General remarks on successful research infrastructures

1. GENERALITIES
2. FINANCIAL SUSTAINABILITY
3. EFFECTIVE MANAGEMENT
4. TRACE THE SUCCESS (MONITORING)
5. HUMAN RESOURCES
6. USER ACCESS
7. NETWORKING

<table>
<thead>
<tr>
<th>Type of research infrastructure</th>
<th>Description</th>
<th>Examples</th>
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<tbody>
<tr>
<td>Single-site facility</td>
<td>Unified body of equipment at one physical location</td>
<td>High-performance laser system; clean room; coastal observatory; Centre of Competence. E.g. Multi-purpose Hybrid Research Reactor for High-tech Applications (MYRRHA); European Solar Telescope (EST)</td>
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<td>Distributed facility</td>
<td>Network of distributed instrumentation or collections, archives and scientific libraries</td>
<td>European Light Infrastructure (ELI); Council of European Social Science Data Archives; Central European Research Infrastructure Consortium (CERIC ERIC); International Centre for Advanced Studies on River-Sea Systems (DANUBIUS RI); European Plate Observing System (EPOS)</td>
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<tr>
<td>Mobile facility</td>
<td>Mobile vehicles specially designed for scientific research</td>
<td>Research vessels, satellite and aircraft observation facilities</td>
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<tr>
<td>Virtual facility (e-infrastructures)</td>
<td>ICT-based system for scientific research, including high-capacity communication networks and computing facilities</td>
<td>European Grid Computing Infrastructure; Digital Research Infrastructure for the Arts and Humanities (DARIAH); Partnership for Advanced Computing in Europe (PRACE)</td>
</tr>
</tbody>
</table>
Hungarian landscape: National Research, Development and Innovation Office

National Research, Development and Innovation Office

Strategic planning and analysis

Governmental coordination and representation

NRDI Fund management

Innovation services

Ministry for Innovation and Technology

Ministry for Culture and Innovation

From 2022
FINANCING PILLARS OF THE NRDI FUND – 2021

Individual excellence

Horizontal programmes

Thematic programmes

National security and defense

Health

National challenges: Secure society and environment, Industry and digitization, Culture and family

Business innovation

Horizontal programmes

NRDI Fund Research sub-fund: HUF 105.762 billion

NRDI Fund Innovation sub-fund: 76.53 billion

Gov. Decree 1077/2021. (II. 27.) on 2021 Programme Strategy of NRDI Fund
The National Research Infrastructure Committee (NRIC)

Tasks

Chair: Zsolt Fülöp, Atomki
Vice-chair: István Szabó, NRDIO
Members: 6 scientific advisors – according to the ESFRI thematic areas

Makes proposals for:
• joining new international research infrastructures
• the development of domestic research infrastructures

Makes recommendations for:
• the evidence based design of funding schemes supporting research infrastructures
• the establishment of a monitoring and evaluation system of RIs and monitoring of our international memberships
• all matters concerning the domestic research infrastructures
Hungary’s membership in international research infrastructures (RIs)

Health & Food (7)
- BBMRI-ERIC
- ECRIN
- elixir
- EMBL
- ERINA
- ERINA
- ICGBE
- attosecond

Physical Sciences & Engineering (8)
- CERN
- ALICE
- CERIC
- CMS
- ESRF
- EuPRAXIA

Social & Cultural Innovation (7)
- ccessda
- CLARIN
- E-RHIS
- E-RIHS
- European Social Survey
- SHARE
- GUIDE
- SHARE

Energy (1)
- ITER

Environment (1)
- ICOS

E-infrastructures (1)
- PRACE

Membership fees: Σ 12,8 m EUR/2021 (4 800 m HUF/2021)
Identifying the TOP national RIs and networks - survey

Aim

• identifying the best domestic research infrastructures and infrastructure networks
• providing international visibility of Hungary's research excellence
• making research services visible and available
• awarding the Outstanding Research Infrastructure title to RIs

April 2021 – launching the online questionnaire
two-step peer review evaluation (with the coordination of the NRIC)
October 2021 – decision
December 2021 – awarding ceremony

Evaluation

• uniqueness, scientific excellence, national strategic significance, size of the network
• international cooperation, relations
• open access and use
• education and training
• industrial innovation cooperation
2 + 40 + 10 + 5 = 57 =

- 2 Large scale key RIs
- 40 Excellent RI
- 10 Excellent new RI clusters
- 5 Emerging RIs

2021-4.1.2-NEMZ_KI – call for proposal


'A' Sub-program (outgoing)
Supporting the use of research and measurement opportunities provided by international research infrastructures.

'B' Sub-program (incoming)
Supporting the use of the significant domestic research infrastructures by international researchers.

- Announcement: 28 September 2021
- Funding/project: 0.5 - 2 mFt (EUR 1 350-5 500)
- Earmarked budget: HUF 100 million (kEUR 280)
- Eligible costs of the researchers or PhD, MSc students related to
  - outgoing/incoming travel
  - stay of abroad/in Hungary
  - project-related travel within the given country
  - disseminating the results of the project
  - participation in international conferences
  - cost of materials, tools and instrumentation

- Cut-off dates: 31 May 2022, 31 Aug 2022
Flagship 1: The ELI ERIC Facilities

The mission of ELI ERIC is to provide access for European and international researchers to the ELI Facilities in the Czech Republic and Hungary.

ELI Attosecond Light Pulse Source
www.eli-alps.hu

ELI-Nuclear Photonics
Romania

The third ELI facility is expected to join after 2023.

ELI Beamlines
www.eli-beams.eu
ELI ERIC is a single, multi-site organisation
A European Research Infrastructure Consortium – an ERIC

This new legal form enables the participation of States as member countries to govern the ELI Facilities jointly and make them available to the scientific community as a single international organisation. Its headquarters are in Dolní Břežany in the Czech Republic.

ELI ERIC involves the Czech Republic, Hungary, Italy and Lithuania as founding Members. Both Germany and Bulgaria are Founding Observers. **Romania and ELI-NP are also expected to join the ELI ERIC consortium, which is open to European and non-European countries to join its membership.**
User Access at ELI ERIC
Three modes of access

- **Excellence-Based Access** – Evaluation of proposals by international peer-review panels. Results of experiments published and open.

- **Mission-Based Access** – Thematic research granted on the basis of scientific missions pursuing challenges. Proposals reviewed by international panels. Results published and open.

- **Proprietary Access** – Paid access for industrial or other users. Results are retained by the user, consistent with ELI ERIC’s Data and IPR Policy.
ELI ERIC 1st User Call

Published end of May 2022

https://www.eli-laser.eu

• The call will run October 2022 through March 2023
• Proposals will be accepted through August
• There will be more than eight instruments
• All instruments have been thoroughly tested during commissioning
• Advise proposers to contact the facilities for technical questions
• The 2nd call will be published January 2023
Flagship 2: ZalaZONE
The most comprehensive vehicle validation environment in the world with autonomous elements

Available:
1. Highway
2. Driving dynamics surface
3. Brake measurement tracks
4. Smart city
5. Conference center
6. High-speed handling
7. University track
8. Test center
9. ADAS surface
10. Freeway
11. Noise measurement tracks
12. Wet handling courses
13. Country road
14. Hill
Research and innovation activities:
- Cutting-edge research,
- Preparatory education for the future,
- Widespread dissemination of research results,
- Value-creating knowledge transfer,

ZalaZONE Research and Technology Centre
- Rented workshops for university research groups,
- Dual higher education training,
- Industrial laboratories,
- Start-up incubation centre.

ZalaZONE Test Centre
R&I Head Office, priority projects.

ZalaZONE track parameters
800 m total length, Dynamic surface, Low-µ section, Smart City, Science Park

ZalaZONE Park is a dynamically developing industrial area next to the Zalaegerszeg Automotive Test Track, a 15-hectare smart city environment. It is focused on ensuring a competitive environment for testing, validation, modern technologies and research and development.
The complete ZalaZONE ecosystem in the Science Park concept

- Buildings
- Equipments
- Knowledge and competence
- Human background

Some of its elements are already working!

... other elements are under construction.
Role of small scale infrastructures
An example of interdisciplinary networks
Outlook – train system vs internet speed vs research infra

Regional Innovation Scoreboard 2012

ESFRI Research Infrastructures under construction

Internet speed across the European Union