Space Communication and Navigation (SCaN) Program Office Mission Commitment Office

APSMEX26 Pre-Proposal Conference

Anum Ashraf, PhD - Mission Commitment Office Lead

Purpose/ Agenda

- Introduce SCaN services available to proposers
- Explain the Mission Commitment Office (MCO)
- Highlight APSMEX26 AO communications requirements

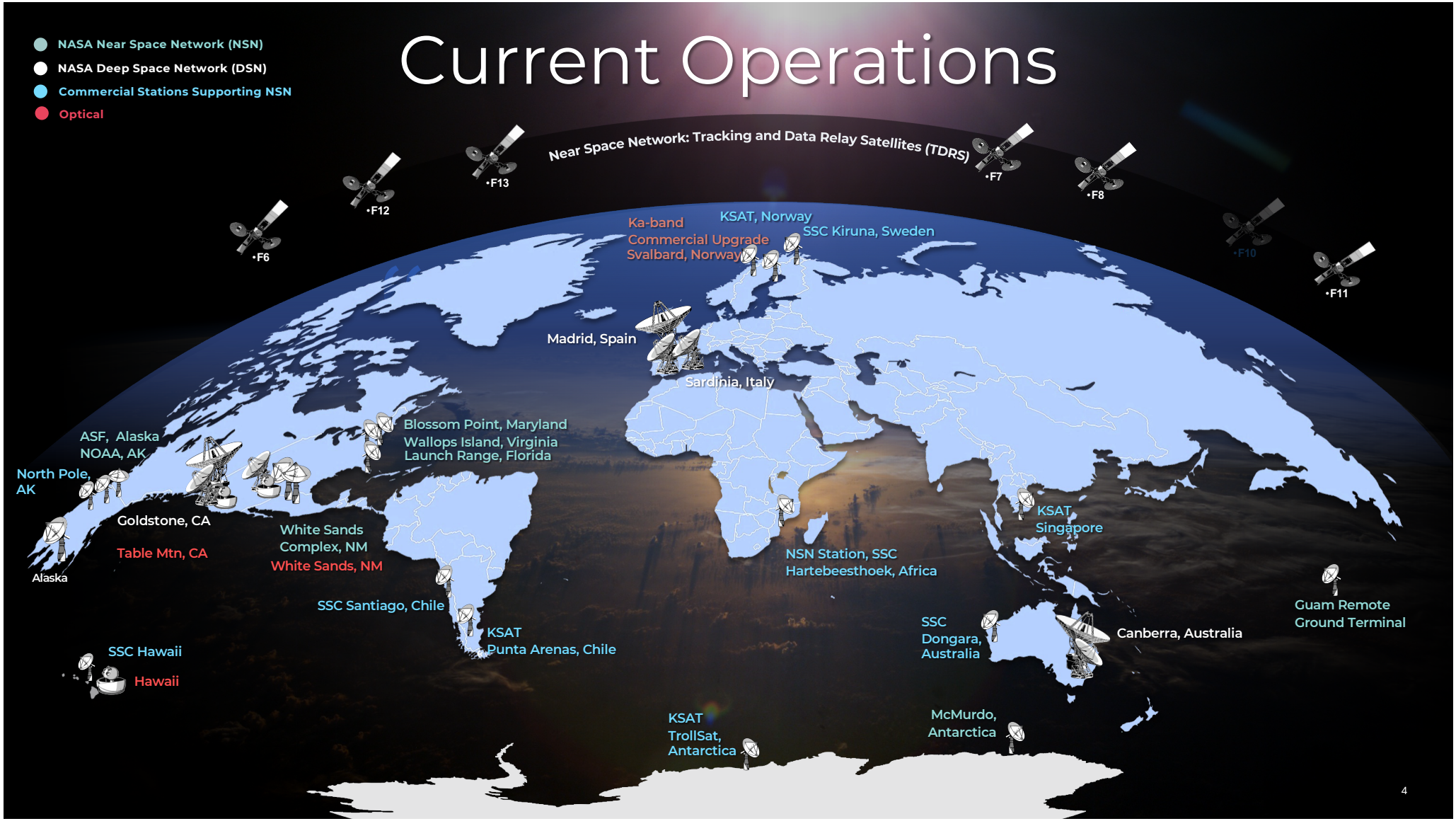
What is SCaN?

SCaN is NASA's provider of space communications and navigation services.

- Responsible for Agency-wide operations, management, and development of all NASA space communications capabilities and enabling technology (NPD 8074.1).
- Expand SCaN capabilities to enable and enhance robotic and human exploration.
- Manage spectrum and represent NASA on national and international spectrum management topics (NPD2570.5E).
- Develop space communication standards as well as Positioning, Navigation, and Timing (PNT) policy.
- Represent and negotiate on behalf of NASA on all matters related to space telecommunications in coordination with the appropriate offices and flight mission directorates.

Supporting over 100 missions across NSN and DSN including support for launch and early orbit operations.
Includes NASA, interagency-government and international parters

Current Operations



Mission Commitment Office: The only “FRONT DOOR” to SCaN

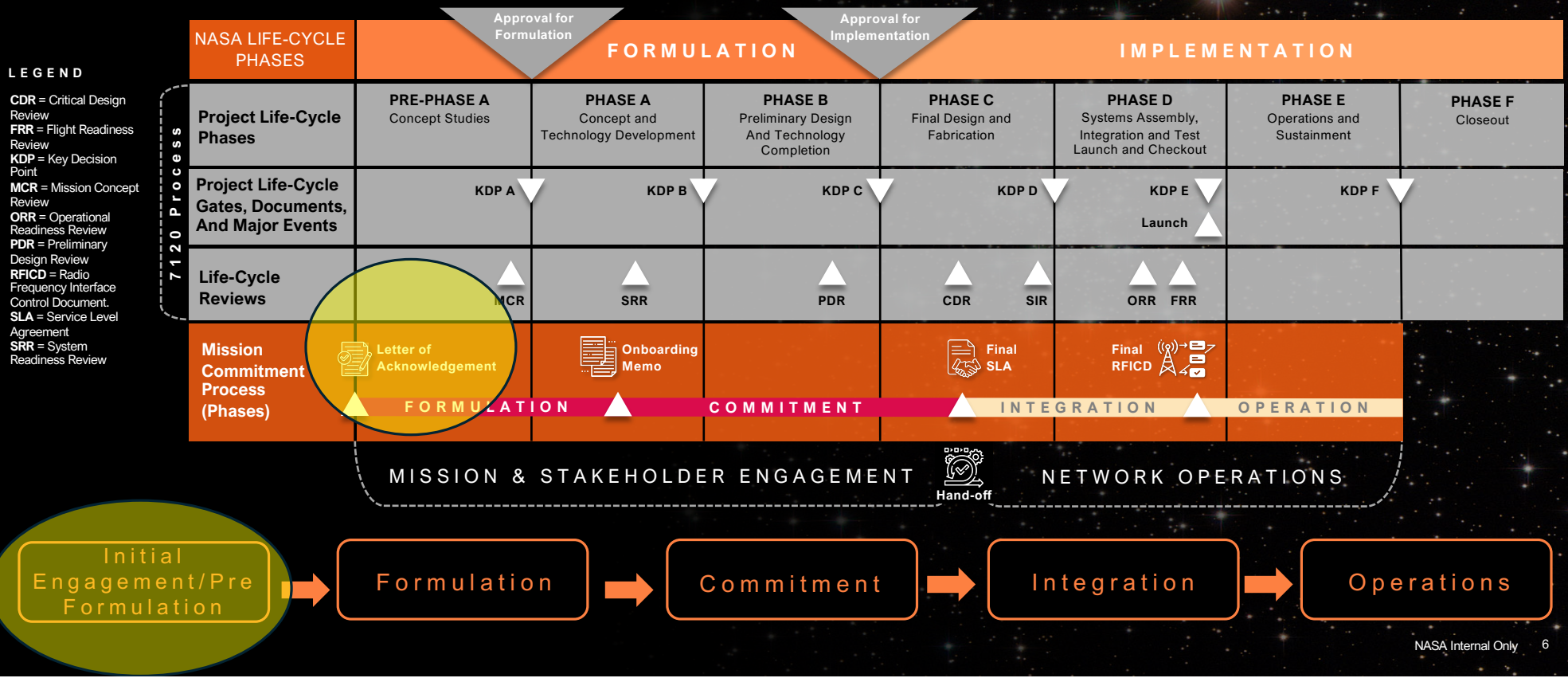
Mission Commitment Office is SCaN's single point of entry.

- Engages with new mission across all phases—from planning to commitment—facilitating discussions, assessing feasibility, and supporting Service Level Agreement (SLA) development for DSN and NSN services.
- Provides strategic planning, project management, space communication analysis, network, loading and modeling to ensure effective integration and coordination across SCaN-managed networks.
- Standardized intake across all mission types
- Defined process gates with entrance/exit criteria
- One external face — missions talk to SCaN, not to individual networks

MCO provides guidance, documentation, and preliminary cost information to support space communications planning during proposal development.

Mission Commitment Process

SCaN's Mission Commitment Office has developed a clear process, tied to mission lifecycle, to onboard new missions to the NSN and DSN.



Initial Engagement/Pre Formulation → Formulation → Commitment → Integration → Operations

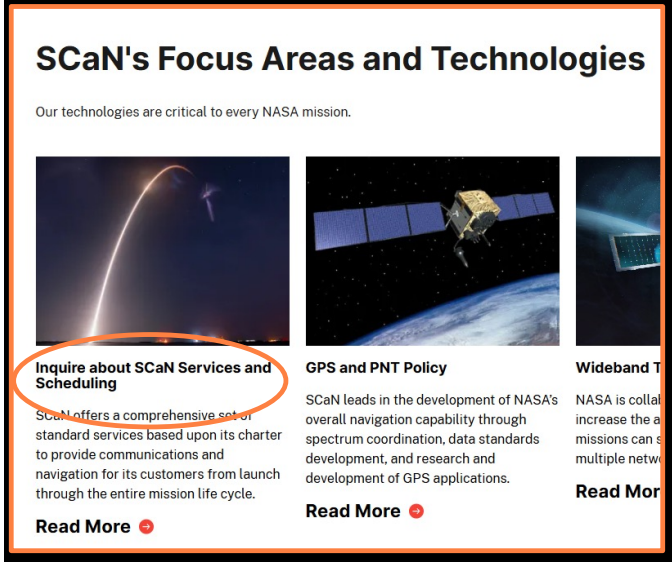
SCaN Consideration for APSMEX 2026 AO

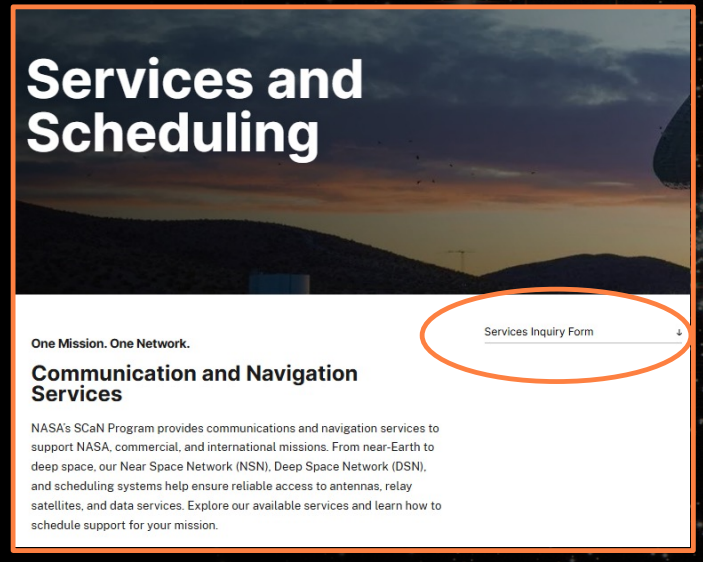
SMD is **requiring** missions to obtain a LOA if intended to use SCaN services

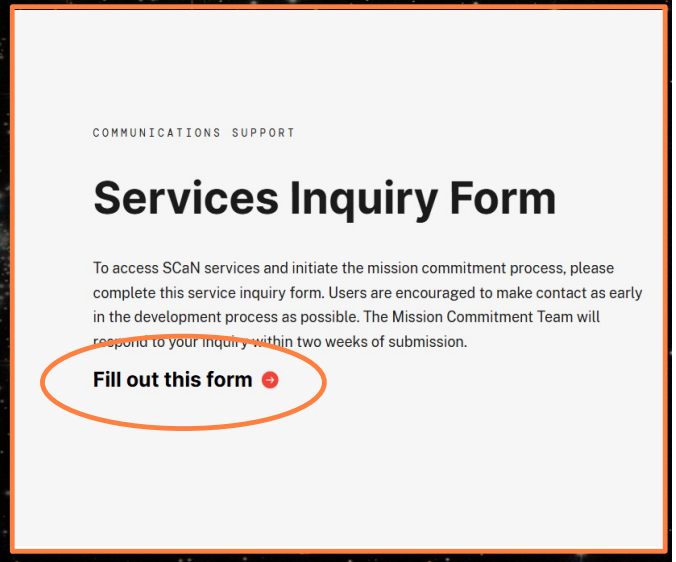
> Requirement 41. If use of NASA SCaN services is proposed, proposals shall include a Letter of Acknowledgment (LOA) from SCaN confirming that the mission concept is supportable with current SCaN capabilities.
>
> Requirement 34. If use of NASA's SCaN Network services beyond the capabilities and capacities described in the SCaN MOCS document is proposed, the proposal shall include a Letter of Acknowledgment from the NASA network provider; the Letter shall confirm the ability of the network to provide the required capabilities and capacities. The Letter shall also include a schedule for when the required capabilities and capacities will become available, and an estimate of the additional costs for these capabilities and capacities, which will be part of the PIMMC.

Step 1: Fill our SCaN's Service Inquiry Form

SCaN has recently launched a new website designed to help streamline the service and scheduling process for network users.







Go to **NASA.gov/scan** to find SCaN's updated service inquiry form.

Previously separate NSN and DSN service inquiry forms were consolidated to one form.

The Mission Commitment Office will follow-up within two weeks.

Step 2: Fill out the SCaN Intake Matrix

INSTRUCTIONS: Describe your mission's PRIMARY operational orbit — the orbit where the majority of your network loading occurs. If your mission has multiple orbital regimes (e.g., transfer orbit, intermediate orbit, final science orbit), describe the primary operational orbit here and reference trajectory files for the complete picture.

Deep space, interplanetary transfer, and flyby missions: enter N/A for Keplerian elements and provide trajectory files (.bsp, .oem, or TLE format) to MCO separately. SCaN uses the combination of your orbital description + trajectory file + loading profile to build the complete geometry picture.

For surface missions, provide landing coordinates. All orbital parameters should reference the central body selected. If your mission utilizes a unique transfer orbit, libration point, or constellation phasing, detail it in the Notes column.

Orbital Profile & Trajectory

Field	Response	Notes
Target Orbit / Destination		[e.g., LEO Sun-Synch 680 km, Lunar surface 85.3°S 31.1°E, Mars orbit 300x30000 km]
Central Body		[Body that orbital parameters reference]
Orbital Altitude — Periapsis (km)	[Enter value]	[Free text]
Orbital Altitude — Apoapsis (km)	[Enter value]	[Free text]
Semi-Major Axis (km)	[Enter value]	[Free text]
Eccentricity	[Enter value]	[Free text]
Inclination (degrees)	[Enter value]	
RAAN — Right Ascension of Ascending Node (degrees	[Enter value]	
Argument of Periapsis (degrees)	[Enter value]	
Repeat Cycle (days)	[Enter value]	
Nodal Crossing Type / Local Time	[Enter value]	
Orbital Period	[Enter value]	
Transfer Orbit Details	[Enter text if applicable]	
Surface Mission?		[Yes if mission lands on a surface]

INSTRUCTIONS: Complete all fields in this section. Fields marked with amber highlighting are mandatory (M) and must be filled before SCaN can route your request to the appropriate network. Use the Notes column for additional context. Drop-down selections can be overridden with custom text if your answer does not fit the provided options. The MCO Disposition section (pink cells) is for SCaN internal use only — do not edit.

Mission Inquiry Data

Field Name	Mission Input	Notes / Specifics
Mission Full Name	[Enter text]	[Free text]
Mission Acronym / Short Title	[Enter text]	[e.g., CAPS2, VIPER, Skyfall]
Project Purpose	[Enter text]	[Free text]
Primary POC(s)	[Enter text]	[e.g., NASA PE, Project Manager, Comm Lead]
Organization / Institution	[Enter text]	[Free text]
Organization Type		[Free text]
National Affiliation		[Free text]
Funding Source		[Free text]
Science Type / Mission Category		[Free text]
NASA Mission Classification		[Reference: NPR 8705.4]
Current Mission Phase		[Free text]
# of Platforms Requiring SCaN Services	[Enter number]	[If total mission platforms differ, note here]
	[Enter text]	[e.g., NET March 2028]

	MANDATORY PARAMETERS (All Missions)										
Link Name / ID	Principal Use	Frequency Band	Link Direction	Information Rate (kbps)	Modulation Scheme	Variable Coded Modulation (VCM) (if applicable)	FEC / Channel Coding	Ranging Type	Coherency	Radio / Transponder Type	Design Reference Ground Antenna
[e.g., DL-Sci-Ka, UL-CMD-X]				[e.g., 2 Mbps, 16 kbps]						[e.g., IRIS v2.1, General Dynamics S-band]	[e.g., DSN 34m BWG, NSN 12m DTE]

Collecting the mission “requirements” (orbital parameters, conops, RF parameters

Step 3: Letter of Acknowledgement

- **MCO reviews the proposed mission concept and comm. requirements** using information provided through the Technical Intake Matrix.
- **If support appears feasible, MCO issues a Letter of Acknowledgement (LOA)** for inclusion in the proposal package.
- **The LOA indicates preliminary concurrence** that the proposed communications concept appears supportable based on the information available during proposal development.
- **The LOA is not a commitment of SCaN resources or a binding agreement.** A formal commitment is made only after mission selection through the Mission Commitment Process, including detailed technical, operational, and cost assessments.

LOA provides preliminary concurrence that the proposed communications concept appears supportable by SCaN during proposal development—it is not a formal commitment of SCaN services.

Proposal Cost Guidance

Proposals using SCaN services must compute the estimated recurring NSN per-minute/per-pass and/or DSN aperture fees and report these in their proposal as an Adjustment to the AO Cost Cap

Requirement 42. Cost estimates for recurring NSN per-minute and/or DSN aperture fees and for nonrecurring MP&I and NRE services shall be included in the proposal as a reduction to the Adjusted AO Cost Cap.

Use the SCaN MOCS document, available in the AO Program Library, to identify applicable SCaN services and develop preliminary communications cost estimates for your proposal.

“Proposals using SCaN services must compute the estimated recurring NSN per-minute/per-pass and/or DSN aperture fees and report these in their proposal as an Adjustment to the AO Cost Cap.”

- Reference the program library Q/A for LEGS reoccurring cost information

“Proposals using SCaN services must also compute the estimated nonrecurring costs and report these in their proposal as an Adjustment to the AO Cost Cap. Nonrecurring costs include Mission Planning and Integration (MP&I) activates and Nonrecurring Engineering (NRE) costs”

- Generic cost estimates for two mission scenarios have been provided and can be used to estimate pre-launch costs (NRE, MP&I)

Other SCaN Consideration for APSMEX 2026 AO

Requirement 35. Proposals for missions operating within two million kilometers of Earth shall be able to perform routine operations without any use of the DSN. Proposals operating beyond two million kilometers of the Earth shall be able to perform routine operations without more than one DSN 34-m antenna at a time.

Requirement 36. Proposals for Astrophysics Explorer missions proposing the use of the DSN shall demonstrate that DSN support is necessary and how alternate mission concepts compromise the science objectives.

Requirement 38. Proposals for missions operating above geostationary Earth orbit (GEO) and below two million kilometers, shall be compatible with the Lunar Exploration Ground Segment (LEGS).

The Deep Space Network (DSN) is a limited, high-demand national asset. Mission concepts should be designed to minimize routine reliance on DSN whenever practical.

Design your communications architecture to use the most appropriate network for your mission. Minimizing routine reliance on the DSN helps preserve this limited resource for missions that require its unique deep-space capabilities (Ignition/Moon Base/Artemis)

Key Documents

- APSMEX26 Announcement of Opportunity
- SCaN Mission Operations & Communications Services (MOCS) – Rev 5
- NSN Users Guide
- Lunar Exploration Ground Sites (LEGS) Brochure
- Spectrum Guidance
- SCaN Service Inquiry Form/Intake Matrix

Key Takeaways

- ✓ Engage MCO early
- ✓ Design efficient communications concepts
- ✓ Understand SCaN cost requirements
  - pre-launch (MP&I/NRE)
  - Operational cost (aperture fees/per min/per pass)
- ✓ Coordinate spectrum activities early
- ✓ **Use MCO as the front door to SCaN**

Questions

Mission Commitment Office
Anum Ashraf, PhD

hqscanmissioncommitment@mail.nasa.gov

BACKUP

Spectrum Planning

Start spectrum planning early.

Mission teams are responsible for providing technical information needed for authorization.
All NASA missions that require the use of the electromagnetic spectrum shall follow the U.S. spectrum regulatory rules/processes as referenced in NASA spectrum policy

- NPD 2570.5: Sets forth NASA policy and responsibilities for obtaining approval for the use of the spectrum for any NASA mission, project, or other activity.
- NPR 2570.1: NASA Spectrum Management Manual provides guidance on the use of radio frequency (RF) spectrum.
- Spectrum Guidance for NASA Small Satellite Missions provides useful information applicable to all space missions.
  - See: www.nasa.gov/directorates/heo/scan/spectrum/policy_and_guidance.html

All missions/projects using RF spectrum must be certified/authorized by the appropriate regulatory authority

- For missions under effective control of NASA, NASA/Spectrum is responsible for securing spectrum certification/authorization from the federal regulator (NTIA).
- Missions must provide the necessary information for preparing the certification and authorization submissions.

All missions should contact their associated Center Spectrum Manager (NASA/Center-led missions) as early as possible

Any project with no clear NASA Center lead may contact the Mission Commitment Office to be routed to the appropriate spectrum POC