ACCELERATE

# Project Deliverable Information Sheet

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# Document Control Sheet

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# Preparation of feasibility fast track pilot

## Background

CERIC started offering open access on 2014, with a first test call in March that year. From then, two calls per year have been issued and nearly 420 measurements have been performed with the instruments offered by the consortium. The submission of a project to a call requires programming the experiments well in advance, since there are six months of time between calls. Moreover, from the moment a proposal is submitted until the moment a measurement is performed, there are at least three additional months of waiting. For this reason, some facilities have implemented fast access procedures that allow, in very specific cases, to have access to facilities with much shorter waiting times. The ISTAC (international Scientific and Technical Advisory Committee) of CERIC recommended that CERIC implements a fast access as well. Learning from the ACCELERATE partners experience, CERIC will develop its own procedures for fast-track open access. The main scope of this procedure for CERIC will be to serve increasingly inter-disciplinary users, which may not have the expertise in all the analytical techniques needed. The proposed fast access will allow feasibility studies on a single instrument. The present report encloses a summary of the main features that emerge from the analysis of the state of the art and potential future developments.

## Existing know-how: Fast access in ACCELERATE partners (TUM FRMII) and in CERIC Facilities

There is an already consolidated experience in fast access within the ACCELERATE consortium: the partner TUM, running the FRMII neutrons reactor through their cooperation in MLZ, the Heinz Maier-Leibnitz Zentrum, has been implementing this modality of access for 2 years. In their fast access programme, called “Rapid Access programme”, a limited number of days (up to a maximum of three beam days out of 60 per reactor cycle, four times a year) are allocated by a fast response process. It is devoted to those measurements, which do not fit into the normal proposal workflow, with two deadlines and reviews per year. The user presence for that kind of experiments is not necessary and therefore samples are sent to the designated local contact that carries out the proposed measurements. Users are then provided with the raw experimental data as well as pre-treated data for further analysis. Only part of the instruments (four in total) are available for the Rapid Access. Proposals for Rapid Access can be submitted anytime; ten days before each reactor cycle the received proposals are reviewed by the established Science internal committees, that evaluate not only the scientific potential of the experiment but mainly how suitable it is for the rapid access, against the regular submission calls. Beamtime to Rapid Access proposals is allocated up to a maximum of 12 hours. Proposals with existing samples (at the time of submission) have priority.
Regarding the CERIC consortium, only one of the Representing Entities has a similar system in place, although the principle is different. The synchrotron Elettra offers the possibility of fast access for macromolecular crystallography experiments since 2011. Half of the available user time per semester is dedicated to fast track proposals. This procedure is not intended as a feasibility test but rather as a full measurement, the rationale behind this fast access mechanism lies on the complexity and uncertainty in sample preparation and lifetime. It is dedicated to macromolecular crystallography experiments having a well-defined experimental setup and samples suffering of a rapid decay in terms of quality since formed. It reduces significantly the time between proposal submission and allocation and requires that crystalline samples be ready in the moment of proposal submission. An average proposal requires three shifts (24 hours) but there is no restriction for the amount of time a proposal can require.

Access is granted from 1 to 3 months from the application for beamtime. It is possible to submit a proposal at any time during the year, so no deadlines are present. At the beginning of every month the proposals submitted in the previous one are evaluated by an appropriate Proposal Review Panel (M). The beamline scientist makes the beam time allocation in the following month, according to the score assigned on the basis of scientific relevance. Diversely from FRMII, in this fast access mechanism the unsuitability of the experiment for the regular calls (every six months) is a pre-condition to request fast access, but the main criterion to win time in the facility is the scientific excellence. Rejected proposals can be resubmitted to compete for time in the following month.

**Fast track access in CERIC**

After analysing the state of the art in ACCELERATE and CERIC facilities, CERIC identified the most suitable option for its own procedure, described below

### Implementation

There will be two phases of implementation:

- the pilot foreseen in this project, to be tested by a restricted group of facilities, and
- a second phase where the pilot, where the tested method will extend to the rest of CERIC facilities willing to offer this kind of access.

The first phase will start within 2017 and will last for 4 semesters (two years).

### Facilities involved

In the pilot, the Austrian, Czech and Slovenian partner facilities will dedicate 5 days per semester to these proposals and those hours will be granted on demand until exhausted.

### Submission of proposals

Submission of proposals will be continuous, based on the IT platform presently used for regular proposals submission and a discussion between the instrument scientists and the researcher (applicant) will be mandatory. Such discussion should assess the requirements for fast access and the non suitability of the proposal to be submitted through the regular channel.
The development of the IT system is in place and it is expected to have it tested and implemented within the end of the year.

### Requirements

Proposals eligible for fast access proposals should have a strong motivation for applying through this channel, satisfying one or more of the following criteria:

- as for regular CERIC proposals, show a multi-technique approach of a scientific problem,
- prove the need to test a new instrument or sample,
- be necessary to validate a result for an imminent publication, or
- any other valid justification for a fast and short access.

### Selection of proposals and allocation of instrument time

The fast-track access will be limited to few proposals per semester and granting a very limited number of hours, therefore it will not compete with the peer-reviewed open access. Proposals received through continuous submission will be evaluated by the scientist in charge of the instrument and the director of the partner facility. The decision on the allocation of time will be up to them.

The most frequent expected assignment is 12 hours but it may vary depending on the specific problem. In any case, it will not be superior to 48 hours.

### Reporting

Users will be asked to fill in a report on the achievements and usefulness of the measurements performed. Instrument scientists will also be interviewed after every semester of fast access experiments, for the duration of the pilot, to get feedback and propose any necessary change in the process.
The present deliverable will be updated according to the outcomes of the pilot implementation phase.