



D/SCI/DJS/SV/val/21851

Paris, 5 March 2007

**CALL FOR PROPOSALS
FOR THE FIRST PLANNING CYCLE OF COSMIC VISION 2015-2025**

1. Introduction

In the well established tradition of the Horizon 2000 (1984) and Horizon 2000 plus (1995) plans, ESA has carried out a new long term planning exercise with a call for new scientific themes, issued in April 2004. The massive response of the scientific community resulted in a total of 151 novel ideas, more than twice as many as for the equivalent exercise in 1984. ESA's Space Science Advisory Committee (SSAC) aided by its discipline working groups then reviewed the proposed ideas and translated them into a set of main scientific themes. The themes were extensively discussed in a workshop in Paris in September 2004 attended by a large number of members of the scientific community and reinforced at a symposium in Noordwijk in April 2005. The result of this in-depth consultative process was the new Cosmic Vision plan 2015-2025 (Cosmic Vision, Space Science for Europe 2015-2025, ESA BR-247, 2005 <http://www.esa.int/esapub/br/br247/br247.pdf>) which addresses four main questions that are high on the agenda of research across Europe concerning the Universe and our place in it. Specifically:

- What are the conditions for planet formation and the emergence of life?
- How does the Solar System work?
- What are the fundamental physical laws of the Universe?
- How did the Universe originate and what is it made of?

Each of these themes can themselves be broken down into detailed sub-themes which point the way towards potential future missions (cf. Appendix 1 and reference BR-247).

On the basis of the Cosmic Vision exercise, the SSAC recommended to the ESA Science Programme Executive to issue a succession of "Calls for Mission Proposals" to implement Cosmic Vision 2015-2025. The pace of implementation must provide for long term sustained work by scientific institutes and industry (which will ensure that Europe continues to excel in space science projects) while recognizing the financial constraints of the Science Programme. The approach is based on a set of successive selection cycles of mission proposals to progressively populate the plan with a portfolio of missions covering the 2015-2025 timeframe. This approach permits to gradually achieve continuity and balance in the implementation of the scientific priorities embedded in the Cosmic Vision themes. It also provides the flexibility needed to adjust the pace of implementation to the financial situation of the Science Programme.

The implementation schedule of the new plan will take into account the actual expenditures related to the major missions (i.e. Gaia and BepiColombo) recently started and the expenditures resulting from the decisions to be taken in late 2007 on the implementation of the Solar Orbiter mission. Within the present financial context **one** Class M mission and **one** Class L mission (cf. section 2.1) are foreseen for launch in the 2015-2018 timeframe.

Furthermore, the implementation strategy takes account of the outcome of the review of the Science Programme carried out by the Science Programme Review Team (SPRT) in 2006-2007. While the Call for new Cosmic Vision mission proposals was planned to be released in the course of 2006, the SPRT considered that the financial situation of the Science Programme required that currently planned commitments be reduced by at least 200 M€ (at 2006 economic conditions) in order to make room for future Cosmic Vision missions to be implemented as early as possible after 2015. As a result, the release of the Call was postponed to early March 2007 in order to give the Executive the time needed to address the financial issues raised by the SPRT. The situation was extensively discussed by SSAC at its meetings in October 2006 and January 2007. The SSAC recommended that the first Cosmic Vision 2015-2025 call be issued as soon as possible, maintaining however the end of March 2007 for the submission of Letters of Intent.

2. Purpose and Schedule

2.1 Mission Categories, cost envelopes and launch timeframe

The Director of the ESA Scientific Programme invites proposals for the competitive selection of medium missions (Class M missions) to be included into the first planning cycle of Cosmic Vision 2015-2025. The aim is to eventually implement one Class M mission for launch in the period 2015-2017, whose cost to ESA should not exceed a financial envelope¹ of 300 M€ at 2006 economic conditions. The mission proposals should be based on existing technologies in order to meet the schedule and minimize the programmatic risk. Scientifically visible ESA contributions to other agency's missions can also be proposed in this category. Past examples of such contributions are the Huygens probe on NASA's Cassini mission or the NIRSPEC Instrument for NASA's James Web Space Telescope (JWST).

In addition, the Director of Science invites proposals for mission concepts for more ambitious projects of the flagship category (Class L mission concepts). Contrary to Class M, these are concepts for large missions that will require an extended preparation phase and specific technology developments. The aim is to eventually implement one Class L mission for launch in late 2018, whose cost to ESA should not exceed a financial envelope¹ of 650 M€ at 2006 economic conditions.

Proposals exceeding the above M and L limits can also be submitted if presented as cooperation with international partners but the cost to ESA must remain within the said limits (cf. section 5).

¹ *The envelopes are ceilings for the mission costs to ESA. Therefore, the envelopes do not include the costs of payload instruments to be funded by national agencies.*

2.2 Proposals which may utilize the International Space Station (ISS)

Given the timeframe of the Cosmic Vision plan (2015 to 2025), and the uncertainties in the capability of the ISS, proposals for utilization of the ISS are not solicited at this time. Potential users of the ISS should contact the Directorate of Human Spaceflight and Exploration for details on ISS utilization opportunities (<http://spaceflight.esa.int/users/index.htm>)

2.3 Mars and Lunar Science

There is no restriction against the submission of proposals in the area of Mars or Lunar science. However it should be recognised that such proposals may also contain elements relevant to the ESA Exploration Programme (<http://www.esa.int/SPECIALS/Aurora/>) entrusted to ESA's Directorate of Human Spaceflight and Exploration. Accordingly, proposals that have an exploration component and could fit the technical and political context of the Exploration programme will also be transmitted for consideration to the ESA Directorate of Human Spaceflight and Exploration. Although all proposals will be internally reviewed for relevance by ESA, proposers should explain any potential relationship and complementarity with the Exploration Programme. Those proposals which will not fall within the domain of the Exploration Programme and are therefore of a solely Mars or Lunar scientific nature, will be evaluated within the only context of the Science Programme.

2.4 Proposals in the scientific areas of Darwin and XEUS studies

The scientific community should note that, in the context of the previous long term plan (Horizon 2000 plus), much work has already been done on the concepts of an Infrared Space Interferometer for exo-planet finding (Darwin) and a large X-ray astronomy facility (XEUS) successor of XMM-Newton.

Regarding the Infrared Space Interferometer, studies have been carried out in coordination with NASA's similar Terrestrial Planet Finder (TPF) concept. These studies have demonstrated the need to develop the key technologies necessary to validate the basic principles of the mission concept, in particular the required nulling interferometric and beam combination techniques as well as the precise positioning and control of the free flying spacecraft.

Technology and concept studies have also been carried out for the large X-ray facility. The emerging concept is based on the model of a formation flying mission which utilizes a potential technology breakthrough in the development of new lightweight micro-pore optics.

In both cases, study activities are still on-going and show that Darwin and XEUS are outside the scope of Class L mission concepts as defined above unless they are implemented within the frame of international cooperation. It is anticipated that proposals falling in the scientific areas addressed by these two mission concepts will be submitted in response to this Cosmic Vision Call. In the light of the outcome of the selection process, the studies related to these concepts will be reassessed. The current studies will be terminated with the expectation that the work done will likely be incorporated in the preparation of the new Class L mission concepts selected from the Call in the same scientific areas.

2.5 The LISA mission

LISA was selected in November 2000 as the third cornerstone mission of Horizon 2000 plus (now referred to as Cosmic Vision 2005-2015) to be implemented within the allocation of a so-called “flexi-mission” envelope (210 M€ at 2006 economic conditions) as a collaborative project with NASA. In November 2003, SPC confirmed LISA (and the LISA Pathfinder, or LPF mission) and requested that all efforts be made to ensure an adequate or equal partnership with NASA regarding the LPF/LISA missions within the allocated envelopes. In mid-2004, ESA and NASA reached a working agreement on the LISA mission share that provided the basis for initiating an industrial formulation study which is presently on-going. The best financial prediction for the ESA-provided elements, based on the above working agreement, is 370 M€ (well above the allocated flexi-mission envelope) and still does not ensure equal or adequate partnership with NASA. In addition, the earliest launch opportunity is not foreseen before mid-2017.

Within the US context, LISA is being reviewed by an external committee, together with the other missions that form NASA’s “Beyond Einstein” programme. A recommendation to NASA about the scientific priorities to be implemented as the first mission of the “Beyond Einstein” programme is expected in September 2007.

The future decision to start LISA will come only after demonstration of the technological maturity of the mission, which will require the successful in flight demonstration of LISA Pathfinder (currently planned at the end of 2009), the confirmation of the level of commitment by NASA and a Cost at Completion, for the ESA provided elements, compatible with the overall Science Programme financial outlook. Thus, no decision to start LISA will be taken prior to 2010 with an earliest launch window in mid-2007, de facto making LISA an element of the new Cosmic Vision plan 2015-2025.

From these considerations, it follows that LISA becomes candidate for a Class L mission concept of Cosmic Vision 2015-2025 with a financial envelope of 650 M€. As unanimously approved by the SPC at its meeting of 22-23 February 2007, LISA will therefore compete with the mission concepts selected from the present Call, for the Definition Study Phase of the first L mission (L1) of Cosmic Vision 2015-2025, with an earliest possible launch window foreseen in 2018. This maintains LISA firmly in the plan thus confirming the ESA commitment not only towards the scientific community but also towards NASA. It also provides a much more adequate financial envelope to fulfill the SPC request for an adequate partnership with NASA.

2.6 Letters of Intent

Proposers are invited to submit a short (maximum 2 A4 pages) signed Letter of Intent (LoI) to the Executive by **30 March 2007**, summarizing the points indicated in Annex 2 and 3. It should be noted that the absence of the LoI does not preclude the subsequent submission of a proposal but submission of the LoI is however encouraged. The LoI allows the ESA Executive to plan for the activities relative to the evaluation of the proposals and also to provide clarification to the proposers prior to the formal submission of a proposal. The LoI should be submitted electronically using the interface provided at:

<http://sci.esa.int/cv2015>

2.7 Briefing meeting

All proposers who have sent a LoI by the above deadline will be invited to a briefing meeting at **ESTEC on 11 April 2007**. The briefing will be given by the Executive with the intention of providing assistance and guidelines to the mission proposers, covering such topics as (i) optimal design of mission and instruments, (ii) advice regarding international cooperation and technical maturity and realism of payload provision, from both a technical and a financial point of view.

2.8 Proposal deadline

Following the briefing and taking account of the indications given thereby, the proposers will be asked to submit full proposals to reach ESA by the deadline of **29 June 2007** (cf. Section 9).

3. Proposal Evaluation and Selection

3.1 Class M Projects

3.1.1 Assessment Study Phase

Mission proposals will be competitively evaluated by the Executive for technical and programmatic aspects and by the advisory structure of the Science Programme for the scientific aspects. Up to three proposals will be selected by the SSAC to enter in the Assessment Study Phase.

The selected proposals will first undergo an internal study, possibly using the ESTEC Concurrent Design Facility (CDF), to establish an initial mission architecture and a Payload Definition Document (PDD). The results of the internal study will serve as input to an in-depth industrial Assessment Phase carried out in parallel by two industrial contractors for each selected proposal. These activities will be under the responsibility of an ESA Study Manager supported by a Science Study Team (SST) chaired by an ESA Study Scientist. The SST will be responsible for all scientific aspects of the study activities. Considerable emphasis will be placed on payload related studies in particular to assess the overall level of maturity as well as the technology readiness level of key components. The overall Assessment Phase will run from November 2007 to August 2009 so as to ensure technically feasible missions with low programmatic and financial risk.

3.1.2 Definition and Implementation Phase

At completion of the Assessment Phase, the study results of the Class M missions will be presented in study reports made available to the advisory bodies and to the community. The results will also be presented at a dedicated workshop open to the community at large. The missions will then be subjected to a competitive down selection process, carried out by the advisory structure under the responsibility of the SSAC and based on scientific excellence. The evaluation process will take place from October to November 2009. Missions for which the Assessment Study Phase indicates an estimated envelope significantly exceeding the Class M financial envelope will not be considered for further selection. Eventually, two missions will enter into competitive industrial Definition Phase starting in April 2010.

The Definition Phase activities will be carried out following the usual Science Programme scheme involving two competing industrial contractors per mission. The Definition Phase activities are expected to last typically 18 months, the duration being commensurate with the complexity of the mission. A payload instrumentation Announcement of Opportunity (AO) will be issued before the start or early into the Definition Phase so that the instruments which will eventually be flown will be included into the Definition Study Phase. The selection of the payload instruments will be carried out by the advisory bodies under the SSAC responsibility with the support of the industrial contractors in the evaluation of the instrument proposals.

The selected Principal Investigators (PI) will have to carry out a phase A/B1 level study for their nationally provided instruments, which will be subjected to the same level of review process as the industrial Definition Phase contractors.

At conclusion of the Definition Phase, the two competing missions will undergo a thorough evaluation and final selection process carried out under the responsibility of the SSAC to recommend a single mission. In parallel, the results of the Definition Phase will be used by the Executive to derive the estimate for the Cost at Completion (CaC) of the two competing missions. The CaC represents the total expenditure to be borne by the Science Programme for the implementation, launch and in orbit operations of the mission. The CaC must be contained within the allowable mission class envelope.

Based upon the SSAC recommendation and the estimated CaC provided by the Executive, The SPC will confirm a single mission to proceed with the Invitation to Tender (ITT) to industry for the Implementation Phase.

During the ITT process, the funding of the instruments will be secured via a formal Multi-Lateral Agreement (MLA) between ESA and the National Funding Agencies. The MLA will need to be in place at the time of adoption by SPC of the mission CaC, foreseen in July 2012, allowing the Executive to proceed with the Implementation Phase (equivalent to phase B2/C/D), which would start in September 2012 leading to a launch in mid 2017.

The mission which fails to be selected for implementation will be removed from the Cosmic Vision plan. However it will be possible to re-propose this mission in response to the next Call for proposals.

3.2 Class L projects

3.2.1 Technology Assessment Phase

Proposals for Class L mission concepts will be competitively evaluated by the Executive for technical and programmatic aspects and by the advisory structure of the Science Programme for the scientific aspects. Their scientific relevance will be established as a necessary condition for further consideration. Furthermore, the technical challenges and merit will be evaluated by a special technical committee.

Up to three L proposals will be selected to undergo internal studies of the proposed concepts and associated options with the identification of the key technology problem areas. Specific and focused industrial studies of these technology areas will then follow. The Technology Assessment activities are foreseen to last from November 2007 to June 2009. These activities

will be under the responsibility of an ESA Study Manager supported by a Science Study Team (SST) chaired by an ESA Study Scientist. The SST will be responsible for all scientific aspects of the studies. An important output from these studies will be the identification of a Technology Development Plan (TDP) to derive technically possible routes for future mission development and the associated programmatic and financial risk.

In the case of very large mission concepts, proposed to be performed in collaboration with international partners, preliminary agreements on the sharing of technology tasks will be established with the potential partners and the schedule of activities will be adjusted accordingly.

3.2.3 Definition and Implementation Phase

After completion of the Technology Assessment Phase activities, the 3 Class L mission concepts will be subjected to a 2 step competitive selection process, planned to take place in late 2009. The aim of the first step is to down select from 3 to 2 mission concepts from the Assessment Phase. At this early stage, the non selected L mission concept will be removed from the Cosmic Vision plan. In the second step, the remaining two mission concepts down selected from the Assessment Phase will be competed with LISA for the Industrial Definition Phase. Eventually, two missions will enter Industrial Definition Phase. However, the remaining mission concept, not entering Definition Phase, will be kept in the plan and its TDP will be activated.

The complete selection process will be carried out by the advisory structure under the responsibility of the SSAC, primarily based on scientific excellence. In addition, other criteria will include compatibility with the Class L mission envelope and the status of international collaboration in case of potential collaborative missions. The selection process will also take into account the time required to perform the necessary technology development activities based on the TDP and reach a maturity level compatible with the start of the Definition Phase. In any case, the technology development activities for the 2 mission concepts entering the Definition Phase will be activated (or continued in the case of LISA). The Definition Phase activities are expected to last typically 18 months, however the actual duration will be commensurate with the complexity of the missions under consideration.

Concerning the instrument procurement, a payload instrumentation AO will be issued for each competing mission at the start of the Definition Phase so that the instruments will be selected early into the Definition Phase activities. As concerns the nationally provided instruments, a phase A/B1 level study, similar to the case of the Class M missions, will have to be carried out. Industry will thus be able to submit, at the end of the Definition Phase, a reliable cost estimate for the execution of the subsequent Implementation Phase.

At conclusion of the Definition Phase, the results of the Definition studies will be used by the Executive to derive the estimate for the Cost at Completion (CaC) of the two competing missions. In parallel, the two competing missions will undergo a thorough evaluation and final selection process carried out under the responsibility of the SSAC to recommend a single mission. Based upon the SSAC recommendation and the estimated CaC provided by the Executive, The SPC will confirm a single mission to proceed with the Invitation to Tender (ITT) to industry for the Implementation Phase.

The other mission, studied at Definition level, will join the mission for which the TDP has been activated. Both will be kept in the plan, under technology preparation, ready to be considered

within the next L selection cycle. Specifically, the process described above implies that if LISA is not adopted as L1, the mission will be kept in the plan to compete for the L2 launch opportunity.

During the ITT process, the funding of the instruments will be secured via a formal MLA between ESA and the National Funding Agencies. Following the ITT phase, the overall financial and programmatic situation of the Science Programme will be reviewed. Based upon a committing CaC provided by the Executive together with the approval of the MLA for the provision of the instruments, the decision to adopt the mission to enter the Implementation Phase should be taken by the SPC in the course of 2012. Consequently, the launch of the first large mission (L1) of Cosmic Vision 2015-2025 would be foreseen in late 2018.

It is to be noticed that in the case of a collaborative mission, a Definition Phase agreement will be established with the partner agency and the above sequence and schedule of activities will be adjusted accordingly. At conclusion of the Definition Phase, the decision to enter implementation will be conditional upon the approval by the ESA Council of a Memorandum of Understanding (MoU) to be negotiated with the partner agency.

4. Payload Funding

National provision of payload instruments has always been a fundamental feature of the Science Programme although in some special cases, instruments have been procured by ESA via industrial contracts (this the case of the GAIA payload or the NIRSpec instrument for NASA's JWST mission). However, in recent years, the procurement of payloads has become an increasingly difficult problem and several missions have been threatened with delays or even cancellation due to the non-availability of appropriate, timely funding in the Member States, during the Definition Phase (B1) and later in the Implementation Phase.

An overall mitigation approach has been recently introduced to attack this problem and avoid a repetition of similar situations. The approach consists of two major steps early on in the mission preparation process:

- Studying the payload instruments to be procured by the PI teams under national funding, to the same level as the ESA funded industrial Definition Phase;
- Establishing formal Multi-Lateral Agreements (MLA) between the funding Member States and ESA as early as possible in the payload selection process.

The MLAs should include a clear understanding of the risk sharing between the partners. In principle, ESA should only take responsibility for risks induced at system level. Confirmation of payload selection (and mission implementation) is conditional upon approval by the Science Programme Committee and the ESA Council of such agreements.

It is clear that different types of missions will require flexible approaches to the issue of payload funding and development. Astrophysics based missions using large telescopes are obvious cases where payload procurement may not fully rely upon national funding and could even go to a full ESA funded payload procurement like in the Gaia mission.

Whatever the approach, proposers must make clear in their proposals the payload development and funding scheme they wish to adopt together with the rationale for the approach which should be supported through a risk analysis.

5. International Cooperation

Proposals involving international cooperation must include a clear identification of the interests and potential role and responsibilities of the various partners and where the additional resources above the ESA envelope may come from. The intended shares of responsibilities between the partners should be outlined so as to permit an assessment of the financial envelopes involved in the proposed cooperation. As a consequence, proposals for collaborative missions must be accompanied by letters from partner agencies clearly stating their interest in the proposed collaboration and their commitment to support the eventual Assessment Phase activities. The type of support provided will depend on the detail of the collaboration, but it will be expected to be commensurate with the proposed partner share of the mission. Collaborative proposals will not be accepted at this stage in the absence of letter of supports by partner agencies. This applies also to the case of collaborations with European National Space Agencies.

6. Schedules

The schedule for the issue of the Call and the proposal evaluation process is as follows:

Activity	Date
Release of 1 st Call for mission proposals of Cosmic Vision 2015-2025	5 March 2007
Letters of Intent due	30 March 2007
Briefing to proposers at ESTEC	11 April 2007
Mission Proposals due	29 June 2007
Proposal evaluation process by ESA and Peer Review Teams	July to end September 2007
Working group/SSAC evaluation and selection of: 3 Class M mission proposals and 3 Class L concept proposals	October 2007

6.1 Class M mission schedule

The specific activities and schedule related to Class M missions is shown in the following table.

Activity	Date
ESA Internal Assessment Phase	November 2007 - end May 2008
Industrial Assessment Phase (emphasis on payload, cost and risk)	June 2008 - August 2009
Open presentation of study results & Working Group recommendation for Definition Study Phase	September - October 2009
SSAC down selection to 2 missions for Definition Phase	October 2009
SPC confirmation of 2 missions for Definition Phase	November 2009
2 missions in competitive Definition Phase	April 2010 - September 2011
Working group/SSAC evaluation and recommendation for adoption of one mission	September 2011-October 2011
SPC Confirmation of one mission for ITT release *	November 2011
SPC mission adoption (CaC and Payload Formal Agreement)	July 2012
Mission enters Implementation Phase	September 2012
Mission Launch	mid 2017

* Two missions may continue into the implementation phase subject to size, cost and complexity.

The missions which fail to enter the implementation phase will be removed from the plan. However they may be re-proposed in response to the next Call for mission proposals of the Cosmic Vision 2015-2025 plan (second selection cycle).

6.2. Schedule for Class L mission concepts

The specific activities and schedule related to Class L mission concepts is shown in the following table.

Activity	Date
Internal Assessment Phase, focused on identification of key technology areas (up to 3 proposals)	November 2007 to May 2008
Industrial Assessment Phase and definition of TDP (3 proposals)	June 2008 - June 2009
Working group evaluation and recommendation for down-selection from 3 to 2 Class L concepts to compete with LISA for Definition Phase	July 2009 – September 2009
From 2L concepts + LISA, SSAC recommendations for two missions to enter Definition Phase. TDPs activated (or continued if LISA) for the two missions entering Definition Phase as well as for the remaining (third) mission concept	October 2009
Two missions confirmed by SPC for entering Definition Phase	November 2009
Two missions in competitive Definition Phase	January 2010 – June 2011
Working group/SSAC evaluation and prioritisation	July 2011 – October 2011
Confirmation by SPC of first mission for ITT release *	November 2011
SPC mission adoption (CaC and Payload Formal Agreement)	July 2012
Start of industrial Implementation Phase	September 2012
Mission Launch	October 2018

* The decision to proceed with the recommended Class L mission into the next phase will depend on the financial situation of the programme.

The proposed L mission schedule is tentative as it will be driven by the evolution of the level of technological maturity of the missions under study. Moreover, the schedule of missions to be implemented with an international partner will be adjusted in coordination with the participating agency.

7. Guidelines for Proposals

The Call will be open to mission proposals in the fields of space science covered by the Cosmic Vision plan 2015-2025. The proposals should be based on facilities in principle to be provided through the Science Programme unless international partners are involved.

Annex 1 provides a brief overview of the Cosmic Vision plan 2015-2025 listing the themes as well as the detailed scientific topics within each theme.

8. Selection criteria

The proposals will be selected through an evaluation process involving peer review teams and their results scrutinised and endorsed by the Science Programme advisory structure under the SSAC.

The following primary selection criteria will be applied:

- Scientific value, i.e. scientific excellence to provide a large potential for discovery and innovation;
- Programmatic validity, i.e. conformity with the themes established by Cosmic Vision (Annex 1) and timeliness of the mission;
- High “science for money” rating, i.e. high scientific return versus required financial investments;
- Timeliness, i.e. relevance of the science goal within the foreseen launch date;
- Level of technology maturity and technical feasibility;
- Cost to ESA with respect to the envelope constraints for Class M and L missions respectively;
- Cost to Member States (including payload, data processing and distribution for M missions...);
- Overall programme risk;
- Communication potential.

9. Deadlines and format for the Replies

All the proposals in response to the present call must be submitted electronically as Adobe Acrobat PDF (version 5 or higher) format documents using the interface provided at

<http://sci.esa.int/cv2015>

Deadlines:

- Letters of Intent (LoIs) have to be submitted by: **30 March 2007**
- Mission proposals must be submitted by: **29 June 2007**

Format:

- Letters of Intent should not exceed two A4 pages in length and should briefly address the topics listed in Appendix 2 and 3.
- Proposals should not exceed 36 (thirty-six) A4 pages in length and should address the same topics more in depth (as described in detail in Annexes 2 and 3), plus any other topics as suggested by the Executive at the April 2007 briefing.

Both Letters of Intent and proposals should be written in English.

In addition, a paper copy of the proposal together with a signed cover letter and the signed original letters of commitment from the partner agencies must be sent to the ESA point of contact indicated below. The paper copies should be post-stamped by 29 June 2007.

10. Address for submission

<http://sci.esa.int/cv2015>

ESA Point of contact:

Dr. S. Volonté
Science Planning and Community Coordination Office
European Space Agency
8-10 rue Mario Nikis
F-75738 Paris Cedex 15

E-mail: Sergio.Volonte@esa.int

Proposers must send a copy of their proposals to their respective national authorities.