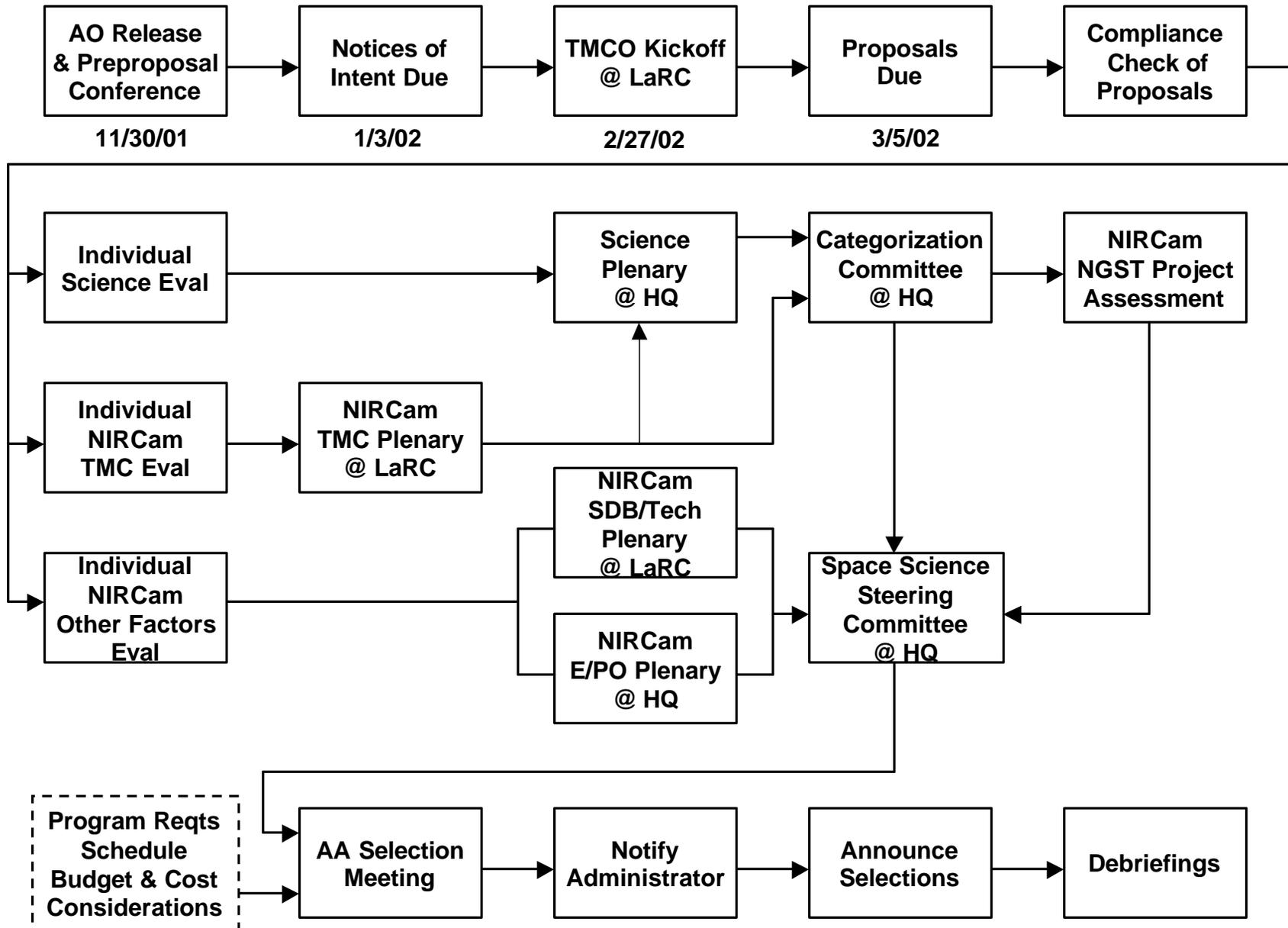


# **TMCO Review and Evaluation Process For NIRCам PI Proposals**

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# Draft NGST Proposal Review Process



# Technical, Management, Cost, and Other Factors (TMCOC) Principles

- **All Proposals will be reviewed to identical standards.**
  - Evaluation Plan approved by NASA HQ and in place before Proposals arrive.
  - All Proposals receive same evaluation treatment in all areas and by all reviewers.
  - The TMCOC process is used by ESSSO to support all OSS evaluations with a standard process.
- **All evaluators are peers in the area of expertise that they evaluate.**
- **Basic Assumption: Proposer is the expert on his/her Proposal.**
  - **TMC:** Task is to try to validate Proposer's assertion of Low Risk.
  - **Proposer:** Task is to provide evidence that the project is Low Risk.

# TMCO Groundrules

- **TMCO Evaluators are:**
  - Best (non-conflicted) CS, DOD, contractor, consultant, and other Government personnel available to support the review.
  - Peers in the areas of expertise they evaluate.
- **TMCO Findings are the consensus of the entire Panel.**
  - Findings are defined as either expected (no finding), above expectations (strengths), or below expectations (weaknesses).
  - Findings result in a Risk Rating (Low, Medium, or High).

# TMC Evaluation Objective

- The TMC evaluation is to determine, for each Proposal, the level of risk of accomplishing the scientific objectives, as proposed, on time and within cost.
- Three bands of risk are defined: **Low Risk, Medium Risk, and High Risk.**
- Exactly what constitutes Low, Medium, or High Risk is a complex issue; however, the following general definitions apply:
  - **Low Risk:** No problems exist that cannot be normally overcome within the time and cost proposed. "Envelope adequate"
  - **Medium Risk:** Problems exist, but are not sufficiently bad such that they cannot be overcome with good management and engineering. "Envelope tight"
  - **High Risk:** Major problems and insufficient resources exist to overcome the problems. "Does not fit within the Envelope"

# TMC Technical Definitions

- **Envelope:** Resources available to handle known and unknown development problems that occur. Includes schedule and funding reserves; reserves and margins on physical resources such as mass, power, and data; descope options; and fallback plans.
- **Contingency (or Reserve):** When added to a resource, results in the maximum expected value for that resource. Percent contingency is the proposed value of the contingency divided by the maximum expected value of the resource minus the contingency.
- **Margin:** The difference between the maximum possible value of a resource (the physical limit or the agreed-to limit) and the maximum expected value for a resource. Percent margin for a resource is the margin divided by the maximum possible value minus the margin.

# TMC Evaluation Scope

- Proposer's understanding and planned use of the processes, products, and activities required to accomplish the development, integration, test, and operation of the proposed NIRCcam flight instrumentation and support systems.
- Team capabilities for system engineering and concurrent engineering.
- Risk of increased cost to the NGST system.
- Relationship between the work and project schedule, as well as the adequacy of margins in the schedule.
- Methods and rationale used to develop the estimated cost, and strategy for reserves recommendation and usage.
- Effectiveness of the proposed implementing organization, including roles and experience of partners and the commitments of partners and contributors.
- Competence of the management team and management plan.
- Degree of support (logistics, facilities, etc.) offered by the proposing institution to ensure that the investigation can be completed satisfactorily.

## TMC Evaluation Scope (concluded)

- Innovative cost-saving features, processes, or approaches will be rewarded if proven sound.
- Investigations proposing new technology must describe qualification plans and/or technology backup plans to ensure success.
- Adequate schedule reserves must be identified to allow the qualification test and backup plans to be implemented within the total proposed cost and within schedule limits.
- The TMC evaluation will include an assessment of the potential for delivering the flight instrumentation to NASA Goddard Space Flight Center according to the schedule contained in Table 3.2 of the AO.
- Proposals that include non-Government furnished technologies with no flight heritage must include a detailed, credible plan for demonstrating how these technologies will reach a NGST Technological Readiness Level of 6 (TRL 6) by March 31, 2004.

# Cost Evaluation

- Cost Realism is evaluated; however, a “should cost” or “Government estimate” is not reported.
- Cost Realism: Reported based on Models, Analogies, Heritage, and Grass Roots information from Proposals. Everyone is responsible for Cost Realism evaluation, not just Cost Team.
- Initial cost analysis based on Proposals (consistency checks, completeness, basis of estimate, contributions, full cost accounting, reserve levels and management, etc.).
- Several independent cost models used to support cost analysis.
- Cost threats, risks, and risk mitigation analysis developed and discussed.
- All information from the entire Evaluation Process provides final assessment.

# Some Characteristics Applicable to a Low Risk Rating

- All risks for the project have been/are being identified and managed by the team, with plans to reduce or retire the risk before launch.
- No risk exists for which there is neither a workaround planned, nor a very sound plan to develop and qualify the risk item for flight.
- The proposed project team and each of its critical participants are competent, qualified, and committed to execute the project.
- The project will be self-managed to a successful conclusion while providing reasonable visibility to NASA for oversight.
- The team has thoroughly analyzed all project requirements, and the resulting resources proposed are adequate to cover the projected needs, including an additional percentage for growth during the design and development, and then a margin on top of that for unforeseen difficulties.
- Reserve time exists in the schedule to find and fix problems if things do not go according to plan.
- Any contributed assets for the project are backed by letters of commitment. The team understands the seriousness of failing to meet technical, schedule, or cost commitments for the project in today's environment.

# Other Factors Evaluation Scope

## **Education and Public Outreach**

- A substantive, high-quality Education and Public Outreach (E/PO) program is an integral element of the investigation.
- Adequate resources should be invested in the planning and implementation of such an effort.
- The E/PO effort is aligned with general OSS E/PO policies and the specific E/PO guidelines given in the AO (and forthcoming AO Amendment).
- Detailed E/PO requirements to be addressed in separate E/PO presentation.

## **New Technology**

- New technology benefits offered in the proposal, in accordance with the *OSS Integrated Technology Strategy*.
- Proposal supports the OSS Strategic Technology Goals by infusion and transfer.

## **Small and Small Disadvantaged Businesses**

- Participation goals, commitment, quality, and level of work to be performed by Small Disadvantaged Business (SDB) concerns in the authorized North American Industry Classification System (NAICS) Groups, as determined by the Department of Commerce (see FAR 19.201 (b)), as well as the participation of Women-Owned Small Businesses (WOSB's), Historically Black Colleges and Universities (HBCU's), and Other Minority Institutions (OMI's).
- Past experience in meeting goals.