**LONG BEAMLINE INSTRUMENT PRE-PROPOSAL**

# End-Station Title

# Keywords describing the end station

# Proposer team

# (names & institution/contact, and role)

# Science case, scientific program and general description of the end station indicating why a long beamline is required

# (about one page, not more than two)

# Scientific community, including industrial use

# International competitiveness

# Interest in partnership

# Technical characteristics

|  |  |
| --- | --- |
| ***Parameter*** | ***Value or explanation*** |
| **Experimental techniques**  Indicate which experimental techniques are to be implemented at the endstation |  |
| ***BEAM PROPERTIES*** | |
| **Required energy range, flux and coherence properties**  Specify, the mandatory and/or desirable working range for the beamline, the corresponding flux and coherence properties |  |
| **Required spectral resolution/bandwidth**  Specify, if possible, the desired spectral resolution, and/or the minimum acceptable spectral resolution |  |
| **Spot size on sample (Horz x Vert)**  Specify, if possible, the desired spot size on sample, and the worse acceptable spot size |  |
| **Is variable focus size on sample needed?**  Indicate if the area of illumination at the sample have to be variable in size, and if so, the required range |  |
| **Divergence on Sample**  Is there any requirement on the divergence on the sample? If so, indicate the range and/or tolerance |  |
| **Harmonic contents**  Indicate the level of harmonic contents tolerated by the experiment |  |
| **Energy scans**  Indicate if the beamline will require energy scans (monochromator scans) during the experiments. Please provide information about typical ranges and speeds |  |
| **Polarization control**  Indicate if the beamline should provide polarization control. Please detail if linear, circular, or arbitrary polarization was needed |  |
|  | |
| ***SAMPLE ENVIRONMENT REQUIREMENTS*** | |
| **Space required around sample**  Indicate the space required around the sample, by the sample and the sample environment |  |
| **Any additional spatial requirements**  Any additional spatial requirements like space behind the sample or any space requirements above, below and to the side of the sample |  |
| **Other sample conditions**  Indicate if the sample requires vacuum, a specific gas atmosphere. Also indicate if it will require cryogenics or high temperatures, magnetic fields, etc. |  |
| **Any specific requirements for sample preparation or operando conditions**  Indicate any specific requirements like clean room conditions, dry-room conditions, animal facilities, under pressure facility or other major installations |  |
| **Any safety or security requirements beyond the usual**  Indicate any additional safety concerns or security measures related to the experiment. |  |

**GUIDELINES**

# The following text provides detailed information, explanations and guidelines to prepare a pre-proposal for the long-beamline call, which specifically seeks for proposals of beamline instrumentation requiring a low emittance storage ring source and also fully utilizing the opportunities coming with a long beamline and its independent end station building. The proposal should focus on the scientific case and the impact of the end station on science and innovation in case that the instrument will be built. We would like to guide your attention on the following two aspects:

1. There may be the option for operating either sequentially or in parallel multiple end stations at all four potentially long beamlines. To promote this option and broaden the scientific case, we encourage partnerships with national and international communities to fund additional instruments and/or specific infrastructures necessary to use the specific end station. Such an engagement is not necessary for proposing an end station but it will help to fund multiple end stations and therefore increases the success rate of the proposal.
2. The end stations of 3 long beamlines (2 ID lines and 1 super bent source) are localized on the neighboring plots to ALBA. They will be located underground and their length and to some level the width can be adapted to the experimental needs (maximum extension is shown in the drawings of the future facilities shown in the introduction of this call). This will allow to build on top of selected end stations lab and office buildings, providing independent access and a complete independent security and access system. In addition, these buildings can provide specific services like clean rooms, animal facilities, or correlative analysis tools. We want to stress that these facilities can only be provided in collaboration with partners who will support construction and operation of the auxiliary infrastructures.

# End-Station Title

Any title which describes the scientific goal of the end station can be chosen. An acronym should be chosen derived from this end station title which should be shorter than 8 characters and unique within the instrument names present at ALBA.

# Proposer team

There will be 3 roles in the proposer team: (i) the SpokesPerson (SP) who is responsible for the proposal preparation and submission. The SP will also be responsible for all follow-up communications and required presentations of the proposal idea. **Every member of the national or international user community can become the SP.** (II) the Principal Investigator(s) (PI) are proposers with major contribution to the proposals. There may be multiple PIs contributing to a proposal. (iii) the SUpporters (SU) who will either support the proposal team with minor contributions or endorse the proposed instrument. The role of each proposer should be indicated on the proposal (SP, PI, SU after the personal information). The team should include at least one Spanish team member as SP **or** PI.

It will be especially important for proposals with SP outside of Spain or with a SP employed by ALBA to argue why there will be a potential user community in Spain (for example by showing the need of specific communities or by including a list of potential users as SU’s) and it will be beneficial if a clear path is shown how this community can be created.

(names & institution/contact, and role)

# Science Case and program description The proposed instrument should be described and all essential characteristics and dependencies explained. Details about specifications will be provided in 8. The description should give the reviewer a first glance on the proposed instrument and should identify all essential components and features which makes this instrument unique or essential for the community and explains how it addresses an important issue. The science case should clearly state which important scientific and/or technological problem will be addressed by the proposed instrument. Examples of current research, which will benefit from the proposed instrument, should be provided and the benefits explained using these examples. In addition, the correlation of the new capabilities with societal needs should be explained.

# (about one page, not more than two [literature citations excluded])

# Scientific community, including industrial use

An important selection criterium will be, if the proposed instrument has either an appropriate existing user community or if such a community can be built in appropriate time and with reasonable efforts. The team should describe the targeted community and either motivate the importance of this community motivated by scientific importance, societal needs, or economic stability or growth fostering innovation. Besides describing its potential size, the team should also evaluate the required efforts for building the community.

# International competitiveness

The proposed instrument should be put in context with the existing capabilities within Europe and the world. The team should point out the uniqueness, the improvement of existing capabilities at ALBA and other sources in the world and the need for the proposed instrument (scientific and/or economic nature). If applicable, the team should also compare the proposed instrument with competing characterization approaches like high resolution transmission electron microscopy or other characterization tools, showing potential synergies or advantages.

# Interest in partnership

Depending on the required resources or the corresponding and supporting infrastructure, some proposed instruments may either extend the available resources like funding or know-how, or target a very specific small but important community. We want to encourage these proposal teams to also propose partnerships. In general, a partnership will provide resources for constructing and/or operating an instrument or supporting lab infrastructure or other resources. In exchange and proportional to the investments, the partner will have part of the available user time to build the own program or to build a specific user program. Typically, partners would be either Spanish or European academic research institutions and/or universities but can also be other entities like industry. It is recommended to discuss any planned partnerships with ALBA management as soon as possible.

The detailed roles and conditions are described in <https://www.albasynchrotron.es/en/about/pbl_regulation-cells_en.pdf>