Finland – Evaluation and monitoring procedure

1. Ex-ante Impact Assessment
1.1. Methodology and procedures conducted (if applicable)

Not applicable or no information presently available.

2. Procedure for selection of the research infrastructures to be included in the roadmap
2.1. Objectives of the evaluation

The above mentioned criteria forms a basis of the evaluations:

1. Scientific quality and potential
2. Open access and utilisation
3. Relevance to the strategies of host institutions
4. National and international relevance
5. Feasibility and Sustainability

2.2. Eligibility conditions

There are a set of general criteria for research infrastructures. A research infrastructure must:

- Provide potential for world-class research and scientific breakthroughs
- Be of broad national interest and enhance the international impact
- Have a long-term plan for scientific goals, maintenance, financing and utilisation
- Be used by several research groups/users for high-quality research
- Be open and easily accessible to researchers, industry and other actors
- Have a plan for access to and preservation of collected data and/or materials
- Be extensive enough so that individual groups cannot manage them on their own

Introduce new cutting-edge technology (if relevant).

2.3. Evaluation criteria for the selection of the RI to be included in the RI national roadmap

The research infrastructure projects evaluated maybe at different stages in terms of their life cycle. Some are in the planning phase while others might already be completely operational. For those research infrastructures that are in the planning phase, the evaluation is mainly based on anticipated future impacts rather than actual results. For existing research infrastructures the actual results will be evaluated.

The criteria used should be fair and equal, reflecting the international state of the art within the field in question. Major upgrades of existing research infrastructures or their reorientation require an evaluation of all criteria, the general and specific ones.

The evaluation of the research infrastructure projects is carried out in a process comprising five different dimensions. Each research infrastructure project is evaluated individually in each separate dimension as well as in comparison to the other projects in all other areas of science. The dimensions are:

1. ***Scientific quality and potential:***
   - The RI is of scientific significance and timely and provides added value at the national and/or international level
   - The RI is continuously used by excellent researchers and research groups
   - Existing RI shall provide an account of their activities, showing utilisation rate and impact, for example, in the form of scientific outputs, new applications, patents, products, or generated business activities or other societal benefits
   - The RI participates in the training of researchers or is utilised for these purposes

2. ***Open access and utilisation, Finnish and international users:***
   - There should be transnational open access to the research infrastructure. Access may require approval of a research plan and reasonable user fees as a compensation for the

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

maintenance, user support and other services
- The research infrastructure should have—data policy that supports the Open Science concept in which research methods, data and outcomes are all thoroughly documented and publicly accessible in an open manner. Therefore, the research infrastructure must have a data management plan that consists of information on data acquisition, computation, storage, and ownership of the data
- The research infrastructure must have clear and well-functioning leadership and administrative structures, adequate personnel for the maintenance, services and user support of the research infrastructure
- The research infrastructure should monitor its utilisation rate
- The research infrastructure should demonstrate its contribution to the training, e.g. provision of courses, professional guidance and science education

3. Relevance to the strategies of host institutions

- Building and operating a research infrastructure requires a long-term commitment from the research infrastructure itself and the host as well as other contributing institutions. Therefore, the strategies and priorities of the host institution(s) will also be included in the evaluation.

4. National and international relevance

This dimension of evaluation relates to the added value the research infrastructure provides for the national and/ global research community, and how it contributes to the visibility, global attractiveness and future development of Finnish research environment.

1. Strategic significance of the research infrastructure for Finland
2. Added value of research infrastructure:
    - for society, at large
    - for innovation activities, business and economy

- through global cooperation (e.g mutual mobility) of Finnish research community

5. Feasibility

The feasibility and sustainability of the project is assessed on the basis of the technical, institutional (e.g. form of ownership, terms of use or membership) and personnel requirements during the whole life cycle of the research infrastructure.

The expenses consist of planning, investment, operational and decommissioning costs during the whole life cycle of the research infrastructure.

Planning costs

Investment costs

- Construction/Building (incl. manpower)
- Acquisition of real estate
- Special technical equipment
- Supply/construction of devices and equipment

Operating costs

- Personnel costs (e.g. operation, maintenance, user support)
- Material costs (incl. membership fees or other payment of contributions to organisations)
- Costs of running the premises (rent, electricity)
- Other noteworthy investments (replacement purchases) required to keep the research infrastructure and equipment on an adequate level, reflecting the state-of-the-art

Decommissioning costs

- Costs of closing down the business and conservation of the resources developed

Ensuring sustainable funding during the whole life cycle of research infrastructure is essential not only for research infrastructure itself but also to the user community at large. In the financial plan investment and operational costs should be made explicit as well as the associated sources of those funds. Flexible business models are essential to keep research infrastructure sustainable in the long run.

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

2.4. Evaluation method and procedures conducted (organisation in charge, timing, selection of reviewers, configuration of panels, indicators, etc.) for the selection of the RI to be included in the RI national roadmap

Proposals by the research organisations, on RI to be included on the roadmap, were evaluated in a two-stage process by international panels of experts. On the basis of the panel's assessments, the Finnish Research Infrastructure (FIRI) Committee decided on the research infrastructures to be selected for the roadmap (see the figure below).

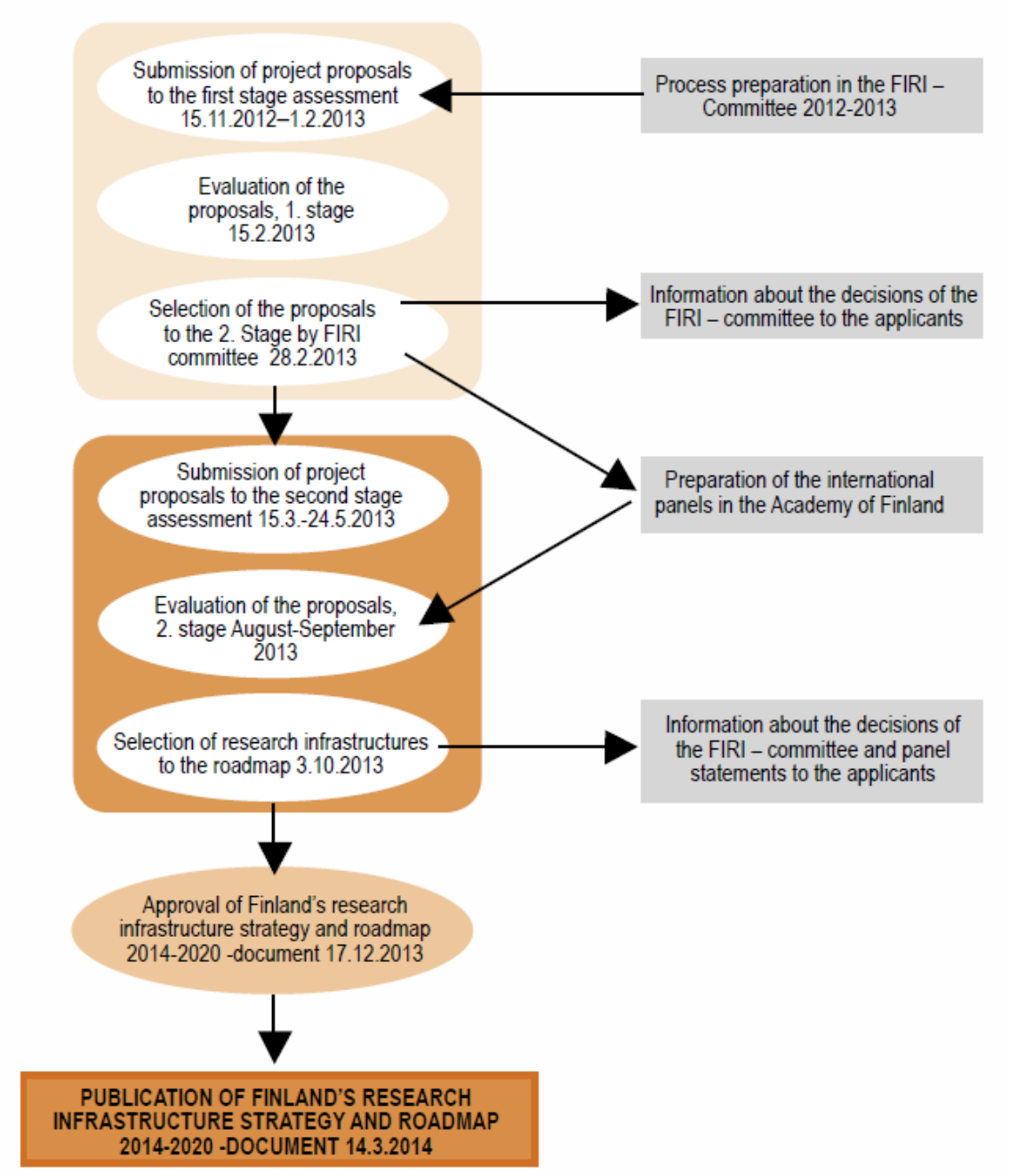

Figure 5: Selection process of RI in Finland.

The evaluations of the proposals sought to identify international-level research infrastructures that support the attainment of Finland's research and innovation policy goals. Projects selected for the roadmap were to create added value in research terms and markedly lift the quality of research in Finland within the discipline in question. They were also to attract excellent researchers to Finland.

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

When assessing the potential for the successful realisation of each research infrastructure, the panel members took into account the scope of the potential user community, multidisciplinary coverage, multi-sectoral reach and quality. All criteria were interpreted from Finland's perspective. However, when weighing up participation in international research infrastructures, the panel assessed the quality and impact of research from the viewpoint of international needs.

Apart from the evaluation of RI projects to be included in the roadmap, an evaluation of the impact and significance of research infrastructures will also be necessary for fulfilling the Finland's research infrastructure Vision:

a) The impact, significance and collaborative use of research infrastructures will be subject to regular evaluation.
b) Decisions on the continuation of international and national research infrastructures of importance to Finland will be based on a systematic evaluation method.

Evaluations will be performed of the direct or indirect benefits of national or important international research infrastructures to Finnish research, business and society. In developing such evaluations, account will be taken of the fact that the nature of research infrastructures may change due to developments in science and technology such as new digital breakthroughs.

2.5. Proposals evaluated and selected (available statistics)

The first Finnish research infrastructure roadmap was published in 2009. A total of 24 major research infrastructure projects (Reference 1) by national actors were selected for this roadmap. Of these, 13 formed part of European roadmap projects under the European Strategy Forum on Research Infrastructures (ESFRI).

Then, a total of 31 projects required for research and innovation in the disciplines in question have been selected for the 2014–2020 roadmap.

3. Update / Monitoring and ex-post Evaluation of RI Roadmap

3.1. Objective of the monitoring of the RI national roadmap as a whole

The mid-term evaluation of the current roadmap has been conducted 2017, results will be published 2018. The main objectives of the evaluation are:

- **Scientific case:**
  - to evaluate the scientific quality and relevance of research infrastructure. The scientific evaluation of the infrastructures, which will be selected to the roadmap, will be valid for three years. Thus, their scientific quality will not be evaluated again, until the roadmap period ends.
- **Implementation case:**
  - to assess, whether the infrastructure is fully implemented and operational (like ESFRI Landmarks), or is it mature enough to be in the roadmap? A landmark should meet all of the criteria set for national research infrastructures. Whereas infrastructures selected to the roadmap should demonstrate clear capacity to fully meet the criteria.
- **Finnish research infrastructure committee:**
  - to decide, based on both scientific and infrastructure specific evaluations, about the final structure of the roadmap and the its categorization

3.2. Periodicity of the RI national roadmap monitoring actions (if applicable)

The roadmap for research infrastructures will be updated every five years. On the other hand, The implementation of the research infrastructure strategy and the progress of research infrastructures selected for the roadmap will be reviewed every three years.

3.3. Methodology and procedures conducted (timing, approach, indicators, etc.) for

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

monitoring the RI national roadmap

The monitoring was based on both reported information 2013-2016 and action plan until 2017 – 2022. In the report, the following KPIs were used:

- Staff of the RI (number of)
- Funding of the staff
  - Users and usage of RI (number of/ annually
  - Costs and funding base of RI
  - Collaboration and interactions of RI
  - Visits
  - Openness of RI:
- access
- Data handling and storage
- Availability of the data produced
  - Publications
  - Intellectual property rights and other outputs 2013-2016:
- Patents and inventions disclosures
- Other outputs (events like seminars, Current care guidelines, research data guidelines, methods, tools and software, other equivalent, openly or commercially available and documented outputs)
  - New Technologies produced
  - Effects and impact:
- World views, culture and human understanding
- Public services and societal functions
- Economy and commerce
- Health and wellbeing
- The environment and natural resources
- Impact that manifests itself in other ways

In the Action plan, RI were asked to tell about their future plans based on the same above mentioned KPIs.

3.4. Methodology and procedures conducted (timing, approach, indicators, etc.) for monitoring the individual RI included in the RI national roadmap

All the RI funded through Academy of Finland, report to Academy annually. The same reporting mechanism (KPIs etc.) is used like described above.

3.5. Methodology and procedures conducted in the case that an ex-post evaluation of the RI national roadmap is planned or has been implemented

Not applicable or no information presently available.

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