Physical and remote access to the European Volcano Research Infrastructures as a strategy to promote the community building: efforts, challenges, and results

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Abstract

Indeed, nowadays data sharing via internet is one of the most used approaches to networking scientific communities. However, the opportunity to physically access Research Infrastructures (RIs) and their installations and facilities is potentially the most powerful mean to build up a community. Physically access, in fact, makes the ideal conditions for the RI's providers and users to work side by side on specific research topics. This is recently the case of the European trans-national access activities promoted in order to allow and push the volcanology community to use either the volcano observatories, to carry out experiments or fieldworks, or laboratories, for exploiting analytical and computational facilities, belonging to the main European volcano research institutions.

The EUROVOLC project has granted the access to 11 RIs for an overall of 45 installations, including single facilities of pools of mobile instrumentation and of laboratories, and remote access to collections of volcanic rocks, of 5 European countries (France, Iceland, Italy, Portugal, and Spain). In the frame of the project, the trans-national access offer has come from 7 partners (IMO, UI, INGV&CNR, CIVISA, IPGP, and CSIC) acting in 7 WPs (13, 14, 16, 16, 17, 18, and 19).

The EUROVOLC work-plan has foreseen two calls, one in 2018 and the other in 2019, allowing users to apply for access the RIs, and the effective physical access in 2019 and 2020, respectively. Each call has been managed according to a stepwise process based on an excellence-driven criterion, in which the roles of the various actors and the schedule have been previously defined.

This contribution aims at presenting the management and coordination efforts related to the trans-national access activities in the frame of EUROVOLC including the preparation and the launch of the 1st call, the process of the selection of the proposals, the feedback from the management of the 1st call, the preparation of the 2nd call, and a critical analysis for improving the management of the 2nd call.

ABC of Trans-national Access (TA)

Trans-national Access (TA)

> 'free of charge' provision of access to a research infrastructure to *selected* researchers or research teams usually working in a country other than the country where the RI is located. TA can be:

- **in person ('hands-on')**, to users visiting the infrastructure, e.g. access to a research vessel, or
- **remote scientific services**, no visit needed, e.g. performance of sample analysis

While **ad-hoc training** on how to use an infrastructure to solve a specific research problems can be a component of the access service provided by the RI, **attendance to training courses**, summer schools or seminars is not considered access to RI.

General training courses on how to use a RI for a set of potential users can be supported under networking activities.
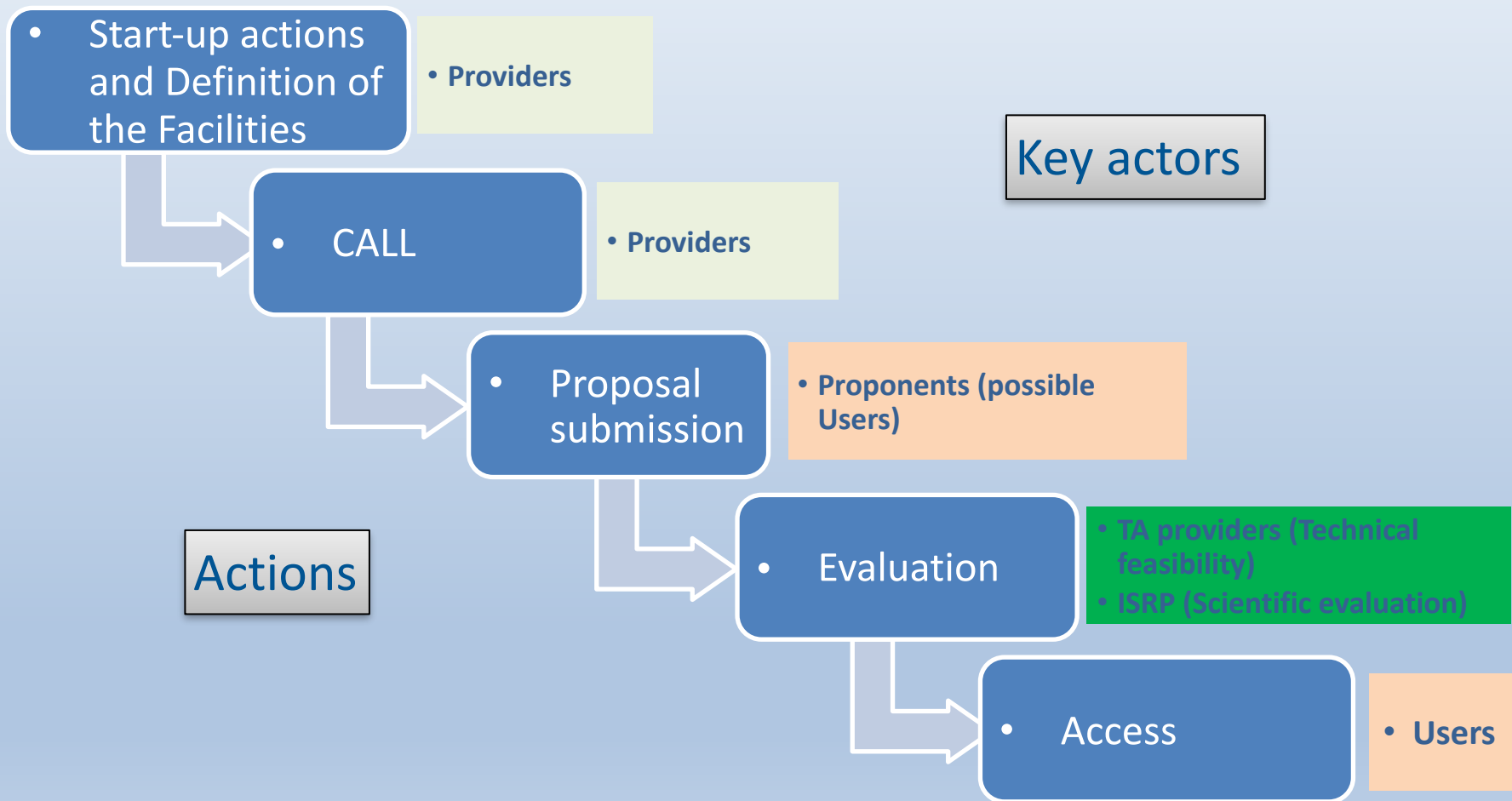
Aims of the management of TA in the EUROVOLC project

- Appliance of the "*excellence-driven*" access mode for the selection of proposals,

- Appliance of the openness and fairness principles,

- Provision of high-quality TA,

- Sharing of the output of the scientific projects across the volcanology community.

TA modalities
"excellence driven" management

TA Coordinator supervises the overall process: management and brokering activities

- Start-up actions and Definition of the Facilities
  - Providers

- CALL
  - Providers

- Proposal submission
  - Proponents (possible Users)

- Evaluation
  - TA providers (Technical feasibility)
  - ISRP (Scientific evaluation)

- Access
  - Users

Key actors

Actions

Management of the First TA Call in steps

Phase	Step	What	Who	Action
Start-up actions and Definition of the facilities	1	Assessment of the criteria and conditions for launching the calls; schedule of the calls	TA Coordinator & Providers	• Assessment of the data management • Definition of the relevant facilities' information
	2	Definition and appointment of the International Scientific Review Panel (ISRP)	Steering Board (SB)	• Definition of the main skills • Selection of the external panel members • Checking of the availability of the selected candidates • Appointment of the ISRP members
	3	Definition of the 1st and 2nd call	TA Coordinator & Providers	• Two surveys were carried out among the TA providers in order to define their offer for the menu of the first call
Call		Launch of the 1st TA call	TA Coordinator, Providers & Dissemination Task	• Editing of data sheets reporting the main characteristics, access conditions, access parameters, and budget availability per infrastructure/ installation/facility • TA web page implementation
	4	1st TA Call opening and advertisement	TA Coordinator & Providers	• TA web page opening • Support to the applicants • Call advertisement during main events of the volcanology community

Management of the First TA Call in steps

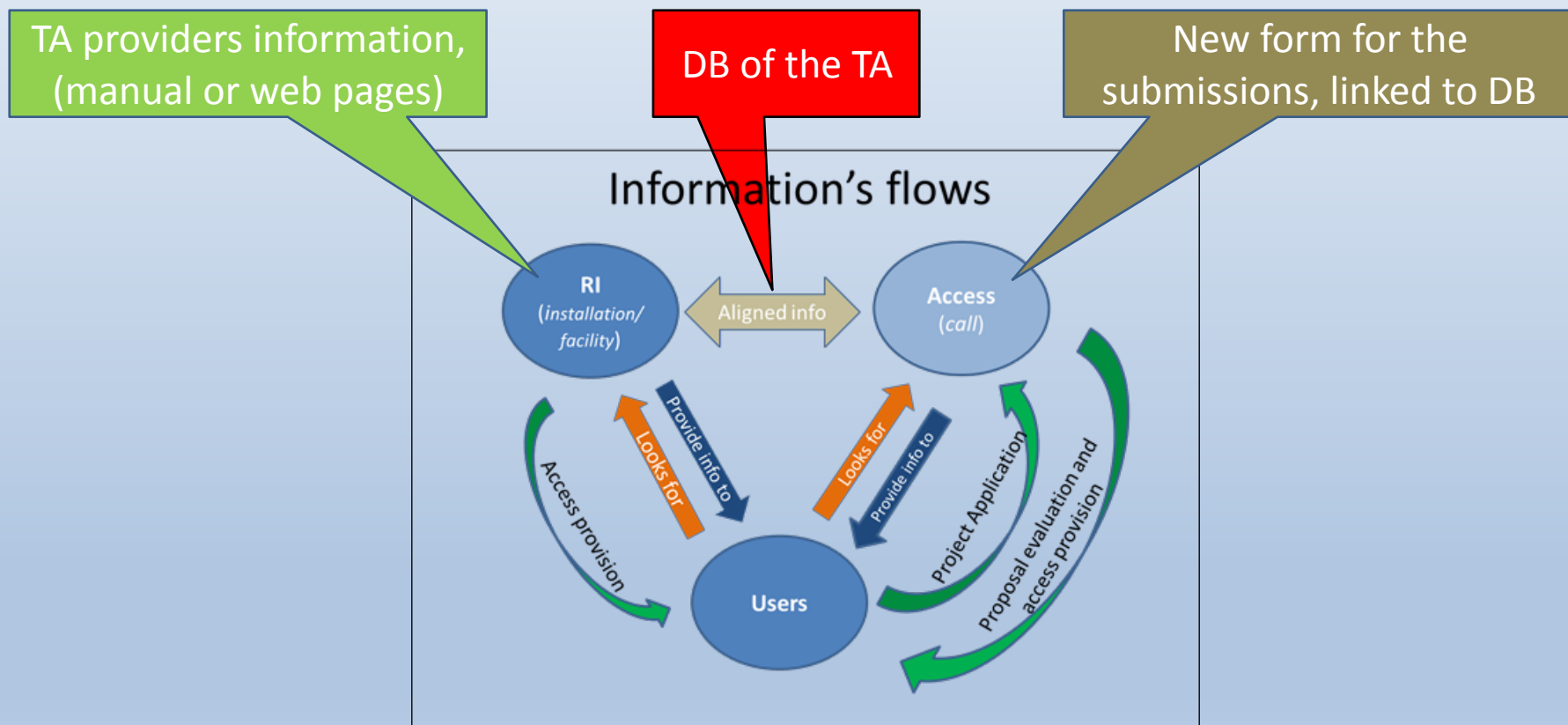| Phase	Step	What	Who	Action
Proposal submission	5	Collection of the applications	TA Coordinator	• Collection of proposals • Organisation of the proposals per infrastructure • Provision of the proposals to the infrastructure providers
Evaluation	6	Pre-evaluation of proposals w.r.t. logistic and technical feasibility	TA Providers	Assessment of the feasibility of each proposal based on the infrastructure/installation/facility required, on the respect of the accessibility criteria and compliance with the access parameters and financial support offered
	7	Scientific Review Panel evaluation	ISRP	Scientific evaluation of the proposals taking into account the logistic and technical pre-evaluation
	8	Assessment of revisions & selection of proposals	SB and ISRP	• List of the successfull proposals to SB • Checking of the list compliance with the max number of fundable proposals per infrastructure (from GA)
Access	9	Access to RIs and support	Users and Providers	• Definition of the final list and official communication to the PIs of the selected proposals • Exchange between the Users and Providers to arrange the activities • Exploitation of the activities
	10	Dissemination of the results (start)	Users and Providers	Presentation of the achievements in national and international scientific events, scientific papers, ect
	11	TA reports	SB, Users & Providers	Provision of a TA report on the activities carried out per project

Evaluation Process of the 1st call

Technical Evaluation (TA Providers)

- **Technical feasibility**
- **Logistic feasibility**
- **Financial feasibility**
- **Qualitative evaluation (A/B/C)**
- **No Selection**

Scientific Evaluation (ISRP)

- **Science**
- **Methods**
- **Team**
- **Rank (1-30)**
- **Selection (threshold 20)**

Final Assessment (SB)
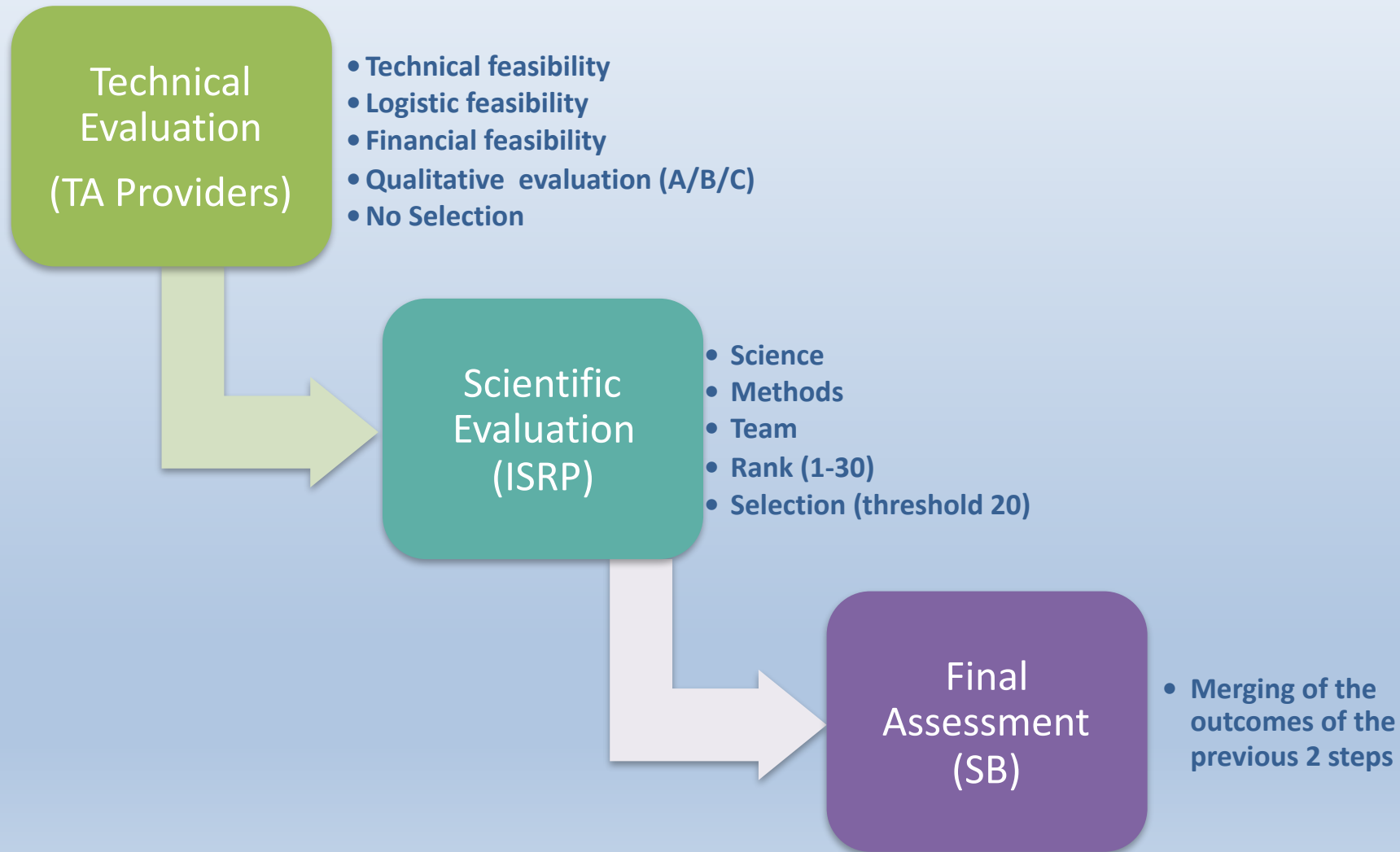
- **Merging of the outcomes of the previous 2 steps**

The management of the second TA call was adjusted and refined based on the experience of the previous call. In detail, the main changes have been:

A. the web page of the TA advertisement and application submission was improved by the implementation of a proper data-base structure able to present the characteristics, access criteria, access parameters, and financial support of each infrastructure/installation/facility, and able to on-line management of the Users' proposal submission

B. the definition of new steps in the evaluation process of the scientific proposals

Management of the Second TA Call in steps (A)

Experience gained in the EUROVOLC 1st Call and the EPOS VO-TCS Implementation

TA providers information, (manual or web pages)

DB of the TA

New form for the submissions, linked to DB

Information's flows

- RI (*installation/facility*)
- Aligned info
- Access (*call*)
- Provide info to
- Looks for
- Access provision
- Project Application
- Proposal evaluation and access provision
- Users

TA Conceptual model of the flow of the information

Management of the Second TA Call in steps (A)

Providers

WP20 (et al.)

RI

Access rules

Facility #1
Facility #2
Facility #...

Installation (a) — offer
Installation (b) — offer
Installation (c) — offer
Installation (..) — offer
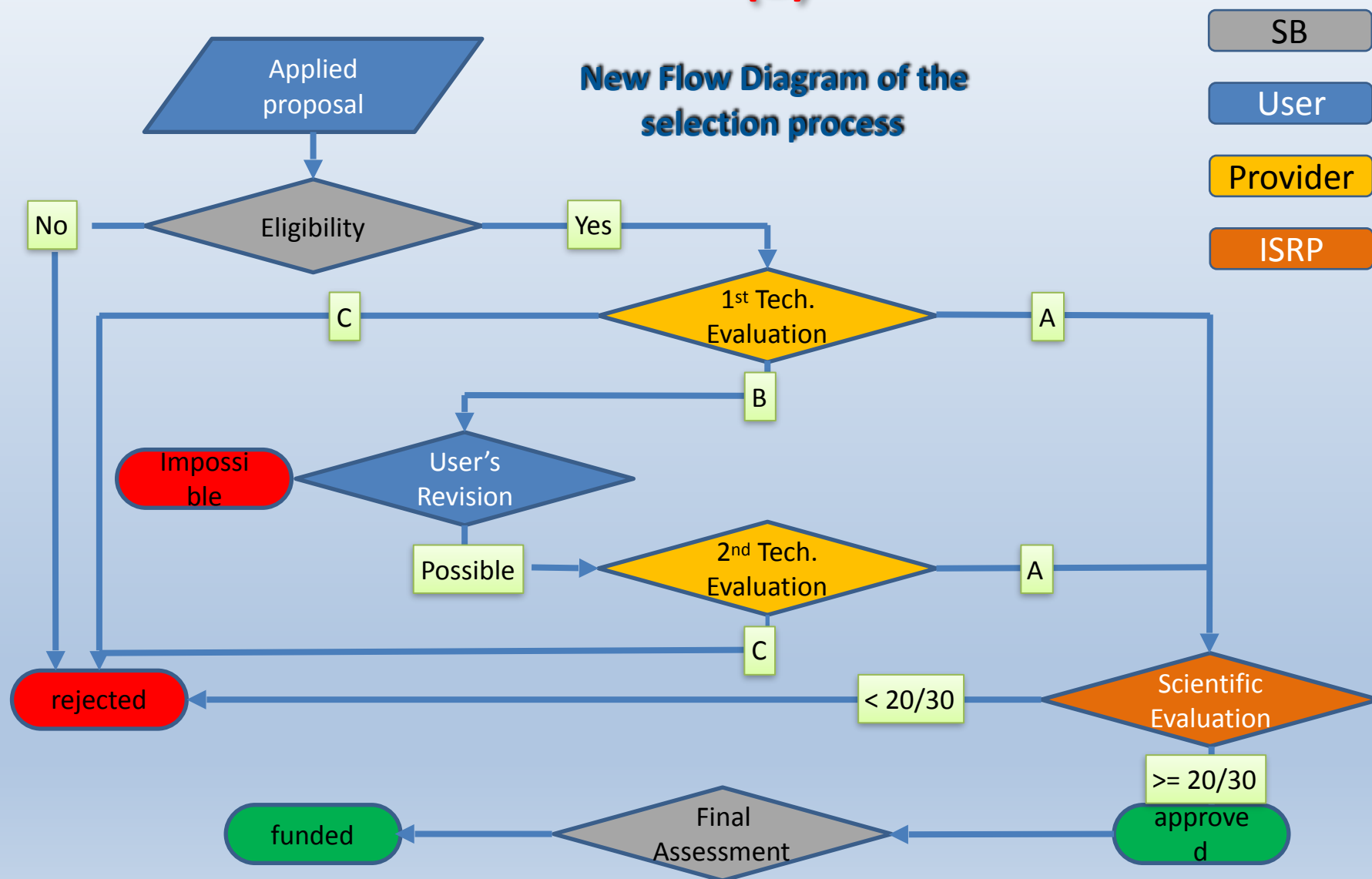Installation (..) — offer

Form

Applications' Countries
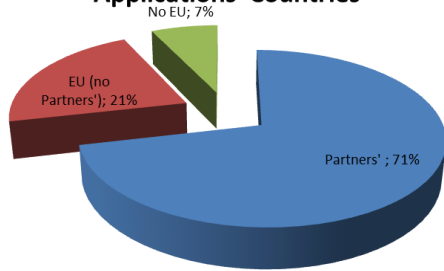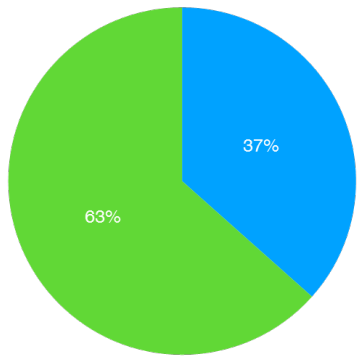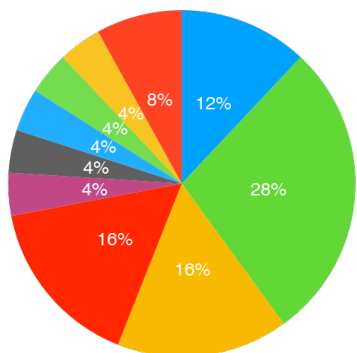
Accesses to the application's form & Submissions
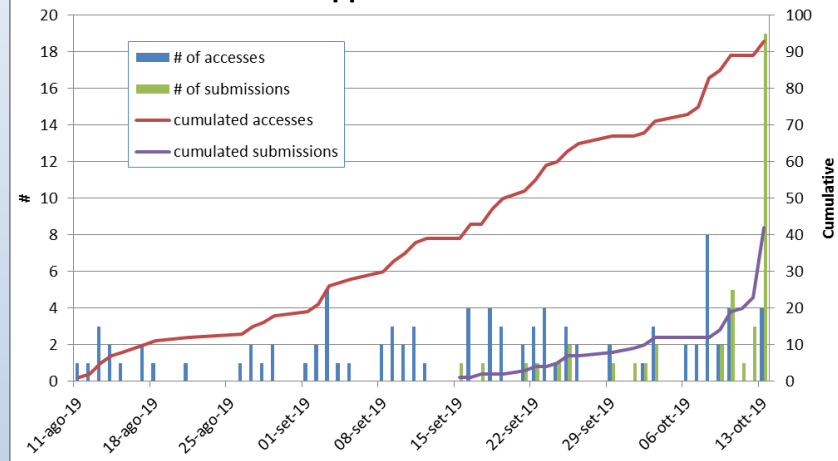
Finalized Submissions - geographic distribution

Management of the Second TA Call in steps (B)

New Flow Diagram of the selection process

Legend:
- SB
- User
- Provider
- ISRP

Flow:
- Applied proposal → Eligibility
  - No → rejected
  - Yes → 1st Tech. Evaluation
- 1st Tech. Evaluation
  - C → rejected
  - A → Scientific Evaluation
  - B → User's Revision
- User's Revision
  - Impossible → rejected
  - Possible → 2nd Tech. Evaluation
- 2nd Tech. Evaluation
  - A → Scientific Evaluation
  - C → rejected
- Scientific Evaluation
  - < 20/30 → rejected
  - >= 20/30 → approved
- approved → Final Assessment → funded

Comparison between the 1st and 2nd call

Submitted	Technical Evaluation			Scientific Evaluation			Funded
	C	B	A	<20	[>= 20; < 25]	[>= 25; <= 30]	
29	1	6	21	8	10	10	12
42	9	N/A	33	3	14	16	27
45%	800%		57%	-63%	40%	60%	125%

Technical Evaluation			Scientific Evaluation			Funded
C	B	A	<20	[>= 20; < 25]	[>= 25; <= 30]	
3%	21%	72%	28%	34%	34%	41%
21%	N/A	79%	7%	33%	38%	64%
18%		6%	-20%	-1%	4%	23%

Comparison between the 1ˢᵗ and 2ⁿᵈ call

Impact
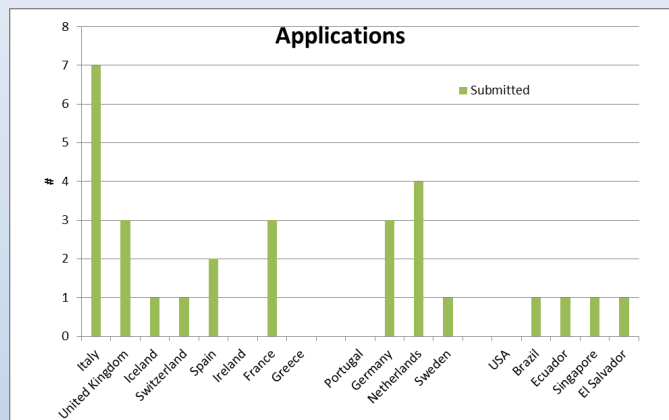
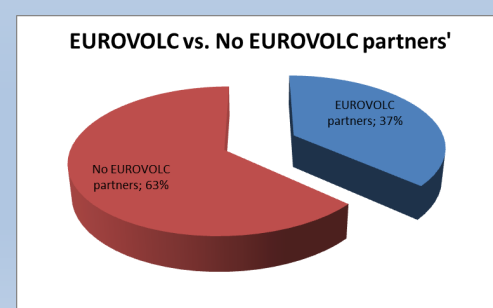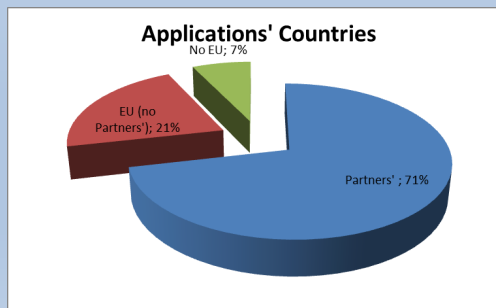**1ˢᵗ Call**
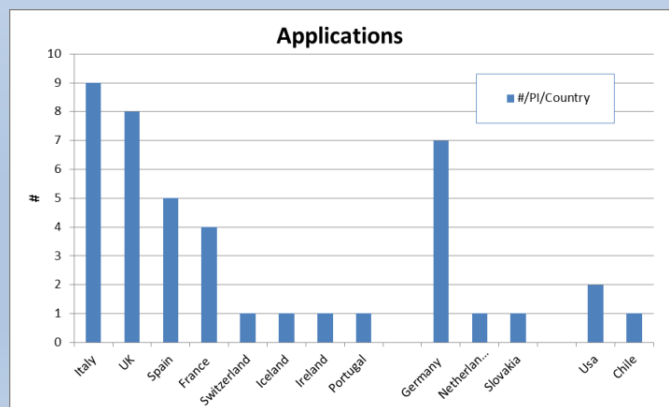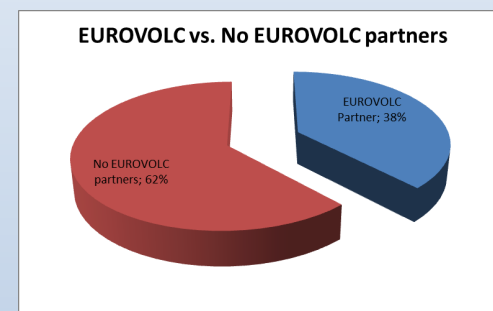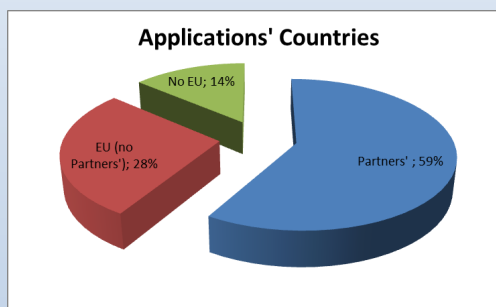
2ⁿᵈ Call

What we learnt …and future prospective (EPOS)

- Effectiveness of the Trans-national Access activities for promoting new science, best practice exchange, and community building
- Trans-national Access as a mean to use all the EU volcanology community resources to foster free-of-charge high-quality science
- Promotion of multi-domain research
- Promotion of the FAIR principles
- Definition of a Data Management model
- Definition of a methodology to classify, collect and manage the information (data) relevant to the infrastructures offered
- Data treatment and informatics
- Definition of a robust and proven model for research proposal evaluation based on a fair and 'excellence-driven" mode
- TA management exportable to other initiative frameworks such as EPOS