

*Thank you for your interest in being a part of the
Reconnaissance/Science Measurement Definition Team
for the International Mars Ice Mapper mission.*

BACKGROUND INFORMATION

First Name

Last Name

Job Title

Current Institution/
Affiliation

Professional Email
Address

Degrees/
Institutions/
Thesis Titles
(as relevant)

Please indicate with an X as relevant.

I am available to participate from late September, 2021 – late January, 2022.

I have some conflicts/constraints.

Please Describe:

By submitting this application, I confirm that I waive all claims associated with my MDT participation against any of the partner Agencies, entities, or persons.

By submitting this application, I confirm that I will not release any technical data or MDT information during proceedings and must receive approval for any additional presentations or research purposes.

1. TOPIC-SPECIFIC EXPERTISE

Please describe your experience/expertise (research focus, mission roles, field/lab experience, engineering, etc.).
Applicants are not expected to have an expertise in all.

1. Mission-critical expertise related to optimizing the capabilities of the primary anchor instrument, a polarimetric SAR/SAR Sounder

1.1
Expertise in Detecting and Mapping Water Ice,
particularly as relevant to reconnaissance measurements for human mission planning (Reconnaissance Objective 1):

1.2
Expertise in Assessing Surface/Near-surface Geotechnical Properties
(roughness, compactness) to provide a fundamental understanding of the accessibility of water-ice resources (Reconnaissance Objective 2)

1.3 Expertise in landing site characterization and measurements needed for human-mission planning (Reconnaissance Objective 3)

1.3A
General Expertise in Landing Site Characterization
(robotic/human Mars missions and/or lunar/Earth analogue sites)



1.3B

Specific Expertise in Human-led Surface Science

(including ice coring for astrobiology/climatology)

1.3C

Specific Expertise in ISRU/Drilling to inform measurement requirements

1.3D Specific Expertise in robotic and human-class EDL/ascent, especially as related to ice/overburden ("solid ground" + other engineering, terrain-related criteria/constraints) to inform measurement requirements

1.3E Specific Expertise in Civil Engineering as related to ice/overburden (e.g., drilling/processing water ice for in situ additive manufacturing; terrain characteristics and regolith resources for roads, structures, radiation shielding) to inform measurement requirements

1.4 Scientific or technical expertise in:

1.4A

Mars cryosphere

(ice/polar processes,
glaciology,
subsurface/permafrost etc.)

1.4B

Mars geology

(especially as relevant to
ice-indicating terrain,
geotechnical properties
etc.)

1.4C

Mars climate

(especially as relevant to
ice)

1.4D

Astrobiology

(especially as relevant to
ice)

2.0 TECHNIQUE-SPECIFIC EXPERTISE

Please describe your experience/expertise (research focus, mission roles, field/lab experience, engineering, etc.).
Applicants are not expected to have an expertise in all.

2.1 Science/engineering expertise related to the mission's primary anchor instrument:

2.1A

Polarimetric SAR capabilities
and techniques

2.1B

Radar sounding

2.1C

Use of other Mars remote-sensing
data to complement/enhance
interpretations of the radar data for Mars
ice detection/overburden
characterization/ human landing site
assessment

2.1D

Data Science/GIS/Data Archiving
particularly but not exclusively radar data

2.2 Additional expertise in reconnaissance/science and instruments:

2.2A

Remote sensing

(including orbital imaging)

2.2B

Mars atmosphere/weather/dust

2.2C

Space weather/radiation environment

2.2D

Radio science

2.2E

Navigation/EDL/Telecommunications

2.2F

Other, as relevant

3.0 Top 1-10 Relevant Publications

Applicants are not required to list 10.

3.1

3.2

3.3

3.4

3.5

3.6

3.7

3.8

3.9

3.10

When complete, please save as:
YourLastName_I-MIM_MDT_Application.pdf
and email it and your curriculum vitae (YourLastName_CV.pdf) to:
gsfc-imim-mdt@mail.nasa.gov