

Charter for the Large Mission Concept Studies Report Team

January 29, 2018

Background

As part of the preparations for the 2020 Decadal Survey (<https://science.nasa.gov/astrophysics/2020-decadal-survey-planning>), NASA HQ has commissioned studies of the following four large-scale mission concepts:

- The Origins Space Telescope
- The Habitable Exoplanet Imaging mission
- The Large Ultraviolet, Optical, and Infrared Telescope
- The Lynx Telescope

Four Science and Technology Definition Teams (STDTs) were established drawing from interested community members, to formulate science and technology goals, the ensuing mission requirements, and a preliminary architecture for the mission concept under study. The STDTs will deliver final reports to NASA by 2019, which NASA will submit to the 2020 Decadal Survey Committee for the four mission concepts to be considered for prioritization. More details to NASA's approach to the studies, milestones, and deliverables are described in the Management Plan for Large Mission Concept Studies – Rev C (<https://science.nasa.gov/astrophysics/2020-decadal-survey-planning>).

One of the milestones of the four studies is the delivery of an Interim Report (deliverable M4) by March 2018. The Management Plan lists the Interim Report Deliverable scope as

- Provide science case and mission concept, using Concept Maturity Level 3 as a guide. The Study Managers will provide in a separate document a concordance matrix, i.e., a matrix that shows where the CML3 attributes appear in the submitted interim report to aid the LRT.
- Deliver initial technology roadmaps; estimate technology development cost/schedule. Each key enabling and/or enhancing technology should be presented.
- Provide the tailored approach to Concept Maturity Level 4 that will be the basis of the final report. The plans for achieving CML 4 should be presented for each attribute.

The Astrophysics Division, through the Decadal Studies Management Team, will use these Interim Reports to document the progress the STDTs have accomplished to date and to assess whether they are on the right track towards delivering the final report. The Interim Reports will be reviewed by the Large-Studies Report Team (LRT). This Charter addresses the tasks of the LRT.

Tasks of the LRT

The Large-Studies Report Team (LRT) is tasked with providing a review of the Interim Reports, and address:

- A. Completeness with respect to M4 Deliverable Scope per the Management Plan for Large Mission Concept Studies – Rev B
- B. Whether the STDTs are on the right track for delivering the final report. In particular:
 1. Are the science requirements described in the Interim Reports flowing effectively and efficiently into mission requirements (including separation of spacecraft, instrument, and ground-system)?
 2. Are the mission requirements clearly stated?
 3. Is the plan for the technology maturation (to TRL 6) sufficiently articulated? Are the presented schedules and milestones realistic?
 4. Are the technology cost and risk adequately addressed? Are they realistic?
 5. Are the mission-level risks understood appropriately for CML?

The LRT shall NOT provide an assessment of the science goals and their merit. This is the job of the Decadal Survey Committee.

Deliverables

The LRT shall

- Participate in a kickoff meeting in February 2018
- Deliver independent written reports for each of the four studies, addressing the above questions, and any other comments and concerns, to HQ. The report shall be delivered by May 21, 2018 (TBR). The report is a document no longer than 15 pages
- Deliver a telecon outbrief to each large mission STDT
- Participate in a two-day Pause and Learn discussion in June 2018 with the Decadal Studies Management Team and the leadership from each large mission STDT.

The LRT will be disbanded after the delivery of the written reports or as needed by NASA.

Contact information

The NASA HQ point of contact for the review of the Interim Reports is Rita Sambruna, Decadal Studies Program Scientist (rita.m.sambruna@nasa.gov; tel. 202-358-2166).