



D4.4 Report from Regional Technical Workshops

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1. Executive summary

This report provides information on the content and format of five InRoad Regional Workshops held in Prague, Rome, Hamburg, Aveiro and Wroclaw between 2017 and 2018. The five events which gathered participants from research infrastructures (RI), regional and national funding organisations, as well as from the European Commission Directorate-General for Research and Innovation (DG RTD), aimed to provide a space for stakeholders to discuss and deliver a set of recommendations that can help improve the coordination of scientific policies and funding regulatory frameworks at a regional, national and European level, as well as support the robust development of RIs.

2. Methodology

Following a sequential process, the feedback gathered from participants in each regional workshop served as the basis for the design and content of subsequent ones. Despite some variations in content and format, all workshops addressed the following core themes:

- The main bottlenecks encountered during the different RI phases
- The importance of the national roadmap process, timing and funding
- Experiences with regard to the long-term funding of RIs
- Recommendations for a better coordination of the different levels of RI funding

Representatives from various RI presented their case with respect to the core points stated in the paragraph above. In addition to these speakers, the five workshops also included representatives from regional and national agencies, ministries and the European Commission (EC), who contributed to the content of the programme by bringing the policy perspective to the workshop.

Albeit some differences in structure, all five workshops included a round of presentations on specific RIs and science policy cases, followed by interactive sessions (either in the form of a Q&A or parallel sessions), where participants had a chance to actively discuss issues in more detail and propose a set of recommendations. The agendas and list of participants for each workshop can be found in Annex I.

3. Workshop findings

The conclusions under the relevant workshop themes were summarised by workshop rapporteurs. The following paragraphs include the key points identified during the various workshop discussions, as well as the observations and recommendations covered in the rapporteurs' outcome statement.

3.1 General observations & recommendations

Experience shows that building pan-European RIs requires a combination of regional, national and European Union (EU) funds that come from different funding instruments, such as state budgets, the EU Framework Programme for Research and Innovation (Horizon 2020) and the European Structural Investment Funds. The establishment and coordination of these funding instruments with national RI strategies is a long process that

can take many years to materialise. Besides this, there is a lack of expertise to choose, at the RI level, the most adequate set of instruments to fund each RI. This, coupled with the insufficient articulation between funding instruments, long-drawn efforts to meet different funding requirements and the need for closer inter-ministerial coordination, represent the main bottlenecks identified during the workshops.

Equally relevant is the idea that European Union (EU) funding plays a fundamental role in initiating discussions among different scientific communities and public funding organisations, leading more often than not, to the creation of national and transnational networks of players that define common agendas and strategies.

It is also important to note that despite the efforts invested in the past years, further action is still needed to facilitate a common understanding of RI terminology by European scientific communities and government institutions, especially with regard to concepts such as 'RI Roadmap', which vary significantly between different European countries.

Recommendations

Greater coordination and rapport between the different regulatory and institutional levels (regional, national and European) is essential to enable the firm development of RIs, whilst respecting the principle of variable geometry¹ that accommodates differences in views among countries.

The alignment of terms and definitions is paramount to the construction of the European Research Area, and therefore, to research infrastructures. Without a common language among funding agencies, scientific communities and policy makers, a shared understanding of the basic concepts cannot be reached, which is necessary to develop further transnational collaborations. A few examples include:

- *What is a research infrastructure?*
- *What is a national RI roadmap?*
- *What is a single-sited research infrastructure?*
- *What is a distributed research infrastructure?*
- *What is an international research infrastructure?*
- *What is a national research infrastructure?*

3.2 Operational phase funding

The diversity of available funding instruments in early stages stands in contrast to the financial challenges experienced by RI managers during the operational phase. The provision of technological and scientific RI capabilities to compete globally requires among other things, a permanent dialogue between users, RI managers and policymakers, as well as a long-term vision backed by governments and their mandated agencies.

In recent years, operational phase funding has acquired more importance due to two factors: the increasing number of RIs entering the operational phase and the new breed of RIs whose operational costs are relatively higher than those of the construction phase. In light of this situation, further clarifications on the differences between funding of RI investments (CAPEX and OPEX) and funding dedicated to competitive research projects

¹ Variable Geometry: http://eur-lex.europa.eu/summary/glossary/variable_geometry_europe.html

are needed to enable the understanding of policymakers. Without a sound understanding of these two concepts, a distortion of the RI mission occurs preventing it from reaching its full potential and from attaining a high return on investment, whether it is in the form of scientific publications, patents, research projects and so forth.

At the same time, it is also important to acknowledge the fine line between capital and operational expenses. Although both concepts are linked to the long-term strategy of a RI, not all available funding schemes cover them to the same extent throughout the RI's life cycle. Structural funds, for instance, do not contemplate the provision of funds for operational expenses that are necessary for the viability of RI services. In High Performance Computing (HPC), as systems become quickly obsolete and renewed investments are required, host organizations are under continuous pressure to cover expenses related to hardware, software, support and maintenance. This, coupled with the fact that RI funding comes from various sources, adds a new layer of managerial complexity to the financial and operational sustainability of the facility.

Recommendations

Ensuring a transitional period from one phase to another through investments is important for the financial sustainability of RIs.

Securing the costs associated to the operational phase of RIs through the reconfiguration of existing and/or new tailor-made financial mechanisms would be a measure well received by RI managers.

Further consideration from national governments should be given to the creation of a dedicated (national, not institutional) funding line to cover operational costs. In this regard, the European Commission should look into its role as facilitator of this process.

Structural funds could help narrow down further the technological gap between less developed European regions and those that are leading the way by covering the operational costs of RIs.

3.3 Alignment of instruments

A one-size fits all approach to RI funding fails to adequately recognise the needs and priorities of unique state-of-the-art facilities. The construction and operation of RIs involves large budgets from national, regional and European funds. To maximise the impact of multilevel investments throughout the different stages of a RI life cycle closer synergies between regional, national and European instruments are needed. However, aligning the pan-European mission with regional policy can be challenging; while the former looks at Europe as an assembly of Member States (MS), the latter looks at Europe as a separated group of regions, leading to considerable consequences for the creation of synergies between structural funds and RTD Framework Programmes.

Adjustments to facilitate the alignment of European Structural Investment Funds with the future framework programme (FP9) in areas related to RI financial regulations, state-aid-rules and public procurement would be highly recommended by some countries.

An equally significant aspect mentioned is building on existing initiatives. National calls for proposals, European Research Area Networks (currently ERA-Nets in H2020), European

Joint Programmes (EJPs) and Joint Programming Initiatives (JPIs) offer a good model to maximize synergies by bringing future scientific communities and users closer to research infrastructures.

Recommendations

A favourable regulatory environment that takes into consideration the distinctive needs of different RIs is important for the investment and operation of facilities, e.g. hiring of specialised personnel, operational costs, equipment components, grid technology, computing resources, etc.

Either the simplification of regulations or a single set of funding rules in the next programming period for research and innovation, could bring about greater stability and clarity to stakeholders (i.e. users of RI services, facility managers, beneficiaries and funding organizations), as well as favour synergies among different funding programmes. The provision of centralized expertise for RI managers could help navigate the complex regulatory environment.

Where new regulatory measures are proposed, attention should be given to detecting and acknowledging both differences and connecting points between the structural funds and the EU Research Framework Programmes.

Synergies between national calls for proposals, ERA-Nets, EJPs and JPIs with RIs could be fostered to cultivate coordinated joint activities in areas of significant strategic value and relevance to the ERA.

The suitability and potential of the Interreg scheme as a model for funding cross-border and inter-regional activities in connection to RIs should be further explored.

Research infrastructures should not be financed through one call for proposals, or with a single set of evaluation criteria, as there are intrinsic differences to consider in terms of capital and operational costs, scientific domain and typology (single sited, virtual, distributed).

3.4 In-kind contributions

In-kind contributions help capacitate and operate RIs through the provision of technical equipment and the secondment of staff. Aspects such as ownership transfer, tax and legal matters, as well as determining the value of certain goods and services can sometimes involve challenging, lengthy processes for the stakeholders involved. A lack of understanding of the specific know-how of a consortium partner can thus have an impact on the provision of suitable resources to an RI.

Recommendations

Understanding the capabilities and know-how of the different partners can help to effectively manage and allocate in-kind contributions in international large-scale facilities.

Agreeing on a standard cost equivalent for a good or service provided by a contributor to a RI (irrespective of the real cost of origin or of execution) not only offers a solution to

arduous negotiations/calculations on in-kind contributions among international partners, but also helps achieve further convergence among countries.

3.5 National roadmaps

The criteria, timing and processes in national RI roadmaps vary from country to country, creating a domestic regulatory framework that presents weaknesses for European Union-level cooperation and growth.

Updated lists, maps or documents of already existing research infrastructures in MS and AC are not always available online for consultation.

Recommendation

A gradual coordination of methodologies for National RI Roadmap preparation and planning across Europe (i.e. criteria, timing and process) would help reduce the variability of processes and intervals, bringing about a greater degree of clarity and predictability for the coordination of policies and the realisation of strategic investments.

To the extent possible, the development and update of a list/database of existing national facilities for consultation purposes—including those involved in ESFRI projects or preparatory phases— would help to attain a better idea of the RI landscape in each country.

3.6 Transnational access policies

In terms of transnational access, two phenomena have been observed: On one hand, large companies are willing to pay for access to RI services to keep their Intellectual Property and on the other, Small Medium Sized Enterprises (SMEs) seeking financial leverage are eager to obtain funding for transnational access and disseminate their results.

The defragmentation and optimisation of resources through common standards and harmonised access rules is vital for the creation of the ERA. This, however, requires not just the establishment but also the effective implementation of policies that ensure access to RI through the principles of transparency, non-discrimination, information and competition (i.e. the European Charter of Access to RI).

Improving awareness of RIs and their portfolio of services and products is essential to increase user involvement inside and outside the scientific community. Promotional activities aimed at informing on the benefits and socio-economic impact of RIs can encourage favourable attitudes in advance of cultural and scientific progress, thus, stimulate the innovation process in Europe.

Recommendation

Given the diversity of users, designing an access scheme that acknowledges the variety of profiles and their different needs could stimulate further the demand for services from state-of-the-art facilities. Such scheme though would have to be aligned to and supported by an appropriate EC funding instrument.

The involvement of users from early conceptual stages of the RI can be beneficial for the design of access schemes, as well as for the validation of the fit-for-use and fit-for-

purpose of research facilities. Besides this, specific actions aimed at young post docs could help raise awareness of the products and services offered by RIs.

User communities could be supported with a research voucher scheme (which would also be a source of funding for the RIs).

An outreach policy can be stimulated through specific initiatives tailored for RIs to extend the range of actions and to go along with existing promotional and educational activities.

3.7 Business plans, financial practices and audits

Despite some scepticism, business plans (BP) are generally considered useful managerial tools in the planning and execution of an RI's objectives. Precisely, they help improve performance through the alignment of activities and resources to the RI's mission.

Also related to BP are Key Performance Indicators (KPI). While some RI communities view them as unfit for the RI's purpose, others consider them a constructive tool for research and development (R&D). In a similar manner, socio-economic impact, which is critical in structural funds, is generally perceived as only measurable after several years. Therefore, demonstrating the value of the initial investment to policymakers can become a daunting task for RI managers.

Updates in rules are as important as investments in infrastructures. In particular, workshop participants have identified the points below as relevant:

- The standardization of purchasing processes for RIs in all countries (through big contracts, for example) and the clarification of state aid regulations in MS and (AC) for public procurements, taxing, VAT from in-kind contribution etc.
- The gradual harmonization of accounting standards to achieve a common and transparent framework that can be used throughout all stages of the life cycle and understood by all parties involved (i.e. funding agencies, delegates, ministries and RI managers), regardless of the statutory seat's geographical location.

Audit processes are not without challenges, as different rules apply in different countries, and concepts inherent to the ERIC legal framework, such as taxing and VAT, in-kind contributions and pension schemes, can be difficult to understand for parties involved, especially for auditors who are unfamiliar with the ERIC legal architecture.

Concerning long-term sustainability, the importance of considering and calculating all costs from an early stage, including those associated to dismantling the RI (if relevant), was highlighted by some workshop participants.

Recommendations

'Result based management' tools, like the one of the United Nations that was developed to address areas where it is difficult or inappropriate to monetize the effects, are available and could be used by RIs for strategic planning².

KPIs are important but need to be adequate and tangible. A minimum common base of indicators in combination with a tailored-set of KPIs could help improve the RI's R&D capacity and the overall excellence of its services.

The use of KPIs for monitoring and evaluation of RIs could allow contractual funding of RIs, taking into account their specific mission and their socio-economic impact in the innovation ecosystem they are embedded in.

The harmonization of accounting standards on an ERIC level would bring about a common framework where all information and terminology is appropriate, comparable and explanatory for all users regardless of nationality.

Despite the fact that complete specifications during the design phase are not available, the estimation of all costs including decommissioning, as well as their periodic re-evaluation, is for the benefit of stakeholders and potential funders. Other than cost structuring, the estimation of decommissioning costs helps ensure that necessary funds will be in place to cover the costs of decommissioning the facility.

The inclusion of an Industry Board (if relevant), can be useful to voice their interests, build networks for collaboration and make small-scale investments in RIs.

3.9 Training and awareness

Although there is ample information out there on ERICs, the general perception, however, is that the information is scattered and not always accessible in a concise form to everyone.

More qualified experts able to navigate the complex financial and regulatory environment are needed to maintain the efficiency of RIs. Also related to this is the shortage of qualified personnel in highly skilled areas such as big data, data mining and modelling that are relevant for RI operation and upgrading.

Science knows no borders. Positioning state-of-the-art facilities in the global arena requires a national science policy that acknowledges the importance of international visibility and a comprehensive national support system that enables the participation of national RI groups in international networking and development activities.

² <http://www.un.org/en/ecosoc/qcpr/pdf/sgr2016-studies-rbm-8jan2016.pdf>

Recommendations

Mutual learning exercises can help starting and existing RI communities gain exposure to good practices, lessons learned and success factors of RI management, based on extensive experience.

Human Resources are necessary to successfully manage the different available funding schemes that support the operation of RIs. Creating a new platform/ empowering an existing one for the analysis of required funding strategies in all stages of an RI's life cycle, notably the operational phase, could be of benefit to the RI community of managers.

The creation of an ERASMUS-type of scheme for short secondments of public civil servants, working in RI policy and funding, could contribute to a better understanding of RIs and the factors that determine the use and non-use of funding instruments as potential sources for RI funding in different countries. In consequence, this would enable more informed funding decisions, as well as a stronger funding coordination among countries through the mobility of these civil servants.

Specific lines of scientific employment in fields such as HPC and Big Data, where Europe is lagging behind in comparison to other world regions, should be further promoted by universities and regional and national authorities.

Next steps

Bringing together representatives from different regional scientific communities and national funding organisations evolved into a useful format for progress reporting and knowledge sharing. The observations and recommendations made during the five workshops have been included in this deliverable. More concrete conclusions and policy recommendations will be mentioned in the report D4.5 due in month 24, upon completion of our ongoing WP3, WP4 and WP5 case studies' analysis and after the validation workshop in Brussels on 1 -2 of October 2018.

Annex I. Individual regional workshop reports

The following pages include the reports for each regional workshop (including their respective agendas and participants' list), organised within the framework of the InRoad project.

**REGIONAL WORKSHOP ON FUNDING OF RESEARCH
INFRASTRUCTURES
Château Liblice
Prague, 8-9 November 2017**

Prague Report

Authors: Carme de Andrés Sanchis (Helmholtz Association, Germany) and Annika Thies (Helmholtz Association, Germany).

Acknowledgements: Beata Lubicka (Wroclaw Research Centre EIT+, Poland), Carlos Silveira (Centro Regional Coordination and Development Commission, Portugal), Claudia Ritter (German Aerospace Centre), Gerd Rücker (German Aerospace Centre), Ivana Paidarova (Academy of Sciences of the Czech Republic), Jan Hrušák (Czech of Sciences of the Czech Republic), Nataliia Voievoda (French National Centre for Scientific Research) and Teresa Jorge (Centro Regional Coordination and Development Commission, Portugal).

Brussels, 05.02.2018

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1st REGIONAL WORKSHOP ON FUNDING OF RESEARCH INFRASTRUCTURES

**Czech Academy of Sciences
Château Liblice
Prague, 8-9 November 2017**

1. EXECUTIVE SUMMARY

The overarching objective of the 1st Regional Workshop on Funding of Research Infrastructures (RIs) was to provide a space for stakeholders from different research facilities and from public funding organisations to discuss and deliver recommendations for the improvement of RI funding in the next generation of structural funds and the European Union (EU) Framework Programme for Research and Innovation (FP9).

The workshop gathered attendees mainly from the Czech national community but also from other countries such as Austria, Bulgaria, France, Germany, Poland and Portugal. The applied selection criteria for the invitation of participants took into consideration the broadest possible representation of fields and expertise.

The opening remarks of Dr Jan Hrušák, Advisor to the Council at the Academy of Sciences of the Czech Republic, introduced participants to the three parallel session format, designed to address the roles of national funding organisations, the European Structural Investment Funds (ESIF) and of the current EU Framework Programme for Research and Innovation (H2020) with regard to the financial sustainability of RIs. More information on the outcome of each of the parallel sessions can be found in the following paragraphs.

2. ROUND TABLE DISCUSSIONS

2.1 GROUP ONE PARTICIPANTS

2.1.1 Moderator

- Ricardo Miguéis— National Innovation Agency of Portugal

2.1.2 Rapporteurs

- Carlos Silveira— Centro Regional Coordination and Development Commission, Portugal
- Carme de Andrés Sanchis— Helmholtz Association, Germany



2.1.3 Participants

- Eva Hajičová— National Coordinator of the Czech node in CLARIN-ERIC
- Jan Gruntorad—CESNET e-Infrastructure for Science, Research and Education
- Lukáš Levák—Ministry of Education, Youth and Sports of the Czech Republic
- Milan Váňa—Aerosols, Clouds and Trace Gases Research Infrastructure
- Radomír Pánek— Institute of Plasma Physics of the Czech Academy of Sciences

2.2 CONCLUSIONS AND RECOMMENDATIONS

Experience shows that building pan-European RIs requires a combination of regional, national and EU funds that come from different funding instruments such as state budgets, H2020 and ESIF. The establishment and alignment of these funding instruments with national RI strategies is a long process that can take many years to materialise. This, coupled with the lack of articulation between funding instruments, long-drawn efforts to meet different funding requirements and the need for closer inter-ministerial coordination represent some of the main bottlenecks identified by Group One participants.

There is also a strong feeling among these participants that a closer rapport between national strategies, funding frameworks and European priorities is essential to facilitate the fast and firm development of RIs, as well as their long-term planning, whilst respecting the principle of variable geometry ¹ that accommodates differences in views among countries.

Other areas of concern refer to the improvement of transnational access policies to increase quality of services and extend availability to a wider range of users on a European and international scale, to the simplification of administrative conditions and regulations in the different funding programmes and to the need for finding feasible solutions to cover the operational costs of research infrastructures.

In addition to these observations, there is a shared consensus that EU funding is fundamental to initiate discussions among different scientific communities and public funding organisations, to develop national and transnational networks of players and to define common agendas and design strategies around these. In many cases the construction of state-of-the-art research facilities is supported significantly by European Structural and Investment Funds.

An equally significant topic considered during the session was the extent to which national funding systems are bound to national RI strategies, and how these converge with European priorities. In this respect, there is a general perception among participants that national pan-European RIs depend on

¹ Variable Geometry: http://eur-lex.europa.eu/summary/glossary/variable_geometry_europe.html



national priorities and to a lesser extent on the ones set by the European Commission.

2.3 GROUP TWO PARTICIPANTS

2.3.1 Moderator

- Teresa Jorge— Centro Regional Coordination and Development Commission, Portugal

2.3.2 Rapporteurs

- Jan Hrušák— Academy of Sciences of the Czech Republic

2.3.3 Participants

- Daniel Carapau— The Foundation for Science and Technology, Portugal
- Evgeni Evgeniev— Ministry of Education and Science of Bulgaria
- Ondrej Hradil— Central European Institute of Technology, Czech Republic
- Lukas Masopust— Institute of Physics of the Czech Academy of Sciences
- Martin Pumera— Institute Chemical Technology Prague
- Stéphanie Lecocq— French National Centre for Scientific Research
- Vlastimil Ruzicka— Technology Centre of the Czech Academy of Sciences

2.4 CONCLUSIONS AND RECOMMENDATIONS

The development and operation of RIs involves large budgets from national, regional and European funds. To maximise the impact of multilevel investments throughout the different stages of a RI lifecycle, closer synergies between regional, national and European instruments are needed. In relation to this, the modification of ESIF framework conditions to better suit RI purposes through the alignment of structural funds with FP9 would be highly recommended by some countries (e.g. financial regulations, state-aid-rules and public procurement).

Ensuring a transitional period from one phase to another through investments is important for the financial sustainability of RIs. In this context, securing the costs associated to the operational phase of RIs through the reconfiguration of existing and new tailor-made financial mechanisms would be well received by RI Operators.

Improving awareness of RIs and their portfolio of services and products is vital to increase the level of user involvement of those inside and outside the scientific community. Promotional activities aimed at informing on the benefits and socio-economic impact of RIs can help encourage favourable attitudes in advance of cultural and scientific progress, thus, stimulate the innovation process in Europe.

The creation of an ERASMUS-type of scheme for short secondments of public civil servants working in RI policy and funding could contribute to a better



understanding of RIs and the factors that determine the use and non-use of specific and non-specific funding instruments as potential sources for RI funding in different countries. In consequence, this would enable more informed funding decisions, as well as a stronger funding alignment among countries through the mobility of these civil servants.

There is a recognized need for all RIs to define access policy and to address the fragmentation and diversification of resources through alignment. Access policy and modalities require common standards and harmonised access rules and conditions for researchers across the European Research Area (ERA).

Another idea raised during the discussion was the establishment of an independent body to monitor and evaluate performance, financial and accounting practices of RIs to help identify managerial and financial issues more easily, as well as to contribute to the formulation of success metrics. Moreover, the application of tailored KPIs, both for internal managerial purposes and for external monitoring/evaluation, could facilitate the tracking and monitoring of a research infrastructure's performance. This shift would then generate valuable evidence to influence the development of corrective measures and effective research and innovation policies and practices. It remains to be further explored to what extent this concept resonates with other research infrastructure communities, as well as how these procedures could be implemented, if feasible. –Indeed, something to consider for the upcoming regional workshops.

2.5 GROUP THREE PARTICIPANTS

2.5.1 Moderator

- Augusta Maria Paci— National Research Council of Italy

2.5.2 Rapporteurs

- Beata Lubicka— Wroclaw Research Centre EIT+, Poland
- Ute Krell— German Electron Synchrotron

2.5.3 Participants

- Pedro Alberto— University of Coimbra, Partnership for Advanced Computing in Europe, Portugal
- Ivana Paidarova— J. Heyrovsky Institute of Physical Chemistry Academy of Sciences of the Czech Republic
- Gerd Rücker— German Aerospace Centre
- Jiří Chýla— Institute of Physics of the Czech Academy of Sciences, European Light Infrastructure
- Nataliia Voievoda— French National Centre for Scientific Research
- Beata Lubicka— Wroclaw Research Centre EIT+, Poland
- Ute Krell— German Electron Synchrotron



2.6 CONCLUSIONS AND RECOMMENDATIONS

Investments in RIs have generated new opportunities to access specialised knowledge, which in 10 years' time (in the majority of cases) will become a commodity resource to European scientific communities. In light of this, exploring further the flexible application of ESIF, for instance by allowing the possibility of using structural funds as a national contribution to a RI outside the country, could open the door to new collaboration models. An initiative of these characteristics, however, would have to be supported by the scientific communities and funding authorities inside and outside the hosting country.

Research Infrastructures are usually embedded or part of other institutions. More often than not, the funding that feeds the RI comes from various sources, which is indistinguishable to the operating RI. For digital RIs such as PRACE², this represents a major challenge, since maintaining the operation of its facilities entails a renewed investment in computing hardware every 5 years. In most cases, therefore, operational costs associated to a RI do not rely on one single funding source or on a specific national RI funding channel.

Placing increasing importance on flexible financial models that accommodate alternative funding sources for RI development, for instance, the involvement of private companies with established consortia to help leverage or attract private investments would be welcomed by some countries. Private co-financing in this context would become an eligibility condition for the selection of national RI projects.

There is a general consensus that transparency is key to a successful and sustainable strategy. From a regulatory perspective, some participants commented that even though national RI funding systems follow certain rules, still the overall level of transparency is rather limited in some countries. Thus, the diffusion of publicly available information on national calls through electronic communication services should be provided. In connection to this, the use of the European Charter of Access to Research Infrastructures as a reference could ensure the establishment of a regulated framework.

Other recommendations relate to future EU funding initiatives aimed at the development of ecosystems around RIs. Opportunities in this line of thought include the new call for proposals under the Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing (NMBP) programme 2018-2020 on creating innovation hubs. An initiative of this kind could help strengthen the network of innovation hubs across the ERA. Under the proposed programme, a RI could become part of a larger multidisciplinary and multi-sectorial initiative, thereby enabling capacities to tackle bigger challenges.

On the whole, the Prague regional workshop was a useful starting point for understanding the experiences and main concerns of the RI Operators, as well

2 Partnership for Advanced Computing in Europe (<http://www.prace-ri.eu>)



as the perspectives of representatives from public funding organisations with regard to the national roadmapping process, its timing and funding. The information gathered throughout these parallel sessions, as well as those gap areas identified afterwards by InRoad consortium partners, will serve as the basis for future discussions in the upcoming regional workshops in Rome, Hamburg, Aveiro and Wrocław.



3. ANNEX

3.1 AGENDA

1st Regional Workshop on Funding of Research Infrastructures

Prague, 8-9 November 2017

Conference Centre at Liblice Castle

8th of November

11h00-13h30 Registration of Participants

12h00-13h45 Light Lunch

14h00-15h30 Plenary Session

Moderator Ricardo Miguéis—National Innovation Agency of Portugal

Welcome speech by Jan Hrušák—Czech Academy of Sciences

Introductory speech by Lukáš Levák—Ministry of Education, Youth and Sports

Keynote speech by Vlastimil Ružička—Ministry of Education, Youth and Sports

15h30-16h00 Coffee break

16h00-18h00

Round table discussion on the funding of Research Infrastructures (RI), along the different phases of the RI life cycle, considering the past experience and projections for the future, namely the following topics will be addressed:

The Role of ESIF in the funding of RI

- How can ESIF contribute to the funding of the different phases of the RI life cycle?
- What are the major advantages and bottlenecks in ESIF RI funding? How is the ESIF funding linked to national prioritization and funding processes? How should these links be improved?
- How should the ESIF framework conditions be modified to better suit the RI purposes?

The role of national and institutional funding of RI

- To what extent are national funding systems directly bound to national RI strategies, and how are these processes linked to European priorities? Are there good practices?



- How transparent are national RI funding systems?
- Are contributions to European RI evaluated differently/funded differently than contributions to national RI, and what are the advantages/disadvantages?

The role of European funding of RI

- How important is European RI funding in the different life cycle phases of the RI?
- What is the focal point of EU funding and how strong is the role of the European Commission as a funder influencing national processes?
- Specifically, do we need a strong intervention from the European Commission to facilitate transnational access to RI?
- Are there particular changes to be proposed with respect to the RI funding within the next Framework Program?

18h00-18h30 Meeting of Rapporteurs

20h00-22h00 Dinner

9th of November

9h00-11h00 Continuation of discussions with the objective of arriving at conclusions/recommendations to be presented by the rapporteurs and discussed in the final plenary session

11h00-11h30 Coffee break

11h30-13h00 Plenary Session

Presentations of conclusions by the rapporteurs
Concluding debate and recommendations

13h00-13h30 Closing Session

13h30-14h30 Light Lunch



3. 2 PRESENTATIONS

3.2.1 Research Infrastructures of the Czech Republic in the context of the European Research Area - Dr. Lukáš Levák

This presentation provided an overview of the Czech national research and development (R&D) system with special attention to:

- a) the role of the Ministry of Education, Youth and Sports as the main body involved in the making of national R&D policy and strategy;
- b) the different RI in which the Czech Republic participates, including international organisations, AISBL and ERIC;
- c) the Large RIs funding scheme and its follow-up activities;
- d) the roadmap of large RIs of the Czech Republic (2016-2022); and
- e) the 2017 evaluation of the national RIs.

3.2.2 Research Infrastructures, an international comparison - Professor Ruzicka

Professor Ruzicka's presentation provided an overview to the findings gathered in a comparative study among countries of similar size to the Czech Republic, e.g. Austria, Estonia, Denmark and Netherlands (just to name a few) revealing the differences and similarities among them in a range of categories such as:

- a) number of researchers per country in 2015;
- b) number of researchers per thousand employed (2015);
- c) number of RIs and international Research Organisations on NRRI³ (2015);
- d) number of RI/IRO⁴ per number of researchers (2015); and
- e) volume of funds for RI and IRO in 2016 (annual funding of RI/IRO as a percentage of government R&D funding).

Furthermore, professor Ruzicka mentioned that the data collected (in particular the funding figures) was often difficult to compare as in some countries funding from a major agency is supplemented by other bodies like regions or by private sources.

³ National Roadmap of Research Infrastructures

⁴ International Research Organisation



**NATIONAL FUNDING: BUILDING AWARENESS ON
POLICY PERSPECTIVES**
National Research Council of Italy
Rome, 27-28 November 2017

Rome Report

Authors: Carme de Andrés Sanchis (Helmholtz Association, Germany), Claudia Ritter (German Aerospace Centre), Gerd Rücker (German Aerospace Centre), Teresa Jorge (Centro Regional Coordination and Development Commission, Portugal), Cecilia Lalle (National Research Council of Italy, Augusta Paci (National Research Council of Italy) and Annika Thies (Helmholtz Association, Germany).

Brussels, 05.02.2018

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2nd REGIONAL WORKSHOP ON FUNDING OF RESEARCH INFRASTRUCTURES

National Research Council of Italy

Rome, 27-28 November 2017

1. EXECUTIVE SUMMARY

The 2nd Regional Workshop on 'National Funding: Building Awareness on Policy Perspectives' provided a space for Italian and foreign experts from research infrastructures (RI) and public research organisations to exchange knowledge and experiences, as well as to raise awareness on a number of relevant issues: 1) national funding instruments and RI roadmaps, including the macro-regional level; 2) research and innovation funding mechanisms to support RI services; 3) monitoring and life-cycle development of RIs; and 4) the formulation of recommendations for RI policy development. More information on the outcome of the sessions can be found in the following paragraphs. Upon request, an extended report with details on the content of the two-day workshop will be provided by the National Research Council of Italy.

2. PLENARY SESSION - DAY 1

2.1 Welcome and Introduction

- Corrado Spinella - National Research Council of Italy - DSFTM
- Isabel Bolliger - UNIL
- Teresa Jorge - CCDRC

2.2 Panel: Perspectives on National funding and RI roadmaps for Pan-European RI including macro regional considerations

2.3 Moderator

Sauro Longhi - Marche Polytechnic University - GARR

2.4 Participants

- Ornela de Giacomo - Central European Research Infrastructure Consortium (CERIC)-ERIC
- Maurizio Peruzzini - National Research Council of Italy
- Carlo Mariani - University of Rome 'La Sapienza'
- Lorenzo Avaldi - National Research Council of Italy
- Floriana La Marca - EIT Raw Materials GmbH
- Virginia Coda Nunziante - National Research Council of Italy



2.5 Conclusions and Recommendations

While there is a general consensus that the financial commitment of Member States (MS) in cash is essential for the operation of RIs, in-kind contributions, on the other hand, are perceived by workshop participants as an additional funding mode that can help capacitate research facilities, as well as fulfil their mission through the provision of products and services like technical equipment and secondment of staff. Operation, however, is a phase in RIs that feeds mainly from cash contributions.

Equally relevant is the involvement of RIs in Public Private Partnerships (PPP). Participants seem to agree that involving research facilities from the beginning in PPPs is important for the long structuring process. Furthermore, according to some participants, Member States (MS) and the European Union (EU) should scale up their investments in Research and Innovation (R&I) to leverage private investment and stimulate the growth of products and services in key global sectors like health, environment and energy. Connecting research and private-sector knowledge through effective models could help break down the silos and foster innovation.

Other points raised throughout the session included the so-called Knowledge Innovation Communities (KICs), which provide favourable place-based conditions for synergies and complementarities with lateral actors such as universities, businesses and research performing organisations in fields like health, climate change and raw materials). These communities provide a critical mass of universities and companies in specific sectors that concentrate specialised knowledge important for the generation of new ideas. The general perception is that involving RIs in the innovation chain of these communities could help bridge the gap between research and market.

Designing and investing in a sound marketing strategy that improves the visibility of a RI is vital for their long-term sustainability. To this end, identifying the core users of a RI and their needs is important to determine appropriate promotional strategies that will increase RI presence among SMEs and academic segments, as well as enable the growth of research and development activities of these facilities. The overall idea is to design policies that place more emphasis on the user dimension.

A one-size fits all approach to RI funding, however, fails to adequately recognise the needs and priorities of state-of-the-art facilities. A favourable regulatory environment for structural funds that takes into consideration the distinctive needs of different RIs is important for the investment and operation of facilities (e.g. hiring of specialised personnel, operational costs, equipment components, grid technology, computing resources, etc.). For instance, the eligibility conditions involved in the use of structural funds have major implications for the operability of research facilities. Given that the



usual norm is that European capital cities are ineligible beneficiaries of ESIF¹, attracting users and qualified personnel to RIs located in regions with limited transport links and school services can become a daunting challenge. These factors should therefore be taken into account when proposing/choosing the location for a new facility.

Also related to structural funds is the perception that socio-economic impact (SEI) in some scientific areas is often only measurable after several years. In consequence, demonstrating the value of the initial investment to policy makers can be a difficult task for RI Operators. This applies in particular to RIs using ESIF. For this reason, workshop participants agreed that exploring the modification of some ESIF rules to suit RI purposes is an area worth further exploring. Moreover, supporting the development of a business plan for the short/mid-term planning and operation of RIs, strikes as a recommendable practice, among workshop participants.

3. PLENARY SESSION - DAY 2

3.1 Block One

3.1.1 Panel: R&I policy mechanisms supporting RIs services

3.1.2 Moderator

- Roberto Senesi - University of Rome 'Tor Vergata'

3.1.3 Participants

- Alberto Morgante - National Research Council of Italy
- Jacqueline Allan - Joint Institute for Innovation Policy
- Roberta Fantoni - Italian National Agency for New Technologies, Energy & Sustainable Economic Development (ENEA)
- Prof. Maria Sabrina Sarto - University of Rome 'La Sapienza'
- Attila Havas - Hungarian Academy of Sciences
- Gian Mattero Fornaro - Agency for the Promotion of European Research (APRE)
- Olga Skalska - Funding Box

3.2 Block Two

3.2.1 Panel: Dialogue with Individual RIs Monitoring and Life-cycle development

3.2.2 Moderator

- Augusta Maria Paci - National Research Council of Italy

3.2.3 Participants

- Antje Keppler - IPS EuroBioimaging ²

¹ European Structural and Investment Funds
(http://ec.europa.eu/regional_policy/sources/docgener/guides/blue_book/blueguide_en.pdf)

² European Research Infrastructure for Imaging Technologies in Biological and Biomedical Sciences
(<http://www.eurobioimaging.eu>)



- Alberto Luini - National Research Council of Italy (EuroBioimaging)
- Carmela Cornacchia - National Research Council of Italy (ACTRIS³)
- Ornela De Giacomo - Central European Research Infrastructure Consortium (CERIC-ERIC)
- Luca Pezzati - National Research Council of Italy (ERIHS)
- Carmela Freda - National Institute of Geophysics and Volcanology (EPOS⁴)
- Corrado Spinella - National Research Council of Italy

3.2.4 Conclusions and Recommendations

There is a recognised need for targeted interventions aimed at fostering synergies between different regional, national and European funding instruments. The coordination of these different levels is important for the sustainability and operability of RIs. Multi-level governance, therefore, should acknowledge the strategic relevance of RIs when designing future scientific policies or deciding R&D funding investments.

The RI landscape in Europe is a diverse one. R&D partnerships between industry and RIs should be promoted, while at the same time the main purpose of many RI, as e.g. Synchrotron facilities should be to provide free access to the research community to enable excellent science. According to a number of participants, financial sustainability is important and should also contemplate supporting a part of the user community through the provision of research vouchers schemes, for example. It is unclear at this point what sort of voucher system could be put in place but this idea is certainly an element for further exploration in upcoming workshops.

Furthermore, availability of information on tools and processes was identified by workshop participants a barrier for the development of collaborations between RIs and the private sector. A stronger focus on raising awareness of regional SMEs, as well as on equipping these with competencies on how to apply, use and understand these state-of-the-art research facilities, is considered to be vital to forge R&D partnerships.

On a more strategic level, participants commented that the link between national science strategy and foresight in some countries is feeble. Connecting the current science strategy of a country to more coordinated future innovation systems requires continuous scanning and monitoring of trends. This analysis is fundamental to evolve quickly and remain competitive globally.

Establishing effective transparent policies that ensure high performance and competition through the principles of non-discrimination, information, accountability and competition are fundamental to sustain scientific

³ European Research Infrastructure for the observation of Aerosol, Clouds, and Trace gases (<http://actris2.nilu.no>)

⁴ The European Plate Observing System (<https://www.epos-ip.org>)



excellence in the European Research Area. Connected with the previous point on availability of information is the idea that feedback from users should be considered to demonstrate the fitness for use of RIs and the fitness for purpose, which is linked to the RIs mission.

Some last suggestions put forward include target actions aimed at raising awareness of young post docs and principal investigators on the products and services offered by RIs. Actions aimed at drawing attention to these segments could help stimulate highly collaborative and interdisciplinary projects among different groups and produce a longstanding (SEI) impact in various fields. Besides this recommendation, the inclusion of an Industry Board in some RIs can be useful to voice their interests, build networks for collaboration and even make small-scale investments in RIs.





4. ANNEX

4.1 Agenda



Agenda	
2nd InRoad Regional Technical Workshop	
National Funding: build awareness on policy perspectives	
27th November Afternoon (14.00-18.00)	
First Session 14.00-15.00	Welcome and Introduction Corrado Spinella (CNR-DSFTM) Isabel Bolliger (UNIL) <i>Key results from InRoad Survey on National Roadmapping</i> Teresa Jorge (CCDRIC) <i>Funding within life-cycle orientation of RIs of Pan-European relevance</i>
15.00 -15.30	Coffee break
1st PANEL 15.30-17.00	Perspectives on National funding and RI roadmaps for Pan-European RIs including Macro regional considerations <i>Aim: to discuss major elements and issues for high-level research for breakthrough innovation and long-term sustainability.</i> Moderator: Sauro Longhi (GARR) Speakers: Ornella De Giacomo (CERIC-ERIC), Maurizio Peruzzini (CNR-DSCTM), Carlo Mariani (Univ. La Sapienza), Lorenzo Avaldi (CNR-ISM), Floriana La Marca (EIT-RM), Virginia Coda Nunziante (CNR-REIUNT)
17.00-18.00	Discussion
18.00	Closing of the first day
20.00	Social Dinner
28th November Morning (9.30 - 13.30)	
2nd PANEL 9.30-10.30	R&I policy mechanisms supporting RIs services <i>Aim: to discuss the need of flexible and targeted mechanisms to facilitate access to RIs to users and support RIs of Pan European interest. Policy incentives for R&I and cross-country interactions requires EU harmonization.</i> Moderator: Roberto Senesi (Univ. Tor Vergata) Speakers: Alberto Morgante (CNR-IOM), Jacqueline Allan (JIIIP), Roberta Fantoni (ENEA), Maria Sabrina Sarto (Univ. La Sapienza), Attila Havas (HAS), Gian Matteo Fornaro (APRE), Olga Skalska (Funding Box)
10.30-11.00	Discussion
11.00 -11.30	Coffee break
3rd PANEL 11.30-12.30	Dialogue with Individual RIs Monitoring and Life-cycle development <i>Aim: to contribute to share experiences, practices and local initiatives fostering an ecosystem of pan European RIs open to research, industry users and policy makers. This to accelerate high-level research and scientific discovery to meet breakthrough innovation.</i> Moderator: Augusta Maria Paci (CNR-DSCTM) Speakers: Antje Keppler (IPS, Euro-BioImaging), Alberto Luini (CNR, Euro-Bioimaging), Carmela Cornacchia (CNR, ACTRIS), Ornella De Giacomo (CERIC-ERIC), Luca Pezzati (CNR, E-RHS), Lilli Freda (INGV, EPOS), Corrado Spinella (CNR, Beyond Nano Initiative)
12.30-13.30	Discussion for Key Messages
Closing, Light Lunch and Departures	



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4.2 Presentations

4.3 Key Results from the InRoad Survey on National Roadmapping - Ms. Isabel Bolliger (UNIL)

This presentation provided an overview of the survey results on national roadmapping processes and advanced some preliminary insights summarised below:

- Out of 46 MS and Associate Countries 27 completed the consultation.
- The survey included questions on policies, decision-making, funding of RI and business plans.
- Joint discussions among researchers, potential users and policy makers are important when planning national RI roadmap processes.
- The purpose and process of national RI roadmaps needs to be clearly defined and communicated. A publicly accessible guide providing criteria, processes and timelines is essential.
- Identifying 'good practices' on methodologies for RI selection could be helpful to improve the process and coordination between different European countries.
- ESIF are a relevant source of funding for RI in some countries.
- The coordination of RI funding instruments requires further improvement. A better understanding of the rules of existing funding instruments would enable the coverage of the whole lifecycle of a RI.
- Member States and Associated Countries are encouraged to make business plan assessment part of their strategic consideration. Sound financial planning is crucial for the long-term sustainability of RIs.
- To guarantee coherence in the European RI landscape the understanding and application of the European Charter for Access to RIs is crucial.

4.4 Funding within Lifecycle orientation of RIs of Pan-European relevance - Ms. Teresa Jorge (CCDRC)

Jorge's presentation provided an overview of the objectives set in Work Package 4 related to synchronisation and interoperability of regional, national and European RI funding instruments. Jorge's presentation touched upon the following points:

- Presentation of InRoad specific objectives on the funding of RI, namely (i) assessing how the NRIRMP are interlinked with different mechanisms for funding RI and the importance of funding schemes regarding the different life cycle stages of RI; (ii) assessing difficulties RI encounter concerning the short, medium and long term funding, including identifying successful mechanisms for commercial / industrial aspects of RI funding; (iii) identifying good practices of RI that succeeded in combining different funding schemes from EU Member States and/or with European instruments; and (iv) developing recommendations for effective and sustainable funding of RI



- Presentation of the general approach pursued (and some first findings): desk review and consultation (section on funding in the InRoad Consultation).
- Organisation of regional workshops with relevant stakeholders on the above mentioned issues through reflection groups (undergoing).
- The completion of in-depth case studies with selected RI in order to examine the usage of different funding instruments at regional, national and European levels (foreseen for next year).
- Proposal of issues to be addressed in the workshop, on the role of national and institutional funding of RI, the role of European funding, and the role of ESIF to the funding of RI.
- Food for thought for the workshop debate in the form of questions that already build on the discussions had in the previous regional workshop (Prague, 7-8 November).

4.5 Dissemination

Two news items published on the National Research Council website:

1. '2nd InRoad Regional Technical Workshop'
(<https://www.cnr.it/it/news/7788/2nd-inroad-regional-technical-workshop>)
2. InRoad: i risultati del Regional Technical Workshop
(<https://www.cnr.it/it/news/7822/inroad-i-risultati-del-regional-technical-workshop>)

One press release published on the InRoad Project website:

- Press Release: 2nd Regional Technical Workshop in Rome on National Funding: build awareness on policy perspectives
(<http://inroad.eu/press-room/>)

4.6 Workshop Organization

Organization of the CNR Working Group: Augusta Maria Paci (DSCTM), Anna Rita Appetito (UREI), Mario Figuretti (DSCTM), Cecilia Lalle (RELINT), Nicoletta Palazzo (UREI) and Gelsomina Pappalardo (IMAA)

CNR Contacts: Augusta Maria Paci (augustamaria.paci@cnr.it), Cecilia Lalle (cecilia.lalle@cnr.it)

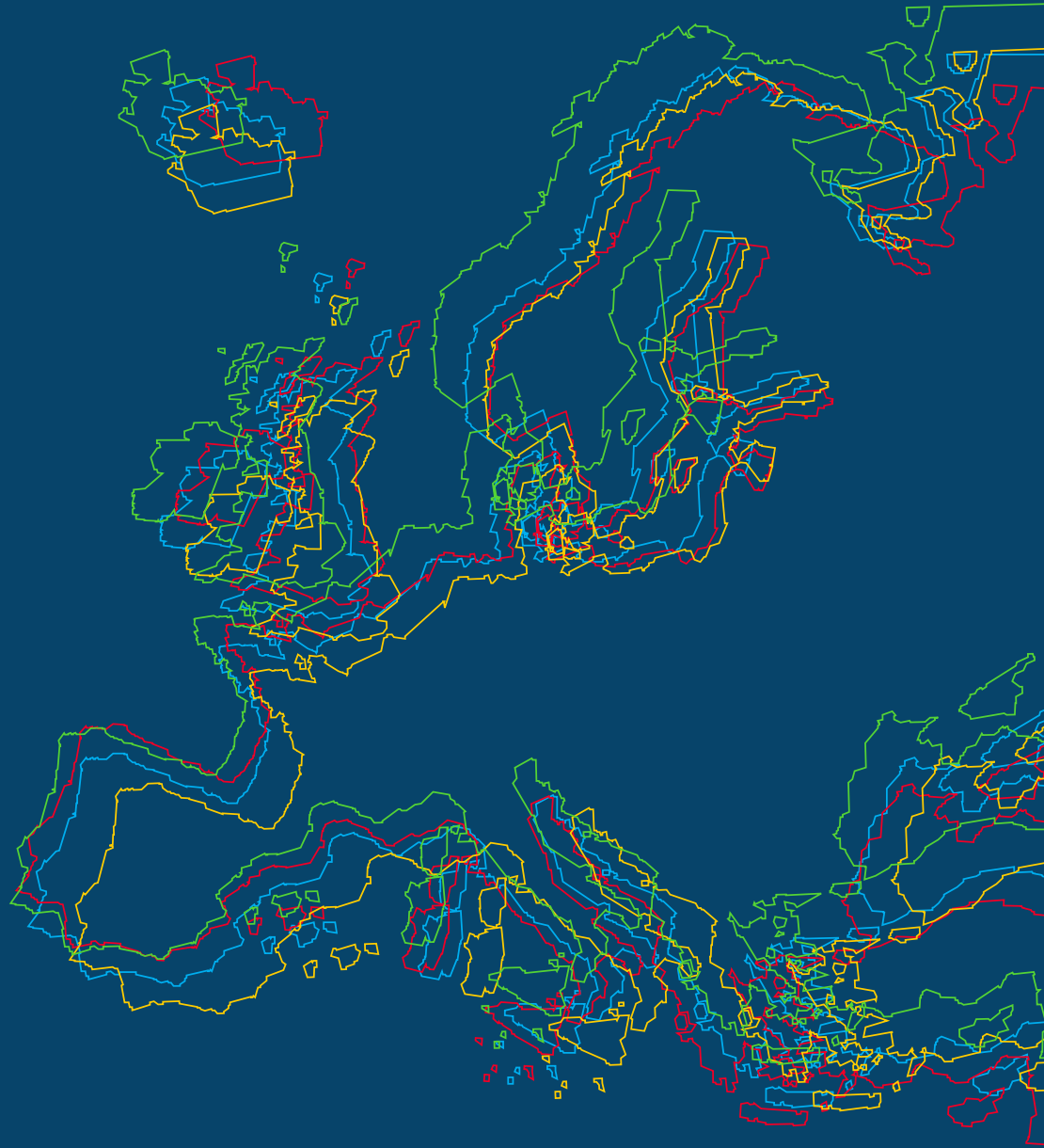
4.7 Follow-on Activities

Fostering Macro-Regional Collaboration: presented to the Steering Board in December 2017





InRoad synchronising research infrastructure
roadmapping in Europe



The Role of Regional, National, Institutional & EU Frameworks in the Long-term Funding of Research Infrastructures

Report from an InRoad regional workshop

Hamburg, 1-2 March 2018



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The Role of Regional, National, Institutional & EU Frameworks in the Long-term Funding of Research Infrastructures

Report from an InRoad regional workshop

Hamburg, 1-2 March 2018

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1. Executive summary

This report provides information on the content and format of the third InRoad Regional Workshop, co-organised by the German Electron Synchrotron (DESY) and the Helmholtz Association in Hamburg on 1-2 March 2018. The two-day event gathered a total of 39 participants from research infrastructures (RI), national and European funding organisations and from the European Commission Directorate-General for Research and Innovation (DG RTD). The workshop aimed at sharing experiences among the different stakeholders to develop a set of recommendations that can help better align scientific policies and funding regulatory frameworks at an institutional, regional, national and European level and support the robust development of RIs.

2. Workshop programme

The workshop programme built upon information gathered in previous InRoad workshops (Prague and Rome in 2017). Specifically, the following points were addressed during the different sessions:

- The main bottlenecks encountered during the different RI phases
- The importance of the national roadmap process, timing and funding
- Experiences with regard to the long-term funding of RIs
- Recommendations for a better coordination of the different levels of RI funding

Six representatives from research infrastructures from different scientific domains and typologies presented their case with respect to the points stated in the paragraph above. In addition to these speakers, the programme also included representatives from the Helmholtz Association, the Federal Ministry of Education and Research of Germany, the European Commission and the Centro Regional Coordination and Development Commission of Portugal. These parties contributed to the content of the programme by bringing the policy perspective to the workshop.

The workshop was structured into three blocks:

- The first block, moderated by Dr. Martin Müller of the Swiss National Science Foundation focused on the coordination of institutional, national and European regulatory frameworks for RI long-term funding.
- The second block, moderated by Dr. Jan Hrušák, Advisor to the Academy of Sciences of the Czech Republic, dealt with the experiences of RI Operators when combining regional, national, institutional and European Union level programmes for the long-term funding of RI, including the bottlenecks identified during the different phases.
- Initially a third block with 2 parallel sessions had been planned to discuss in groups the above topics in more detail. However, it was replaced with a plenary session including all participants due to time constraints.

The full agenda can be found in Annex I, p. 10.

3. Workshop findings

The conclusions under the relevant workshop themes were summarised by two rapporteurs: Dr. Michael Räß, Head of General Management of Infrafrontier GmbH and Professor Dr. Ulrich Schurr, Coordinator of EMPHASIS and Head of Plant Sciences at the Institute of Bio-and Geosciences at Jülich Research Centre GmbH. The following paragraphs include key points

identified during the workshop's discussion, as well as the observations and recommendations covered in the rapporteur's outcome statement.

3.1 General observations & recommendations

- Despite efforts to align terminology and definitions, after all these years, further action is still needed to improve and facilitate a shared understanding of the RI domain among different European scientific communities and government institutions. Notably the concept of "RI Roadmap" varies significantly between different European countries.
- Diversity can be seen as both a challenge and an opportunity. More qualified experts able to navigate the complex financial and regulatory contexts are needed to develop and maintain the efficiency of RIs.

Recommendations

- *If anything, an alignment of the definitions and terms would be useful to help with the classification of facilities and the application of specific terms. A few examples include:*
 - *What is a research infrastructure?*
 - *What is a national RI roadmap?*
 - *What is a single-sited research infrastructure?*
 - *What is a distributed research infrastructure?*
 - *What is an international research infrastructure?*
 - *What is a national research infrastructure?*
- *Human Resources are necessary to successfully manage the different available funding schemes to support the development and operation of RIs.*

3.2 Regional cohesion policy structural funds

- Aligning a pan-European mission with regional policy can be challenging. While the former looks at Europe as an assembly of Member States, the latter looks at Europe as a separated group of regions, leading to considerable consequences, e.g. divergent and misaligned objectives in the use of structural funds and RTD Framework Programmes.
- The use and implementation of European Structural & Investment Funds across regions is diverse. The application process, the setting of objectives and their practical implementation represent some of the difficulties involved in the application of this instrument in distributed infrastructures.

Recommendations

- *Consideration should be given to detecting and acknowledging both differences and connecting points between the structural funds and EU Research Framework Programmes, where new measures are proposed.*
- *Either the simplification of regulations in the current funding mechanisms or the provision of centralized expertise for RI Operators could help navigate this complex regulatory environment.*
- *Assessing the suitability and the potential of the Interreg scheme as a model for funding of cross-border activities in connection to RIs could be of use.*

3.3 Operational phase funding

- The diversity of available funding instruments for earlier phases, e.g. planning, construction, and implementation stages of an RI stands in contrast to the scarcity of funding instruments and the financial challenges experienced by RI Operators during the operational phase.
- In recent years, operational phase funding has acquired even more importance due to two factors: the increasing number of RIs entering the operational phase and the new breed of RIs whose operational costs are relatively higher than those of its construction phase.
- Concerning European-level policy making for the operational phase: if the operational budget in the end quite often is to be covered by the organisations operating the facilities, are they also responsible for the overall pan-European vision and strategy?

Recommendations

- *Create a new platform or empower an existing one for systemic analysis of required strategies, policies and instruments in all stages of an RI's life cycle, notably the operational phase – for this, RI involvement is vital.*
- *A systematic review of the transnational access instrument could help determine for which RIs it is suitable and which ones have experienced problems with it.*
- *National governments should consider providing dedicated (national, not institutional) funding lines to cover operational costs of their RIs. In this context, the European Commission should look into its role as facilitator of this process.*

3.4 Further key points identified during the workshop's discussion

3.5 Alignment of instruments

Building on existing competences is important. National calls for proposals, European Research Area Networks (currently ERA-Nets in H2020), European Joint Programmes (EJPs) and Joint Programming Initiatives (JPIs) offer a good model to maximize synergies by bringing future scientific communities and users closer to research infrastructures.

Recommendation

- *Synergies between national calls for proposals, ERA-Nets, EJPs and JPIs with RIs could be fostered to cultivate coordinated joint activities in areas of significant strategic value and relevance to the European Research Area.*

3.6 In-kind contributions

In-kind contributions can generate value in the development and operation of an RI. Nevertheless, aspects such as ownership transfer, tax and legal matters, and determining the value of certain goods and services can sometimes involve challenging, lengthy processes for the stakeholders involved. A lack of understanding of the specific know-how of a partner can thus have an impact on the provision of suitable resources to an RI.

Recommendations

- *Understanding the capabilities and know-how of the different contributing partners to a research infrastructure can help to effectively manage and allocate in-kind contributions in international large-scale facilities.*
- *Agreeing on a standard cost equivalent for a good or service provided by a contributor to a RI (irrespective of the real cost of origin or of execution) not only offers a solution to arduous negotiations/calculations on in-kind contributions among international partners, but also helps achieve further convergence among countries.*

3.7 National roadmaps

Updated lists, maps or documents of already existing research infrastructures in Member States and Associated Countries are not always available for consultation.

Recommendation

- *To the extent possible, the development and periodical update of a list/database of already existing national facilities, including those involved in ESFRI projects or preparatory phases could facilitate a comprehensive overview of the RI landscape in each country for consultation purposes.*

4. Next steps

Bringing together representatives from different regional scientific communities and national funding organisations in the last three regional workshops has evolved into a useful format for progress reporting and knowledge sharing. The observations and recommendations made will be included in the final reports D4.4 and D4.5, due in months 19 and 24 respectively. In the meantime, the progress reporting shall be continued in further regional workshops:

- Aveiro, Portugal (12-13 April 2018)
- Wroclaw, Poland (24-25 May 2018)

These events will serve as a tool to advance into more concrete conclusions and policy recommendations. However, consecutive action items depend on the discussions and agreements reached in the validation workshop that will take place in Brussels on the 1st-2nd of October 2018.

5. Participant list

No.	Name	Institution	Field	Position	Role	Country
1	AXT, Kathrin	SHARE-ERIC	SOCIAL & CULTURAL INNOVATION	Head of Financial Affairs	Participant	DE
2	BAUCK, Sönke	Swiss National Science Foundation	N/A	InRoad Project Coordination	Observer	CH
3	BROTTIER, Franck	Euroopportunities OÜ	PHYSICAL SCIENCES & ENGINEERING + ENVIRONMENT	Responsible of the funding model of DANUBIUS and ELI	Participant	EE
4	CAPRIA, Ennio	ESRF	PHYSICAL SCIENCES & ENGINEERING	Deputy Head of Business Development	Participant	FR
5	DE ANDRES SANCHIS, Carme	HGF	N/A	Project Manager	Observer	DE
6	DE LUCA, William Ernesto	Georg Eckert Institute	E-INFRASTRUCTURES	Head of Digital Information and RI	Participant	DE
7	EITELBERG, Georg	DNW	PHYSICAL SCIENCES & ENGINEERING	Director	Speaker	NL
8	FRANZ, Hermann	PETRA III	PHYSICAL SCIENCES & ENGINEERING	Deputy Director of Photon Science	Speaker	DE
9	GLIKSOHN, Florian	ELI-DC	PHYSICAL SCIENCES & ENGINEERING	Associate Director - Integrated Organisational Development	Participant	CZ
10	GRIFITHS, Alexandra	SwissCore	N/A	Project Manager	Observer	CH
11	HARLE, Isabella	BMBF	R&D POLICY	Policy Officer	Participant	DE
12	HRUŠÁK, Jan	Academy of Sciences of the Czech Republic	R&D POLICY	Advisor to the Council	Participant	CZ

13	ISEMER, Hans Jörg	DANUBIUS	ENVIRONMENT	Head of International Projects	Participant	DE
14	JORGE, Teresa	CCDRC	N/A	Head of Cooperation & Promotion	Observer	PT
15	KRELL, Ute	DESY	N/A	Head of European Projects	Observer	DE
16	LECOQ, Stéphanie	CNRS	N/A	Project Manager	Observer	FR
17	LEHNER, Frank	DESY	PHYSICAL SCIENCES & ENGINEERING	Head of International Cooperation and Strategic Partnerships	Speaker	DE
18	MIGUEIS, Ricardo	CESAER	R&D POLICY	Senior Advisor for Research and Innovation	Participant	BE
19	MÜLLER, Martin	SNSF	N/A	InRoad Coordinator	Observer	CH
20	PACI, Augusta	CNR	N/A	Technology Director	Observer	IT
21	PAHL, Deike	XFEL	PHYSICAL SCIENCES & ENGINEERING	Grant Manager	Participant	DE
22	PASTERK, Markus	BBMRI-ERIC	HEALTH & FOOD	Administrative Director	Participant	AT
23	RÄß, Michael	INFRAFRONTIER	HEALTH	Head of General Management	Rapporteur	DE
24	RITTER, Claudia	DLR -RI	N/A	Head of Coordination Unit	Observer	DE
25	RÜCKER; Gerd	DLR	N/A	Project Manager	Observer	DE
26	RUZICKA, Vlastimil	Technology Centre ASCR	STRATEGIC STUDIES	Analyst	Participant	CZ
27	SCHUMACHER, Marcus	ICOS	ENVIRONMENT	Atmosphere Programme	Participant	DE

28	SCHURR, Ulrich	IBG-2 , JÜLICH (EMPHASIS)	HEALTH & FOOD	Coordination, Head of Plant Sciences at the Institute of Bio-and Geosciences	Rapporteur	DE
29	SILVEIRA, Silveira	CCDR	N/A	Project Manager	Observer	PT
30	SOBCZAK, Dominik	European Commission (DG RTD)	Scientific Policy	Executive Secretary ESFRI	Speaker	N/A
31	STAREV, Svet	CERN	PHYSICAL SCIENCES & ENGINEERING	Section Leader - EU Projects Management & Operational Support	Participant	CH
32	THIES, Annika	Helmholtz Association	N/A	Director	Observer/Sp eaker	DE
33	TSCHECHTSCH ER, Thomas	The European XFEL	PHYSICAL SCIENCES & ENGINEERING	Scientific Director/Member of the Management Board	Speaker	DE
34	ULLMANN, Petra	DESY	N/A	Assistant EU Project Office	Observer	DE
35	VOGEL, Patricia	NWO	N/A	Project Manager	Observer	NL
36	VOIEVODA, Natalia	CNRS	N/A	Project Manager	Observer	FR
37	WENZEL- CONSTABEL, Peter	BMBF	Policy	Director of Research Infrastructures	Speaker	DE
38	WIESENFELD T, Sören	Helmholtz Association	Policy	Head of Research	Speaker	DE
39	YENES FERNÁNDEZ, Iñigo	PRACE	E-INFRASTRUCTURES	Financial and Legal Officer	Participant	BE

6. Annex I. Hamburg Regional Workshop Agenda



HELMHOLTZ
RESEARCH FOR GRAND CHALLENGES



Workshop agenda

THE ROLE OF REGIONAL, NATIONAL, INSTITUTIONAL & EU FRAMEWORKS IN THE LONG-TERM FUNDING OF RESEARCH INFRASTRUCTURES Hamburg, 1-2nd March, 2018

Day 1- Thursday, 1st of March 2018

09h00 – 09h30	Registration
10h00 – 11h00	Visit to Petra III facility
12h00 – 12h45	Lunch
12h45 – 13h15	Opening session
12h45 – 13h00	Welcome: Dr. Frank Lehner (Head of International Cooperation and Strategic Partnerships at DESY).
13h00 – 13h15	Aims of the workshop, short overview of the InRoad project: Annika Thies (Director of the Helmholtz Association's Brussels Office (Helmholtz Association)).
13h15 – 14h30	Block 1 Moderator: Dr. Martin Müller (InRoad Coordinator, Swiss National Science Foundation (SNF))
Context	The coordination of regional, national, institutional and EU frameworks for RI long-term funding. How do these four levels interact? Current policies, bottlenecks and differences between scientific communities.
13h15 – 13h45	The role of national funding in RIs: Peter Wenzel-Constabel (Head of the Research Infrastructures Section, Federal Ministry for Education and Research (BMBF)).
13h45 – 14h15	The role of institutional funding in RIs: Dr. Sören Wiesenfeldt (Head of Research, Helmholtz Association).
14h15 – 14h30	Wrap-up with recommendations from speakers.
14h30 – 14h45	Coffee break
14h45 – 18h15	Panel (part 1)

Context	Experiences of RI Operators combining regional/national/institutional/EU-level programmes for the long-term funding of RI. Bottlenecks identified during the different phases and recommendations for the future.
Panel (part 1)	Moderator: Dr. Jan Hrušák (Advisor to the Council at the Academy of Sciences of the Czech Republic, Member of ESFRI Executive Board)
14h45 – 15h15	The German-Dutch Wind Tunnels Foundation (DNW): Prof. Dr. Georg Eitelberg (Director DNW).
15h15 – 15h45	The European XFEL: Dr. Thomas Tschentscher (Scientific Director, Member of the Management Board of the European XFEL and member of EIROforum).
15h45 – 16h15	Infrafrontier: Dr. Michael Räß (Head of General Management, INFRAFRONTIER).
16h15-16h30	Wrap-up with recommendations.
16h30–17h00	Coffee break
Panel (part 2)	Moderator: Dr. Jan Hrušák (Advisor to the Council at the Academy of Sciences of the Czech Republic, Member of ESFRI Executive Board)
17h00 – 17h30	Petra III: Dr. Herman Franz (Deputy Director of Photon Science at DESY)
17h30 – 18h00	EMPHASIS: Prof. Dr. Ulrich Schurr (Coordinator; Head of Plant Sciences, Institute of Bio-and Geosciences at Jülich Research Centre GmbH)
18h00 – 18h15	Wrap-up with recommendations from panelists
19h00–22h00	Dinner at Au Quai, Große Elbstraße 145 b-d, 22767 Hamburg

Day 2 - Friday, 2nd of March 2018

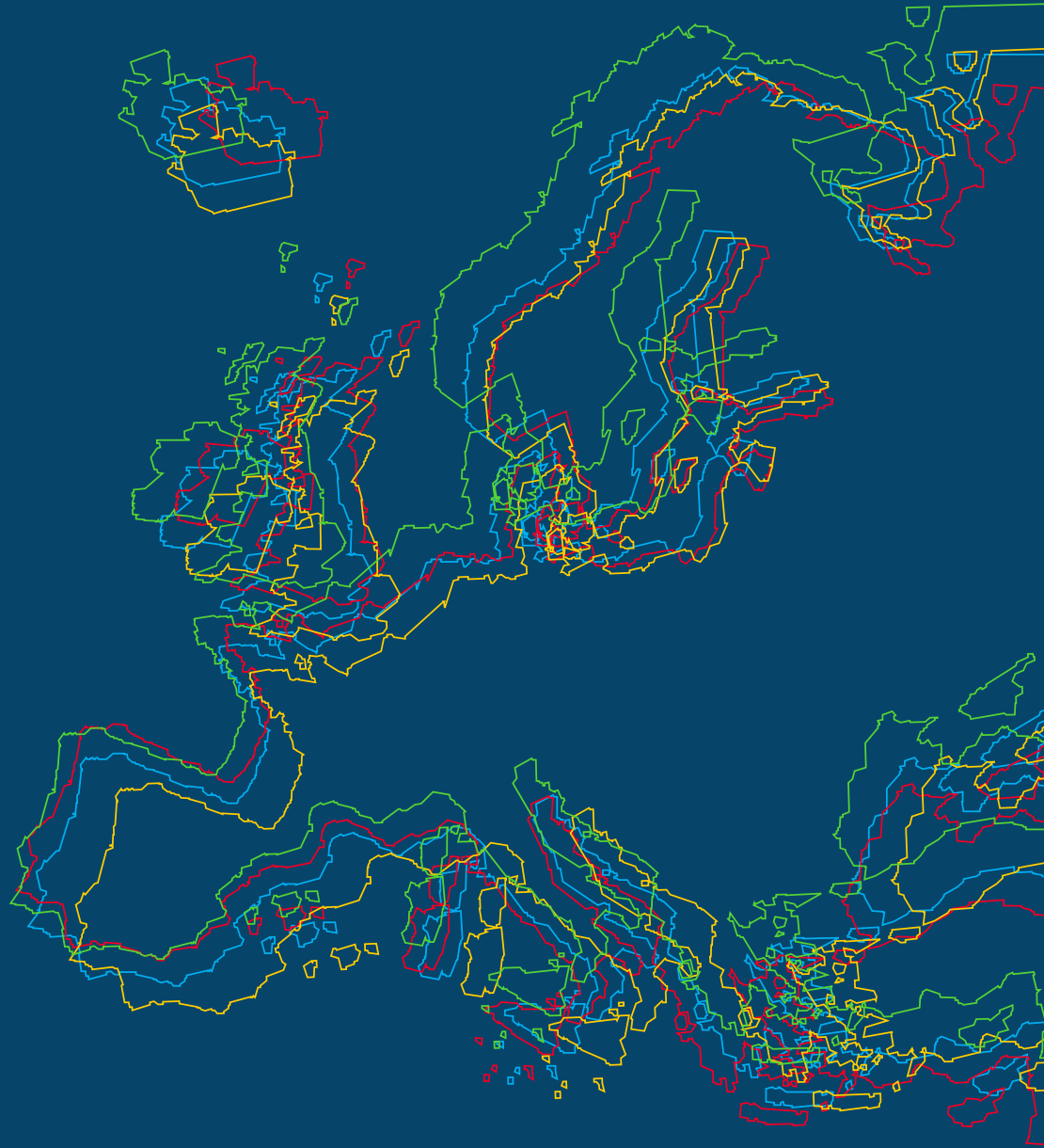
09h00 – 09h30	Coffee
09h30–10h30	Block 1 Moderator: Dr. Martin Müller (InRoad Coordinator, Swiss National Science Foundation (SNF))
09h30 – 10h00	The Role of the European Commission funding RI + status of long-term sustainability action plan: Dominik Sobczak (ESFRI Executive Secretary, Research Infrastructures Unit, DG RTD).
10h00–10h30	InRoad: aims, interim results and next steps: Dr. Teresa Jorge (Head of Cooperation and Promotion at the Centro Regional Coordination and Development Commission).
10h30–10h40	Format and expectations of the parallel sessions: Carme de Andrés Sanchis (Project Manager at the Helmholtz Association).
10h40–12h40	Block 2 (Parallel sessions) Moderators: Ute Krell (Head of the EU Project Office at DESY) and Annika Thies (Helmholtz Association)
10h40–12h40	Recommendations for the future: Funding and the National roadmap process. Group 1 Moderator: Ute Krell ; Group 2 Moderator: Annika Thies .

12h40 –13h30	Lunch
13h30–16h00	Block 3 (Wrap-up, closure and visit to XFEL facility) Moderators: Ute Krell (DESY) and Annika Thies (Helmholtz Association)
13h30–14h00	Summary of rapporteurs of the break-out sessions and conclusions.
14h30 – 16h00	Visit to the European XFEL.

END of workshop



InRoad synchronising research infrastructure
roadmapping in Europe



The role of structural funds in the mix of funding sources for the long-term sustainability of Research Infrastructures

Report from an InRoad regional workshop

Aveiro, 13 April 2018



InRoad has been funded by the European Union's Horizon 2020 Research and Innovation programme under grant agreement No 730928.

InRoad Regional Workshop

The role of structural funds in the mix of funding sources for the long-term sustainability of Research Infrastructures

University Campus of Santiago, Aveiro
(Portugal), April 13th 2018

Authors: Carme de Andrés Sanchis (HGF), Teresa Jorge (CCDRC) and Annika Thies (HGF).



InRoad has been funded by the
European Union's Horizon 2020
Research and Innovation programme
under grant agreement No 730928.

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1. Executive summary

This report provides information on the 4th InRoad Regional Workshop organized by the Centre for Coordination and Regional Development Commission (CCRDC) in Aveiro, on April 13, 2018. The workshop aims were to bring together regional, national and European research infrastructure (RI) experts in order to:

- share experiences and develop knowledge and understanding of the research; infrastructure (RI) funding environment;
- provoke a reflection on the critical issues that affect the longevity of RI;
- raise awareness among participants; and
- provide a set of recommendations that can improve overall RI funding conditions to support their robust development.

2. Workshop programme

Building on the experience and knowledge of previous workshops, the day was structured into 4 blocks:

First, an opening session with a welcome speech by Ana Abrunhosa, President of the CCDRC, followed by a presentation on Inroad's findings by Dr. Martin Müller, from the Swiss National Science Foundation and a keynote speech on the RI ecosystem by Ricardo Miguéis, Senior Advisor for Research and Innovation at Conference of European Schools for Advanced Engineering Education and Research (CESAER).

Second, a panel introduced by Teresa Jorge, Head of Cooperation and Promotion at the CCRDC, where 3 topics were presented in the following order:

- the role of structural funds in the mix of funding sources by Dr. Ondřej Hradil, Core Facility Coordinator of the Central European Institute of Technology (CEITEC);
- the combination of different funding sources and mechanisms by Dr. Gonzalo León, Deputy Rector for Innovation Partnership, Polytechnic University of Madrid; and
- the importance of roadmapping procedures by Dr. Miguel Castelo Branco, Coordinator of the National Functional BIN – Brain Imaging Network of Portugal.

The third block was dedicated to 3 parallel sessions, where the abovementioned topics were discussed in more detail by workshop participants.

The fourth block consisted of a plenary session with a presentation from Dr. Jan Hrušák, Vice Chair of ESFRI, on the future prospects for the long-term sustainability of RI, followed by a debate moderated by Ricardo Miguéis (CESAER) and closing interventions by Professor Helena Pereira, Vice President of the Foundation for Science and Technology of Portugal (FCT) and Professor Manuel Assunção, Principal of University of Aveiro.

3. Workshop findings

The conclusions from the roundtable discussions were summarized by three rapporteurs: Alexandra Vilela, Member of the Board of COMPETE 2020 - Operational Programme for Competitiveness and Internationalization; Professor Domingos Barbosa, Instituto de Telecomunicações (Engage SKA – Square Kilometre Array); and Dr. Daniel Carapau, Scientific Officer at the Foundation for Science and technology of Portugal. The paragraphs below touch upon the main points identified during the group discussions, as well as some observations and recommendations covered in the rapporteurs' outcome statements.

3.1 Funding programmes and frameworks

The role of R&D investment in RI is poorly understood by policymakers. Without a sound understanding of these two concepts, a distortion of the RI mission occurs preventing it from reaching its full potential.

There is a fine line between capital and operational expenses. Although both concepts are linked to the long-term strategy of the RI, not all available funding schemes cover operational costs. Structural funds, for instance, do not contemplate the provision of funds for operational expenses that are necessary for the viability of RI services. In High Performance Computing (HPC), for example, as systems become quickly obsolete, host organizations are under continuous pressure to cover expenses related to software, support and maintenance.

RIs are positioned in the middle of the knowledge chain playing a key role in the validation of new scientific and technological concepts developed by academia and industry.

When it comes to infrastructures hosted by universities, sustainability and adequacy of funding remain important and unresolved issues in some countries.

Besides adequacy of funds, two other factors are important: the awareness of funding conditions and opportunities from a multiannual financial perspective among RI Managers and timely funding decision-making.

Recommendations and clarifications

The fundamental differences between funding for RI investments and running costs, and funding dedicated to competitive research projects needs to be further clarified in a way that can be easily understood by policymakers.

The provision of technological and scientific RI capabilities to compete globally requires among other things, a permanent dialogue between users, RI managers and policymakers, as well as a long-term vision backed by governments and their mandated agencies. Structural funds could play a relevant role here, allowing the coverage of operational costs in RIs, thereby narrowing down the technological gap between less developed regions and those that are moving forward.

Despite efforts to date, in the face of global competition, regional, national and European funding institutions should strive to continue to improve the conditions for transnational inter-sector collaborative activities to flourish, not just on each level but also across them.

A funding pipeline from universities to RIs could bring about the continuity needed for the provision of excellent scientific services, where market failures do exist. Whenever an RI is considered of strategic relevance (e.g. its inclusion in a National Roadmap) a minimum level of funding should be granted to support a pluriannual strategy. Furthermore, European Commission funding should be regarded as a mean to complement the national funding (and not to replace it).

3.2 Rules and bureaucracy

Even though the funding rules in some countries have evolved in the past years towards more evidence and impact-based criteria, a closer alignment of the various regulatory levels (regional, national and European) is still needed to enable the optimal use of existing funding schemes.

Recommendation

A single set of funding rules in the programming period for research and innovation, could bring about greater stability and clarity to all parties involved (i.e. users of RI services,

facility operators, beneficiaries and funding organizations), as well as favour synergies with other funding programmes, e.g. the Cohesion funding schemes.

3.3 Transnational access

In terms of transnational access, two phenomena have been observed: On one hand, large companies are willing to pay for access to RI services to keep their Intellectual Property and on the other, Small Medium Sized Enterprises (SMEs) seeking financial leverage are eager to obtain funding for transnational access and disseminate their results.

Recommendation

Given the diversity of users, designing an access scheme that acknowledges the variety of profiles and their different needs could stimulate the demand for services from state-of-the-art facilities. Such scheme though would have to be aligned to and supported by an appropriate funding instrument.

3.4 Measuring performance

While some research infrastructure communities view KPIs as unfit for purpose, others consider them a constructive tool for research and development (R&D).

In certain cases, when measuring performance, the role and impact of the RI in boosting job creation, growth and competitiveness should be considered.

Recommendation

KPIs are important but need to be adequate and tangible. A minimum common base of indicators in combination with a tailored-set of KPIs could help improve the RI's R&D capacity, monitoring processes, the overall excellence of its services and funding decisions on a contractual basis.

KPIs used to measure the socio and economic impact of RIs (therefore to be assessed in a longer term) should be included in the common set of indicators to be adopted, in line with an innovation ecosystem approach.

3.5 National roadmaps

The internationalization of RI, meaning the scaling-up of activities and standards through meetings with other European and/or international relevant stakeholders, has long been neglected by national scientific policies in some countries.

Recommendation

Science knows no borders. Preparing and positioning state-of-the-art facilities in the global arena requires a national science policy that acknowledges the importance of international visibility and a comprehensive national support system that enables the participation of national RI groups in international networking activities.

3.6 Training

There is a shortage of qualified personnel in highly-skilled areas such as big data, data mining and modelling that are relevant for the operation and upgrading of RIs.

While there is ample information out there on ERICs, the general perception, however, is that the information is scattered and not always accessible in a concise form to everyone.

Although there are several RI funding instruments available at different levels (regional national and European), RI Managers, however, tend to lack clear information on them.

Recommendations

Specific lines for scientific employment in fields such as HPC and Big Data (where Europe is lagging behind in comparison to other world regions), should be promoted by universities, as well as regional and national authorities.

Mutual learning exercises can help starting and existing RI communities gain exposure to good practices, lessons learned and success factors of RI management based on evidence.

Trainings addressed to RI Managers on funding instruments would facilitate the identification of those schemes that are best suited to each RI, as well as the optimum coordination of different funding sources.

4. Closing session

In the afternoon, Professor Helena Pereira gave an overview of FCT's role, the level and distribution of funding across all disciplines, some statistics on the number of RIs in the national roadmap (#40) and the percentage figure of facilities hosted by region. Following Pereira's presentation, Dr. Manuel Assunção, Principal of the University of Aveiro, highlighted the need for an improved understanding of the different funding sources and mechanisms to maximize their effective and efficient use, as well as the importance of structural funds and universities to sustain scientific and technological competitiveness.

5. Next steps

Bringing together representatives from the different regional scientific communities and funding organizations in the past four workshops has evolved into a useful format for progress reporting and knowledge sharing. The observations and recommendations made in the Aveiro workshop will be included in the final reports D4.4 and D4.5, due in months 19 and 24 respectively. In the meantime, the progress reporting shall be continued in the last regional workshop foreseen in Wroclaw, Poland, in May 2018.

6. Participant list

NAME	INSTITUTION	NAME	INSTITUTION
Alexandra Griffiths	Swisscore	Jan Hrusak	CAS
Alexandra Rodrigues	CCDRC	João Gregório	Governo dos Açores
Alexandra Vilela	Compete2020	Jorge Graça	Universidade do Algarve
Ana Abrunhosa	CCDRC	Judite Alves	Museu Nacional de História Natural e da Ciência
Ana Fabíola Maurício	UCP	Luis Pereira de Almeida	CNC
Ana Quintais	CCRDC	Luis Seca	INESC
Andreas Meissner	INL	Manuel Santos	UA
António Pereira	UA	Márcia Valério	ULisboa

Antonio Villanueva	University of Vigo	Margarida Franca	CCRDC
Artur Silva	UA	Martin Muller	SNSF
Beata Lubicka	Eitplus	Miguel Castelo-Branco	University of Coimbra
Carla Coimbra	CCRDC	Natalie Haley	University of Oxford
Carlos Silveira	CCRDC	Nataliia Voievoda	CNRS
Carme de Andrés Sanchis	HGF	Nuno Moreno	IGC
Cristina Secades	University of Vigo	Nuno Alves	Politécnico de Leiria
Conceição Carvalho	CCRDC	Ondřej Hradil	CEITEC
Daniel Carapau	FCT	Pedro Alberto	UC
Domingos Barbosa	SKA, IT Portugal	Pedro Magalhães	ICS
Fernando Guiomar	IT Campus Universitário de Santiago	Pedro Vieira	CCRDC
Francisco Amado	University of Aveiro	Ricardo Miguéis	CESAER
Francisco dos Santos	UNL	Rui Nobre	CNC
Geoffrey Mitchell	IPL	Sheila Vidal	IGC
Gonzalo Leon Serrano	UPM	Teresa Jorge	CCRDC
Henrique Santos	C4G Implementation Starts up	Miguel Conceição	UA
Isabel Castanheira	Instituto Nacional de Saúde		
Isabel K. Bolliger	UNIL		

7. Workshop agenda



InRoad WORKSHOP AGENDA

The role of structural funds in the mix of funding sources for the long-term sustainability of Research Infrastructures

April 13th 2018

Venue: University Campus of Santiago, Aveiro (Portugal), Reitoria

Entrance Google Maps Link: <https://goo.gl/nQmWkn>; Coordinates:

40° 37' 53" N 8° 39' 27" W

The event will be in english only.

09.00-09.30	Registration of Participants and Welcome coffee
9.30 – 10.15	<p>OPENING SESSION</p> <p>Welcome speech - Ana Abrunhosa, President of Comissão de Coordenação e Desenvolvimento Regional do Centro</p> <p>Introductory Speech– Martin Muller, InRoad Coordinator, Swiss National Science Foundation <i>Brief presentation of InRoad's findings and results</i></p> <p>Keynote speech - Ricardo Miguéis, Senior Advisor for Research and Innovation, CESAER - Conference of European Schools for Advanced Engineering</p>
10.15 – 11.00	<p>1st PANEL</p> <p>Teresa Jorge, Comissão de Coordenação e Desenvolvimento Regional do Centro <i>Context and aim of the Workshop</i></p> <p>Ondřej Hradil, Core facility coordinator of CEITEC - Central European Institute of Technology <i>The role of Structural Funds in the mix of funding sources</i></p> <p>Gonzalo León, Deputy Rector for Innovation Partnership, Universidad Politécnica de Madrid <i>Combination of different funding sources and mechanisms</i></p> <p>Miguel Castelo Branco, Coordinator of the National Functional BIN - Brain Imaging Network <i>The importance of road mapping procedures</i></p>
11.00-12.45	<p>Round table discussions in parallel sessions</p> <p>Discussion on the Long Term Sustainability of Research Infrastructures (RI) and funding instruments along the full life cycle, focusing on The role of Structural Funds in the mix of funding sources Combination of different funding sources and</p>
12.45 -13.30	Light Lunch
13.30 -15.00	<p>Round table discussions in parallel sessions</p> <p>Difficulties in short, medium and long term funding and recommendations to overcome them, focusing on The next generation of ESIF and FP9 The funding of future life cycle stages of RIs Road</p>
15.00 -15.15	Coffee break

15.15 -17.00	<p>PLENARY SESSION</p> <p>Presentation of conclusions of parallel sessions by rapporteurs Jan Hrusak, Vice Chair of ESFRI</p> <p><i>Long Term Sustainability of Research Infrastructures: the European call for action and prospects for the future programming period</i></p> <p>Debate and recommendations - Moderated by Ricardo Miguéis, Senior Advisor for Research and Innovation, CESAER - Conference of European Schools for Advanced Engineering Education and Research</p> <p>Closing Interventions</p>
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InRoad has been funded by the European Union's Horizon 2020 Research and Innovation programme under grant agreement No 730928.



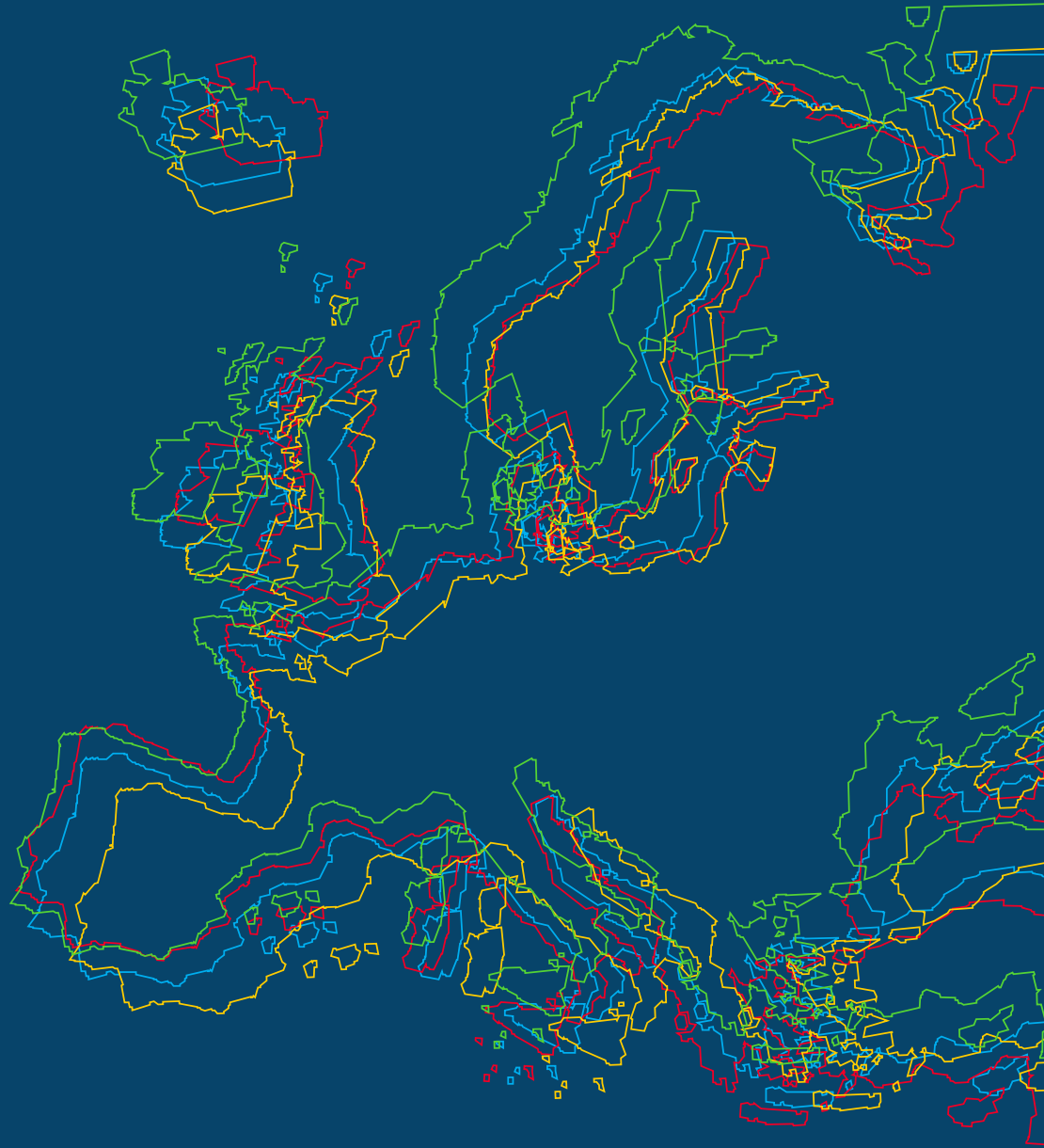
synchronising research infrastructure
roadmapping in Europe



comissão de coordenação
e desenvolvimento regional
do centro



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roadmapping in Europe



5th Regional Workshop on Interoperability of funding instruments and governance of Research Infrastructures

Report from an InRoad regional workshop

Wroclaw, 24-25 May 2018



InRoad has been funded by the
European Union's Horizon 2020
Research and Innovation programme
under grant agreement No 730928.

InRoad Regional Workshop

5th Regional Workshop on
Interoperability of funding
instruments and governance of
Research Infrastructures (RI).

Wroclaw, 24-25 May 2018

Authors: Beata Lubicka (EIT+), Carme de Andrés Sanchis (HGF) and Annika Thies (HGF).



InRoad has been funded by the
European Union's Horizon 2020
Research and Innovation programme
under grant agreement No 730928.

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1. Executive Summary

From 24 to 25 May 2018 the Wrocław Research Centre EIT+ held the 5th Regional Workshop on Interoperability of Funding Instruments and Governance of Research Infrastructures (RI). The aim of the workshop was to further explore the different approaches taken by three RI to combine and manage the different funding streams and available resources. The workshop gathered 36 participants including managers, professors and administrative directors of RI. Moreover, the representatives of the Ministry of Science and High Education, responsible for the upgrading of the Polish National Roadmap of Research Infrastructure, and the representative of the National Contact Point (KPK) joined the fruitful discussions. Finally, different InRoad consortium members came to support the development of common recommendations for the European RI ecosystem in order to scheme the funding, along the whole life cycle of the RI.

2. Workshop programme

With the objective to lead the discussion and drive to conclusions, the methodology of the workshop was based on the three case studies presented by Ms. Ute Gunsenheimer, Head of External Relations & European Union Projects at the European Spallation Source, Dr. Ellenor Devine, Project Coordinator at the National Genomics Infrastructure and Dr. Michał Młynarczyk, Deputy Director for Administration and Finance at SOLARIS. After each presentation, the participants were given the opportunity to engage with speakers through a Q&A session, followed by debates in six roundtables. The case studies were chosen in order to illustrate three different issues:

- I. The ERIC status and combinations of funds including structural funds and issues on in-kind contributions from extensive consortium partners - European Spallation Source (ESS);
- II. National financing as the main source of funding and the inclusion of commercial services —The National Genomics Infrastructure (NGI);
- III. The RI that became a national prerogative in facilitating the construction phase after its application to the European Strategic Forum for Research Infrastructures (ESFRI) – Polish Synchrotron Light Source SOLARIS.

Workshop participants commented on the case studies and shared their own experiences, encouraged by InRoad project moderators, to reflect further on the problems and find common solutions to the identified bottlenecks. The challenge for the workshop was to develop solutions within the given set of European Union (EU) rules in view of difficulties to secure finances

according to RI needs, and give concrete inputs to improve the interpretation of the regulations and the formulation of recommendations on funding mechanisms.

Overall, the discussions within the groups tackled the following points:

- I. The need for a better alignment of policies and investments for RI on a national and European level and their influence in the long-term sustainability (LTS) of RI, through:
 - a) the standardization of methodologies for National RI Roadmap preparation and planning, as well as by providing guidance to „new“ Member States (MS) on RI development policy;
 - b) the simplification of the structural fund's application and implementation process, which involves lengthy multi-stakeholder negotiations and coordination among ministries, the European Commission (EC) and funding agencies;
 - c) the alignment of national strategies with smart specialization and the European Research Area (ERA);
 - d) the clarification of state aid regulations and exemptions for RI in order to facilitate their potential and optimize costs; and
 - e) the gradual harmonization of accounting standards to achieve a common and transparent framework that can be used throughout all stages of the life cycle, and that helps to improve the understanding of financial practices in European RI by all parties involved, i.e. funding agencies, delegates, ministries, and Managers.
- II. The importance of timing and coordination in the implementation of structural cohesion funds for regional development, in EU funds for efficiency purposes and assurance of the sustainability in future lifecycle stages. Specifically, flexible frameworks that enable the planning and linking of two financial periods of structural funds, for instance, by prolonging the budget to the next financial period, thereby facilitating a smooth transition from one phase to the other.
- III. The use of business plans (BP) as managerial tools and different approaches to customers, which in the case of RI are the funding agencies, society and the direct users (including industrialists). In regard to BP, three aspects were highlighted:
 - a) the importance of connecting the mission to the RI activities to create social impact;
 - b) their role as a management tool to improve performance and achieve better outputs, outcomes and impacts and economic sustainability;
 - c) the difficulties in estimating the direct impact of research projects (i.e. predictability) through the use of key performance indicators (KPIs) in some scientific disciplines, and the value of employing a different set of KPIs depending on the RI typology (hardware and knowledge driven).
 - d) the possibility of adopting a 'result based management' tool, like the one used by the United Nations, appropriate for fields where it is difficult to monetize the effects.

- IV. Considering that updates in rules are as important as investments in infrastructures: The standardization of purchasing processes for RI in all countries (through big contracts, for example) and the clarification of state aid regulations are issues that continue to elicit debate, particularly the diversity of legal frameworks across Member States (MS) and Associated Countries (AC) when it comes to public procurements, taxing, VAT from in-kind contribution, etc.
- V. Clearer information on Intellectual Property (IP) ownership rules and on funding schemes and processes (which are different from country to country) are needed, particularly from the beginning, when scientific communities across MS and AC are trying to coordinate efforts.
- VI. Audit processes are not without challenges, as different rules apply to different countries, and concepts inherent to the ERIC legal framework, such as taxing and VAT, in-kind contributions and pension schemes, can be difficult to understand for all parties involved, especially for auditors who are unfamiliar with the ERIC legal architecture.
- VII. Among the challenging issues related to LTS: The importance of considering and calculating all costs, including those associated to dismantling the RI from an early stage of the RI development (if relevant); and the idea that decommissioning not just depends on the type of activity but also on the general perception of the full life cycle.
- VIII. The involvement of users from early conceptual stages, who create the intellectual environment and pressure for new services, upgrades and the modernization of instrumentation of RI.
- IX. Different types of research infrastructures should not be financed through one call, or with a single set of evaluation criteria, as there are intrinsic differences to consider in terms of capital and operational costs.

3. Next steps

With the round of the project's regional workshops concluded, InRoad will now compile the main bottlenecks and recommendations put forward by workshop participants into one technical report (D4.4) to be submitted in month 19 to the European Commission. The final conclusions and policy recommendations, on the other hand, will depend on the discussions and agreements reached after the validation workshop in Brussels in October 2018, where a broad number of stakeholders from different sectors and fields are expected.

4. Participants list

Name	Institution
Artur Bednarkiewicz	Wroclaw Research Centre EIT+
Albert Bogdanowicz	The Institute of Biochemistry and Biophysics of the Polish Academy of Sciences
Isabel Bolliger	University of Lausanne
Jolanta Czajkowska-Patyna	Wroclaw Research Centre EIT+
Carme de Andres-Sanchis	Helmholtz Association
Ellenor Devine	SNP&SEQ Technology Platform National Genomics Infrastructure (NGI)
Dariusz Drewniak	Ministry of Science and High Education
Rafał Duczmal	Infrastructures NCP Poland, IPPT PAN
Alexandra Griffiths	Swiss National Science Foundation
Ute Gunsenheimer	European Spallation Source ERIC
Jan Hrušák	Academy of Sciences Czech Republic, ESFRI Vice-Chair
Teresa Pratas Jorge	Comissão de Coordenação e Desenvolvimento Regional do Centro
Agnieszka Korzeniowska-Kowal	Institute of Immunology and Experimental Therapy PAS
Łukasz Kozera	BBMRI -PL Wroclaw Research Centre EIT+
Beata Lubicka	Wroclaw Research Centre EIT+
Petr Lukáš	European Spallation Source Scandinavia-CZ Nuclear Physics Institute
Anna Misiewicz	Institute of Agricultural and Food Biotechnology
Michał Młynarczyk	SOLARIS-PL National Synchrotron Radiation Centre
Janusz Olejnik	Poznań University of Life Sciences
Dorota Olszewska	EPOS-PL Institute of Geophysics, Polish Academy of Sciences
Michał Ostrowski	CTA-PL Astronomical Observatory of the Jagiellonian University

Name	Institution
Ivana Paidarová	J. Heyrovský Institute of Physical Chemistry of the CAS, v. v. i.
Maciej Piasecki	CLARIN-PL Wroclaw University of Science and Technology
Ireneusz Pyka	Central Mining Institute
Ewa Rudnicka	Wroclaw University of Science and Technology
Paweł Siedlecki	The Institute of Biochemistry and Biophysics of the Polish Academy of Sciences
Carlos Silveira	Comissão de Coordenação e Desenvolvimento Regional do Centro
Jakub Socha	University of Warsaw, Biological and Chemical Research Centre
Pavel Straňák	DARIAH/CLARIN Institute of Formal and Applied Linguistics Charles University
Jakub Śliwiński	Wroclaw Research Centre EIT+
Nataliia Voievoda	Institut de Chimie du CNRS
Mariusz Wielec	Centre for Advanced Materials and Technologies Warsaw University of Technology
Naděžda Witzanyová	European Spallation Source Scandinavia-CZ Nuclear Physics Institute
Piotr Zielenkiewicz	The Institute of Biochemistry and Biophysics of the Polish Academy of Sciences
Klaudia Ziemblińska	Poznań University of Life Sciences

5. Workshop agenda



5th InRoad Regional Workshop

Interoperability of funding instruments and governance of Research Infrastructures

** Case studies and recommendations **

Wrocław, 24th -25th May 2018

Venue: Wrocław Research Centre EIT+ (Wrocławskie Centrum Badań EIT+), *Campus "Pracze" street Stablowicka 147, 54-066 Wrocław, tel. to organizer +48502396845*

Thursday, 24th May

12h00-13h00	Registration of Participants and Buffet Lunch
13h00-14h00	OPENING SESSION ○ Welcome ○ Piotr Dytko (President of Wrocław Research Centre EIT+) ○ Drivers and trends in national Research Infrastructures roadmapping ○ Isabel Bolliger (University of Lausanne) ○ The expectations from the InRoad workshop ○ Teresa Jorge (Comissão de Coordenação e Desenvolvimento Regional do Centro)
14h00-14h45	CASE STUDY No 1 ○ ESS European Spallation Source ERIC – How to enhance the synchronization and interoperability of different funding schemes throughout each phase of a Research Infrastructure's life cycle? ○ Ute Gunsenheimer (Head of External Relations & EU Projects), Naděžda Witzanyová , (Head of Unit International Cooperation, Nuclear Physics Institute of The CAS)
14h45-15h15	QUESTIONS TO CASE STUDY No 1 ○ <i>Roundtable discussions, additional questions from the participants and formulation of the recommendations.</i>
15h15-15h45	COFFEE BREAK
15h45-16h30	CASE STUDY No 2 ○ SOLARIS Polish Synchrotron Light Source – Challenges and support to improve business planning on the national level and the links with ESFRI ○ Michał Młynarczyk (Deputy director for administration and finance)

16h30-17h15	QUESTIONS TO CASE STUDY No 2 <ul style="list-style-type: none"> ○ Roundtable discussions, additional questions from the participants and formulation of the recommendations
17h30	Bus Departure to the City Centre
18h45	Sightseeing in Wroclaw starting from Plac Solny
19h30	Social Dinner Restaurant "Jasna" street Pawła Włodkowica 18

Friday, 25th May

8h30	Bus Departure from bus stop Kazimierza Wielkiego (see the map) to WRC EIT+
9h15-10h00	CASE STUDY No 3 ○ NGI The National Genomics Infrastructure <ul style="list-style-type: none"> ○ Ellenor Devine (NGI-facility SNP&SEQ technology platform)
10h00-10h45	QUESTIONS TO CASE STUDY No 3 <ul style="list-style-type: none"> ○ Roundtable discussions, additional questions from the participants and formulation of the recommendations
10h45-11h15	COFFEE BREAK
11h15-12h00	<ul style="list-style-type: none"> ○ The role of public and private funding in designing and operational phase of EPOS-PL (Poland) ○ Dr inż. Dorota Olszewska (Project Manager, Assistant Professor, Institute of Geophysics Polish Academy of Sciences)
12h00-12h45	<ul style="list-style-type: none"> ○ The National Roadmap of Research Infrastructure; the process and the role in the research and innovation ○ Dariusz Drewniak (Counsellor General, Ministry of Science and High Education)
13h00-14h00	Lunch
14h00	Departure