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HUMAN AND ROBOTIC EXPLORATION

Ideas for exploring the Moon with a large European lander

Submit Your Idea

Overview

Activity

Ideas 60

Team

Idea Submission

25 hours left

Evaluation

Starts Jul 4

Closed

53 Followers



Director of Human an...
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ESA Director General
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What would you do with a large European lander on the Moon?



ESA is looking for your ideas for missions to the Moon that could be delivered using a European Large Logistic Lander (EL3). This lander is being prepared to deliver around 1.5 tonnes of payload to locations from the equator to the poles; from the near side to the far side. Missions deployed by this lander could range from cargo supply to support human missions, to astrophysical observatories, or missions which rove across the surface, dip into shadows or explore lunar caves. This is not a one shot deal. The plan is for a cadence of missions from the late 2020s into the 2030s. The EL3 lander is being prepared as part of the European Exploration Envelope Programme (E3P) in the Directorate of Human and Robotic Exploration (HRE).

If you could fly your mission, what would you do? Where would you go? Why?

The aim of this Call for Ideas is to gather the best concepts in Europe and beyond, and from these to build a portfolio of mission concepts for study. One of these missions may be taken forward as a proposed mission concept on EL3 at the next ESA Council at Ministerial level. Other mission ideas may be considered for later opportunities. Mission ideas will be used to help define the design of the lander to be suitable for a diverse set of uses and users, from science and technology to applications we have not even thought of yet.

Final selection of consolidated and developed mission concepts, based on successful ideas, will lead to the issue of Open Competition Pre-Phase A studies. Therefore, your ideas may shape what ESA will look into in the future!

Scope for Mission Ideas - What type of Ideas we are looking for?

ESA is looking for ideas which address the agency's strategic goals in exploration:

- To inspire
- To create new knowledge
- To grow international cooperation
- To create economic growth and industrial competitiveness

Of particular interest are ideas that address:

- ESA's Strategy for Science at the Moon ([here](#))
- ESA's Strategy for Space Resources ([here](#))
- ESA's Technology Strategy ([here](#))
- Novel and innovative technologies and solutions to exploration challenges, e.g. energy, transportation, mobility, habitation, communication, navigation, resources, radiation, dust,

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life support etc.

- Engagement of actors from outside the space sector to address these challenges
- Opportunities for international cooperation and partnerships
- Engagement of the public to share in the journey that lies ahead

The primary interest is in those mission concept ideas that could credibly be undertaken between the late 2020s and late 2030s.

The process

A chart describing the process can be seen in the attachment ('CFI process chart'), a description is stated below:

What we will do with the ideas?

This is the first step of the process: the identification of ideas via this Campaign on the OSIP.

Please submit your ideas here until the idea submission deadline. Ideas can be edited by authors and co-authors until 3 July. Selecting to make your idea visible to the community is a great way to build teams and to mature ideas throughout the submission process.

After closure on 3 July, ideas will undergo a review (see evaluation criteria below) by internal ESA teams, and by a team of external science experts nominated by ESA's science advisory structure.

What will happen next following this review?

In the second step the authors of the best ideas will be invited to further develop their mission concepts, with advice from ESA technical experts. At this stage, ESA may decide to group authors together to create mission concept teams where submitted ideas are similar or complementary. There will be a workshop day (date TBD) to facilitate this interactive process.

A review of the developed concepts will follow. ESA foresees to support the maturation of up to five of these concepts, with up to 20,000 euros awarded to each concept team (see general and special conditions regarding eligibility for small award contracts). Up to three mission concepts will be selected by ESA for CDF study.

Study of developed mission concepts

In the third step, up to three selected mission concepts will be studied in ESA's Concurrent Design Facility (CDF) to further assess their technical, scientific and financial credibility. The mission concept teams will be invited to participate in the CDF sessions working together with ESA. If the outcomes of these studies are positive, successful mission concepts will be taken forward for Pre-Phase A study, for which there will be an Open Invitation to Tender (ITT).

Timeline of the Call for Ideas Campaign

- 29 May: Call for Ideas opens
- 3 July 2020: Idea submission deadline, start of step 1 review
- End of July: Authors notified of initial idea evaluation

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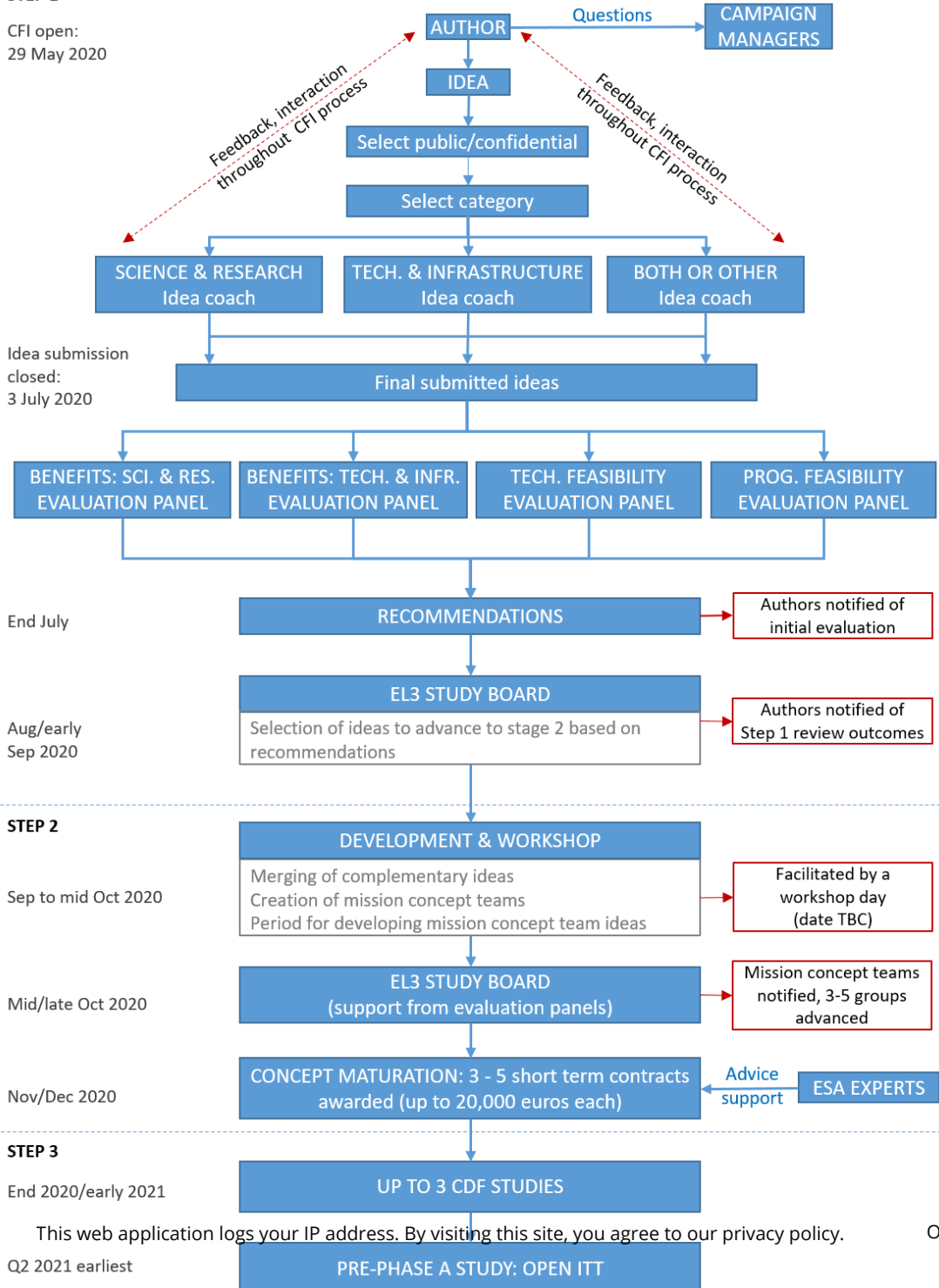
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- August/September: Step 1 review outcomes, ideas selected for advancement to step 2
- September/October: workshop day (date TBD)
- Mid/late October: Step 2 outcomes, selection of up to five mission concepts for maturation phase
- End of 2020: Selection of up to 3 mission concepts for CDF study
- End of 2020 / early 2021: Step 3 - CDF studies begin
- Q2 2021 earliest: Pre-Phase A studies

Timeline

STEP 1

CFI open:
29 May 2020



Submitting Ideas

Ideas must be submitted using the form seen when clicking 'Submit your Idea'.

Authors may submit multiple ideas.

Ideas submitted to Voyage 2050 can be resubmitted, using this new format.

Authors can choose if their idea will be publicly visible or visible only to ESA and authorised reviewers. We encourage authors to select the option to make the idea visible to the community.

Example Mission Ideas

- **Polar Explorer** – mobile surface mission to map the distribution of water ice at a lunar pole and access a permanently shaded crater
- **Dark Age Explorer** – first image of the cosmic dark ages from the far side in long wavelength radio
- **Deep Interior Explorer** – a global or regional geophysics network
- **Cave Explorer** – first entry to a lunar skylight and access to a lunar cave
- **Swirl Explorer** – first access to characterise the environment in a mysterious lunar swirl
- **Bio Explorer** – exposing biological models to understand effects of the environment including radiation and dust toxicity
- **Cataclysm Explorer** – dating the Late Heavy Bombardment with returned samples from large impact basins
- **In Situ Resource Utilisation Pilot Plant** – first production of useable products from local resources
- **Crewed mission preparation** - deployment of a pressurised habitat/rover
- **Hopper** - use of multiple hoppers to enable a lunar lander network

Supporting Information

- Description of the European Large Logistics Lander (EL3), see [attachment 'The European Large Logistic Lander'](#)
- The European Exploration Envelope Programme (E3P), see [attachment 'Space 19+ E3P'](#)
- ESA's Strategy For Science at the Moon ([here](#))
- ESA's Strategy for Space Resources ([here](#))
- ESA's Technology Strategy ([here](#))
- Destination Moon: This 8-minute film gives an overview of the past, present, and future of Moon Exploration, from the Lunar cataclysm to ESA's vision of what Lunar exploration could be ([here](#))
- The Moon: An interactive web documentary on the why and how of lunar exploration ([here](#))
- The Global Exploration Roadmap ([here](#))
- The ESA Concurrent Design Facility ([here](#))

The Global Exploration Roadmap ([here](#))

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- Chart describing timeline and process of this Call for Ideas, see above and [attached 'EL3 CFI Timeline and Process'](#)
- Future Lunar Communications Architecture, see attachment '*Lunar communications architecture study report*'
- **FAQs:** Frequently asked questions and answers, see [attachment 'FAQs'](#)

SPECIAL CONDITIONS

Further to the general conditions:

Everyone interested may participate in this Campaign, participation is not limited to entities registered in one of the ESA Member States, Associate Member States or Cooperating States.

Only ideas clearly addressing the Campaign subject are eligible. All ideas that do not comply will be archived and the author notified of this.

Relevant ideas previously submitted to other calls are also welcome.

Awards: any awards or short term contracts of up to 20,000 euros to mature mission concepts will be limited to participants registered in one of the ESA Member States, Associate Member States or Cooperating States ([link](#)). Please note, that restrictions exist for certain implementation paths, e.g. ESA procurement actions are restricted to entities eligible for doing business with ESA (see also [here](#)).

Intellectual Property Rights: ESA does not expect the ideas to contain elements that are subject to non-disclosure obligations protected by intellectual property rights, or resulting in limitations for ESA's use in the frame of the internal review by the appointed evaluators. If authors nevertheless require additional non-disclosure arrangements before submitting their proposal, ESA is ready to discuss this upon specific request.

EVALUATION CRITERIA

Ideas will be reviewed with regard to the following evaluation criteria:

- Scientific merit
- Addressing exploration knowledge and technology gaps
- Technological feasibility
- Programmatic coherence
- Strategic alignment
- Innovation and novelty
- Socioeconomic impact
- Potential to engage beyond the space sector

Ideas need not address all of these criteria to be considered.

COMMENTS

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COMMENTS 6



Carlo Convevole

Dear all,

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how is it possible to have the Non Disclosure Agreement for the proposal submission? I have also a question about the deadline: is it the 2nd or the 3rd of July?

I was not able to find an email to ask these questions.

Best regards

Carlo

Jul 1 at 01:02 AM



Francesca Elizabeth McDonald

Dear Carlo

You have until 23.59 on 3 July (CEST) to submit ideas.

Please note that for this first submission stage ideas can be submitted confidentially so that it is only visible to the evaluation panels and ESA internal Campaign managers and an Idea Coach.

Jul 1 at 01:13 PM



antoine lecocq

Dear ESA,

I can't seem to access my draft idea from the dashboard. It is there, but every time I click on it, it brings me back to the home page instead of my draft...Any help would be greatly appreciated...

Thank you and have a nice day

Antoine@plen.ku.dk

Jun 18 at 10:14 AM

Show one older reply



antoine lecocq

Dear Francesca,

No, it still doesn't work. I resubmitted my idea (I received a confirmation email so I suppose that it worked). However, I can't seem to access my earlier draft to delete it. Again, I go to **my dashboard** and then **drafts** but when i click on it it take me back to the main page rather than my actual idea. As long as the one I submitted is available and can be accessed by others (including you i guess) that's ok, but there's definitely something going wrong. I have also tried with 2 different browsers (Edge and Firefox).

Best

antoine

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Jun 19 at 03:41 PM



Francesca Elizabeth McDonald

Dear Antoine






Please see the message I have sent you at the bottom of your idea submission relating to your question above

Best regards

Francesca

Jun 19 at 04:55 PM

Attachments

Name	Creation Time
 EL3 CFI Timeline and Process.pdf	May 28
 FAQs.pdf	May 29
 The European Large Logistic Lander.pdf	May 29
 Lunar communications architecture study report.pdf	May 29
 Space 19+ Flyer E3P.pdf	May 29

Do you need help?



Campaign Manager - James David Carpenter, Exploration Science & Research Coord.

Please contact us with any questions and we will respond shortly. We also refer you to the Frequently Asked Questions (see attachment).

Background Information

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Human and Robotic Exploration

ESA's future for human spaceflight and robotic exploration is a sustainable and international endeavour to visit new places and discover new things. Exploring space is about travelling further and coming back with new experiences and knowledge to help us on Earth.

[Learn More](#)

What's your idea?

We appreciate all input. Even rough ideas can fuel a discussion and help to ideate. Help us to improve by submitting your own ideas to this campaign.

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