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FONDS NATIONAL SUISSE
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SWISS NATIONAL SCIENCE FOUNDATION

SWISS RESEARCH INFRASTRUCTURES ROADMAP

CALL FOR APPLICATIONS FOR NEW RESEARCH INFRASTRUCTURES OF NATIONAL RELEVANCE

*State Secretariat for Education, Research and Innovation (SERI)
Swiss National Science Foundation (SNSF)*

October 23, 2013

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1. QUICK REFERENCE

SCOPE

Update and renewal of the Swiss roadmap for research infrastructures of national relevance in view of the Federal Council Dispatch on the promotion of Education, Research and Innovation (ERI) for 2017-2020. (Infrastructures funded in the ERI period 2013-2016 will automatically be considered in the 2017-2020 roadmap.)

KEY DATES AND DEADLINES

23 JAN 2014	Application deadline
APR 2015	Publication of the new roadmap and beginning of implementation according to priorities set by the ETH Board, the Cantonal Universities and the SNSF
JAN 2017	Start of official implementation for infrastructures financed explicitly according to the ERI Dispatch

WHO CAN APPLY?

MEMBERS OF:

- **SWISS CANTONAL UNIVERSITIES**
- **SWISS CANTONAL UNIVERSITIES OF APPLIED SCIENCES**
- **INSTITUTIONS OF THE ETH-DOMAIN**

HOW TO APPLY?

By email to the address roadmap@sbfi.admin.ch.

APPLICATION SPECIFICATIONS

CONTENT	<ol style="list-style-type: none">1. Letter of commitment of host institution2. 2-page CV and publication list of the last 5 years3. Short general presentation of the research infrastructure4. 8-page in-depth description of the research infrastructure<ul style="list-style-type: none">▪ Research relevance and potential▪ Uses, functions, and access▪ Technical feasibility▪ Execution state and financial plan
FONT SIZE	11 pt
LINE SPACING	14 pt
LANGUAGE	English

2. SCOPE

The new roadmap for research infrastructures (RIs) will allow both the update and the creation of new RIs of national relevance for Switzerland in view of the Federal Council Dispatch on the promotion of Education, Research and Innovation (ERI) for 2017 to 2020.

Existing infrastructures funded* under the current ERI Dispatch (2013-2016) will automatically be considered in the new roadmap.

(* funded by SNSF, Academies, Cantonal Universities, ETH Domain, Confederation)

3. ELIGIBILITY

Eligible applicants are members of Swiss Cantonal Universities, Swiss Cantonal Universities of Applied Sciences (*Fachhochschulen*), and Institutions of the ETH Domain. Please find below examples of standard research infrastructures.

STANDARD RESEARCH INFRASTRUCTURES

Standard research infrastructures can be grouped in the following three categories:

LARGE PHYSICAL DEVICES

Particle accelerators, telescopes, ships, stations, specific laboratory equipment, etc.

DATA/SERVICE CENTERS

Scientific data collections, archives, libraries, clinical research specific services, integrative research centers, etc.

IT PLATFORMS

High performance computing, computer grids, digital information networks, etc.

4. APPLICATION

Please apply via email, to the address roadmap@sbfi.admin.ch until **January 23, 2014**.
The application must contain the following sections:

LETTER OF COMMITMENT OF THE HOST INSTITUTION

INFORMATION ABOUT THE DIRECTOR(S) OF THE NEW RI

Two-page curriculum vitae and list of publications of the last five years

ONE/TWO-PAGE SUMMARY DESCRIPTION OF THE NEW RI

DETAILS REGARDING THE FOLLOWING POINTS (maximum 8 pages)

- **RESEARCH RELEVANCE AND POTENTIAL**
National/international relevance of the RI for future research developments and trends.
Main questions which can be addressed with the new RI and research areas that will benefit.
Comparison of the new RI to existing RIs (please address national, European, and international levels).
- **USES, FUNCTIONS, AND ACCESS**
Direct and prospective users (please detail institutions and research fields, as well as the access policy of the new RI).
- **TECHNICAL FEASIBILITY**
Technical and logistic conditions needed for the implementation of the RI
Long-term outlook with respect to potential collaborations and the integration of the new RI into the development of the host institution.
Planned governance (legal/organizational structure and management).
- **EXECUTION STATE AND FINANCIAL PLAN**
Current stage of the project and overall financial implications of the new RI during its life-time.
Financial plan including information regarding own resources as well as second and third-party funds.

All documents must be written in English.

Please use 11 pt for font size and 14 pt for line spacing.

5. SELECTION

The first step evaluation of the applications will be conducted by the SNSF.

The following criteria will be of particular importance:

- Relevance of the new RI for national and international research, either from a specialized or interdisciplinary point of view;
- Potential for development of national and international collaborations;
- Overall feasibility and state-of-the-art;
- Integration of the new RI in the Swiss research panorama.

Swiss Research Infrastructure Roadmap in view of the 2017-2020 ERI Dispatch

Concept

(23 October 2013)

All information relating to the *Research and Innovation Promotion Act (RIPA)* is based on the official language versions dated 14 December 2012, which will be enacted on 1 January 2014 (cf. BBl **2012** 9657; FF **2012** 8915; FF **2012** 8489).

All information relating to the *Federal Act on the Funding and Coordination of the Higher Education Sector (HEdA)* is based on the official language versions dated 30 September 2011, which will be enacted on 1 January 2015 (cf. BBl **2011** 7455; FF **2011** 6863; FF **2011** 6629).

Contents

- I Legal basis: RIPA**

- II Operational definition**

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I Legal basis: RIPA

The requirement to periodically produce a Swiss Research Infrastructure Roadmap was recently set down in the Research and Innovation Promotion Act RIPA and the Research and Innovation Promotion Ordinance RIPO.

Federal Act on the Promotion of Research and Innovation (RIPA) of 14.12.2012:

Chapter 2: Coordination by the Federal Council

Art. 41 General principles

(...)

⁴ Furthermore, and in particular with regard to cost-intensive research infrastructures, it shall take the measures required to coordinate coherently the Confederation's international research and innovation promotion activities with:

- a. development planning in the ETH Domain; and
- b. coordination and task allocation in all higher education institutions in Switzerland in particularly cost-intensive areas.

(...)

Ordinance on the Federal Act on the Promotion of Research and Innovation (RIPO), (draft for consultation, 28 May 2013):

Art. 54 Research infrastructures

¹ Periodically or as required, the SERI shall draw up a report for the Federal Council on the status and development of research infrastructures, in particular in major international research institutions and other internationally coordinated research infrastructures in which Switzerland participates. In particular, it looks at:

- a. Switzerland's responsibilities under international treaties;
- b. developments in research and innovation at European level in particular with regard to the establishment and operation of internationally coordinated research infrastructure;
- c. development priorities in specialist areas and disciplines in research and innovation in Switzerland;
- d. corresponding development priorities in the ETH Domain and other higher education institutions.

² In this it shall consult the research promotion institutions, the CTI, the federal offices involved and where necessary the SSIC¹, and ensures that the necessary scientific expertise is available.

³ It also ensures that, in cases where there is a direct relationship with the particularly cost-intensive areas defined in the Higher Education Act (HEdA) of 30 September 2011, there is harmonisation between research and innovation policy planning in accordance with RIPA and coordination in higher education policy in accordance with the HEdA.

⁴ The Federal Council takes note of the report and decrees the necessary coordination measures.

¹ Swiss Science and Innovation Council (formerly the Swiss Science and Technology Council SSTC).

II Operational definition

What: Research infrastructures (RIs) as understood in the Roadmap entail wide-ranging instruments, resources and services for research in all scientific areas with *at least* national importance for the scientific field or specialist community in question. In Switzerland, RIs are funded by the private and public sectors for a medium-term period (usually more than 10 years) and increasingly on a long-term basis. RIs enable the pursuit of research activities and the development of specific research areas. As a rule, an RI does not carry out independent competitive research; this is done by research scientists and research groups in specialist fields, possibly in close collaboration with the RI.

Standard research infrastructures can be grouped in the following three categories:

- a. *Instruments:* large-scale equipment e.g. particle accelerators, telescopes, research ships, measuring stations, specific laboratory installations (e.g. cleanrooms)
- b. *Information and service infrastructures:* (i) Research data and data service centres, including scientific data collection and archiving; (ii) archives, libraries and collections;² (iii) specialist service centres (e.g. in clinical research; for networking different scientific fields)
- c. *Technical infrastructures:* e.g. e-infrastructures (high-performance computers; grid; digital science information networks)

Open access: The RIs are in principle open to national and international research communities.

Organisation: The RIs may be situated in one location or be organised in a network of several sites. Networks are managed by a centralised administrative unit.

² Editorial projects as such are not considered to be research infrastructures. For such projects, the SNSF will launch a separate call for applications.

III Procedure

Summary

The aim of the Roadmap report is to provide an **overview** of **prospective** research infrastructures and **existing** supported RIs of **at least national importance**.

The following chapters describe in detail how the Roadmap report is drawn up. The SERI and the SNSF launch a joint *call for applications* for the prospective RIs with a *two-stage* evaluation procedure. Once the SNSF has conducted a quality check (first stage of evaluation), the SERI coordinates the allocation of the planned RIs to the relevant funding or host institution for further evaluation (second stage of evaluation). This occurs in consultation with the institutions involved.

The **funding institutions according to RIPA** are the Swiss National Research Foundation (SNSF), the four Swiss Academies of Arts and Sciences as well as the Confederation (for non-university research infrastructures and internationally coordinated research infrastructures established on the basis of an international agreement).

Potential **host institutions** for newly planned RIs are the ETH Domain institutions, the cantonal universities and universities of applied sciences, private organisations based in Switzerland and international organisations.

Stage 1: Consortia of applicants can submit *letters of intent* for planned RIs (with institutional commitment to co-finance and/or provide follow-up funding for the RIs). The SNSF carries out the scientific quality control and classifies the applications. For stage two of the evaluation, the SNSF, with reference to its own foresight activities, may make recommendations concerning the funding source or host institution of the positively evaluated prospective RIs.

The **aim** of stage 1 is to gain an **overview** of prospective research infrastructures.

Allocation: The SERI coordinates the assignment of prospective RIs to funding or host institutions in consultation with all the involved institutions. The relevant funding or host institution is responsible for the second stage of evaluation and, where appropriate, for funding in the 2017-2020 ERI period.

→ The allocation **in no way prejudices** stage two of the evaluation. The relevant institutions decide **autonomously** as part of their planning and evaluation procedures for the 2017-2020 ERI period if and how they wish to consider the prospective RIs.

Stage 2: The second stage in the evaluation process is conducted on the basis of the procedures and criteria of the relevant funding or host institution. The latter sets its own requirements, specific evaluation and prioritising criteria and deadlines; these are therefore not described here.

Roadmap report: The Roadmap report is drawn up by the SERI. The Roadmap report contains *all* prospective RIs which have been positively evaluated by the SNSF in the quality control procedure and an inventory of RIs which already receive funding (overview). In addition, the prospective RIs are assigned to the relevant institution in accordance with the results of the allocation procedure.

Implementation: Funding decisions are made within the framework of the 2017-2020 ERI Dispatch:

- taking account of the relevant funding and host institutions' multi-annual programmes,
- on the basis of results available from the second evaluation stage, respectively on the basis of decisions made autonomously by the relevant institution, and
- on the basis of funding available during the 2017-2020 ERI period.

**A. Joint call for applications by SERI and SNSF for prospective RIs
(stage one of evaluation process)**

1. Who can submit an application?

Eligible applicants are members of Cantonal Universities, Cantonal Universities of Applied Sciences and of all institutions of the ETH-domain who can provide official institutional commitment to co-fund and/or provide follow-up funding for the prospective RIs.³

2. Letters of Intent for quality control by SNSF: content requirements

(Announced 23 October 2013 / Submission deadline: 23 January 2014)

2.1. General description

General description of proposed RI (max. 2 pages)

2.2. Answers to questions on four aspects of evaluation a-d (max. 8 pages)

a. Scientific potential:

- (i) What is the significance of the proposed RI?
- (ii) Which research issues will be addressed?
- (iii) Which new research field can be developed?
- (iv) Which other ways of addressing the research issues have been looked at?
- (v) How does the proposed RI differ from existing similar research infrastructures at national, European or international level?

→ Questions to be answered together with a short description of the current state of research.

b. Use:

- (i) Who will want or be able to make use of the planned RI? (incl. details on size of user group and their disciplinary and institutional background)
- (ii) How will use of the planned RI affect the use of existing RIs?
- (iii) How is access organised, and how is it guaranteed that high quality research will be conducted with the help of the prospective RI?

c. Feasibility:

- (i) To what extent are the technical requirements for setting up the RI in place?

³ Editorial projects should be submitted in the separate SNSF call for applications.

- (ii) Why does the host institution have an interest in providing the location for the proposed RI?
- (iii) What place does the planned RI have in the organising institution's long-term research strategy?
- (iv) What form does the planned governance concept take (legal form; management and organisational structure)?

d. Implementation status and financial plan:

- (i) How far has the project been developed?
- (ii) To what extent do the envisaged financial commitments (incl. funding applied for here) cover the expected life-time requirements of the RI?
- (iii) What does the organising institution contribute (finances; staffing; etc.)?
- (iv) Financial plan
- (v) Annex (if already available): detailed financial plan incl. details of own funds and any other funding applied for or already secured.

B. Inventory (Inventory of RIs already receiving funding)

The SERI draws up an inventory of the research infrastructures already receiving funding earmarked under the ERI Dispatch. In doing so, it acts as the 'leading secretariat', drawing up the inventory with the support of the relevant research bodies under RIPA.

The inventory also includes the following information about each prospective RI:

- host institution;
- main sources of funding;
- development prospects, incl. information on dismantlement, withdrawal, redimensioning or expansion based on (recent/periodic) assessments and situation-specific analyses;
- (estimated) budgetary requirements for 2017-2020 and 2021-2024.

The **inventory** includes

- **National research infrastructures:** these comprise RIs already receiving funding under Art. 16 RIPA, those receiving funding from the SNSF, academies as well as those being funded within the ETH Domain and cantonal universities and universities of applied sciences;
- **ESFRI infrastructures** in the Swiss Roadmap for Research Infrastructures of March 2012 which receive funding in the 2013-2016 ERI period;
- Ongoing Swiss participation in **internationally coordinated research infrastructures** on the basis of an international agreement.

C. Quality control by SNSF and allocation

1. Content check (24 January to 7 February 2014)

The SERI and the SNSF check that the applications are complete.

2. Quality control of prospective RIs by SNSF (February to June 2014)

Quality control of the prospective RIs is carried out by the SNSF. The SNSF is responsible for organising and conducting the quality control procedure. Where necessary, it can involve the CTI, the Academies and international experts.

2.1. Criteria for quality control

- a. Scientific potential/Generation of scientific added value from both disciplinary-specific and interdisciplinary viewpoints:*
 - How original and scientifically important are the research issues and approaches which will arise under the proposed RI?
 - What is the added value compared with existing research?
- b. Use and accessibility (national and international, cross-disciplinary):*
 - Can the proposed RI be used and accessed broadly?
 - To what extent do the performance record and expertise of future users suggest that high quality research will be conducted with the help of the proposed RI?
 - To what extent will the proposed RI and the data generated under it be accessible and available to a wide research community?
- c. Feasibility:*
 - To what extent does the proposed RI reflect state-of-the-art research and development technically, logistically, methodologically and conceptually?
- d. Funding and institutional embedding:*
 - To what extent is the long-term continuation, funding and institutional embedding of the planned RI secured?
- e. Importance for Switzerland in research landscape:*
 - (i) To what extent does the planned RI respond to existing strengths in research in Switzerland, and to what extent does it compensate a weakness?
 - (ii) What is the importance of the planned RI in terms of Switzerland's role in international research?
 - (iii) What role does the proposed RI play in training young scientists?

2.2. Quality classification

On the basis of the results of the quality check according to the criteria a-e above, the **SNSF**

- classifies the proposed RI according to the following scale:

<input type="checkbox"/> limited importance <input type="checkbox"/> importance with development potential <input type="checkbox"/> considerable importance

A proposed RI is **positively evaluated** in the Roadmap process if it receives the classification “importance with development potential” or “considerable importance”

- carries out a **further assessment for each scientific field**, prioritising proposed RIs in that area according to manifest needs of the respective scientific communities. The SNSF considers the RIs already receiving funding in the given scientific field (→ Inventory) and assesses whether an existing RI can be substituted short-term (2017-2020), medium-term (2021-2024) or long-term (after 2024) if the planned RI is established.

3. Allocation to relevant funding or host institutions (July to September 2014)

3.1. Recommendation by SNSF

Under RIPA (art. 4, let. c), academic research centres and the Confederation are responsible for funding research infrastructures. Under art. 10, para. 3, let. c RIPA, the SNSF plays a subsidiary role and may make recommendations concerning the funding source or the host institution. Thirdly, there are the Academies, which may also support research infrastructures set up to develop specific fields of expertise in Switzerland (art. 11, para. 6 RIPA).

The SNSF can, for example, draw on its own **foresight activities** and recommend a competitive call for applications or a grouping of a proposed RI with existing RIs.

3.2. Allocation

The SERI considers the SNSF recommendations and coordinates the allocation procedure in consultation with the SNSF, the ETH Board, the CRUS (Rectors’ Conference of the Swiss Universities), the Swiss University Conference (SUK/CUS), the KFH (Rectors’ Conference of the Swiss Universities of Applied Sciences), the Swiss Council of Universities of Applied Sciences and the Swiss Academies of Arts and Sciences.

→ The results of the allocation procedure **in no way prejudice** stage two of the evaluation. The institution to which the given RI is assigned decides **autonomously** as part of its planning and evaluation procedures for the 2017-2020 ERI period if and how it wishes to consider the prospective RI.

D. Second stage of evaluation (October 2014 to end of 2016)

The second stage of the evaluation process of the RIs positively evaluated by the SNSF at the quality control stage (first stage) is carried out by the institutions to which the RI has been allocated according to the institution's **own processes and criteria**. The individual procedures (requirements, specific evaluation and prioritising criteria, deadlines) are organised autonomously by the individual institutions and are not dealt with here.

The prospective RIs which are due to be set up and receive funding in the 2017-2020 ERI budget period should be integrated into the appropriate *multi-year programme (MYP)*.

Who	SNSF	Academies	ETH Domain	Cantonal Universities and Universities of Applied Sciences	Confederation
What	Infrastructures for immediate research	Infrastructures for networking between different scientific fields	Research infrastructures	Research infrastructures ⁴	Non-university research infrastructures (Art. 15 RIPA); ⁵ internationally coordinated research infrastructures on basis of international agreements
Decision	Research Council	Swiss Academies for Arts and Sciences	ETH Board	Cantonal Universities resp. Cantons; Hochschulrat / Conseil des hautes écoles	Head of EAER; Federal Council
MYP (yes/no)	Yes	Yes	Yes	Yes	No

⁴ The procedures for project funding under art. 47 HEEdA run until the end of 2016.

⁵ The procedures for funding under art. 15 RIPA run until the end of 2016.

IV Roadmap report and implementation

A. Roadmap report: acceptance criteria and report structure

Acceptance criteria for planned RIs:

- (1) RI fulfils all aspects of the operational definition;
- (2) Funding has not yet been secured fully or only in part: in view of the criteria set out in Art. 6 of the Subsidies Act (SubA, SR 616.1)⁶, the RI should receive federal funding.
- (3) RI has been classified by the SNSF as being of “importance with development potential” or of “considerable importance”.

Allocation to relevant funding or host institutions: In the Roadmap report the prospective RIs are allocated to the appropriate institutions in accordance with the results of the allocation discussion.

Inventory: The Roadmap report also includes an inventory of RIs already receiving ERI funding and information on their development potential and financial requirements.

B. Consultation of the Swiss Science and Innovation Council

Before the Roadmap report is submitted to the Federal Council, the Swiss Science and Innovation Council is invited to give an assessment as part of its recommendations for the 2017-2020 ERI Dispatch.

C. Implementation: Funding decision under 2017-2020 ERI Dispatch

The definitive funding decisions are made

- taking account of the relevant funding and host institutions’ multi-annual programmes,
- on the basis of results available from the second stage in the evaluation process respectively on the basis of decisions made autonomously by the relevant institution, and
- on the basis of funds earmarked in the 2017-2020 ERI Dispatch.

RIs may be funded individually as follows:

- a. *Direct federal funding* for a RI is awarded on the basis of
 - (i) Art. 15 RIPA (non-university research infrastructure), or
 - (ii) Art. 28. Abs. 2, let. a RIPA (internationally coordinated research infrastructure based on an international agreement).

⁶ Art. 6 SubA: Provisions on financial aid can be issued when:

- a. the Confederation would like a specific task to fulfilled;
- b. the task cannot sensibly be fulfilled by an individual canton;
- c. the task could not be completed satisfactorily without financial aid;
- d. reasonable self-help measures and other financial possibilities are insufficient; and
- e. the task cannot be fulfilled more easily, effectively or efficiently in any other way.

- b. *Indirect federal funding* for a RI is awarded from funds earmarked for the ETH Domain, SNSF, Swiss Academies for Arts and Sciences or for project funding under HEdA (art. 47).

V Schedule

WHAT	WHO	WHEN
Procedure		
(1) Call launched	SNSF and SERI	23 October 2013
(2) Inventory drawn up	SERI (coordination)	Ongoing to March 2014
(3) Applications for new RIs submitted	Applicants	23 January 2014
(4) Content checked	SERI and SNSF	to 7 February 2014
Evaluation		
(1) Quality control and classification	SNSF	7 February - 30 June 2014
(2) Allocation procedure	SERI, SNSF, Academies, ETH Board, CRUS, SUK/CUS, KFH, FHR/Conseil HES	July / August / September 2014
(3) Stage two of evaluation procedure in accordance with procedures of relevant institutions	ETH Board Hochschulrat / Conseil des hautes écoles SNSF (Research Council) Academies Confederation	October 2014 – end of 2016 ⁷
(4) Roadmap report drawn up	SERI	October/November 2014
ERI procedure		
(1) Swiss Science and Innovation Council gives assessment	Swiss Science and Innovation Council	December 2014-January 2015
(2) Federal Council acknowledges Roadmap	Federal Council	March 2015
(3) Roadmap published	SERI	March 2015
(4) Preparation 2017-2020 ERI Dispatch	SERI	Spring-autumn 2015
(5) Adoption of 2017-2020 ERI Dispatch	Federal Council	End of 2015
(6) Approval of 2017-2020 ERI Dispatch	Parliament	End of 2016

⁷ The procedures for project funding under art. 47 HEdA and for federal funding under art. 15 RIPA run until the end of 2016.