ICRI2022 side event: *Long-term sustainability of small and mid-scale distributed RI projects* 19th October 2022, Brno (Czech Republic).

Conclusions' summary

SESSION 1. RI PROJECTS SUSTAINABILITY PLANS

➢ ARICE

Development of an International Research Icebreaker Consortium able to fund and implement cruises in the High Arctic: multi-national collaboration on the planning and implementation of Arctic research cruises with heavy icebreakers.

- MoU or similar between nations
- Barter system
- National contributions through a similar IODP (International Ocean Discovery Program) quota system (in cash or in-kind contributions).

➢ ESTEEM3

First steps towards sustainability: Creation of a "European Distributed Research infrastructure for Advanced electron Microscopy" (e-DREAM) as a non-profit initiative (https://e-dream-eu.org/).

Current actions:

- Formation of a legal entity (AISBL).
- Horizon Europe proposals with other ARIE partners (Analytical Research Infrastructures in Europe). Successful applications for INFRA-SERV and INFRA-TECH projects (ReMade@ARI and IMPRESS).

Longer-term sustainability: Uncertain. Guidance and advice required from the EC.

➢ EUFAR

Established as an AISBL in Jan 2018

Member organizations (14) support the AISBL via membership fees and in-kind contributions of personnel. This supports key core activities including:
- Website maintenance
- Data portal
- Administration
- Some dissemination activities

Mid to long term

- Expand membership to provide additional cash and in-kind resources
- Seek external funding opportunities that can
    o Support RI development activities beyond the scope of present resources
    o Support renewed Transnational Access to grow the user base and enable wider access to flight activities
- Work with related RIs in the ENVRI[1] community

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[1] ENVRI: Environmental Research Infrastructures.
The current ENVRI Community brings together 26 European Research Infrastructures that are studying different aspects of the Earth system. https://envri.eu/research-infrastructures/

     o   Promotion of session on airborne science at EGU[2] General Assembly, jointly with the IAGOS, LifeWatch, SIOS and HEMERA INFRAIA projects.

➢ **EUROFLEETS+**

Eurofleets is a distributed, platform-oriented RI, offering both physical and virtual access. Providing access to state-of-the-art Research Vessels, we are an advanced community transitioning from project based to formal structure with the inaugurate a legal entity, in particular an AISBL named EUROFLEETS RI, that provides a formal structure for cooperating on a Pan-European level.

• Provision of Ship Time Access to researchers through a structured annual Transnational Access programme
• Develop and maintain a dedicated "information and opportunity platform" providing easy access to up-to-date information on the European Research Vessel Fleet and associated equipment
• Function as a "market-place" for those offering access to Research Vessels and equipment and those looking for charter, barter or in-kind contribution to research projects, monitoring activities, logistical functions etc.,
• Develop and implement **Training Activity** (Floating Universities, Technology Workshops, Marine Technician Training, and Infrastructure Management courses)
• Participation in European funded programmes which will address existing and future threats to our environment as well as our seas and oceans

➢ **EUROnanoLAB**

EuroNanoLab within the value chain of innovation

• More than 700 high-tech companies/year access to EuroNanoLab nodes (Startups, Spin-offs, SMEs, Corporates)
• On average, 13% of the ENL nodes' budget is coming from industry
• On average 10% of the ENL's PhDs belongs to Industrial /Innovative PhD programs linked to regional specialisations

EUROnanoLAB today

• Importance of establishing an EU micro and nano-fabrication ecosystem highlighted in the ESFRI 2021 Landscape Analysis.
• Access to ENL CRs of Renatech, Czech NanoLab, It-fab @ ENL in NEP
• Direct involvement in Pan-European initiatives fostering Sustainable Nano Fabrication & Innovation
• ENL participates (through Consiglio Nazionale delle Ricerche-CNR) to the INFRA-2021-EOSC-01-04 "FAIR-IMPACT" project for FAIR data implementation.
• GO NANOFAB Implementation Network for micro- and nanofabrication data.
• Alignment and integration with National Infrastructures Roadmaps, e.g. « Infrastructure for ENergy TRAnsition aNd Circular Economy @ EuroNanoLab - iENTRANCE@ENL » @ Italy
• Experts Groups on Dry Etching, Lithography, EXPERTS GROUPS Data and Processes

EUROnanoLAB upgrade

• Update of the MoU almost complete
• Prioritized activities identified

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[2] EGU: European Geosciences Union

- Partners' financial commitment settled up
- HORIZON EUROPE Research Infrastructures Work Program 2023-2024. Calls to be addressed will be those focused on promoting and strengthen synergies and integration within the EU-RI ecosystem. e-DREAM and ARIE are examples to consider.
- Targeted Scientific Communities
- Synergy and integration within the EU RI ecosystem
- Establishment of a Legal Entity under discussion (ERIC, AISBL …)
- Strong alignment with Regional Innovation Ecosystems and National Science and Research Roadmaps.

➢ iNEXT-Discovery

- Translating user feedback to needs.
  INSTRUCT-ERIC is a key beneficiary of iNEXT-Discovery. They are analysing user access and needs (based on mutual experiences with users) and results of joint research and networking activities to elaborate a long-term sustainability plan.
- Infrastructure evaluation and sustainability planning
- Foresight meeting
- Expanding interaction possibilities with industry
- All iNEXT-Discovery activities will be evaluated for their value for the community to be potentially continued under the umbrella of INSTRUCT-ERIC.

➢ PRISMAP

Supply model

- Our Transnational Access model is based on access to radionuclides that are commercially unavailable.
- Rather than bringing the researchers to our facilities, we bring our radionuclides to our users.
- We additionally offer services at our medical facilities where we perform research activities that may not be possible at our user's facilities (challenges with licensing of radionuclides, with long transport of short-living radionuclides).
- We provide a central access point for the European user community in nuclear medicine and molecular imaging interested by innovative radionuclides.

Mid- and long-term sustainability

- Our sustainability depends upon many factors: that of the individual infrastructures, that of our community, and that of our joint effort.
- Those aspects are addressed directly within a dedicated WP, within our management structure with a Sustainability Manager analysing the efforts made in that context, and through support of existing and future facilities.
- A WP is dedicated to the emerging facilities, with openness to new projects as they arise.
- Our communication tools are separated between project specific content and infrastructure related content, the latter meant to outlive the project (e.g., access platform).
- Strategic relevance within the European Radioisotope Valley, following the SAMIRA action plan of the European Commission.

➢ TRANSVAC

Model: Dynamic business model

Bio-Holding:
Based on in-licensed vaccines candidates at early stages that will be developed to further stages of development using in-house resources (partners expertise and facilities). These vaccines will be then sold, and the revenues will flow back to the RI.

- Investor and business partner primarily for early-stage researchers and start-ups.
- Provide funding and active business building support.

This model provides the higher revenue, but it is the most time and efforts consuming.

Contract development / partnership model (service provision)

- Contract development partnership primarily for early-stage researchers and start-ups
- Provide access to a full suite of tailored value-chain / transversal services and project managers to oversee end-to-end vaccine development
- No access to funding. Offered only on the commercial basis.
- There will be a new legal entity or parent company which hosts the RI (looking for a legal entity model that suits better their needs). The RI will work as a "broker" which mediates the provision of services by the members/associates of the parent company.
- Funds come from services fees and royalties.
- Part of the revenues go back to the service providers (partners) and part to the parent company.

➢ **VetBioNet**

Options for mid and- long-term network sustainability

1. Identifying the activities and services to be maintained in the long-term
2. Identifying the legal structure best adapted to sustain the identified activities
3. Defining strategies for subsequent funding of this legal structure

- The option favoured by VetBioNet was to maintain key elements of VetBioNet with additional funding through Horizon Europe.
- Sought to develop new projects in collaboration with other research infrastructures, (ISIDORe).
- EU Candidate Partnership Animal Health & Welfare (PAHW) also presents a promising funding instrument to sustain VetBioNet activities related to veterinary infectious diseases (listed in the Horizon Europe Strategic Plan for 2021-2024
- Currently preparing an ERG agreement to maintain key infrastructure. ERG is a co-operation instrument formed between parties and tailor made by the members. No need for a financial contribution for the creation of the ERG. An ERG can operate with in-kind contributions and seconded staff from members.

> The **ERG** stands for European Research Group or maybe better known in French as GDRE (Groupement de Recherche Européen).
>
> A GDRE is:
>
> - A contractual structure with a specific governance
> - A simple co-operation instrument without legal personality, formed between the Parties, in principle for a period of 4 years (but can be indefinite length => renewal upon evaluation)
> - Tailor made organization, the members define its content
> - No need for financial contribution for the creation of the ERG as such
> - ERG can largely operate with in-kind contributions and seconded staff from members

> • Can be largely inspired by the current consortium agreement (including governance structure and management of IP)
>
> General mission:
> • Support research and fulfil the aim set out in its Scientific program and in particular:
> • facilitate and encourage contacts and exchanges of researchers
> • sustain any collaborative activities;
> • co-ordinate and structure multi-partner research programmes enabling bids to be made on calls for proposals involving support for research and technological development projects;
> • ensure the harmonisation and complementarity of the programmes being pursued by colloquiums, conferences

Why an ERG would be useful for sustainability

- Able to respond with an existing network to coordinate multi-partner research, funding applications (ISIDORe, PAHW)
- Maintains the network, facilitate and encourage contacts and exchanges of researchers.
- Sustains collaborative activities.
- Ensure the harmonisation and complementarity of the programmes being pursued by meeetings, conferences, workshops devoted to themes relevant to the ERG.
- Encourage training activities.

➢ **VITALISE**

Long-term sustainability

- A marketplace where clients post projects and Living Labs place bids.
- Free for ENoLL members

KEYNOTE SPEAKER – ENRIITC

ENRIITC (The European Network of Research Infrastructures and Industry for Collaboration) aims to establish a European network of national industry contacts (ILOs[3]) and the RI industry contact points (ICOs[4]) to act together and engage better with industry.

RI current situation:
- The community is diverse covering many scientific disciplines, countries, and types of RIs.
- The roles of ICOs and ILOs are often poorly defined and disconnected from the host organisation's strategy. Prevents exploiting the innovation potential for co-development.
- RIs remain mainly isolated in the innovation ecosystems.
- ILOs and ICOs face similar challenges for engaging companies, should learn from and interact with one another.

RI-industry engagement:

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[3] Industry Liaison Officer (ILO) – Expert staff working at Government agencies or Research institutes in the member states to stimulate the collaboration amongst the national industry and the international RIs, providing advice on business opportunities, R&D collaborations, calls for tender, and industrial services.

[4] Industry Contact Officer (ICO) – Research Infrastructure staff responsible for strengthening and coordinating cooperation strategies and activities with Industry.

- Information provided to industry is generally clear and sufficient (*reflects a limited study, often this might not be the case. Some industrials do not even know what a RI is*).
- Personal contacts are key to start collaboration.
- Importance to demonstrate the potential of RIs to deliver (showcase success stories).
- Public funding is an instrument used **by both** users and suppliers of RIs.
- Collaborative projects with RIs bring real novelty and the right expertise (*lower the entry level into commercial phase*).
- RI suppliers are interested in engaging in such funded activities (*industrial users are more interested in getting solutions to problems*).
- Trustful collaboration.
- RI-users' relationships should be meaningful beyond the commercial value, including a strong interest of the RI in the industrial needs.

Challenges
   Industry as a supplier:
o   Complicated, lenghty and unharmonised tendering procedures
   Industry as a user:
o   Access fees can be prohibitive
o   Confidentiality and IPR management are critical
   RI-industry working together:
o   Users are mostly interested in solutions to their problems
o   Users need fast solution routes

Opportunities
o   Suppliers are interested in co-designing technologies.
o   Suppliers are interested in building long-term relationships (through consultancy, students).
o   Public incentives could be drivers for reciprocal engagement.
o   Focus publications on the process (*how is the work with the industrial users/suppliers*) rather than the industrial product being developed.

Conclusions
there are opportunities for RI to use industry as part of their sustainability. But to fully exploit this possibility, RIs:
✓   Need for RIs to initiate broader engagement campaign with industry
✓   ICOs and ILOs could be instrumental drivers in the RI-industry engagement
✓   Underexploited potential around innovation
The ENRIITC network can support RIs in their engagement with industry

SESSION 2. CO-CREATION SESSIONS - CONCLUSIONS

Group A: Sustainability of distributed RIs – funding models and operational solutions (R&I, harmonisation of standards, Open Science, education and networking activities).

- EU funding is time limited. Other sources of funding are needed to assure long-term sustainability.
- The distributed RI format makes sometimes difficult to include all partners.
- There is a lack of direct communication channels with policy makers to understand decision making and priorities of the work programmes. *Small and medium size RI are more affected by this.*
- Harmonisation of national, regional and EU policies and funding programmes for RI is needed.
- Small and medium scale RI are rarely given visibility in the ESFRI roadmap.
- World landscape is constantly evolving, flexibility is needed for RI to adapt.

- Developing sustainability plans require specific skillsets that RI need to learn/acquire.

Group B. Sustainability of services – TNA: physical, remote, and virtual access.

- Trans-national access (TNA) is unique, allowing to mobilise the whole intellectual potential of Europe and beyond. It offers a lot for community development, particularly for countries that have not invested or are under-represented in science. Cannot be replaced by other schemes like multilateral agreements.
- TNA provides important added value for research communities and funding it through national sources is difficult (sometimes is not even allowed by national laws). EC support is therefore critical.
- There is a risk that by only funding large-scale top-down initiatives as in the current INFRASERV calls, smaller facilities and even communities may be left out.
- Very broad calls can be a hindrance to diversity.
- Remote services provision may be useful for "automatised" services but less so for tailored, more complex experimental set-ups. *It would be interesting to follow the progress of the **eRImote** project which is currently collecting good practices on remote access solutions across domains.*
- Demonstrating user support is important for long-term RI sustainability *vis-à-vis* funders. Users should be able to tell their experiences with RIs to government, write letters to support RIs; RIs must demonstrate the impact of their activities to funders.
- User interaction is crucial. By promoting this, the RIs can enlarge and strengthen the community[5].

Group C. Visibility and impact of RIs activities including catalogues of services, outreach activities to all types of users and the public.

- All stakeholders cannot be reached using the same information or going to the same events or using the same speech/terminology. Specific information should target a specific audience, e.g., Conferences to find researchers, bilateral meetings to approach the industry, success stories and data/stats to attract funders. No "one size fits all".
  All stakeholders should be considered as partners: users (public or private), public, policy makers, funders, collaborators.
- Dedicated facilitators help to bring together the RIs and industry. Dedicated agencies, dedicated staff, e.g., "business developers" or what ENRIITC calls ILOs and ICOs.
- Targeted outreach activities for specific stakeholders' groups require dedicated resources (staff time, legal support). These activities need to be funded as they help RIs to find funders other than the EU, e.g., national funding agencies, regional innovation clusters, etc.
- Find a balance among research and services, the RIs are necessarily both. For basic sciences (astronomy) it is difficult to get visibility to stakeholders like the EC.
- Interaction with other communities is key for sustainability. Small/middle sized RI can benefit from interactions with ERICs, e.g., joint projects/activities. Could make them relevant for future ESFRI roadmaps.
- Cross-disciplinary actions should not be always top-down. This approach cannot be applied to everything and does not always work well. More bottom-up is needed. On the other hand, cross-

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[5] Staff exchanges are also of great importance. In many cases, hands-on training can be best provided by expert staff through in-person visits to high-end facilities.

disciplinary activities are good for best practices sharing and development (particularly beneficial for the RI staff).

Wishlist:

- Templates for legal documents (MoU, NDA,…) or legal support from the EU. These documents are quite standard for EU RIs and RI projects. Avoid the RI staff to do this work from scratch.
- Get out of the pillar I. *Perhaps the possibility to apply for funding in calls offered in the programmes of pillar II and III, mostly focused on innovation:* **Pillar II – Global Challenges and European Industrial Competitiveness and Innovative Europe** *and* **Pillar III - Innovative Europe.**
- Organise more and more often events like this side event, with more time for discussion, wrap-up and questions from the audience.
- More direct dialogue with the EC for RIs that do not currently have any mechanisms or funding for sustainability. This is urgently needed.

Online group: Sustainability of distributed RIs

- Creating legal entities poses major administrative challenges to researchers specially from small RI communities. Another way to demonstrate commitment aside from legal structure (AISBL, ERIC, etc) is requested.
- Engaging in projects with the private sector is not always easy. Often there is not investment when short-term revenue is not guaranteed.
- Sustaining RIs may be expensive but creates innovation. Make them valuable for the public and private sectors.

SESSION 3 – EUROPEAN COMMISSION FEEDBACK (Agnes Robin – DG RTD, RI unit)

- Support to RI under Horizon Europe is moving towards a more challenge-driven approach, with more focus on what is perceived as necessary and useful from the user perspective.
- The EC is studying the possibility to create a CO-FUND pilot for RI, relying on the support of local governments (national or regional), decreasing the dependence on EC which can no longer be the sole funder of transnational access to RIs, due to budget constraints.
- The EC is working with ESFRI and member states to improve the landscape analysis. Until now, this has focused on existing large-scale RIs, small/mid-scale RIs were not necessarily well considered. Now moving to more in-depth, broader analysis which is decoupled from the roadmap to follow.
- The ESFRI work takes also more into account global perspectives. Although it is not easy to map the RI landscape – it is a very ambitious task.
- New European innovation agenda - capacity to link EU to local/regional infrastructures.
- TNA still supported under Horizon Europe, but HE cannot continue supporting same RIs communities forever (activities other than TNA/consolidation of starting and advanced communities,…). INFRASERV and CO-FUND expected to support the transition to sustainability.
- Way forward is still open - listening to discussions on AISBL and other legal structures other than ERIC.