Ocean Observations and European Research Infrastructures

Agnès Robin *(remotely)*
Research infrastructure
European Commission

EurOcean
Half-Day Conference
Capri, 24 October 2017
Many platforms contributing to Ocean Observations
Recent/ongoing efforts in integrating as network or as pan-European research infrastructures.
"Research infrastructures are facilities, resources and services that are used by the research communities to conduct research and foster innovation in their fields.

Where relevant, they may be used beyond research, e.g. for education or public services.

They include: major scientific equipment (or sets of instruments); knowledge-based resources such as collections, archives or scientific data; e-infrastructures, such as data and computing systems and communication networks; and any other infrastructure of a unique nature essential to achieve excellence in research and innovation.

Such infrastructures may be single-sited, virtual or distributed."

(in H2020 Work Programme)
"Research Infrastructures" (RIs)

are not (only/primarily)...

• monitoring programmes (environmental assessment e.g. EU MSFD)
• data providers for operational forecast models, satellite calibration
• training programmes
• goods/services providers on existing markets ("economic activities")
• etc.
but... relevant RIs are key contributors. Monitoring etc. requirements are essential parts of RIs objectives and strategy, key elements for long-term sustainability and duly considered as regards:

• User strategy
• Organisation, governance
• Data and access policy
• Funding framework
• Collaboration...
• **Added-value!**
RI Business Plan?

• Example: EMBRC-ERIC (template from EIB for ERICs)
• for funders, policy makers, user communities, academia and industry, other stakeholders
• key deliverable of Preparatory Phase
• Updated on a regular basis
## ESFRI 2016 Roadmap

<table>
<thead>
<tr>
<th>Energy</th>
<th>Environment</th>
<th>Health &amp; Food</th>
<th>Physics &amp; Engineering</th>
<th>Social &amp; Cultural Innovation</th>
<th>e-RI</th>
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<tbody>
<tr>
<td>ECCSEL ERIC</td>
<td>ACTRIS 2016</td>
<td>AnaEE</td>
<td>CTA</td>
<td>E-RIHS</td>
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<td>EU-SOLARIS (*)</td>
<td>DANUBIUS-RI 2016</td>
<td>EMBRC (ERIC)</td>
<td>EST</td>
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<td>MYRRHA</td>
<td>EISCAT_3D</td>
<td>EMPHASIS 2016</td>
<td>KM3NeT 2.0 2016</td>
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### ESFRI Projects
- SIOS
- Euro-BioImaging (ERIC)
- ISBE
- MIRRI
- EPOS (ERIC)
- ERINHA
- EU-OPENSSCREEN (ERIC)

### ESFRI Landmarks
- JHR
- EMSO ERIC
- BBMRI ERIC
- E-ELT
- CESSDA ERIC
- PRACE
- Euro-Argo ERIC
- EATRIS ERIC
- ELI (ERIC)
- CLARIN ERIC
- IAGOS
- ECRIN ERIC
- EMFL
- DARIAH ERIC
- ICOS ERIC
- ELIXIR
- ESRF UPGRADERS 2016
- ESS ERIC
- LifeWatch ERIC
- INFRAFRONTIER (*)
- Eur. Spallation Source ERIC
- SHARE ERIC

### Single site
- New 2016
- (ERIC application)
- *ERIC under preparation

- Instruct-ERIC
- European XFEL
- FAIR
- HL-LHC
- ILL 20/20
- SKA
- SPIRAL2

*ERIC under preparation
## ESFRI 2016 Roadmap

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### ESFRI Projects

- **ECCSEL ERIC**: ACTRIS<br>**2016**: AnaEE<br>**CTA**: E-RIHS
- **EU-SOLARIS (*)**: DANUBIUS-RI<br>**2016**: EMBRC (ERIC)<br>**EST**: KM3NeT 2.0<br>**2016**: WindScanner<br>**EPOS (ERIC)**: ERINHA
- **SIOS**: EU-OPENSSCREEN (ERIC)<br>**Euro-BioImaging (ERIC)**: ISBE<br>**MIRRI**: ILL 20/20 (ERIC application)
- **JHR**: EMSO ERIC<br>**BBMRI ERIC**: E-ELT<br>**E-RIHS**: CESSDA ERIC<br>**PRACE**: CESSDA ERIC
- **Euro-Argo ERIC**: EATRIS ERIC<br>**ELI (ERIC)**: CLARIN ERIC<br>**EMFL**: DARIAH ERIC
- **IAGOS**: ECRIN ERIC<br>**ESRF UPGRADES 2016**: ESS ERIC
- **ICOS ERIC**: ELIXIR<br>**InfraFrontier (*)**: Eur. Spallation Source ERIC<br>**SHARE ERIC**: SHARE ERIC
- **LifeWatch ERIC**: INFRAFRONTIER (ERIC application)<br>**European XFEL**: European XFEL
- **Instruct-ERIC**: Instruct-ERIC<br>**European XFEL**: European XFEL
- **Single site**: HL-LHC<br>**Marine comp.** (ERIC application): ILL 20/20<br>**(*ERIC under preparation)**: SKA<br>**Spiral2**: SKA
## ERICs' membership (marine related)

<table>
<thead>
<tr>
<th>Established ERICs</th>
<th>Host country</th>
<th>Members</th>
<th>Observers</th>
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</thead>
<tbody>
<tr>
<td>Euro-Argo ERIC</td>
<td>FR</td>
<td>DE, UK, IT, NL, EL, FI, IE, ES</td>
<td>NO, PL</td>
</tr>
<tr>
<td>ICOS ERIC</td>
<td>FI</td>
<td>BE, DE, FR, IT, NL, NO, SE, CZ, DK, UK</td>
<td>CH</td>
</tr>
<tr>
<td>EMSO ERIC</td>
<td>IT</td>
<td>IE, EL, ES, FR, PT, RO, UK</td>
<td></td>
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<th>Upcoming ERIC (2017)</th>
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In "STATUTES OF Euro-Argo ERIC"

• (Article 3 - Objectives and tasks) ...and, (d) to provide quality controlled data and access to the data sets and data products to the research (climate and oceanography) and operational (e.g. Global Monitoring for Environment and Security (GMES)/Copernicus Marine Service) communities.

• (Article 4 – Activities) ...(i) maintain the links with the research and operational (including GMES/Copernicus Marine Service) user communities; ...

• (Article 27 – Dissemination Policy) 1.Dissemination of the data ...either in the ‘pull mode’...; or in the ‘push mode’, ...(WMO) ... (GTS), ... (EMODnet), to the Copernicus Marine Service and to specific users upon request.
In preamble of "Statutes of the European Multidisciplinary Seafloor and Water Column Observatory — European Research Infrastructure Consortium (EMSO ERIC)"

- WHEREAS the Members desire to coordinate long-term monitoring of environmental processes using a European-scale distributed Research Infrastructure consisting of ocean observatories and platforms capable of collecting and transmitting data autonomously, to be known as the European Multidisciplinary Seafloor and Water Column Observatory (EMSO);...

- WHEREAS the Members request the European Commission to set up, ...(hereinafter referred to as ‘EMSO ERIC’), which will form part of the sub-sea segment of Copernicus and GEOSS (Global Earth Observation System of Systems) and will contribute to the implementation of Directive 2008/56/EC ... establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive);
EU Research Infrastructure policy

• **Long-term sustainability** of pan European Research Infrastructures (RIs): life cycle approach
• **Interoperability** - European Open Science Cloud
• **EU landscape:** integrating/opening RIs of European interest
• RIs for Open **Innovation**
• **Training** (incl. RI managers)
• **Global** dimension
More attention to...

- Political context: 3Os strategy, European Cloud Initiative Communication
- **Synergies** (e-infrastructures, other Horizon 2020/EU priorities e.g. GEOSS, COPERNICUS)
- **Long-term sustainability** (LTS)
- **Innovation** (larger scale initiatives)
- Level of **integration** ("advanced/starting" communities)
Sustainable European Research Infrastructures – A call for action

• EC has launched a debate with EU Member States on establishing a European action plan
• EC document on key issues to be addressed
• Bulgarian EU Presidency: high-level conference on RIs on 22-23 March 2018
LTS: key issues for an action plan (1)

- **Synchronizing** RIs national roadmaps / budgets
- Making RIs available more broadly (**cross-border access** schemes)
- Fostering links **RI – Industry** (large-scale pilots involving RIs and industry)
- Exploiting better **data** from European RIs
- Putting in place effective **governance** mechanisms at European level
LTS: key issues for an action plan (2)

• Making better use of the European Structural Investment Funds (ESIF), the European Fund for Strategic Investments (EFSI), and the InnovFin – EU Finance for Innovators programme for developing RIs

• Promoting the international outreach of RIs, using them as flagships for European science policy

• …
Horizon 2020 – work programme 2018-2020

1. Development and **long-term sustainability** of new pan-European RIs
2. Implementing the **EOSC**
3. **Integrating** and opening RIs of European interest
4. **European Data Infrastructure** (HPC)
5. Demonstrating the role of RIs in the translation of Open Science into Open **Innovation**
6. Support to **policy** and **international** cooperation
EUROFLEETS ARICE (tbc)
EMSO ERIC
JERICO Next
AQUACOSM HYDRALAB+
Euro-Argo ERIC
EUROFLEETS ARICE (tbc)
GROOM
SeaDataNet
EUROFLEETS EuMarine-Robots (tbc)
EMBRC (ERIC)
Many more…
(Satellites)
Find out more:

http://ec.europa.eu/horizon2020

http://ec.europa.eu/research/infrastructures