



## 2023 International Mars Exploration Working Group Face to Face Meeting Findings

**When:** 7-10, November 2023

**Where:** Tokyo, Japan

- **IMEWG Chair:**
  - IMEWG members agreed that ESA should continue as the IMEWG Chair for the 2024-2026 term. Claire Parfitt will take over from Sanjay Vijendran as primary point of contact for ESA.
  - The IMEWG membership wishes to thank Sanjay for his leadership over the preceding 2 years and also thanks JAXA for their hospitality and hosting of this year's face to face meeting.
- **IMEWG Working Teams:**
  - The Mars Communications Working Group will meet imminently to pursue the development of international interoperability standards.
  - The Lower Cost Missions Team will develop an international mission concept study to outline an architecture for multi-national rideshares and payload hosting.
  - The Lower Cost Missions Team and Mars Communications Working Group see value in a focused, in-person meeting with potential commercial partner participation
  - The Analogues Coordination Team will continue to collect site information for an analogues database and will concurrently consider future objectives and needs for analogue site development.
  - The progress and findings from these teams will be presented once every 3 months on a rotating basis at IMEWG telecons. Written summaries of their activities and conclusions will be documented annually on [IMEWG Confluence site](#) along with any other relevant work.
- **IMEWG 2024/25 workplan:**
  - IMEWG's assessment of robotic reconnaissance thrusts should be updated and expanded to include emerging needs (e.g. science objectives for humans, planetary protection knowledge gaps, others?)
  - IMEWG should reengage with ISECG to explore collaborative opportunities on international human mission objectives and architecture
    - Identifying common answers to mission architecture questions: landing site selection, number of crew, mission durations, and general sizing constraints, is a key first step.
  - IMEWG should establish a splinter team to draft a proposal for commercial participation in future IMEWG activities and meetings. Key considerations include:
    - IMEWG should avoid granting competitive advantages (perceived or otherwise)
    - Not all commercial partnerships will be relevant to all IMEWG members, particularly those with smaller budgets.
    - Focused meetings (e.g. on Mars communications) or site visits (e.g. to commercial providers in Texas, USA) would help narrow the focus of conversations with commercial partners to topics of greatest interest to IMEWG attendees.
  - IMEWG members should review IMEWG's current public outreach presence (e.g. on [IMEWG.org](#)) and recommend desired improvements and next steps to expand the group's efforts.
- **Robotic exploration of Mars and future human mission ideas brainstorming:**
  - IMEWG members agree that multi-national coordination on the science objectives for human missions Mars and the landing site selection is a valuable area of collaboration. The IMEWG membership will seek to engage with ongoing NASA studies to assess science objectives and landing sites for human missions.

- Building on the previous IMEWG Reconnaissance Thrusts document, key identified knowledge gaps in human mission planning for future focus include:
  - Improved Martian weather models.
  - Ice resource mapping
  - Fundamental mission architecture assumptions (e.g. how long will the stay on mars be, how long will the transfer be, where will humans land etc.)
- **Key takeaways from the F2F meeting:**
  - Mars communications and navigation as well as lower cost missions should continue as priorities for IMEWG.
  - The IMEWG member Interests and Capabilities charts helped establish a common understanding of member ambitions for Mars exploration and collaboration, mission concepts, as well as their strengths and relevant heritage.
    - Members agree that this format would be useful to continue at future face to face meetings with updated question sets that address topics such as agency funding cycles and the bilateral / collaboration options provided by your agency.
  - IMEWG looks forward to the outcomes of ongoing International Mars Ice Mapper mission concept studies. Both ESA's MARCONI and Ice Mapper present opportunities for future multi-national collaboration that should be explored at future meetings.
  - IMEWG should revisit discussions about collaboration and fostering partnership opportunities at future telecons and face to face meetings.