

Entry, Descent and Landing (EDL) Instrumentation
Engineering Science Investigation (ESI)
Proposal Details and Programmatic Structure for MIDEX
May, 2019 (Version 1.1)

1. Proposal requirements and evaluation

- A. Explorers Program investigations involving entry, descent, and landing (EDL) into the atmosphere of a Solar System object (including the Earth) shall include an Engineering Science Investigation (ESI), to be funded outside of the cost cap, to obtain diagnostic and technical data about vehicle performance and entry environments. Details of the goals and objectives of this activity will be posted on the MIDEX Program Acquisition Website (<https://explorers.larc.nasa.gov/HPMIDEX/>) in the Program Library.
- B. The ESI shall be described in no more than five (5) pages, contained in a proposal Appendix. The proposal should contain information about how the EDL data will be collected; the types, numbers, and accommodation of the instrumentation, and rationale for stated data collection priorities. Please see the EDL Instrumentation Goals and Objectives document for more detailed requirements.
- C. The ESI will be evaluated by personnel with experience in entry, descent and landing instrumentation and/or who will use the data returned from such an investigation. The proposers will receive specific feedback on the ESI content and implementation. The review and feedback on the Engineering Science Activity will be separate from the main proposal review, and will not affect overall proposal review scores.

2. Programmatic structure of the ESI

- A. During the proposal phase (present to roughly September 2019): Proposers are encouraged to consult with NASA personnel to better meet this requirement. NASA personnel will be able to answer questions but will not provide specific implementation design efforts. Point of Contact: Todd White, Todd.R.White@nasa.gov, 650-604-4144.
- B. During Phase A (roughly Q2 CY 2020 to Q1 CY 2021): NASA will augment the selected mission concept study teams with personnel who will help design and cost the ESI, if requested. The ESI will be fully described and costed as a separate line item in the Concept Study Report.
- C. During the evaluation of the Concept Study Reports, NASA will provide

further feedback on the ESI and will request changes in implementation if needed.

- E. At down-selection for mission implementation (roughly Q4 2021), pending separate funding has been approved, NASA will commit the resources to fund the ESI. This commitment will be documented in a Memorandum of Agreement (MOA). Once funded, the ESI shall be a Level 1 requirement on the Project, through execution.
- F. At any point, the ESI may face descope and/or termination review if the funding directors for the ESI determine that other mission priorities take precedence over the ESI.