



# MERIL

MAPPING OF THE EUROPEAN  
RESEARCH INFRASTRUCTURE  
LANDSCAPE

<http://portal.meril.eu/>

**D14R JOINT SERVICE CATALOGUE FOR RESEARCH**  
**MERIL PORTAL: EXPERIENCE IN DATA**  
**MODELLING AND FUTURE PLANS**

European Science Foundation  
29 September, 2016

# OUTLINE



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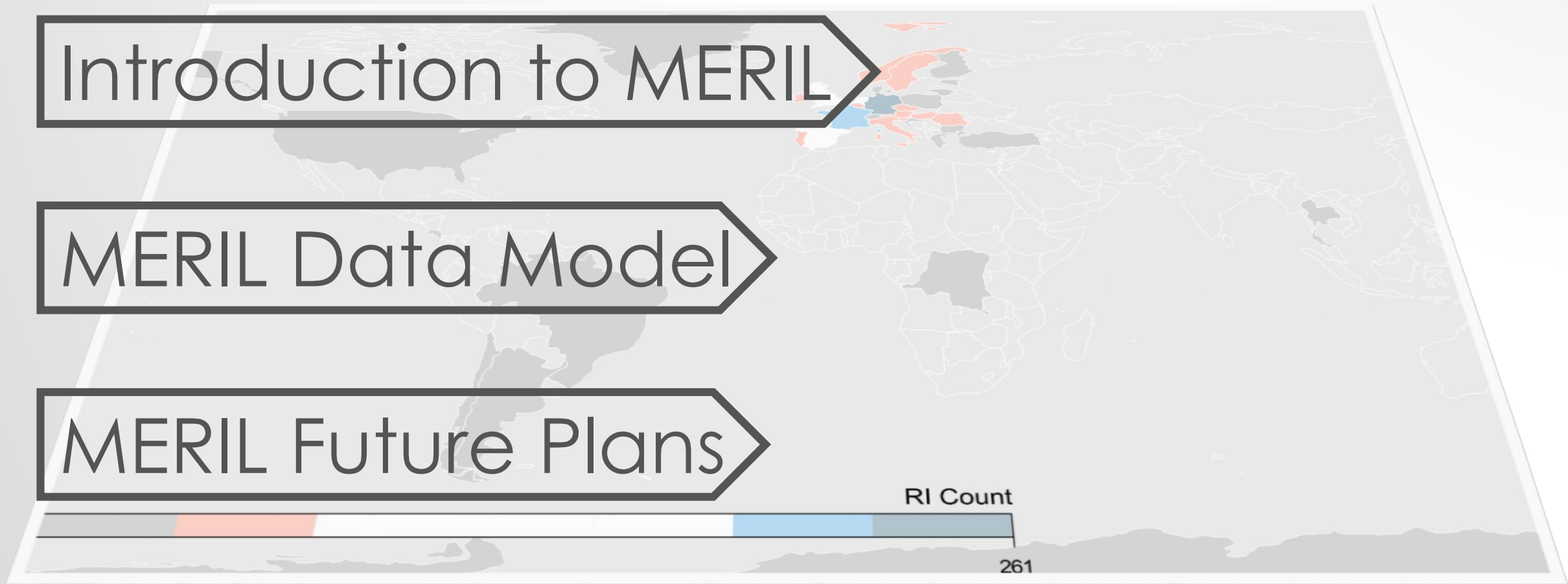
Introduction to MERIL

MERIL Data Model

MERIL Future Plans

RI Count

261



**VISION**



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MAPPING OF THE EUROPEAN  
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**Comprehensive Mapping of **European**  
**Openly Accessible** Research Infrastructures**

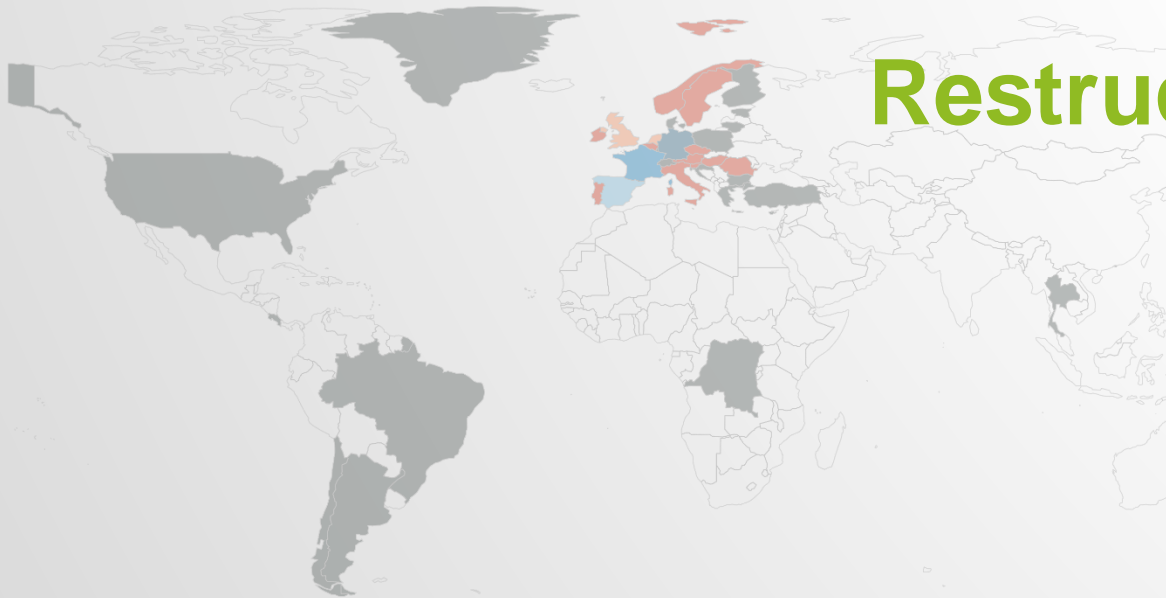
**‘of **More than National** Relevance’**

# EC-FUNDED MERIL-2



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**Building on previous efforts initiated by ESF  
Member Organisations in 2010:**



**Restructure current data model  
& current portal**

**& Expand scope**

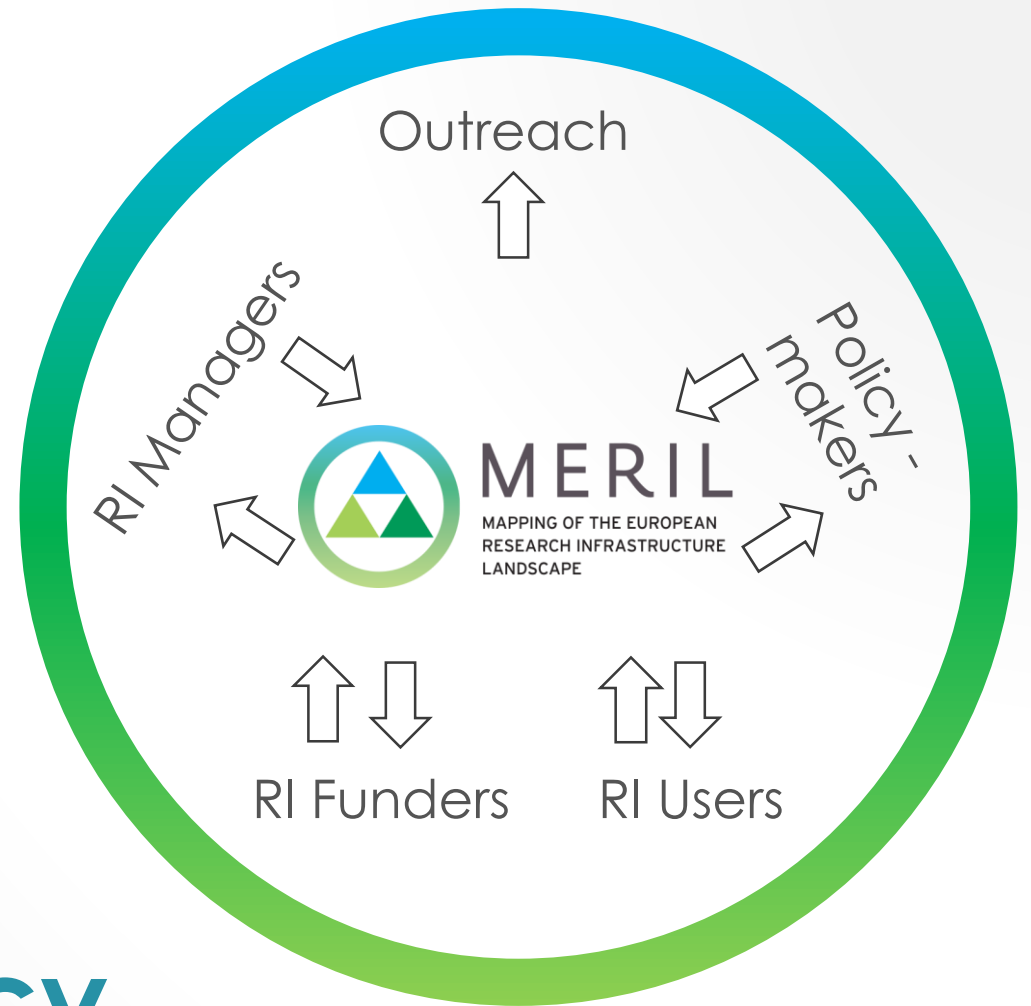
# MERIL OBJECTIVES

Serve policy maker needs by:

- Providing data on RIs across European countries and scientific disciplines
- Offering data and tools for RI landscape and gap analysis, benchmarking

**SUPPORT FOR:**

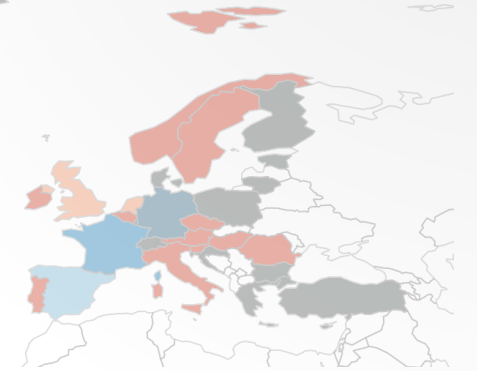
- Data transparency
- Evidence-based decision making



# MERIL-2 CONSORTIUM



Project Development and Data Management  
**ESF** – European Science Foundation



New MERIL IT Portal Development  
**EKT** - The National Documentation Centre of Greece

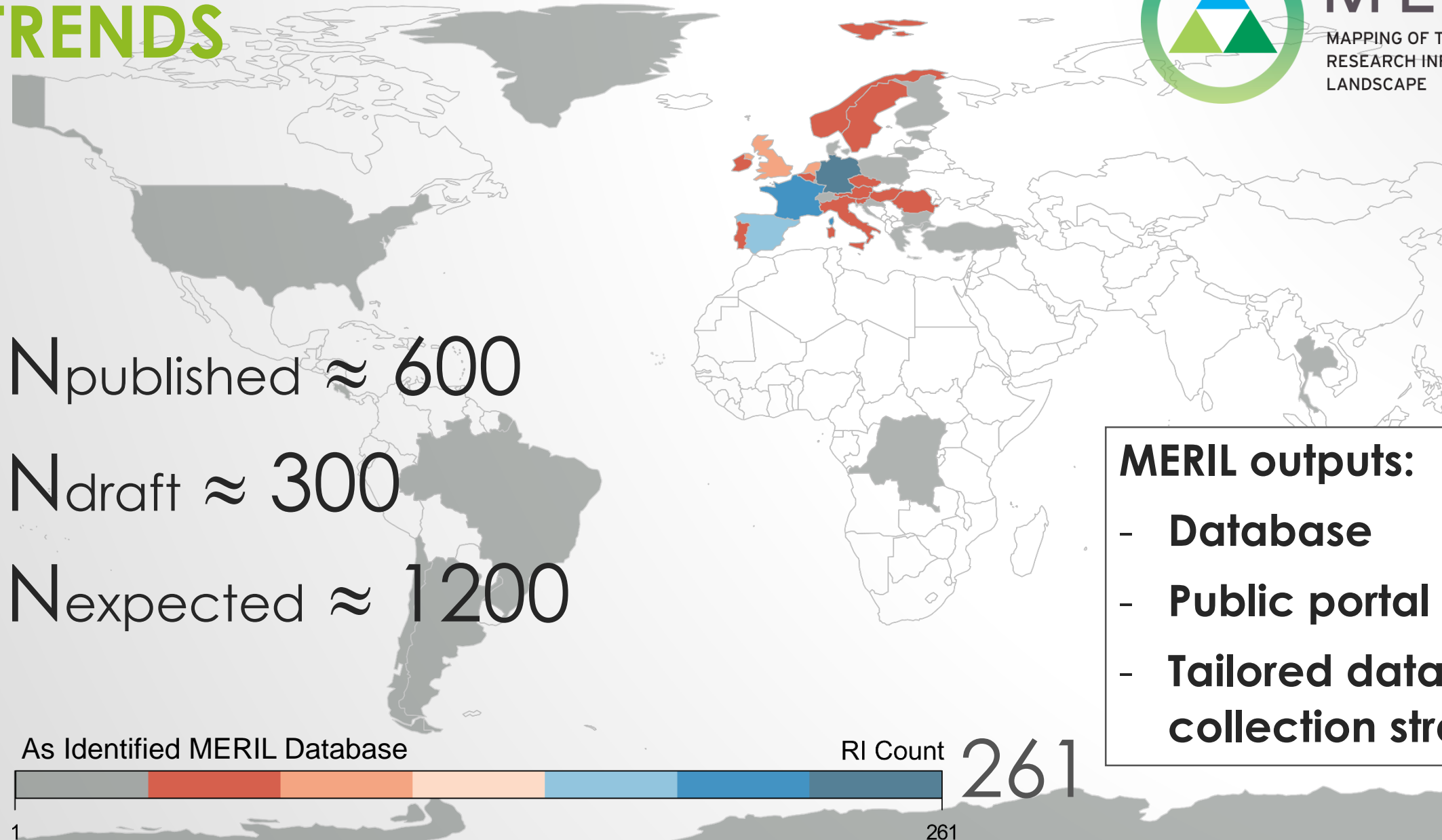
RI Stakeholder Consultation  
**APRE** – Agency for the Promotion of European Research

# TRENDS



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$N_{\text{published}} \approx 600$

$N_{\text{draft}} \approx 300$

$N_{\text{expected}} \approx 1200$

## MERIL outputs:

- Database
- Public portal
- Tailored data collection strategy

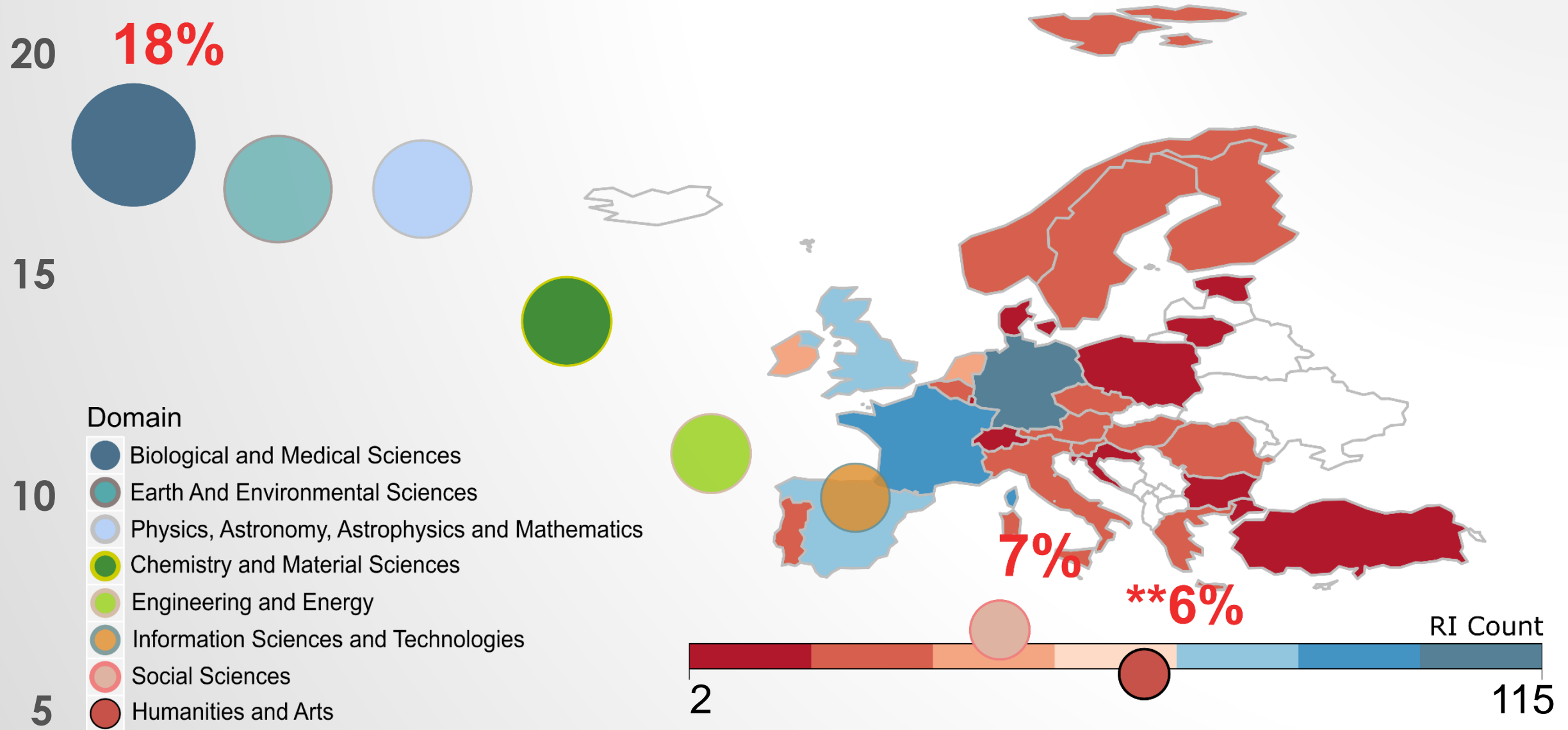
As Identified MERIL Database

RI Count

261

1 261


# GEO-COVERAGE: PARTICIPANT COUNTRIES





# PORTAL PAGE

Research service title  
Research service description



Home Page » List of Research Infrastructures » Iberian Grid Infrastructure

## IBERGRID - Iberian Grid Infrastructure

<http://www.ibergrid.eu/>

[View big map](#)


**Hosting organisation:** Instituto de Fisica de Cantabria (IFCA)

**Location:** Avenida de los Castros, s/n | E-39005 Santander Santander | Cantabria Spain  
LIP, Av Elias Garcia 14, 1° | 1000-149 Lisbon Portugal


**Contact:** Isabel Campos  
Jorge Gomes

**Details:**  
Main status: Operational from 2010  
Status 2: Under construction from 2007 to 2010  
RI Type: Distributed

**Description:**  
The Iberian Grid Infrastructure (IBERGRID) unites the Portuguese and Spanish national distributed computing infrastructures under a single federated infrastructure. Through IBERGRID both countries participate in the European Grid Initiative (EGI) supporting a wide range of international research communities. The infrastructure is composed of data processing and storage resources provided by computing centres in universities and



IBERGRID resource centres



IBERGRID logo


**Keywords:**  
Scientific computing, distributed computing, multidisciplinary, high throughput computing, high performance computing, grid computing, cloud computing, data analysis, national grid initiatives

Research Service(s):	Equipment:
<b>High Throughput Computing Grid</b> Access to High Throughput Computing processing clusters geographically distributed. The service is aimed at data intensive processing.	<b>NCG Computing Resource Center</b> Portuguese national computing centre maintained by FCCN, LIP and LNEC ( <a href="http://www.ingrid.pt">http://www.ingrid.pt</a> ) -High Throughput Computing -High Performance Computing -Online Data Storage -Cloud Computing (pilot)
<b>High Performance Computing Grid</b> Access to High Performance Computing processing clusters geographically distributed. The service is aimed at small-to medium-scale parallel processing with data intensive requirements.	<b>LIP-Lisbon Computing Resource Center</b> -High Throughput Computing service -Middleware test facility -Online Data Storage - <a href="http://www.lip.pt">http://www.lip.pt</a>
<b>Cloud Computing</b> Access to a distributed federated IaaS cloud computing infrastructure.	

Last updated on: 2014-03-25 at 10:32

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DISCLAIMER | CONTACT



# RI SERVICES ENTITY

## Research Service ▼

🔑 ID\_Research Service INT

◇ Title VARCHAR(45)

◇ Description MEDIUMTEXT

Corresponds with  
**Service entity in CoS**

### Keywords:

Scientific computing, distributed computing, multidisciplinary, high throughput computing, high performance computing, grid computing, cloud computing, data analysis, national grid initiatives

### Research Service(s):

#### High Throughput Computing Grid

Access to High Throughput Computing processing clusters geographically distributed. The service is aimed at data intensive processing.

#### High Performance Computing Grid

Access to High Performance Computing processing clusters geographically distributed. The service is aimed at small- to medium-scale parallel processing with data intensive requirements.

#### Cloud Computing

Access to a distributed federated IaaS cloud computing infrastructure.

### Equipment:

#### NCG Computing Resource Center

Portuguese national computing centre maintained by FCCN, LIP and LNEC (<http://www.ingrid.pt>)

- High Throughput Computing
- High Performance Computing
- Online Data Storage
- Cloud Computing (pilot)

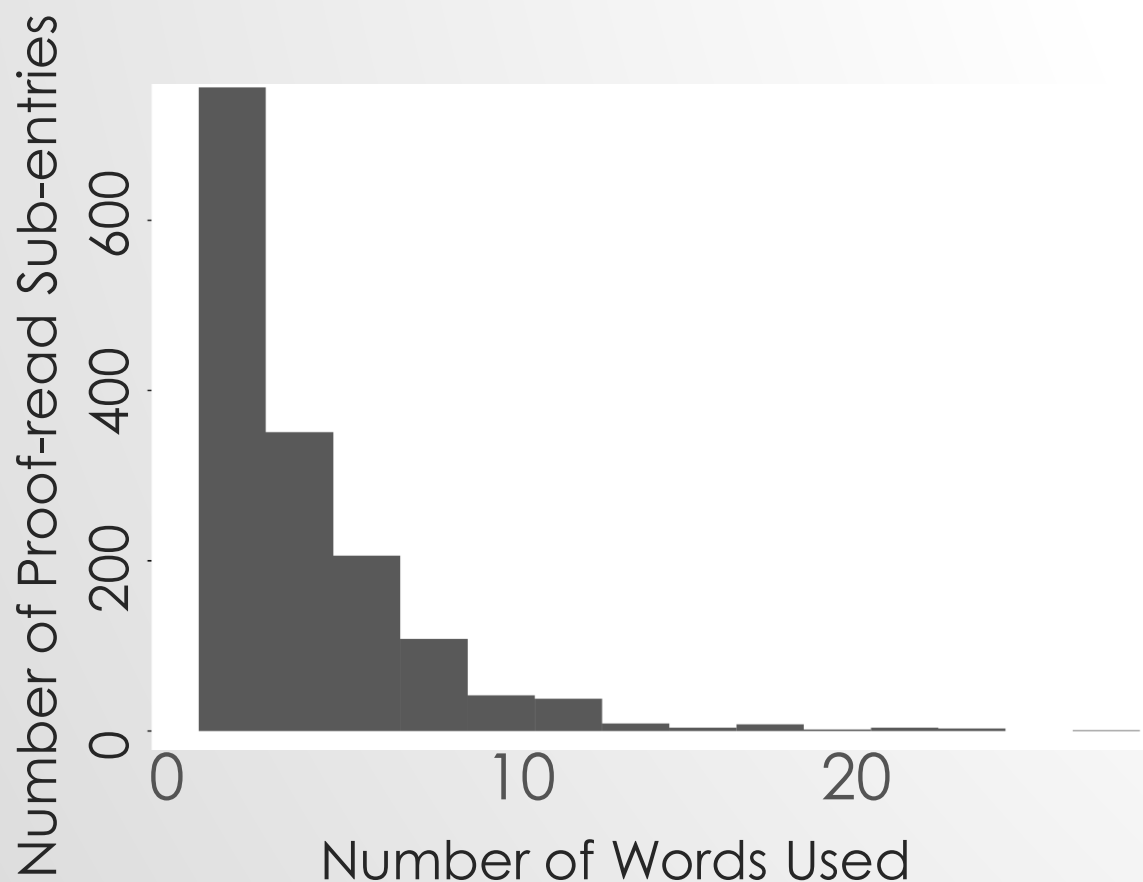
#### LIP-Lisbon Computing Resource Center

- High Troughput Computing service
- Middleware test facility
- Online Data Storage
- <http://www.lip.pt>

# RESEARCH SERVICES

## Free text input practices

1615 Research Service entity data patterns analysed



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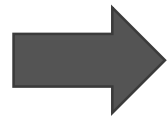
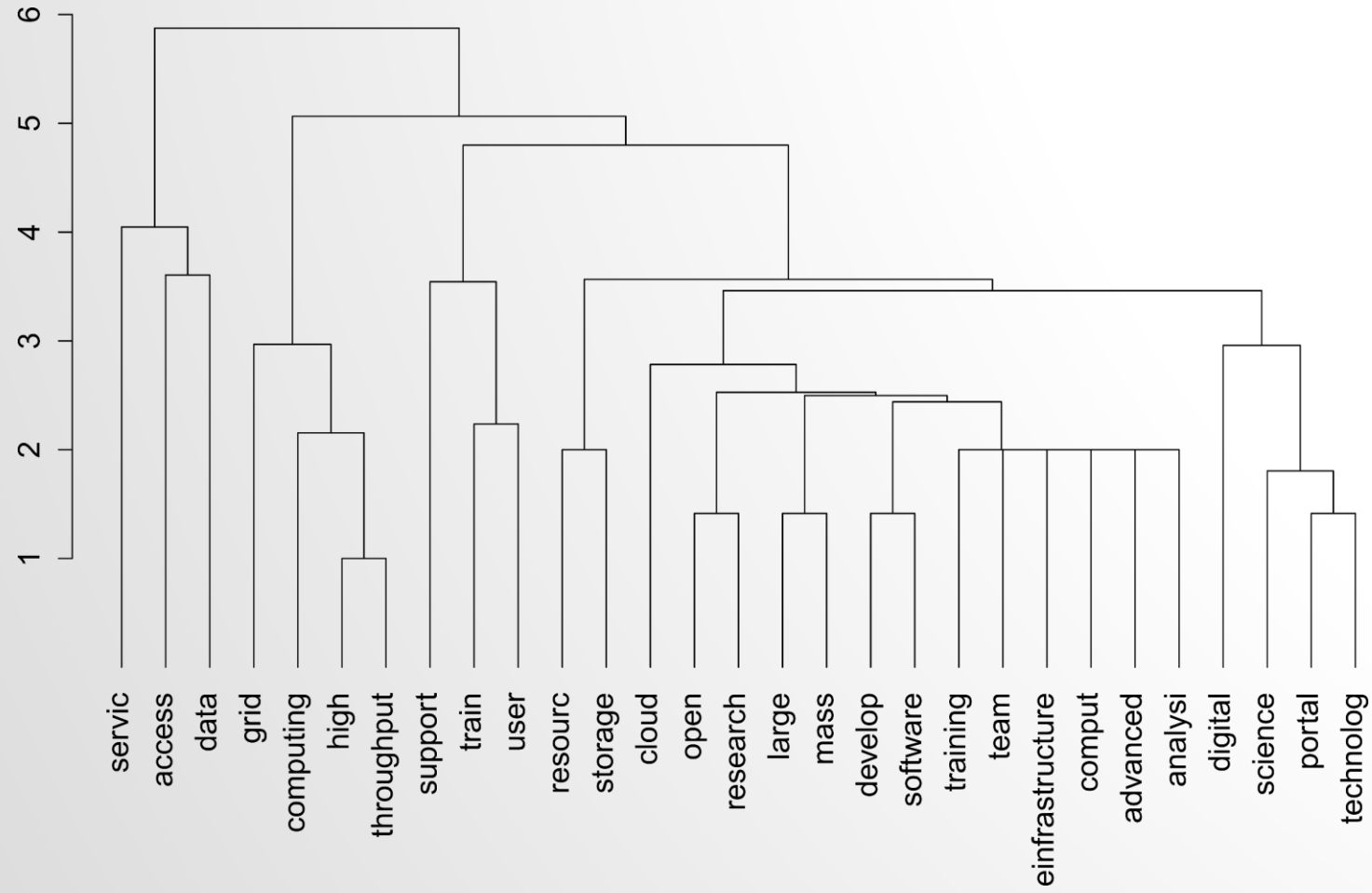


# E-RI SERVICE NAME

## Free text input practices



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Formalization needed

# STRUCTURING RESEARCH SERVICES

## Proposal



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Construct a dynamic library of *Research Service* titles from a list of  $\approx 1600$  entries (not yet de-duplicated/cleaned) + further text mining; manipulated to **guide standardized RI research service portfolio documentation.**

# DATABASE REMODELLING



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Solutions

**Limitations** of the first MERIL data model:

- Unstructured free text fields
- Not fully comprehensive meta data (e.g. Definition of users)
- Full CERIF-compliance missing
- Limited scope



- Introduce high level of structuring
- Provide comprehensive meta data
- Prepare CERIF-based data model
- Expand the set of variables of interest (e.g. information on access)

# DATA STRATEGY



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First  
module

- **Core data**

Basic RI-identifying data, including scientific identification (Dataset chapters *Identification* and *Scientific description*)



Including  
*Research  
Services*

Second  
module

- **Additional data**

Other useful data (Dataset chapters *Access and use*, *Scientific activities*, *Collaborations* and *Other activities*)

Third  
module

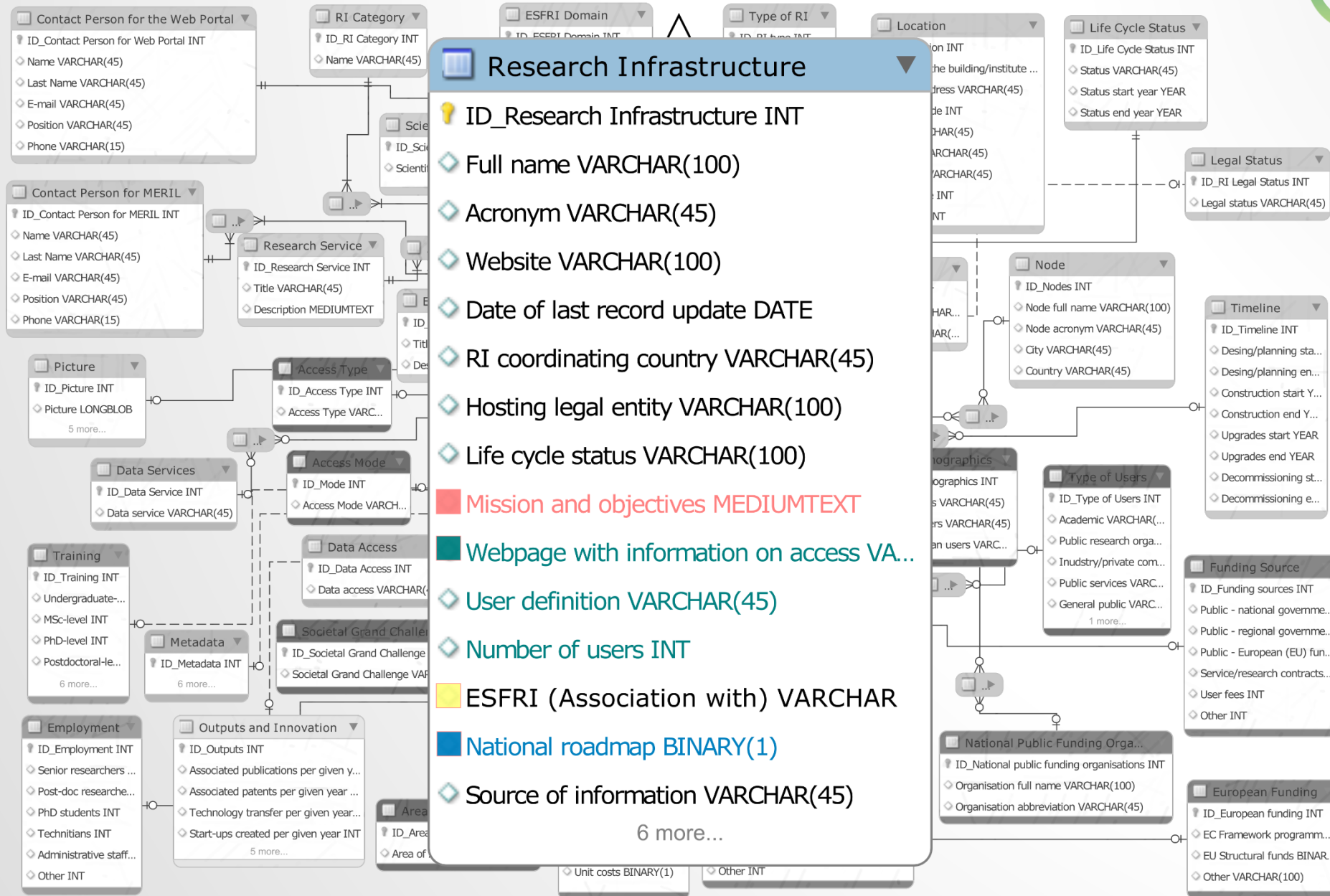
- **Advanced data**

Data useful for the deep analysis of RI activities (Dataset chapters *Human resources and training*, *Data policies*, *Impact*, *Innovation* and *Costs and Funding pilot*)





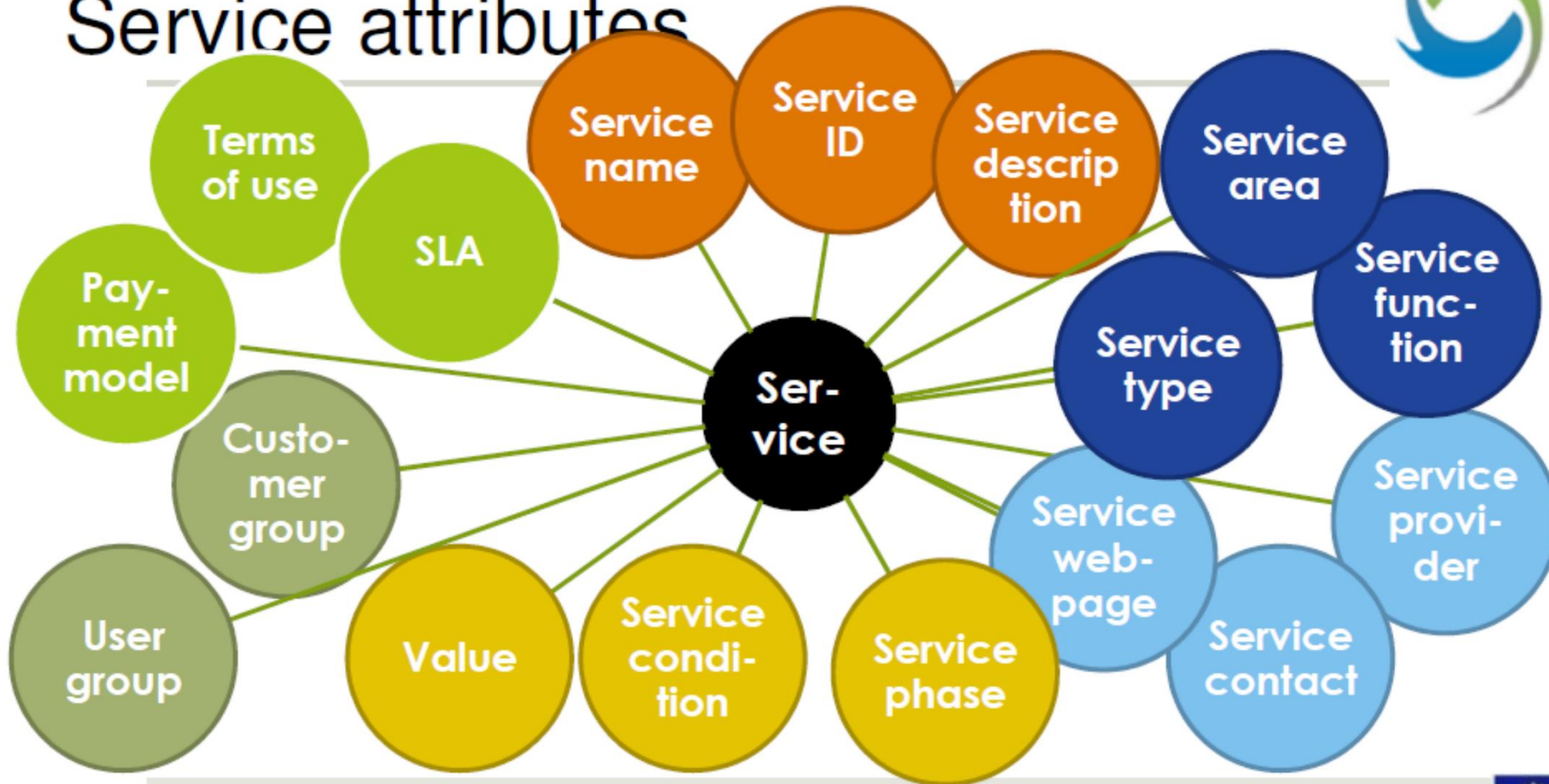
# COMPARING CoS AND MERIL



# COMPARING CoS AND MERIL



## Service attributes



Slide adopted from Dr Angela Dappert's presentation 'Towards a joint service catalogue for e-Infrastructure services' at EGI Conference 2016, April 2016

# RI SERVICES AND RELATED ENTITIES

Research Infrastructure

- ID\_Research Infrastructure INT
- Full name VARCHAR(100)
- Acronym VARCHAR(45)
- Website VARCHAR(100)
- Date of last record update DATE
- RI coordinating country VARCHAR(45)
- Hosting legal entity VARCHAR(100)
- Life cycle status VARCHAR(100)
- Mission and objectives MEDIUMTEXT
- Webpage with information on access VA...
- User definition VARCHAR(45)
- Number of users INT
- ESFRI (Association with) VARCHAR
- National roadmap BINARY(1)
- Source of information VARCHAR(45)

6 more...

Data Services

- ID\_Data Service INT
- Data service VARCHAR(45)

Access Mode

- ID\_Mode INT
- Access Mode VARCH...

Access Type

- ID\_Access Type INT
- Access Type VARC...

Type of Users

- ID\_Type of Users INT
- Academic VARCHAR(...)
- Public research orga...
- Inudstry/private com...
- Public services VARC...
- General public VARC...

1 more...

Research Service

- ID\_Research Service INT
- Title VARCHAR(45)
- Description MEDIUMTEXT

User Demographics

- ID\_User Demographics INT
- National users VARCHAR(45)
- European users VARCHAR(45)
- Extra-European users VARC...

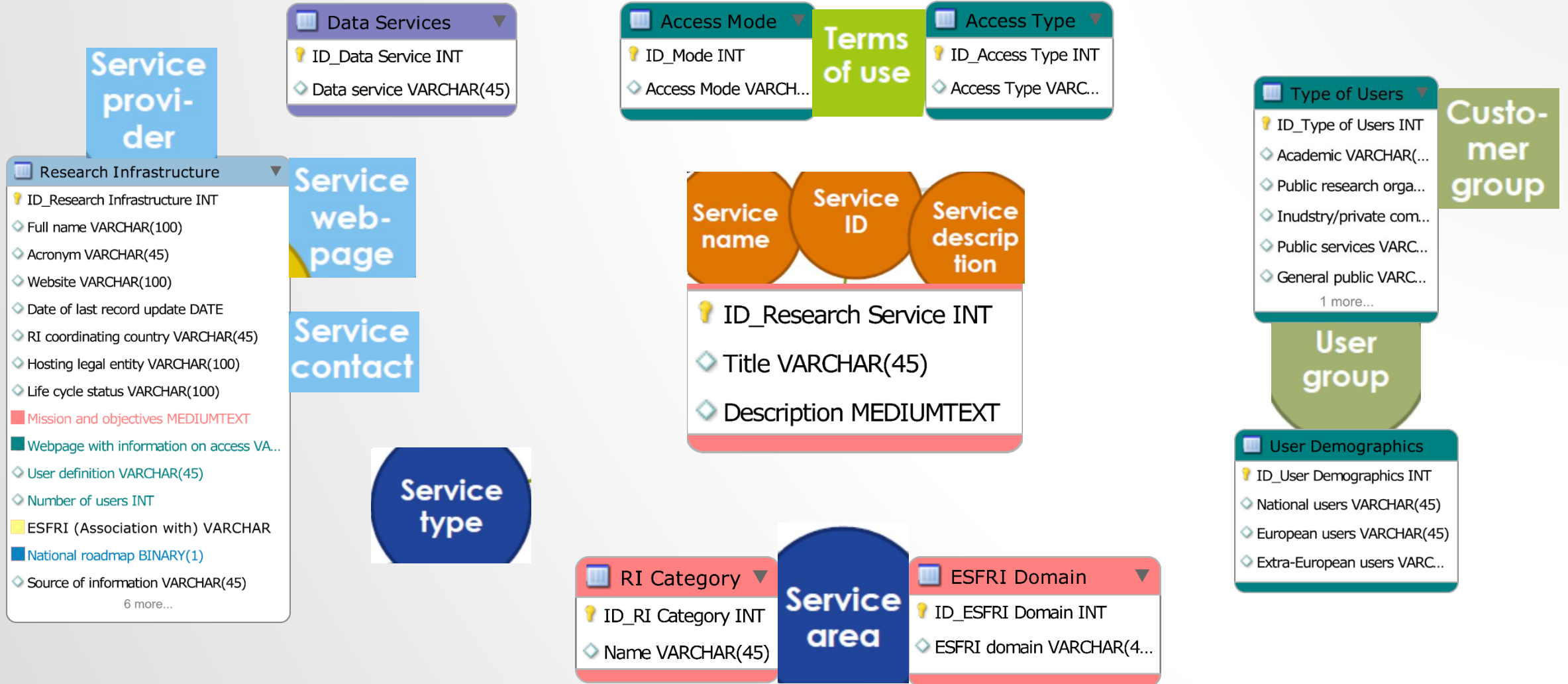
RI Category

- ID\_RI Category INT
- Name VARCHAR(45)

ESFRI Domain

- ID\_ESFRI Domain INT
- ESFRI domain VARCHAR(4...

# MERIL RI SERVICES AND CoS



# FUTURE: ADDRESSING THE CHALLENGES



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- New means of data harvesting (equipment.data)
- Linking with national RI databases
- Linking with field-specific RI databases (Infect-ERA, EurOcean, RMS Facilities Database, TIARA, DER-lab)
- Learn from procedurally similar initiatives (Global Observatory on Health R&D, CFI Research Facilities Navigator)



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**Thank you for your attention**

**meril@esf.org**

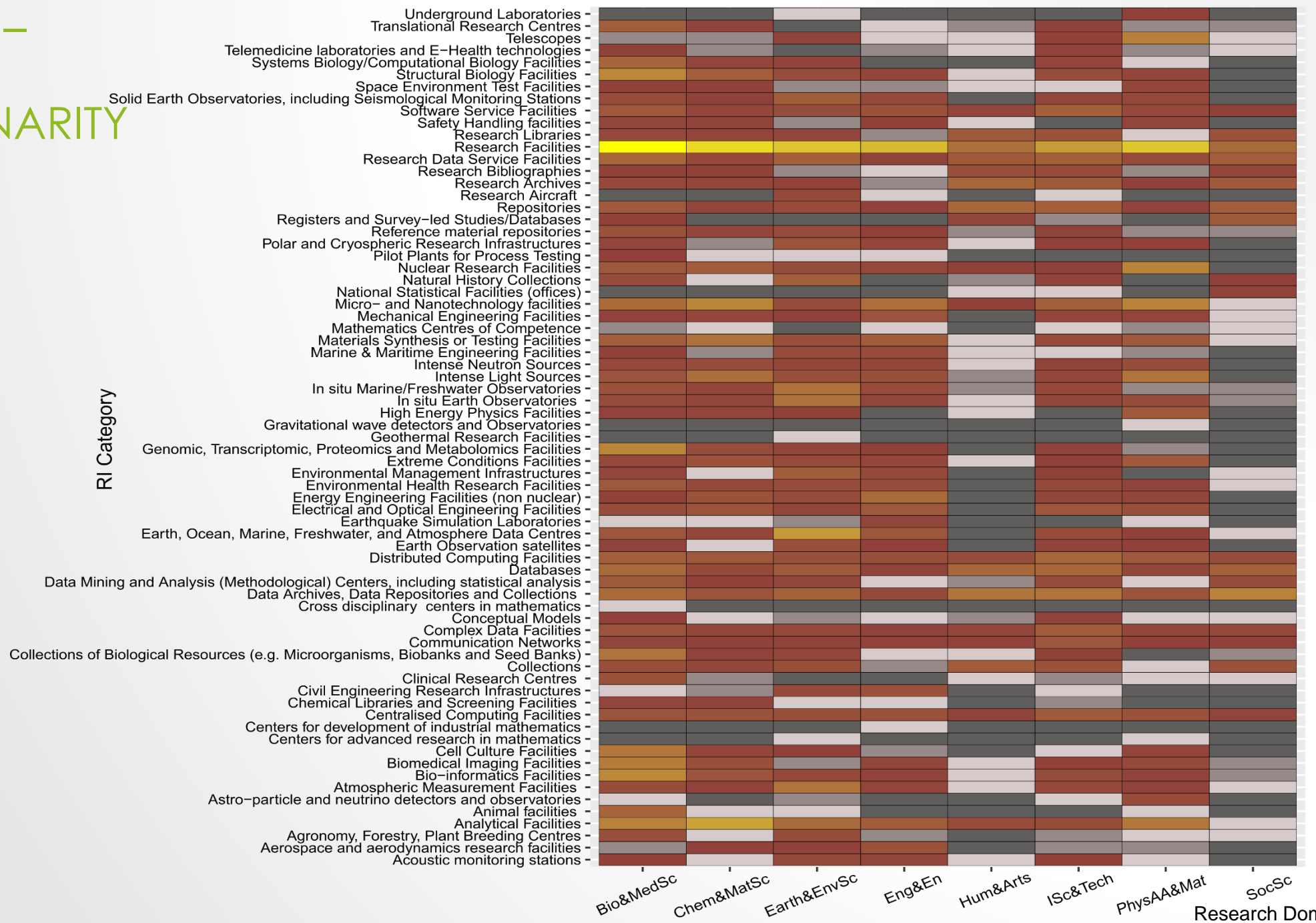
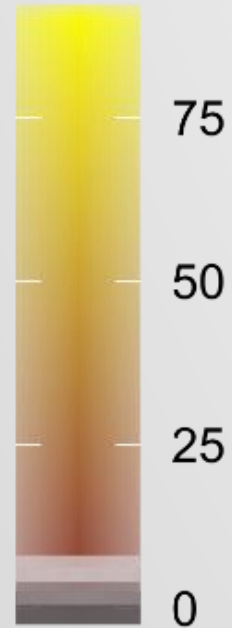
<http://portal.meril.eu/>

EXTRA SLIDES TO FOLLOW



# RI CATEGORY – DOMAIN INTERDISCIPLINARITY

Frequency



F

Bio&MedSc Chem&MatSc Earth&EnvSc Eng&En Hum&Arts ISc&Tech PhysAA&Mat SocSc  
Research Domain