

# **Joint Scientific Space Mission**

**Chinese Academy of Science (CAS) - European Space Agency (ESA)**

## **PROPOSAL**

**Proposal Title:**

**Co-PIs:**

**Signature:**

**Affiliation:**

**Email:**

**Signature:**

**Affiliation:**

**Email:**

# OUTLINE

## **1. Back cover (contact information page, 1 page, mandatory limit)**

*Must provide the contact information for both Co-PIs (name, age, gender, affiliation, address, phone, email address, etc.)*

## **2. Executive Summary (2 pages mandatory limit)**

*It should contain a summary of the proposal, allowing the reader to gain a preliminary understanding of the proposal's content upon reading.*

## **3. Science objectives (10 pages, suggested length)**

*It should clearly address the scientific rationale for the proposed mission, explaining the broad context, the progress in the relevant field that the proposed mission will achieve, the need to perform the relevant measurements from space, the eventual synergy with other facilities (ground- and space-based), etc. It is suggested to assume that the relevant readers will be scientists from other fields of space science, hence not necessarily experts in the field*

## **4. Scientific requirements (5 pages, suggested length)**

*For the selected mission a Science Requirements Document and a Mission Requirements Document will have to be produced rapidly; the information provided in this section will constitute the starting point for these documents. Proposers should explain how the science is “sized”, what the required measurements are, and how these translate in certain instrumental requirements. It should be understandable by both scientists and engineers.*

## **5. Proposed payload (15 pages, suggested length)**

*It should explain, following on the definition of scientific requirements, what instrument(s) will be needed to achieve the required measurements. While the proposal is not intended to contain engineering blueprints, the information provided should allow readers to assess the feasibility and maturity of the proposed instruments. Relevant information about e.g. Technology Readiness Levels, heritage, etc. needs to be provided. To allow a proper technical evaluation of the proposal the following information needs to be provided:*

*Measurement principle/detection concept;*

*Block diagram: main building-blocks and subsystems, including software;*

*Design description (down to major subsystems) and operating principle;*

*Performance budgets;*

*Required resources: Volume, mass, power, data transmission;*

*Specific/critical interface requirements to the spacecraft and environment constraints, e.g. accommodation, integration, cooling, pointing, contamination and cleanliness, radiations, magnetic cleanliness, etc.*

*Specific calibration needs (on ground and in-orbit);*

*Technology readiness assessment per unit and relevant heritage;*

*Implementation schedule.*

## **6. Proposed mission configuration and profile (10 pages, suggested length)**

*A description of the proposed mission needs to be provided, including details of the orbit, launch, etc. together with the system level requirements imposed by the mission concept (e.g. pointing requirements, sun aspect angle constraints, specific observing modes etc). Relevant options and trade-offs should be identified, and a concept for the operations must be provided, describing the mission phases from launch to end of life (e.g. and as relevant: observing strategy, measurement sequence, specific modes for science or calibration aspects, spacecraft disposal at end of life, etc.). Details of the spacecraft should be provided as far as possible, including possible spacecraft design (if/how available), requirements/description of major sub-systems and estimation of spacecraft key budgets (possibly by benchmarking with previous missions). Proposers may make reference to the mission profiles described in the Annex to the present Joint Call or deviate from them, by providing necessary elements for enabling the proposal assessment*

## **7. Management and cooperation scheme (5 pages, suggested length)**

*Proposers should spell out the proposed procurement scheme for all payload elements, specifying how they plan to achieve an ITAR-free space segment. While proposers can of course describe their views concerning the possible share of responsibilities between ESA and CAS, this will be decided after the proposal's selection by the two Agencies. Proposers should also describe their proposed science management plan (data policy, community involvement, etc.) and how they plan to ensure that the mission is implemented jointly through the mission's lifecycle. Operations will be jointly provided by ESA and CAS. This section should also include a description of the team's composition, experience and proposed contributions of each party.*

## **8. Costing (2 pages, suggested length)**

*While proposers are not expected to provide detailed costing information about the proposed mission, they should argue convincingly that the proposed mission can be implemented within the constraints of the*

*Joint Call, in particular the ESA CaC (Cost at Completion) ceiling of 53 M€ (2015 e.c. plus a possible additional allowance to cater with, e.g., ITAR compliance), with a comparable sized contribution from CAS, in particular if the proposed mission is deviating from the guidelines provided in the Annex.*

## **9. Bibliography (not required but encouraged)**

*The list of references can be included as an Annex (see below), thus not counting against the page limit.*

Proposers may include if they wish letters of endorsement from national funding agencies or from eventual international partner agencies (although only the letters sent directly to [ESA-CAS-Call@cosmos.esa.int](mailto:ESA-CAS-Call@cosmos.esa.int) and [jointmission@nssc.ac.cn](mailto:jointmission@nssc.ac.cn) will be considered for the proposals evaluation), as well as a bibliography list and eventual list of supporters. These should be clearly marked as proposal annexes, and will not count against the proposal page limits.

ESA will share the proposals with Member States funding agencies and with SPC delegations, e.g., for the purpose of discussing their commitment, as well as, when applicable, with the proposed international partners. ESA cannot therefore ensure the confidentiality of the submitted material.