annual activity report to the GA after consultation with the advisory committees
- Prepare the DiSSCo strategy and financial plans for approval by the GA
- Represent DiSSCo ERIC at national and international fora
- Guarantee communication and harmonised implementation of programs with the DiSSCo nodes
- Delegates responsibility for the day-to-day management of the ERIC to the CEO

CEO

Composition
- An individual person appointed by the GA

Reports to
- The Board of Directors

Responsibility
- The legal representative of DiSSCo ERIC
- Day-to-day management of the DiSSCo ERIC, implementing the decisions of the Board of Directors and monitoring of DiSSCo programs

Authority
- Manages the Central Hub
- Implements the decisions of the BoD
- Advises the BoD on operational and strategic issues
- Formulates policies and planning recommendations to the BoD
- Represents the DiSSCo ERIC, advocates for and promotes the RI
- Submit the annual report to the European Commission

Nodes Committee

Composition
- Representing Organisation of the National Nodes (RONNs) of the DiSSCo distributed facilities and Service Provider Nodes (SPNs), e.g. CETAF, that have a formal agreement with DiSSCo ERIC

Reports to
- The General Assembly / supports and advise the Board of Directors

Responsibility
- Advise the GA and the Board of Directors in relation to topics of relevance to nodes.

- Formulates specific recommendations based on feedback provided by Service Provider facilities and National Nodes
- Provide advice on DiSSCo's annual work program

<u>Authority</u>
- Ensure alignment of the policies implemented in the distributed infrastructure
- Ensure consistency and coherency of the activities carried out at the DiSSCo distributed research infrastructure
- Advise the General Assembly and the Director-General in relation to the activities of the nodes
- Advise on national priorities and trends
- Advise on the preparation of the scientific strategy
- Advise on user needs and new user communities at national level

Scientific & Technical Advisory body

<u>Composition</u>
- Renowned experts

<u>Reports to</u>
- The General Assembly

<u>Responsibility</u>
- Provide advice on the scientific strategy of DiSSCo

<u>Authority</u>
- Advise the General Assembly on the matters of scientific, technical, and ethical nature of the DiSSCo activities
- Evaluate the scientific, technical, and ethical activities of DiSSCo ERIC and report to the General Assembly on an annual basis

Stakeholders Forum

<u>Composition</u>
- Representatives from DiSSCo partners in the creation and provision of services and end-user communities

<u>Reports to</u>
- The General Assembly

<u>Responsibility</u>
- Represent the user community's needs and suggestions for improvement of DiSSCo

<u>Authority</u>
- Advise on new services provision and joint service creation

- Evaluate the level of alignment of DiSSCo RI services with user's needs and the new user communities
- Monitor joint programs and formulate new collaboration
- Advise on strategic partnership, also globally

DiSSCo Governance Model 3
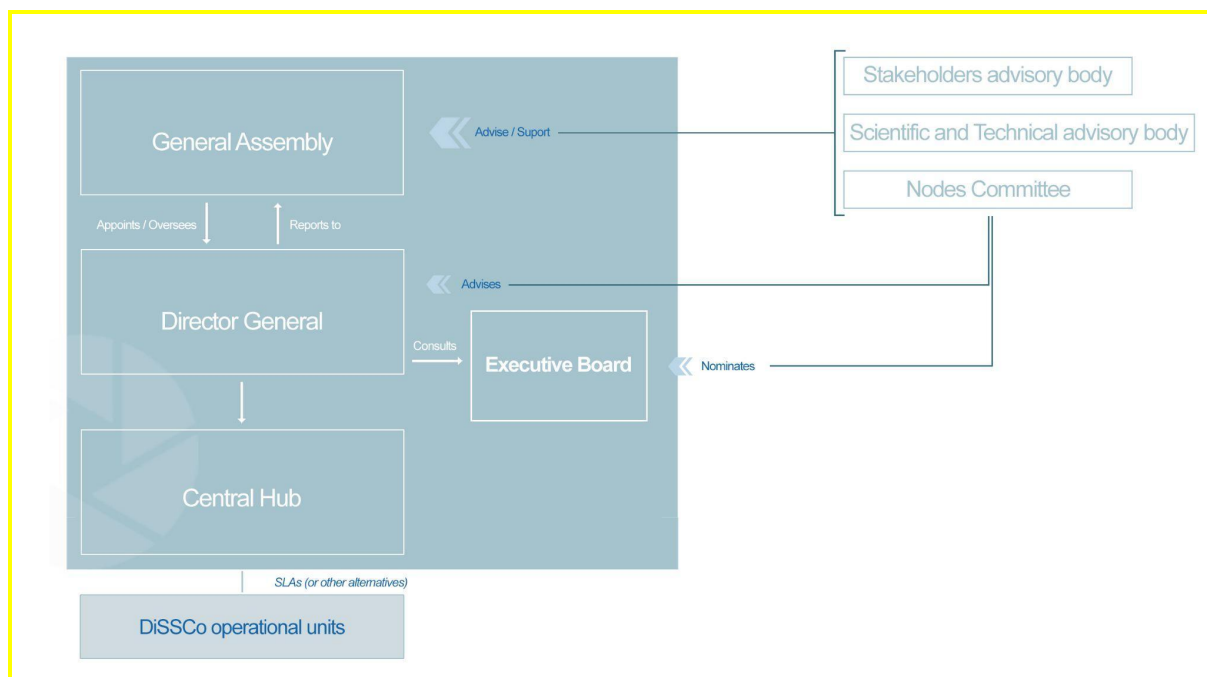
Model 3 During the workshops conducted to discuss models 1 and 2, a number of difficulties were highlighted with each one of the models. While Model 1 works well for ELIXIR, some stakeholders felt that it did not provide enough space to facilitate the active participation of institutions and nodes at the executive level of DiSSCo ERIC. This is because the Nodes Committee's role is limited to advisory under model 1, and not executive (albeit working closely with the Director-General as well). Model 2, on the other hand, requires that a small number of representatives from the Nodes Committee will actively lead the management of the DiSSCo ERIC and form the executive level. This may be problematic as they may find themselves in a conflict with their own institution's agenda, and there is also no guarantee that they will be fully committed to this demanding role or can work well together. Against this background, model 3 provides a hybrid between the two models, whereby the Nodes Committee can nominate a number of representatives to be appointed to an Executive Board (or Executive Committee) that will work closely with the Director-General but will not replace the function of the Director-General (as in the case of model 2). As

explained above, the Executive Board will be consulted regularly by the Director-General and will take an active part in the executive function of the DiSSCo ERIC.

Thus model 3 offers a hybrid between models 1 and 2. It is characterised by a two-layer internal structure: the General Assembly and the Director-General, but with the creation of an Executive Board (or Executive Committee) that will work closely with the Director-General at the executive level. It is proposed that the members of the Executive Board will be nominated by the Nodes Committee (with a possibility for a permanent seat for CETAF). Under model 3, Institutions' involvement is done both through their participation in the Nodes Committee as an advisory body to the General Assembly, and through the participation of representatives nominated by the Nodes Committee at the executive level, working closely with the Director-General, but the final decision and powers of representation of the DiSSCo ERIC remain with the Director-General. Below is a description of the internal structure in model 3:

General Assembly

Composition
  - Representatives of the ERIC's Members and Observers
  - Oversees the implementation of the DiSSCo programs against pre-defined objectives

Responsibility
  - Responsible for the overall strategic direction

Authority
  - Approve the strategy and strategic plan
  - Approve the work programme
  - Decide on the amendment of the ERIC statutes and implementing rules
  - Approve the method for calculating and level of members' contributions
  - Approve admission of new members and observers
  - Appoint and dismiss the Director-General
  - Appoint members of the advisory bodies & establish additional advisory bodies
  - Adopt implementing rules
  - Adopt the annual budget & annual activity report
  - Approve the annual accounts audit report
  - Wind-up the DiSSCO ERIC
  - Decide on any other matter that is necessary to fulfill the task of DiSSCo ERIC

Director-General

<u>Composition</u>
- An individual person appointed by the GA

<u>Reports to</u>
- The General Assembly

<u>Responsibility</u>
- The legal representative of the DiSSCo ERIC
- Responsible for the implementation of the decisions by the GA
- Responsible for consulting and seeking advice from the Executive Board
- Consult the [community] in the process of preparing annual work programs

<u>Authority</u>
- Carry out the day-to-day management of the DiSSCo ERIC following the GA's directions and decisions
- Submit an annual activity report to the General Assembly after consultation with the Nodes Committee
- Submit the annual report to the European Commission
- Manage the Central Hub
- Prepare DiSSCo work and financial plan for approval by the GA
- Represent DiSSCo at national and international fora
- Any other task as may be required by the GA

Executive Board

<u>Composition</u>
- 3-5 individual persons nominated by the Nodes Committee and appointed by the General Assembly (with an option for a permanent position for CETAF)

<u>Reports to</u>
- The Director-General / [Nodes Committee]

<u>Responsibility</u>
- Responsible to support to Director-General in the implementation of the decisions by the General Assembly in accordance with the Statutes and applicable law
- Support in the implementation of DiSSCo programs
- Help to implement the recommendations of the Nodes Committee while remaining loyal to the interests of the ERIC and the instructions of the Director-General

<u>Authority</u>
- [Represent the nodes and the Nodes Committee]

- Represent DiSSCo at national and international fora
- Guarantee communication and harmonised implementation of programs with the DiSSCo nodes

Nodes Committee

Composition
- Representing Organisation of the National Nodes (RONNs) of the DiSSCo distributed facilities and Service Provider Nodes (SPNs), e.g. CETAF, that have a formal agreement with DiSSCo ERIC

Reports to
- The General Assembly / supports and advise the Director-General through the Executive Board

Responsibility
- Advise the GA and the DG in relation to service provision
- Collect and consolidate the views of the [participating institutions] with a view to formulating relevant recommendations
- Formulates specific recommendations based on feedback provided by Service Provider Nodes and National Nodes
- Provide advice on DiSSCo's annual work program

Authority
- Ensure alignment of the policies implemented in the distributed infrastructure.
- Ensure consistency and coherency of the activities carried out at the DiSSCo distributed research infrastructure
- Contribute to and advise the General Assembly and support the Director-General in relation to the preparation of the work program and the scientific strategy activities of the nodes
- Advise on national priorities and trends
- Advise on user needs and new user communities at national level

Scientific & Technical Advisory body

Composition
- Independent experts selected on a worldwide basis, without a requirement to be based in a member or observer country

Reports to
- The General Assembly.

Responsibility
- Provide advice on the scientific strategy of DiSSCo

Authority
- Advise the General Assembly on the matters of scientific, technical, and ethical nature of the DiSSCo activities
- Evaluate the scientific, technical, and ethical activities of DiSSCo ERIC and report to the General Assembly on an annual basis

Stakeholders Forum

<u>Composition</u>
- Representatives from DiSSCo partners in the creation and provision of services and end-user communities

<u>Reports to</u>
- The General Assembly

<u>Responsibility</u>
- Represent the user community's needs and provide feedback on the scientific strategy and elements of the workplan

<u>Authority</u>
- Advise on new services provision and joint service creation
- Evaluate the level of alignment of DiSSCo RI services with user's needs and the new user communities
- Monitor joint programs and formulate new collaboration
- Advise on strategic partnership

Annex I - Comparative analysis of governance models in other EU RIs

	Questions	BBMRI-ERIC (Fomer Administrative Director - Markus Pasterk)	EPOS-ERIC (Coordinator Implementation Phase (IP) - Massimo Cocco)	DARIAH-ERIC (Secretary-General - Arnaud Roi)
1	Given that the ERIC is open for membership by States and Iternational organisations only, how do you facilitate meaningful participation in the governing bodies by the research institutions themselves (or by their organisation, i.e AISBL)?	(Apply to institutions only). 1. Network: A network coordinator is needed. Based on SLA or other contractual relation.2. Management Committee (MC): Appointed by the GA, supporting Director General/Executive Director in the definition and implementation of the work programme. Composed by NNs directors. Theoretically no executive power at ERIC level but with a sound impact in its advisory role. At national level the MC has executive powers based on SLA with the ERIC.	Due to the large n. of organisations, EPOS guarantees meaningful institutional participation through the following: 1. Representing entities at the GA, in close communication with the ERIC members. That role does not cover all potential institutional roles, i.e as service providers. 2. For services provision, EPOS is based on a federated network of institutions. Based on SLA (or other contractual agreements) the ERIC defines the relationship with research organisations through thematic core services (TCS). Some of the institutions belonging to the TCS provide services directly to the ERIC and others at a national level. The TCSs are independent of the ERIC and coordinated by a Service coordination advisory board. The model guarantees a bottom-up dynamic in the decision-making process.	Two different ways institutions can act in the gov. structure. 1. As representing entities at the GA (2 rptt, one from the science policy (funding agency), one from the scientific domain, normally the head of the node) 2. Member of the National Nodes Coordination Committee. The committee meets montly and guarantees the alignment of the ERIC with national priorites which ensures a good position of DARIAH in the national roadmap. Sometimes the same person acts as members of the committee and GA member, that is not advisable but may happen with small countries.
		Post-Brexit: The UK can even host the headquarters. From a legal point of view, there are no major problems to join.	n/a	Based on a contractual agreement and provisions in the Statutes, DiSSCo might can articulate CETAF role in the gov. body although it may be not well accepted by member states if a partner comes with same rights and diff. level of duties. Another way is to have CETAF as part of the executive bodies with meaningful role in the daily operation.
2	Do you have a situation of significant non-state actors which take part in the governance, without being a full member? How is that justified to other actors without voting rights?	BBMRI statutes only include courtries as members. However, 2 different solutions: 1. Member of an Advisory Body. 2. Associate member, (AM) specifically to assign a non-countries partner a role in the governing structure. Based on a contractual agreement, it links information flows to specific organisations. The AM can be invited to the General Assembly (GA), without voting rights.	ERIC includes only the usual membership. The institutions constitute the Nodes. EPOS can have several nodes at national level based on thematic services, each ERIC member decides where to contribute according to the national priorities.	Relation based on unofficial practices. No based on contractual agreements of any kind although the situation is changing now (service or operational level agreements). The Nodes are organised differently also in each country: legal entities, consortium agreements (i.e Poland), project-based cooperation (i.e Germany).
3	Central Hub and Nodes relationship - How is the relationship between the central hub and the nodes regulated? Are they all part of the same legal entity (the ERIC) or do they have separate legal entities?	1. A clear definition of NN is necessary. 2. Agreement (SLA, other) based the relationship (rights/duties) equally for all NNs or according to NN's role in the ERIC. The latest essential to regulate i.e VAT exemption (only in cases where ERIC services are provided directly from a node on behalf of the ERIC, as part of the work programme of the ERIC).	Federated legal agreements.	In the case of DARIAH: 1. Benefit from the coordination devoted to the digital development 2. ERIC is a facilitator that enable share/co-creation of services and tools, 3.ERIC also facilitates the scale up of national developments to EU level which partially compensates the big disparities betw big/small countries.4. ERIC facilitates the access to funding programs.
4	What are, next to the Statutes, the top-level documents governing the work of your Infrastructure? Which topics are covered?	1. RoP for each body 2. Thematic internal rules i.e HR, procurement, delegation powers within the ERIC for signature, framework agreement with the nodes, ethical rules. Start the overall discussion early enough avoid future inconsistencies or amendments (amendments are a GA responsibility).	The federated legal agreements differ notably and capture the existing differences among institutions.	Not much, Statutes and RoP for the coordination hub
5	How did you set the level of core services in relation to the contribution?	Services provisions at 3 diff levels. 1. ERIC's services 2.services provided by the national nodes, and 3. services provided by the institutions, like access. The first thing to do is to define the services and providers. For each individual service BBMRI defined the cost and payer (it can be considered categories: Free -EU members; -30% for Associated Members; 100% for other users). Core services and service providers have to be defined very well.	Membership fee funds only ERIC activities while funding agencies and institutional budget fund TCS activities. Participation in a TCS benefit partners 1. Institutions are included in the national roadmaps and grant access to funds 2. optimise sustainability increasing visibility and leading thematic national priorities 3. enable data sharing in a community already highly motivated.	In Dariah, the contribution model: 10% cash/90% in-kind. The hub does not provide services directly and therefore the bigger budget goes to the national developments. The membership fee is fixed and based on the GDP, not negotiable. The in-kind contribution is negotiable but a threshshold is defined. On top of that, budget comes from EU-funded projects centrally managed by the hub.
6	What variables form the basis of the Member States' financial contributions to your RI?	The ERIC may control the flow of the entire funding that later goes back to the nodes and institutions for the operation of ERIC activities. However, that is not the case at BBMRI. The in-kind contributions are very limited (for ERIC's operation at national level), cash-contributions cover ERIC activities.	Sustainability is based on four main dimensions: legal, financial, technical, and governance. Your community has to share the RI's mission and vision to keep engaged and drive developments.	GDP
7	From your experience, what are the decisions/actions to avoid when building a governance model for a future ERIC? (Lessons learnt)	1. Make sure that there is an element that distinguish between very large to very small countries. The contribution model needs to be flexible to avoid financial crisis if some members leave the ERIC. A way to do it is to adjust the contribution model annually, a normal practice, well accepted, 2. Well documented and clear by-laws to avoid operational problems in future.	n/a	1.Try to keep the governance model simple with well-defined relations, duties/rights. 2. Think carefully about the pros/cons of the ERIC for DiSSCo (i.e. not flexible governance framework; ERIC's role in EOSC, etc). 3. Think carefully the sitting mostly based on the accounting, HR, other national regulations, 4. The contribution model should be balanced with a meaningful in-cash contribution.

	Questions related to post-Brexit	ELI-RI AISBL (Associate Director - Integrated Organisational Development - Florian Gliksohn)
1	Which are the areas where the UK may find constraints to participate? Is about the VAT, the acceptance of the EU Court for disputes, or where?	Different areas: 1. Since DiSSCo is an RI that will strongly rely on established research organisations, you're going to have a challenge generally with the VAT exemption, because, in most countries, it doesn't benefit representing entities. The ERIC only (I'm simplifying) can enjoy it. Which means, in your case, that the scope of the exemption will remain limited unless you find a system that allows costs to be borne directly by the ERIC (e.g. CERIC-ERIC, unique in the way manage VAT). The UK, if it were to join the ERIC, would have to grant the same exemptions anyway as a pre-condition, so I don't really see an issue there.
		2. The recognition of the competence of the EU Court of Justice is an issue, but it's a precondition anyway for the UK to be a member.
		3. More generally, there are on-going discussions with the UK as the UK has recently been asking for provisions in ERIC Statutes that it intends to join that recognise its right to withdraw from an ERIC with quasi-immediate effect in case a change in the ERIC Regulation were to affect materially their rights and obligations. This has been the subject of discussions with the EC that is not in favour of such provisions as they are seen as affecting the sustainability of ERICs. This debate has not yet come to a conclusion.
		4. I could see some issue about to what extent there could be some clashes between regulations applying in the EU and in the UK.There could be all sorts of other elements to consider: GDPR rules, mobility of staff, customs, etc.
2	What kind of requirements we should include in the agreement with the UK as a third country?	At this stage, there's not much you can do since this is subject to discussions between the UK and the EU. What I would recommend at this stage is that you consider another form of association or partnership as a fallback option in case the UK is not in favour of joining. This would typically be a contractual agreement between the ERIC and the UK organising the involvement of the British organisations, participation of the UK in the governance, financial relations, etc.
3	ERIC challenges - text endorsed by both parties	*"third countries other than associated countries, or intergovernmental organisations, may withdraw from ELI ERIC, following changes in Council Regulation (EC) No 723/2009 that would materially affect their rights and obligations in relation to ELI ERIC. In this instance, and where it applies, the obligation to pay any contribution is also terminated. Other liabilities shall be evaluated by an independent arbitrator agreed by the withdrawing party and ELI ERIC"*
	U.K Statement at the FF2 meeting (May 10, 2021)	
	1. There is no legal obstacle to the UK becoming a member of an ERIC. The UK Government adopted the ERIC regulation into law in 2019.	
	2. Following EU Exit, however, the UK government has stated that in order for the UK to become a full member, three principles would need to be set out in the ERIC statutes. These	
	a. Changes to the statute, i.e. the legal basis of our membership, would need to be agreed unanimously by the General Assembly or the body of Government Representatives.	
	b. Changes to the mechanism through which the financial contribution is calculated need to be agreed unanimously by the same body.	
	c. In the event of changes to EU law, the UK would reserve the right to withdraw with immediate effect and without penalty.	

3. If these principles cannot be included in the statutes, then the UK could not become a full member. We would instead seek to negotiate a bilateral agreement which would aim, as

	Questions	CLARIN (Executive Director - Franziska De Jong)
1	Could you describe the executive level of CLARIN governance chart?	CLARIN is one of the rare RI where the executive power is shared by an Executive Director and a Board of Directors. The BoD members include three experts from partners institutions responsible for the technical developments (full time position) and strategic supervision (1,5 FTEs paid). The Executive Director is the Chair of the BoD. The main function of the BoD is to support the Executive Director in the daily management.
2	Has the structure changed with time?	Yes, there are ongoing discussions to modify the BoD functions to enable them to take ownership at least of: Technical, HR, Financial and Strategic operation (linking the Central Hub with the Nodes Committee). Furthermore, the Executive Director position has become crucial for the central management, coordination and effective implementation of the decisions taken by the GA members.
3	Would you recommend a model with a strong executive direction or not?	Experience says that it is highly advisable to have a strong Executive Director supported by a small group of expert professionals as BoD. The other way around may increase complexity in the daily management by the ExD and can impact a fluent communication with stakeholder and EU level. It is not recommended by the ERIC Committee, and it does not necessarily fill the communication gap between the GA and the Central Hub.