CALL 2009-CV

CALL FOR PROPOSALS ON EARLY TECHNOLOGY DEVELOPMENT IN PREPARATION FOR COSMIC VISION CANDIDATE MISSIONS

DEADLINES
Last day of submission

Concerning L-type Mission candidates Laplace, Lisa, and IXO:	**2010 February 1, 17:00**
Concerning M-type Mission candidates Cross-Scale, Euclid, Marco Polo, Plato, Solar Orbiter, Spica:	**2010 March 1, 17:00**

This is an extra call for proposals with special boundary conditions. It is not to be confused with the normal calls for research proposals issued by SNSB annually.

This is a new type of call and prospective appliers are welcome to contact SNSB to get information on open questions.

A decision to fund early technology development based on proposals resulting from this call does not constitute any promise to actually carry on funding the project to full implementation, even if the mission and instrument is approved by ESA.

PURPOSE AND PROJECTS ELIGIBLE FOR SUPPORT

The ESA approach for technology development for Cosmic Vision is quite different from the past ESA Science Programme. ESA plans to apply more stringent requirements on technical readiness and maturity for instruments to be selected for flight on future science missions. This requires more upfront national technology development in preparation for future missions. The purpose of this call is to allow Swedish research groups an opportunity to seek support from SNSB for Phase A/B1 payload activities, with a schedule for applications more suited to the ESA Cosmic Vision requirements than the normal annual calls of SNSB.

On December 7, 2009, the Board of SNSB allocated a preliminary sum of 3.5 Mkr (incl. overhead) for future-looking technology development. This allocation is intended to allow support of a subset of three types of proposals:

1. Technical project proposals received in May 2009, based on the normal annual call, for which the SNSB decision has been postponed.
2. Proposals regarding L-type mission candidates received in response to the current call.
3. Proposals regarding M-type mission candidates received in response to the current call.

SNSB will consider proposals in response to this call only if they are tied explicitly to Cosmic Vision candidates that remain in the programme on February 19, 2010 (please read carefully below what this means for M-type candidates). SNSB will further consider only proposals concerning Phase A/B1-type activities on instrumentation and associated needs for an appropriate and justified involvement of Swedish research groups in ESA activities in preparation for the above-mentioned mission candidates.

L-type Mission candidates

ESA is currently considering three mission candidates for large missions within Cosmic Vision:

- Laplace
- Lisa
- IXO

Technology proposals connected to any of these three mission candidates must reach SNSB by February 1, 2010.

ESA does not plan to issue any instrument AO for these missions in 2010, but assessment studies are on-going, some of which concern technology development.

M-type Mission candidates

ESA is currently considering six mission candidates for medium-sized missions within Cosmic Vision:

- Cross-Scale
- Euclid
- Marco Polo
- Plato
- Solar Orbiter
- Spica

The ESA Science Programme Committee (SPC) is expected, at its meeting on 17-18 February 2010, to select a subset of the above six candidates. The selected subset of mission candidates is expected to enter Definition Phase in the spring of 2010, whereas the not selected candidates will be removed from the list of candidates. The outcome of this down-selection can be expected to be displayed on the SNSB web site on February 19.

Technology proposals connected to any of the M-type mission candidates must reach SNSB by March 1, 2010. SNSB will consider only proposals concerning M-type mission candidates that remain in the Cosmic Vision program on February 19. We fully realise that the time-span between the two above dates (a working week and two week-ends) is very short. However, it

is inherent to the new ESA procedure that a lot of technical development and proposal writing will be efforts wasted on candidate missions that will never fly, or that will fly only in a later phase of the Cosmic Vision programme.

After the February 2010 SPC meeting ESA plans to issue an Announcement of Opportunity for instruments on the remaining M-type Mission candidates (for Solar Orbiter this has already been concluded).

Special requirements on proposals in response to this call

On a first glance the application forms and cover sheets for this call look very similar to their appearances in the normal annual calls. However, they are different and it is important to use the right versions. In addition, the required contents of the enclosures differ in many ways compared to the annual calls, as specified here:

Enclosure 1 must include:

- A general summary of the proposed technology development.
- A short motivation for the early engagement in the instrument and candidate mission (why can this become beneficial to Swedish space research?).
- In case the proposal concerns an instrument which is not explicitly part of the model payload used in the ESA Assessment Study for a candidate mission, then you must include a scientific rationale for the proposed instrument.
- A detailed description of the proposed technology development.
- An analysis of the current state of development and how far matured the technology for the instrument can be expected to be if the proposed project is carried out. This analysis should preferably use the TRL system (for a general treatment of the TRL system, see http://en.wikipedia.org/wiki/Technology_readiness_level; for ESA's definitions see http://sci.esa.int/science-e/www/object/index.cfm?fobjectid=37710).
- A detailed description of the current role and the potential future role of the applying group in an established instrument consortium, and a description of the past cooperation within the consortium, and the plans of the consortium for the coming two years.
- A comparison of the proposed instrument development with previous hardware projects of the applying research group.
- The staff situation and the responsibilities of individuals should be specified for each project.

Enclosure 2 is important and must include:

- A detailed specification of anticipated costs for the proposed early technology development. Note that it is not sufficient to merely restate the information in forms C1-C3. It is mandatory to include costs for all years for which funding is sought. References to relevant sections in enclosure 1 should be given when appropriate, but does not replace a description in this enclosure.
- An indication, if possible, of the long-term national needs (throughout the hardware phase and the science harvesting phase), should the mission and instrument in question eventually be selected by ESA and funded by SNSB. This information will be used to assess whether an early funding will realistically materialise in project participation and how any endorsement letters should be formulated.

- If there are additional costs that the research group is unable to estimate (e.g. industrial costs), this fact should be clearly stated.

Note that overhead costs (hitherto 35%) should not be included in the cost specification.

Enclosure 3 may contain a progress report if the research group is already pursuing early technology development in preparation of Cosmic Vision candidate missions.

Enclosure 4 must contain the CV for the principal applicant. A CV may also be included for any additional person whom the applicants feel is central to the success of the project.

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FUNDING STRUCTURE

Several projects per research programme

A single application may include proposed technology development for more than one instrument or mission. Each natural piece of hardware development should be presented as a separate subproject (separate columns in forms C1-C3, separate forms D1-D8, etc.).

Funding period

SNSB may provide funding for several years (maximum 3 years, but probably not more than 2 years for proposals to the current call) in one grant whenever this is deemed appropriate. The period of funding is decided by SNSB. The applicants should therefore apply for three years if the project is sufficiently mature to allow detailed specification of the project plan and costs over this period.

However, note that in Enclosure 2 it is required to indicate the long-term needs, should the mission and instrument be selected (see above).

SALARY GRANTS

Contrary to the annual calls, this call does not include career positions for researchers. But required staff costs not otherwise covered (including both scientific and technical staff) may be included in the proposal. SNSB will not make any commitments for support of salaries beyond grant periods.

HOW TO WRITE AN APPLICATION

Please note the **letters CV** in the document names below, which show that these documents are different from those used in the last annual call.

Download the application form (FORM2009CV) and the cover-sheets (COVER2009CV) from SNSB's web page www.rymdstyrelsen.se. Read these instructions (INSTRUCTION2009CV) carefully. Fill in forms A, B1-B2, C1-C3, D1-D8, to the extent

appropriate, using Microsoft Excel or compatible software. Write the required enclosures, preferably in English (the working language of the Space Research Advisory Committee), as specified in the cover-sheets. This can be done by adding text to the existing Microsoft Word document, or by converting the cover-sheets to your text editing system.

Convert the resulting Excel and text files to the PDF format and merge them all together to a single PDF document containing the entire application (in the Swedish version of Adobe Acrobat 5.0 this can be done with the menu command DOKUMENT/INFOGA SIDOR).

An application must be submitted in two ways (both obligatory):

1. An e-mail with the subject "Ansökan" must reach SNSB on the address science@snsb.se by the deadline shown above. The application shall be attached to the e-mail as two partly overlapping documents:
    a. the Excel document, including all Excel sheets (Intro-E)
    b. a PDF-document containing forms A-E and Enclosures 1-4.

2. Eight (8) paper copies should be submitted to *Rymdstyrelsen, Box 4006, 171 04 Solna* (visiting address: Solna strandväg 86). The uppermost of the 8 copies must have original signatures in blue ink. Each copy should have punched holes and be stapled in the corner to hold the sheets together as one document. Paper copies must be received by SNSB no later than 72 hours after the deadline shown above.

It is of the highest importance that the paper copies are identical to the digital application submitted to SNSB by e-mail. The paper copies should be produced from the digital file actually submitted to SNSB. By signing the paper copy of the application, the applicant certifies that the digital file and the paper copies are identical.

Application forms and further information on the Swedish National Space Board (SNSB) may be downloaded from the web: www.rymdstyrelsen.se. Additional application information may be obtained from Mona Lannerö, 08-627 64 84, lannero@snsb.se.

Which costs should be included?

Charges to central university administration, costs for administration and premises are not to be included in the application.

All costs should exclude VAT.

Salaries and other project costs

The salary costs in the application should reflect the expected salary situation for the person/position in question throughout the period the application concerns. All salary costs applied for should include prescribed social fees (specified at the top of form B), but no other overheads. In case of multi-year contracts SNSB can't be expected to cover any salary costs higher than sought for.

The row “Consultancy…” concerns purchased tasks, occasional help with work, costs for external experts etc.

The row “Travel costs…” should include costs for project travel.

The row “Instruments/equipment” concerns for example purchase of new laboratory equipment necessary to carry out a given project.

The row “Instrument expendables” concerns, for example, consumables.

Please note that all salary costs given on form C1-C3 must be described in more detail on form B. Form B should further give an overview of *all the persons expected to work within the project*, and all costs associated with the project, both for personnel and for other expenditures.

It is mandatory to state the amount previously contracted in Forms D1-D8, i.e. all funding previously granted to the project.

Statement of accounts

If the amount of remaining funding on **any** grant from SNSB at the end of 2009 is expected to be more than 25 % of the funding accorded for 2009, it should be accounted for in the cost enclosure.

Unknown costs

If there are additional costs that the research group is unable to estimate, this fact should be clearly stated in Enclosure 2. For example, this could apply to industrial costs.

HANDLING OF SUBMITTED APPLICATIONS

The applications will be evaluated by the Space Research Advisory Committee and decisions on funding are planned to be taken on 2010 March 11.

Criteria for selection

When new project proposals are evaluated, many criteria and aspects have to be considered initially. The following aspects will be taken into account specifically:

- The realism of the proposed technology development (goals, implementation, work-packages, schedule, well-motivated cost estimates)
- The need for early technology development to meet ESA requirements on technical maturity before selection of instruments
- The project’s potential to renew, develop and promote future national and international space research
- The scientific and technological prospects for the group to successfully execute the project