Tips and tricks of a beamline scientist for successful proposals

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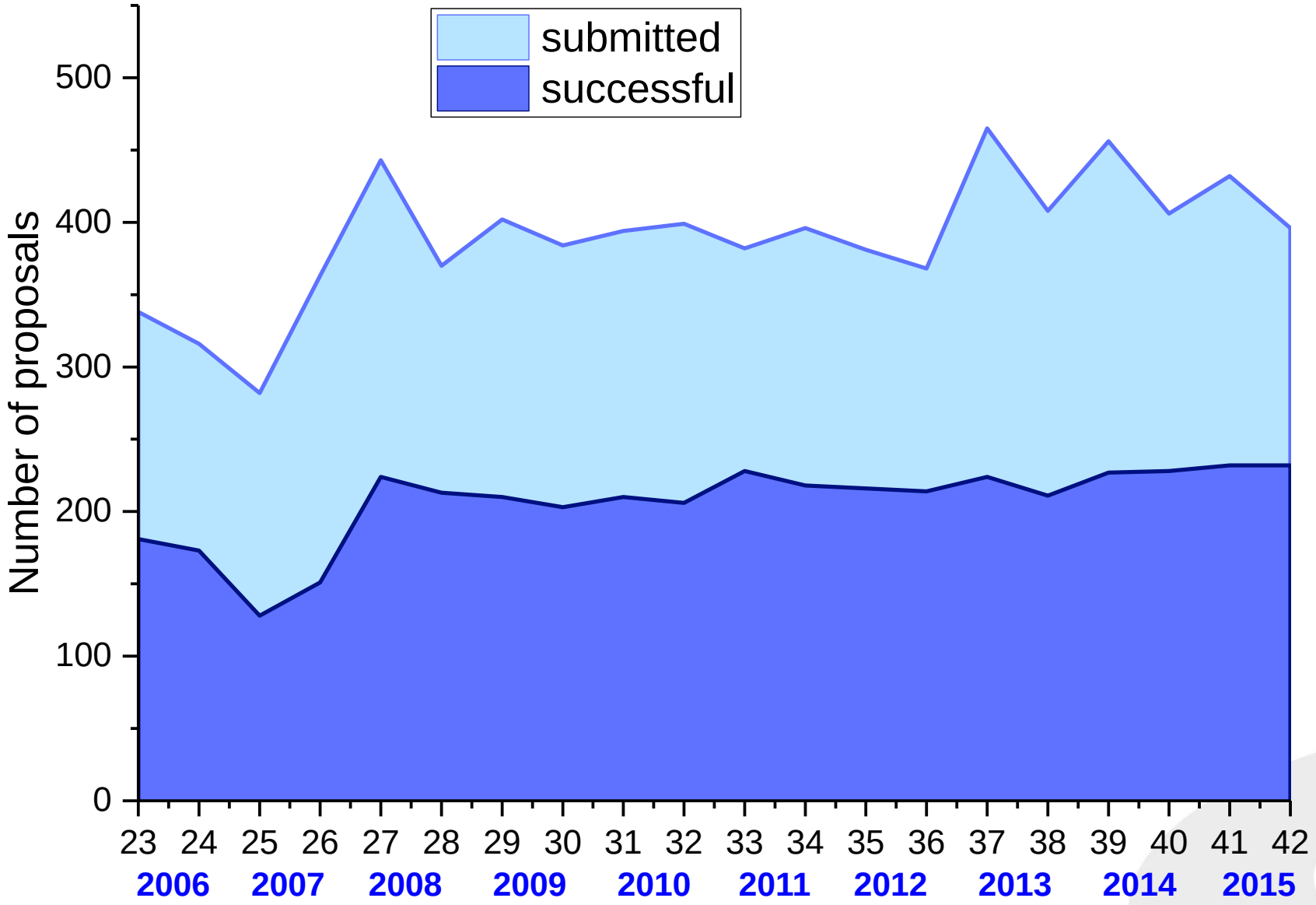
Some considerations

High competition for beamtime at Elettra



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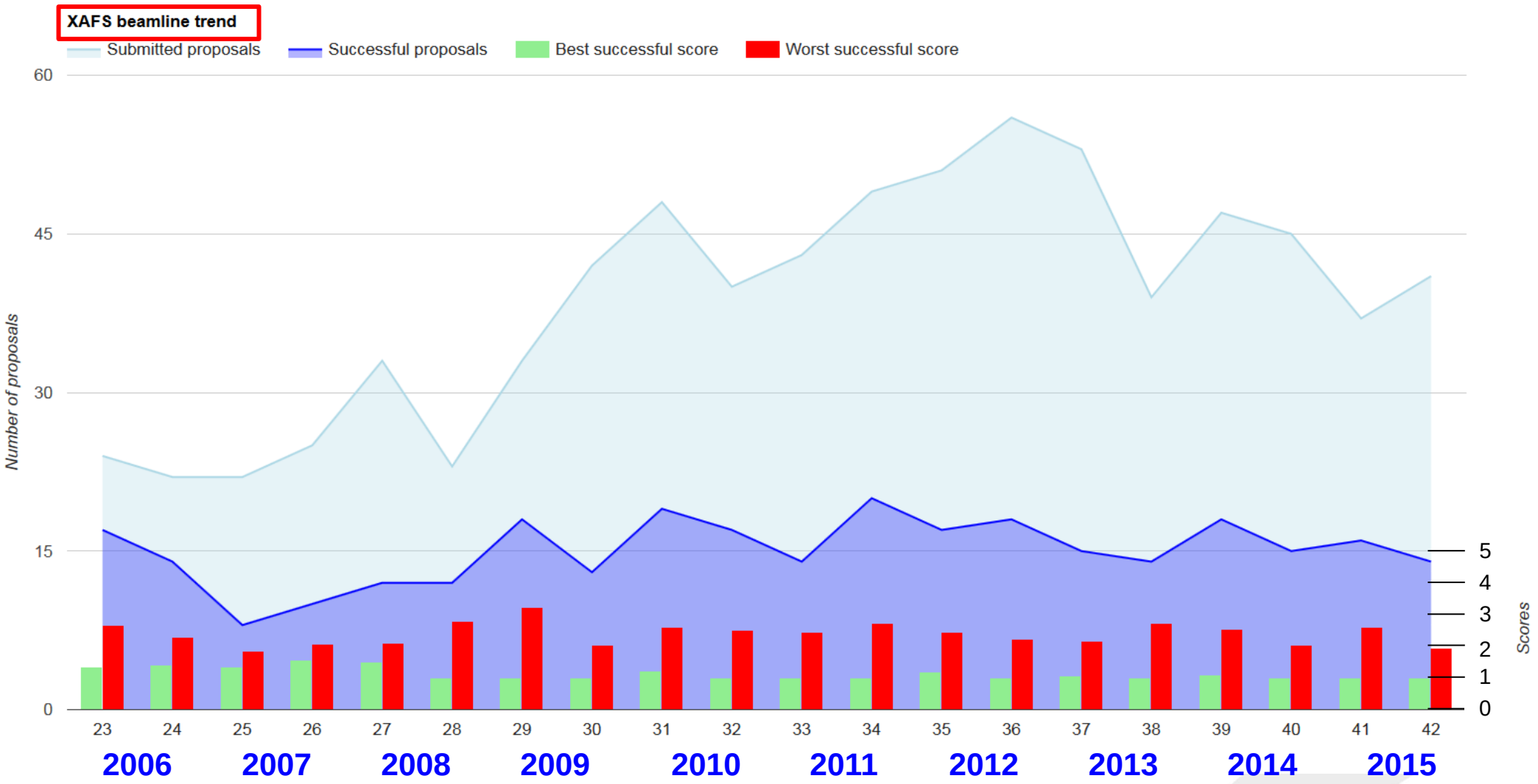
Some considerations

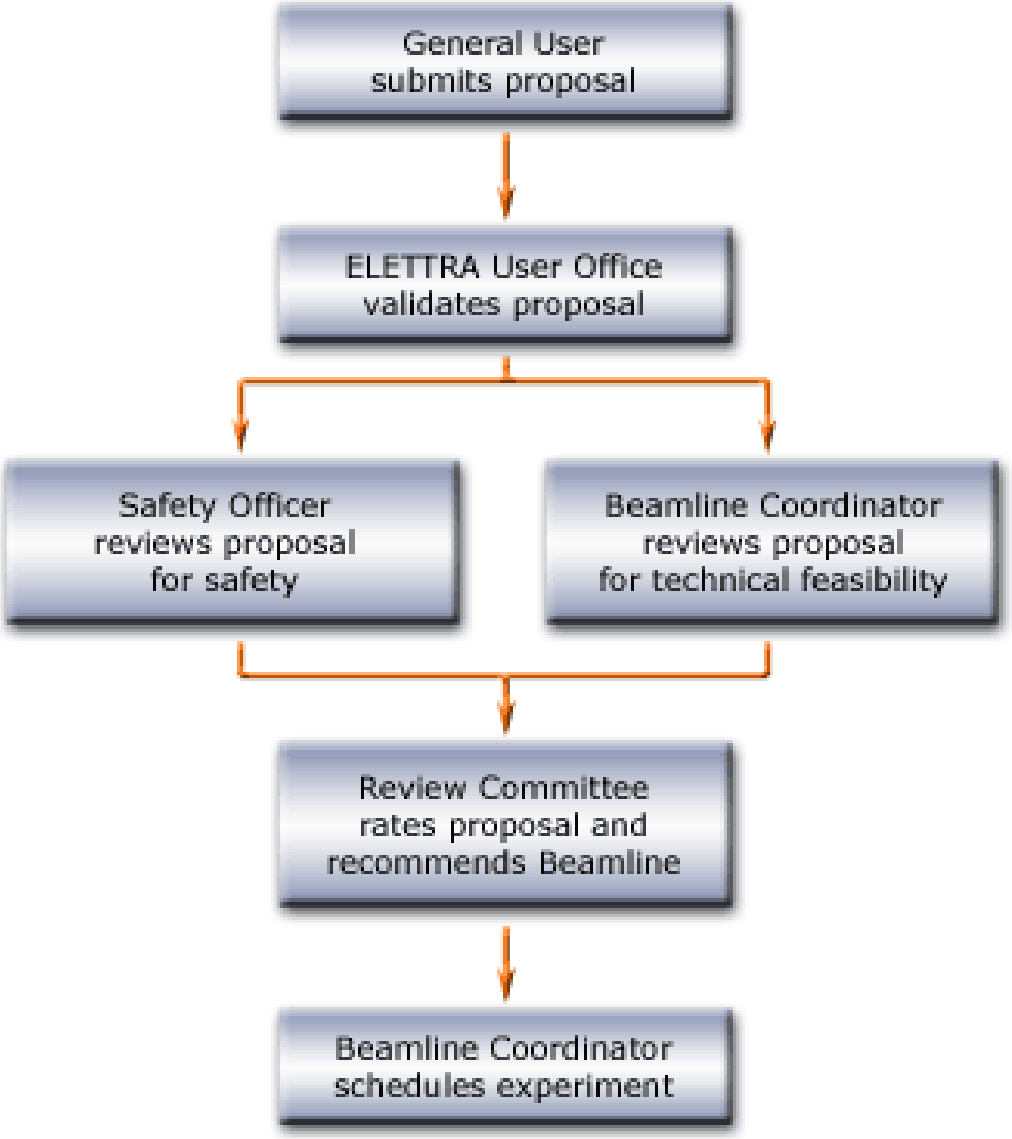


Peer review proposals

- For users intending to publish their scientific results in the literature
- Two semestral calls (mid March, mid September)*

  - *Normal proposals*
    - 1 semester
    - Beamtime allocated during the semester consecutive to the call for proposals
  - *Long term proposals*
    - Allocation over 2 years (4-semesters)
    - No need to submit new proposals relating to the project every 6 months; however, an interim report after the 1st year of the project required
    - Complex piece of equipment which takes a long time to assemble and dismount is to be transferred to Elettra for the project. During the two-year period, the instruments will be available also to other users

Proposal path



If you are a new user

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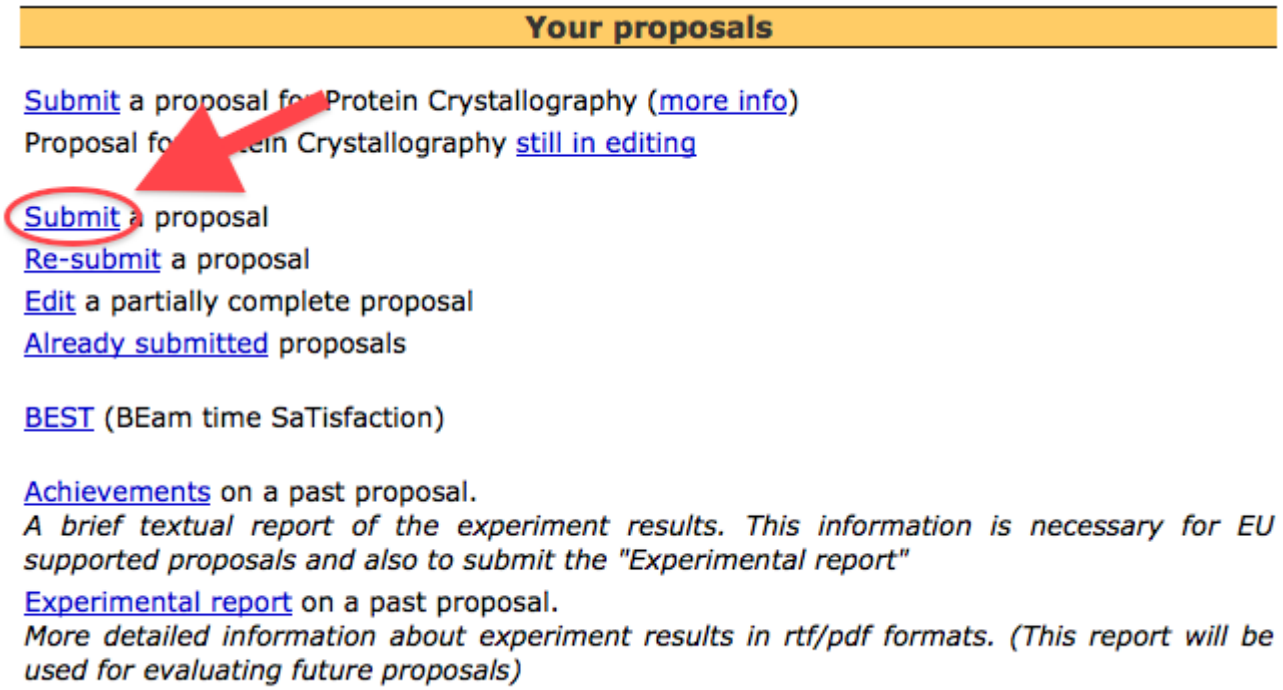
If you are not a new user

Login on VUO



Your proposals

Submit a proposal for Protein Crystallography (more info)
Proposal for ...ein Crystallography still in editing

Submit a proposal
Re-submit a proposal
Edit a partially complete proposal
Already submitted proposals

BEST (BEam time SaTisfaction)

Achievements on a past proposal.
A brief textual report of the experiment results. This information is necessary for EU supported proposals and also to submit the "Experimental report"
Experimental report on a past proposal.
More detailed information about experiment results in rtf/pdf formats. (This report will be used for evaluating future proposals)

Proposal form (all in english)

- General information
- Sample description (safety form)
- Local contact and participants

Filling fields on
Elettra user portal (VUO)

- Proposal description

General information - 1

Add Proposal

Proposal Title

Like the title of a paper

Proposal Objectives *(min 30 characters) max 400 characters*

- equivalent to abstract of scientific paper
- clear statement on essence of proposal
- reviewers should understand exactly what the proposal is about from this;
- details are given in the following sections

Proposal Category

For purely statistical purposes please specify if your research is done in collaboration with industrial companies
Collaboration with Industry ☐

Check the box below if you require financial support through the ICTP-Elettra Users Programme (for scientists from developing countries)
ICTP-Elettra Users Programme Support Requested ☐

Proposal Category
In case of continuation or resubmission please specify your
Previous Proposal Number

- **New:** If you are submitting this experiment plan for the first time or it has little correlation with your previous work at Elettra
- **Continuation:** Experiment complemetary/conclusive to an experiment already performed at Elettra.
- **Resubmission:** Proposal already been submitted in a previous call but modified or rewritten according to the suggestions of the proposal review panel.

Application Category
Motivations of Long Term request

- **Normal**
- **Long term**

European Union statistics information:
Discipline
Specific discipline

Chemistry,Earth Sciences & Environment, Energy Engineering and Technology,Humanities, Information and Communication technologies, Life Sciences and Biotech, Materials Science, Mathematics, Physics, Social sciences

General information - 2

Experimental Requirements

Beamline Required

Please specify the 'Second beamline required' only if you can ALTERNATIV

Alternative beamline required

Please specify the total number of shifts required (1 shift is 8 hours); If this is a Long Term proposal you have to specify the number of shifts required for this semester.

Shifts Required: 0

- Careful and informed choice
- Correct beamline (target the proposal) and correct beam time in shifts

Please select accurately this field because the 'Research Area' determine

Research Area

-Atoms, molecules and plasma
-Protein and macromolecular crystallography
-Condensed Matter-Electronic and Magnetic structure
-Catalytic Materials/Surface science
-Instrumentation and Technological materials - Life and Medical Sciences,Polymers and Soft Matters
-Scattering
-Hard Condensed Matter- Structures

Please specify the Electron Beam Requirements:
- Multi bunch: normal operation - high intensity
- Few bunch: special operation - low intensity only for time resolved experiment.

Electron Beam Requirements: Multi Bunch

Photon Energy (eV)

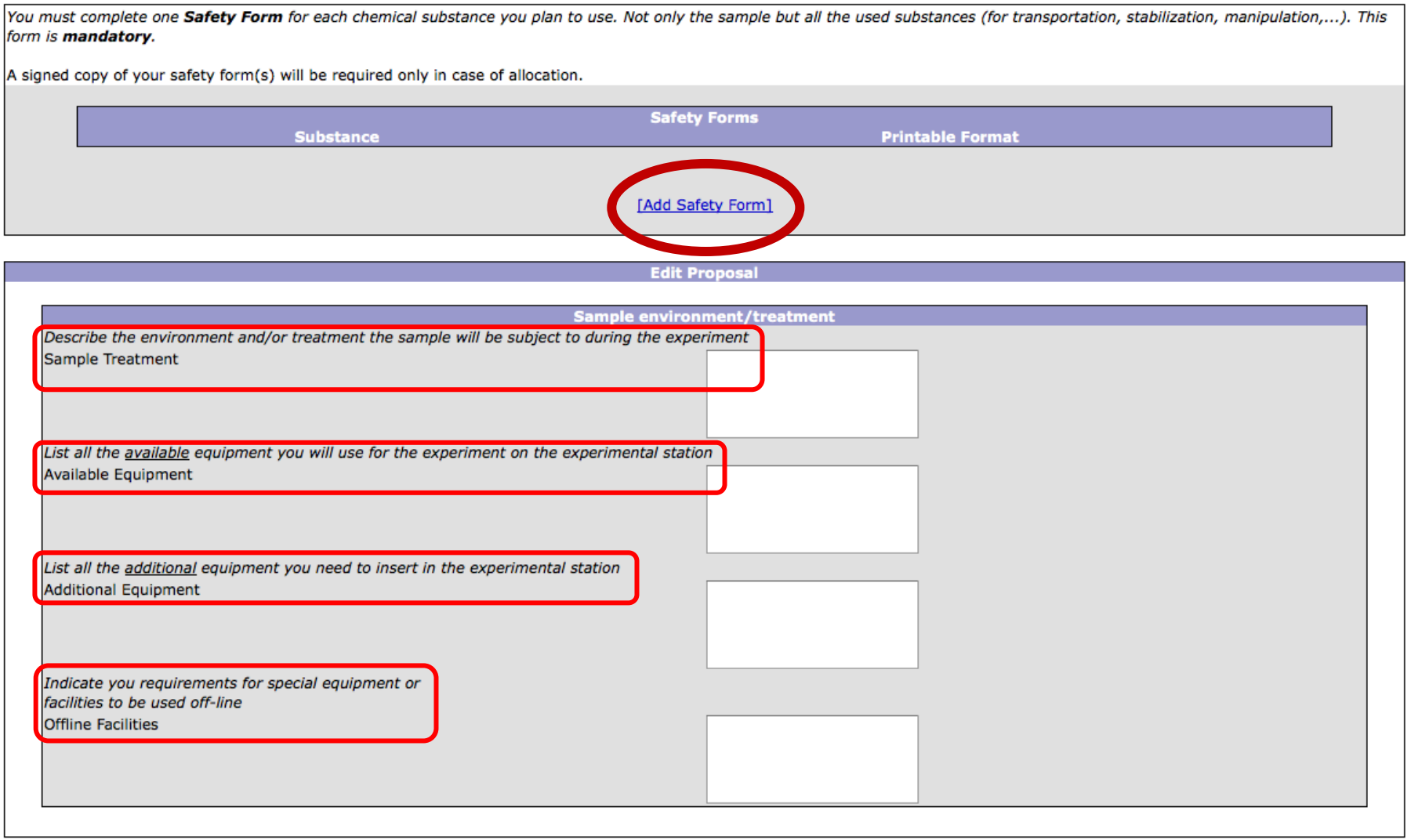
Photon Energy Resolution (eV)

Other requirements

[Save & Continue] [Exit without saving]

Sample description

Give details about your sample, and complete a safety form for every substance you intend to use, not only samples but also other substances used for transportation, stabilization, manipulation, etc.



*You must complete one **Safety Form** for each chemical substance you plan to use. Not only the sample but all the used substances (for transportation, stabilization, manipulation,...). This form is **mandatory**.*

A signed copy of your safety form(s) will be required only in case of allocation.

Safety Forms	
Substance	Printable Format

[Add Safety Form]

Edit Proposal

Sample environment/treatment

Describe the environment and/or treatment the sample will be subject to during the experiment
Sample Treatment

List all the available equipment you will use for the experiment on the experimental station
Available Equipment

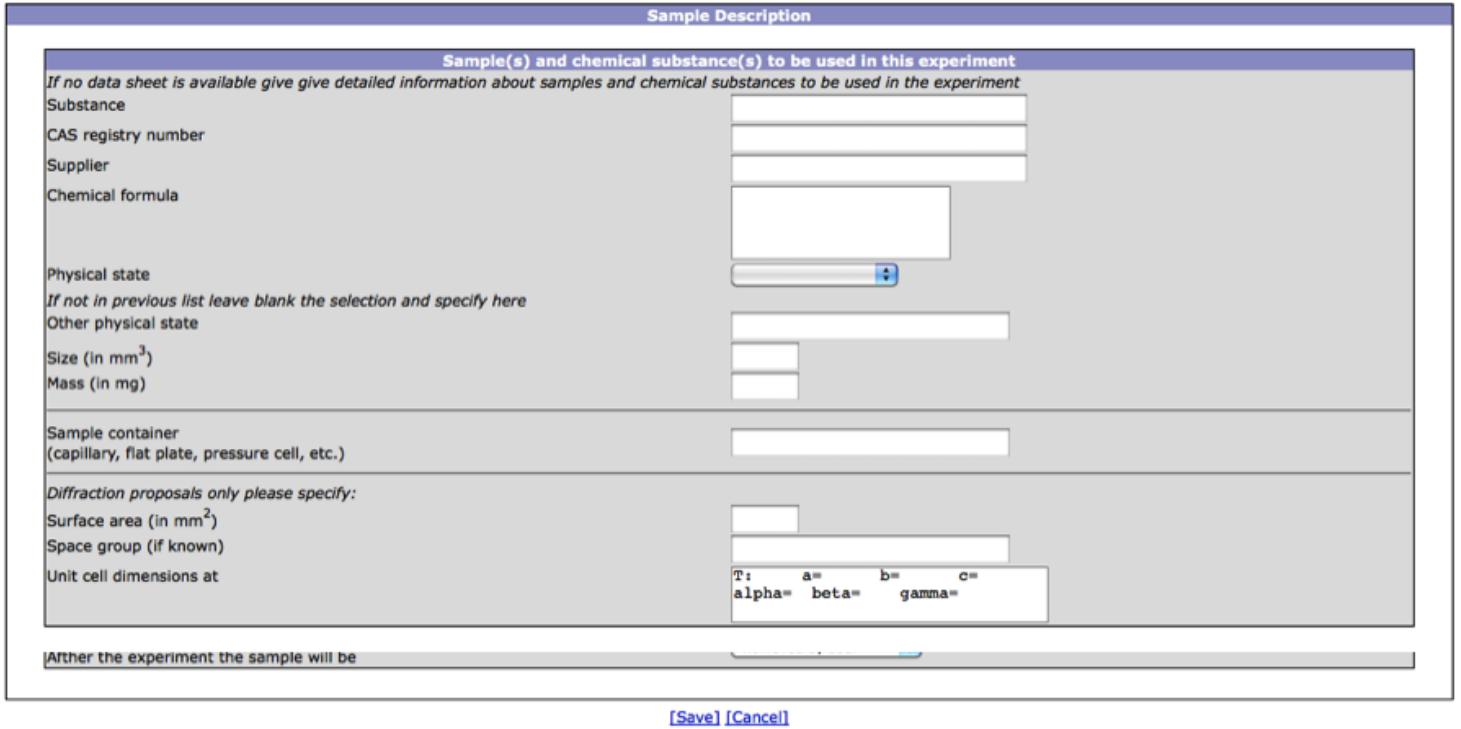
List all the additional equipment you need to insert in the experimental station
Additional Equipment

Indicate you requirements for special equipment or facilities to be used off-line
Offline Facilities

[Save & Continue] [Delete this Proposal]

Safety form

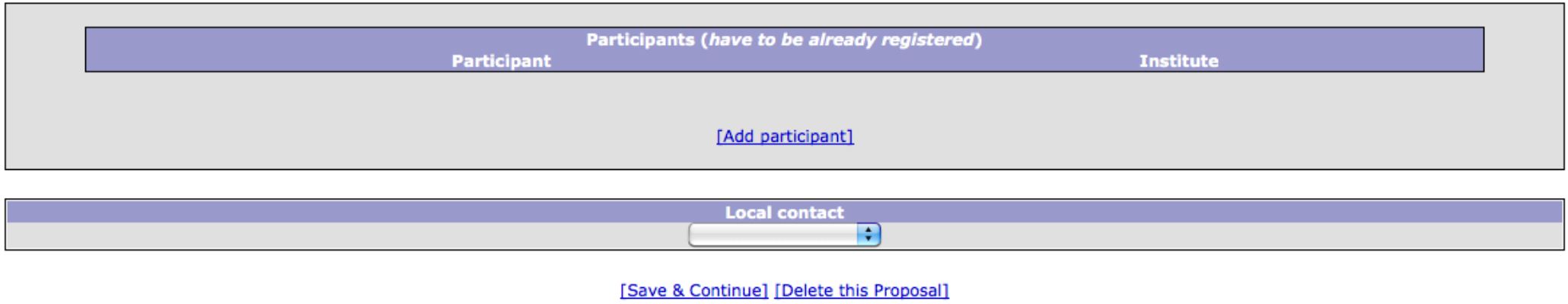
- The safety form is **mandatory** (if you do not complete at least one you will not be able to submit your proposal)
- You will be given the possibility to update your safety forms 3 weeks prior to the scheduled date of your experiment, in case you need to change, delete or add new materials. An e-mail from the VUO will let you know when editing is available
- A signed copy of your safety form(s) will be required only in case your proposal is scheduled, you do not need to send a sign copy for the evaluation step. All signed safety forms should arrive at Elettra before your experiment starts



Local contact and participants

- The user completing the proposal is considered the **proposer**.
- All official communications will arrive to the proposer only
- There are no restrictions to the number of **participants**. To add a participant, click on the link "Add participant". You will be presented a search field and you must search your collaborators among the registered VUO users.
- It is also possible to add or delete participants in every moment before the starting date of your experiment, writing to the Users Office
- If you wish to include Elettra staff , ask permission

- The **Local contact** is the beamline scientist you interacted with before you prepared your proposal and who will probably assist you during your experiment. The menu will show you the options for the beamline you requested



Proposal description

Two pages

Times new Roman 10

----------do not change above this line----------

1. **Background**
2. **Motivation for the present proposal**
3. **Experimental plan**
4. **Justification of beamline(s) and beamtime requested**
5. **Results Expected & impact**
6. **References**

Final steps

- Upload the file (RTF or pdf)
- Click on Check and definitely submit this proposal

  or
- Save in editing status to submit later

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After the submission

- Within 2 weeks the beamline staff assess the feasibility
- Within 6 weeks the reviewers evaluate the proposals
- The beamline staff schedules the experiments

Proposal rating

1.0 -1.5 points Highly innovative research proposal of exceptional quality and outstanding scientific and/or practical relevance. It must get beamtime.

1.6 -2.0 points A well-conceived and original research proposal, with strong potential for making an important contribution to an active field of research. No alternative analytical tool is available. It should definitely get beamtime

2.1 -2.5 points Very good proposal, with a relevant scientific case and likely to produce significant results. The need for Elettra or FERMI is evident and it should get beamtime under normal circumstances.

2.6 -3.0 points A potentially excellent proposal which is lacking some information, e.g., preliminary results, further explanations, etc. Although not groundbreaking, it is near cutting-edge and likely to produce significant results. The need for Elettra or FERMI is evident. It may get beamtime, unless there are too many exceptional proposals

3.1 -4.0 points Elettra or FERMI may be required and the science interesting, although in a well-worked area of research. It is of lower priority in a competitive environment. It may get beamtime, if the pressure on the beamline is not heavy

4.1 -5.0 points Doubts exist regarding the scientific content of the proposed project, or the scientific case is not clear, or there is no clear requirement for Elettra or FERMI. It should not get beamtime, unless there is no demand on that particular beamline.

After the beamtime

- Supply some feedback through the VUO
  - BEST (BEamtime SaTisfaction form)

Mandatory for the submission of new proposals

- Achievements
  - *outline of the main results of your beamtime*
- Experimental report
  - *2 pages*
  - *Report of the experiment, what has been measured, possibly results (of course it is not the paper)*

Proposal description

Two pages

Times new Roman 10

----------do not change above this line----------

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3. **Experimental plan**
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6. **References**

1. Background

- Set the scene for the interest of your research
- Indicate fundamental and societal importance of your work
- Refer to any previous measurements or preliminary characterization
- Relevant figures can be useful
- Avoid vague or too broad aims
- Write in a simple way and be clear

Consider that the reviewers are expert in many different fields, but not necessarily super-experts in your own field

2. Motivation for the present proposal

- Be specific on what you want to do, specifying the class of samples you intend to measure
- Say why you are doing it
- Say what kind of information your measurements will give on your systems
- If you want to measure your samples at some special conditions (temperature, pressure, electric field, …..) mention it in this section and why these conditions are important

3. Experimental plan

- Say how you are going to carry out the experiment at synchrotron
- No need to describe the recipe of how you prepare your samples
- How many samples you intend to measure
- Specify the setup according to the samples
- Be specific of the conditions of the measurements (e.g. how many temperature)
- Show reviewers you are ready and prepared
- Allow beamline scientists to make feasibility assessment
- Ask a reasonable number of beamtime shifts (1 shift = 8 hours)

prior discussion with beamline scientist is strongly advised

4. Justification of beamline(s) and beamtime requested

- Specify the characteristics of the beamline that are essential for performing your work
  - Energy resolution
  - Equipment available
  - …..
- You can mention here that you have experience (however lack of experience is not the handicap you may believe it is. The synchrotron and FEL radiation communities depend on new users)
- If you have requested beamtime on different beamlines for the same project you can mention here including the proposal number for the other beamline
- 1 shift = 8 hours. Ask the staff of the beamline if you do not know the necessary beamtime for your experiment (You do not know it for sure if you are a new user)

4. Results Expected and Impact

- What results are you expecting?
- How these results will allow to answer specific questions?
- What will be the impact of answering this question on your field of research and what is the importance of your study

Just because something has not been done before
does not mean it is worth doing now

If there are plenty of studies of the same kind or a large plethora of results
be convincing about why you want to go in the pool
and what will be the added value of your proposal

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5. References

- Illustrate importance of topic by citing one or two milestone papers in your field
- Cite recent exciting developments in or around specific topic of proposal
- Indicate level of your research by citing your own recent, relevant publications (with or without Elettra data)

Do not expect that reviewers will have time to read all the references so give all essential information in the proposal

Final remarks

Proposals must be scientifically compelling and competitive

- Very few proposals are rejected for technical reasons
- Almost all submitted proposals could be done with useful results
  - *Could they be done?*
  - *Should they be done?*
  - *Must they be done?*
- The proposals must be geared towards research specifically benefitting from SR measurements
- Strong scientific case where SR could give a result which would allow a field to significantly advance

Final remarks

Lots of proposals

- reviewers have many proposals to review and discuss
- proposal must be self-contained
- all important information should be given in the proposal
- reviewers do not necessarily have time to get extra information from references
- technically poorly written proposals (typos, errors, non-respect of template and format) have high chance of automatic poor grade
- structure is important; clear and easy to read
- prepare…

Final remarks

Consult beamline staff

- **In advance** (3-4 weeks before the deadline)
- To identify clearly whether and how the experiment can be done and whether it can give you the answers you need
- Advise on number of shifts required for each experiment

About the beamline staff…….

- He/she does make technical feasibility
- He/she **does not** review your proposal from a scientific point of view

Multitechniques proposals

Central European Research Infrastructure Consortium

CERIC-ERIC is an integrated multidisciplinary and multiprobe Research Infrastructure open for external basic and applied users in the fields of Materials, Biomaterials and Nanotechnology.

With a single entry point it allows to use excellent facilities in 7 European Countries.

The access is free for basic users and commercial for industrial users. Free access is by international peer review selection and open publication, industrial and/or proprietary use is at market costs

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Central European Research Infrastructure Consortium

The partners

Austria, **Czech Republic, Italy, Poland, Romania, Serbia** and **Slovenia.**

Croatia and **Hungary** participate as Observers pending accession.

Member States appoint one **Representing Entity** each, who has the capability to support the scientific and technical operation of CERIC-ERIC through a **Partner Facility**, complementary to all others in an overall multi-technique Infrastructure.

The facilities

Austria (Graz University of Technology) light and X-ray scattering laboratories, Austrian SAXS beamline at Elettra.

Czech Republic (Charles University Prague) surface analysis, thin film growth and studies of reaction mechanism on catalyst surfaces

Italy (Elettra Sincrotrone Trieste) XAS, XRD, imaging…

Poland (Polish Ministry of Science and Higher Education) techniques based on synchrotron radiation in the soft x-ray range

Romania (National Institute of Material Physics) HRTEM and EPR laboratories

Slovenia (National Institute of Chemistry) NMR spectroscopy

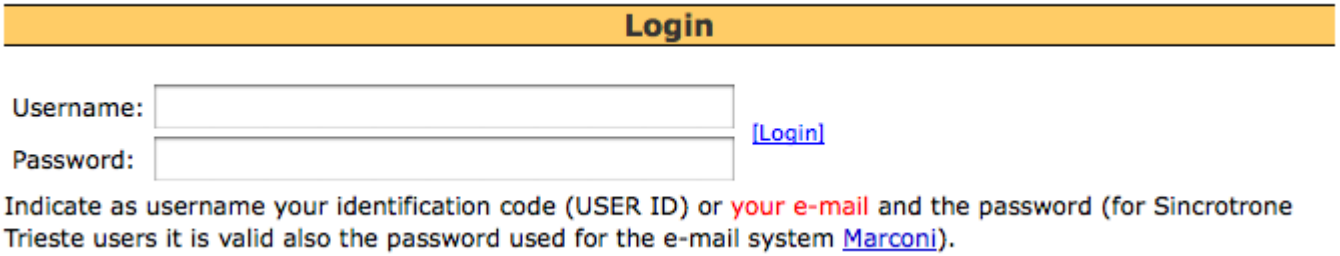
Croatia (Ruđer Bošković Institute) ion beam techniques

Hungary (Budapest neutron centre) Neutron scattering

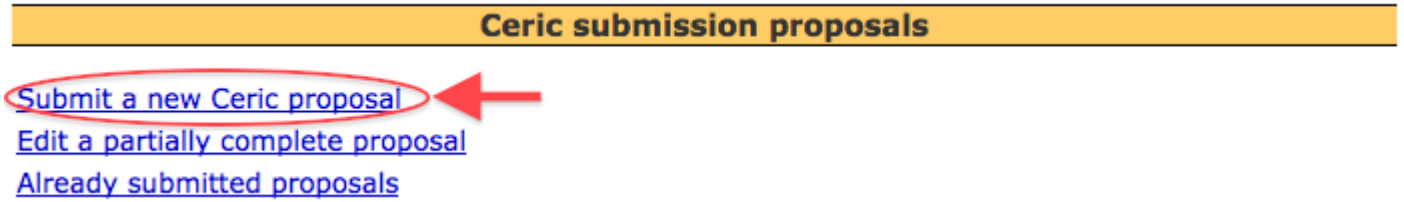
How to submit a proposal

Two calls/year

Proposals must be submitted through the CERIC Virtual Unified Office (**CERIC VUO**).



and choose **"Submit a new CERIC proposal"**:



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https://www.ceric-eric.eu/