

12 March 2020

**Research infrastructures** constitute a reserve of research facilities, equipment, materials and services facilitating research and development at different stages of innovation, supporting organised research, researcher training and teaching at universities, and maintaining and developing research and innovation capacity. provide potential for world-class research and scientific breakthroughs.

Generally, a national research infrastructure must:

- 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 for all researchers
- have a plan for access to and preservation of collected data and/or materials in the spirit of open science and data policy
- be extensive enough so that individual groups cannot manage them on their own
- introduce new cutting-edge technology (if relevant).

**Please provide both written feedback and numerical ratings to each of the following items.**

The numerical evaluation of the sub-items and final rating is made with a rating scale ranging from 1 (poor) to 6 (outstanding). We encourage using the entire scale.

<b>6 (outstanding)</b>	Demonstrates exceptional novelty and innovation. Has potential to substantially advance science at global level.
<b>5 (excellent)</b>	Is extremely good in international comparison – contains no significant elements to be improved.
<b>4 (very good)</b>	Is in general sound but contains a few elements that could be improved.
<b>3 (good)</b>	Is in general sound but contains important elements that should be improved.
<b>2 (fair)</b>	Contains flaws. Is in need of substantial modification or improvement.
<b>1 (poor)</b>	Contains severe flaws that are intrinsic to the proposed infrastructure.

In addition to a numerical rating, please give a written review under each of the questions below.

## **1 National and international relevance of research infrastructure to quality, renewal and competitiveness of science and education** **Sub-rating (1–6)**

### **1.1 Science**

How well does the research infrastructure facilitate scientific excellence in terms of scientific results, breakthroughs and scientific progress and renewal nationally and internationally?

### **1.2 Landscape**

How do you see the research infrastructure's positioning in the research environment and its connection to the research infrastructure and research landscape, both nationally and internationally? Does the research infrastructure significantly strengthen the environment and the landscape? Does the research infrastructure have collaborations that can significantly contribute to the success of its activities? Can the research infrastructure be used by user communities from different research fields?



### 1.3 Added value

Do you think the research infrastructure has or will have added value to research and education at a national and/or international level? Please explain.

## 2 Wide and versatile impact of research infrastructure

Sub-rating (1–6)

### 2.1 For society at large

What kind of added value does the research infrastructure generate for society at large or for innovation activities, business and the economy? Can the research infrastructure produce new innovations, business activities or other societal benefits? What kind of impact does the research infrastructure have on know-how and innovation ecosystems?

### 2.2 For Finland

Does Finland's membership benefit Finland, the Finnish research community and Finnish society at large? Please explain. (This question applies only to research infrastructures that act as national nodes of international research infrastructures in which Finland is a member.)

## 3 Ownership, funding, know-how and organisational structure

Sub-rating (1–6)

### 3.1 Ownership

Is the ownership of the research infrastructure clearly described? How well will the host organisations support the research infrastructure? How well is the project aligned with the research strategies of the organisations? Do you see that the support is on a sustainable basis?

### 3.2 Funding base

Do you think that plans for the research infrastructure's funding base are sustainable and realistic in general?

### 3.3 Know-how

Are the merits<sup>1</sup> and competence of the director and other key persons sufficient for managing the research infrastructure? Do the personnel have the competence for maintenance, service provision and user support? Is there sufficient training and career development for the personnel? Please explain.

### 3.4 Organisational structure

Describe whether the leadership, resources and division of labour for maintenance, services and user support are appropriate and well planned? How viable are the operations in Finland?

## 4 Research infrastructure operation

Sub-rating (1–6)

### 4.1 Life cycle

How well are the life cycle and the life cycle categories of the research infrastructure described? Does the infrastructure have an exit plan?

### 4.2 Responsibility and sustainable development

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<sup>1</sup> The Academy of Finland is committed to promoting the DORA recommendations and to not using journal-based metrics, such as Journal Impact Factors, as a surrogate measure of the quality of individual research articles, to assess an individual scientist's contributions.



How well have ethical issues, for example concerning the structure and methods of work at the infrastructure, or guidelines for using the infrastructure, been considered?

Has the research infrastructure considered sustainable development issues, such as the United Nation's Sustainable Development Goals (SDGs), sufficiently? How well has the research infrastructure described the means to estimate the carbon footprint? Please explain.

Has the research infrastructure considered promotion of equality and non-discrimination within it or in society at large?

#### 4.3 Long-term perspective and dynamism<sup>2</sup>

- **Services and users:** Are the services well planned? What do you think of the user profile and utilisation rate of the research infrastructure? Is the research infrastructure continuously used by excellent researchers and research groups?
- **Open access:** Does the research infrastructure provide open access to users (access may require approval of a research plan and reasonable user fees)? Do you see that the research infrastructure informs of access possibilities openly enough?

### 5 Digital platforms and data

Sub-rating (1–6)

#### 5.1 Data management policy

Does the research infrastructure offer feasible guidelines, practices or incentives/demands for researchers in order to support open research data? Are the management, storage, use and rights of ownership of the research data planned well enough? (*For this information, see the 'Data management policy' appendix of the application.*)

5.2 Does the research infrastructure take into account the necessary changes brought about by increasing digitalisation and data intensity? Please explain.

### 6 Risk management

Sub-rating (1–6)

6.1 Has the research infrastructure identified any potential risks that might threaten its implementation plans? Is there a plan for risk management? Do you see any risk elements outside the management plan?

### 7 Overall assessment and rating

7.1 Please give an overall assessment for the application including lists of strengths and weaknesses as well as any additional comments.

Strengths:

Weaknesses:

Comments:

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<sup>2</sup> The Academy of Finland is committed to promoting the principles and practices of open science to improve the quality, responsibility and social impact of science. The goal is to make all outputs produced and used in research (research publications, data, methods) and their metadata widely available for reuse. The principles of open science must be pursued with due attention to good scientific practice and law. The degrees of data openness may justifiably vary, ranging from fully open to strictly confidential.



**Overall rating**

**Rating (1–6)**

Please note that the final rating should not be a mathematical average of the sub-ratings.

- The final rating should not be a mathematical average of the sub-ratings. For example, the application should not be penalised if it has a slight weakness in one evaluation item that is later strengthened in another item (e.g. lack of some expertise in a local team but compensated through international collaboration).

