Optimizing SOFIA Science Instrument Procurement Strategy

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ee factors govern the design of SOFIA science instrument procurement strategy

Alignment with desired scope of the solicited work:

- Development of a science instrument for SOFIA should typically require <$10M over < 3 years

Science community engagement:

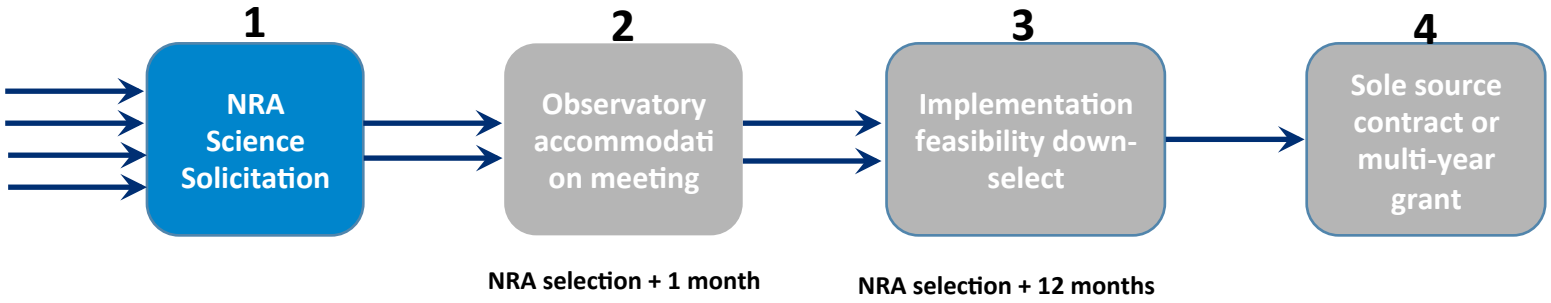
- Target offers are university experimentalists who are not proposing in partnership with a major aerospace contractor
- Proposal production cost must be low – consistent with the anticipated selection rate
  - The above target offerors typically do not have access to B&P resources

Acceptance of technical risk must be much higher than that of an orbital program

- Fielding low TRL technology and prototype instrument systems in a hands on environment to produce advanced science is a fundamental mission objective of SOFIA

best solicitation process for SOFIA is one in which science and implementation posals are developed sequentially

bles broad science community engagement through avoidance of unfunded engineering work



1:

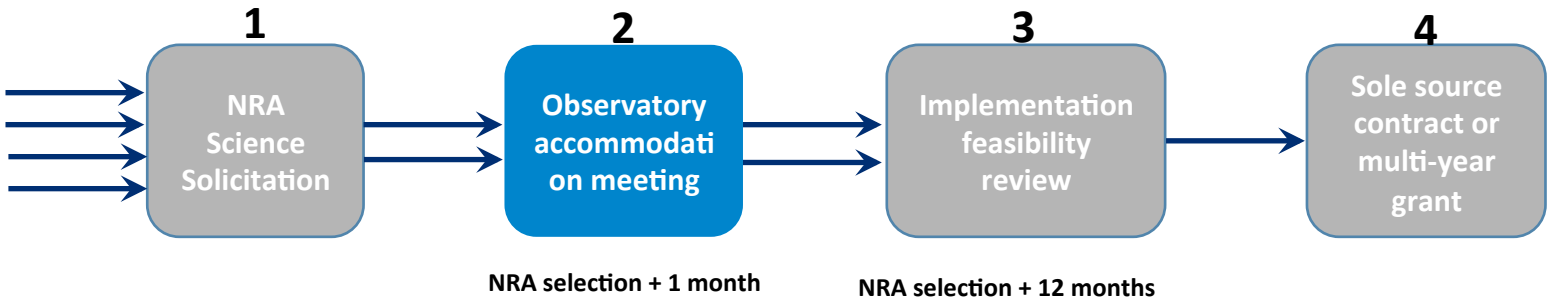
NASA Research Announcement (NRA) solicitation of science proposal containing only a top-level description description of hardware design

- Emphasis on how the science potential of SOFIA would be impacted by the proposed new instrument capability
- Cost constraints defined in solicitation. However, cost and management proposal is not solicited at this stage
- Selection via a HQ-convened panel, configured for science subject matter expertise

Single year grant award (~$100K typical) for subsequent development of technical, management and cost pr

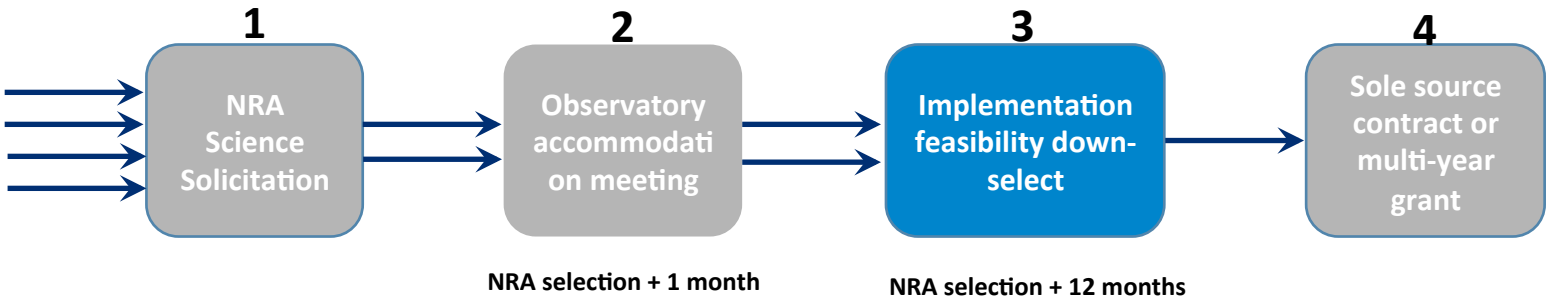
- Provides funding for the work of producing the non-science aspects of the proposal

The SOFIA Project must interact with the NRA-selected Principle Investigators (PIs) to ensure understanding of implementation requirements



- Step 2:
  - A SOFIA Project convened meeting in which exit criteria for Step 3 are interactively discussed
    - Key interface requirements
    - FAA requirements
    - Systems engineering requirements and delivered documentation
    - Cost estimation methodology
    - Schedule planning and tracking methodology
  - The potential for SOFIA engineering support or other work packages to be offered to the PIs should be considered and discussed here
    - Necessity will depend on the PI organization
    - Goal is to enable a “best athlete” approach toward roles/responsibilities for low cost implementation

A gateway implementation review is used to assess cost/schedule risk prior to commitment



Step 3

- The implementation proposal is assessed relative to the exit criteria that was documented and briefed in Step 2
- Assessment by a HQ-convened panel that is optimized for engineering, management, and cost estimation expertise
- Projects that do not pass this gate must re-propose through Step 1

Step 4

- Selecting among contract vs grant alternatives is a critical trade that should be carefully considered wr the individual nature of the PI organizations.
  - Selection through gate 1 (NRA) provides sole source justification

This multi-step procurement plan is well matched to SOFIA mission-specific driving criteria (chart 2)

Puts science first to ensure SOFIA mission success

Maximizes university community engagement through avoidance of unfunded engineering work

Enables SOFIA and the PI to develop a collaborative “best athlete” approach to implementation resulting in reduced cost

Implementation feasibility gate provides off ramp to ensure that the initial 1 year grant phase has retired risk to a level that is acceptable to SOFIA and consistent with available resources

New Science Instruments on SOFIA

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SOFIA Users Group #7

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Community Announcement on 3rd Gen SI

NASA's Astrophysics Division plans to solicit proposals for the development of a Third Generation Science Instrument (3G SI) for the Stratospheric Observatory for Infrared Astronomy (SOFIA) via an Amendment to ROSES-2015 in June 2015.

The total funding available for the SOFIA 3G SI is expected to be $17M. The current SOFIA Program planning budget is sufficient to select and develop one new instrument over the period of Fiscal Year (FY) 2016 to FY 2019. NASA has the goal to commission any new instrument selected in the 2018 time frame.