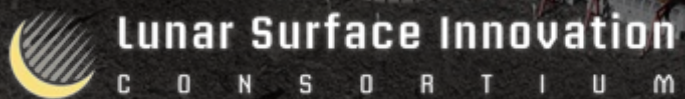


LSIC Surface Power Telecon

March 24, 2022

Begins at 11:03

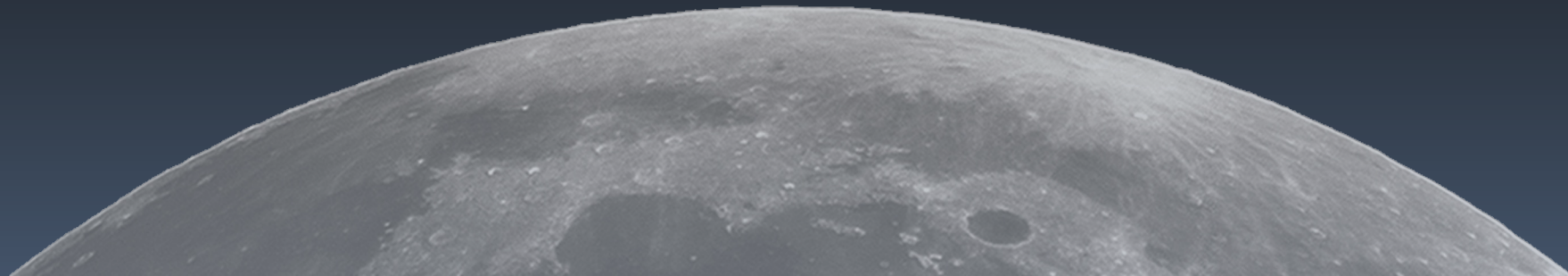


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- Community Updates
 - Upcoming/recent events
 - Solicitations
 - Upcoming MOSA-specific telecon
 - **LSIC SP Summer Workshop**

- **Technical Talk: Ian Jacupka (NASA GRC) on Hydrogen and Fuel Cell Technology**



LSIC | Upcoming Meetings and Workshops



- **LSIC Spring Meeting: Keynote NASA Associate Administrator Robert D. Cabana**
 - Abstracts due March 4, 2022, Event May 4-5 (hybrid) <https://lsic.jhuapl.edu/Events/Agenda/index.php?id=200>
- **Nuclear and Emerging Technologies for Space (NETS)**
 - May 8-12, Registration open <https://www.ans.org/meetings/nets2022/>
- **2022 IEEE Aerospace Conference-Registration Deadline: February 27, 2022**
 - March 5-12, 2022 <https://www.aeroconf.org>
- **Advanced Power Systems for Deep Space Exploration: Late Summer 2022**
- **Lunar Surface Science Workshop.**
 - Sept “Lunar Resource Evaluation Campaign - Implementing”
- **AIAA ASCEND.**
 - 24- 26 Oct. Las Vegas. Abstracts due 3/31.
- **More complete calendar on LSIC website: email me with additional events!**

NASA has identified two critical gaps for lunar surface power systems:

1. Power Transmission that can deliver power from a remote generation source to critical mission operation loads where a) power loads are frequently or permanently immersed in extreme cold; and b) there are large variations in average power loads versus peak power loads. NASA has significant interest in both wired and wireless transmission, and the challenge seeks to incentivize and demonstrate both types of solutions.

2. Energy Storage that can a) power mission operation loads when power generation is not available; and b) survive and operate in extreme cold environments.

<https://www.herox.com/WattsOnTheMoon>

Phase 2 of the competition will last approximately 30 months and award up to \$4.5 million.

Process is complex and involves multiple steps to be carried out by all participants in the proposal.

- Two step process. (for an initial vetting)
- **Topic 1. Cislunar/Lunar Surface Infrastructure & Capabilities**
 - Technologies that support global lunar utilization leading to commercial commodities and services for a robust lunar economy. Such infrastructure could include examples such as **long-distance lunar power distribution; survive and operate during lunar night;** in-situ Resource Utilization; lunar communications; autonomous construction...
- Funded Space Act Agreement
 - Cost sharing, more agency to industry

A space technology is at a Tipping Point if:

- TRL \sim >4 at time of submission of the Mini Proposal.
- Ground demonstration or flight demonstration will result in:
 - Maturation to TRL 6+
 - More able to bring technology to market
- There is a robust plan for commercialization

Schedule	
Mini Proposal Q	3/15
Mini Proposal due	3/31
Notifications	5/31
Final Proposal Q	7/14
Final Proposal due	7/28
Selections Notified	11/30
Funding	Jan 2023

Space Tech Solicitations (<https://www.nasa.gov/directorates/spacetech/solicitations>)

Early Career Faculty 2022

Notices of Intent due: March 2, 2022

Proposals due: March 31, 2022

Announcement for Partnership Proposals (AFPP) to Advance Tipping Point Technologies

Mini proposals due: March 31, 2022

Final proposals due: July 28, 2022

Space Technology Announcement of Collaboration Opportunity (ACO)

Mini proposals due: March 31, 2022

Final proposals due: July 28, 2022

Watts on the Moon Challenge, Phase 2

Registration due: June 15, 2022 at 5 p.m. EDT

Upcoming:

Tech Flights solicitation

Early Stage Innovations Solicitation

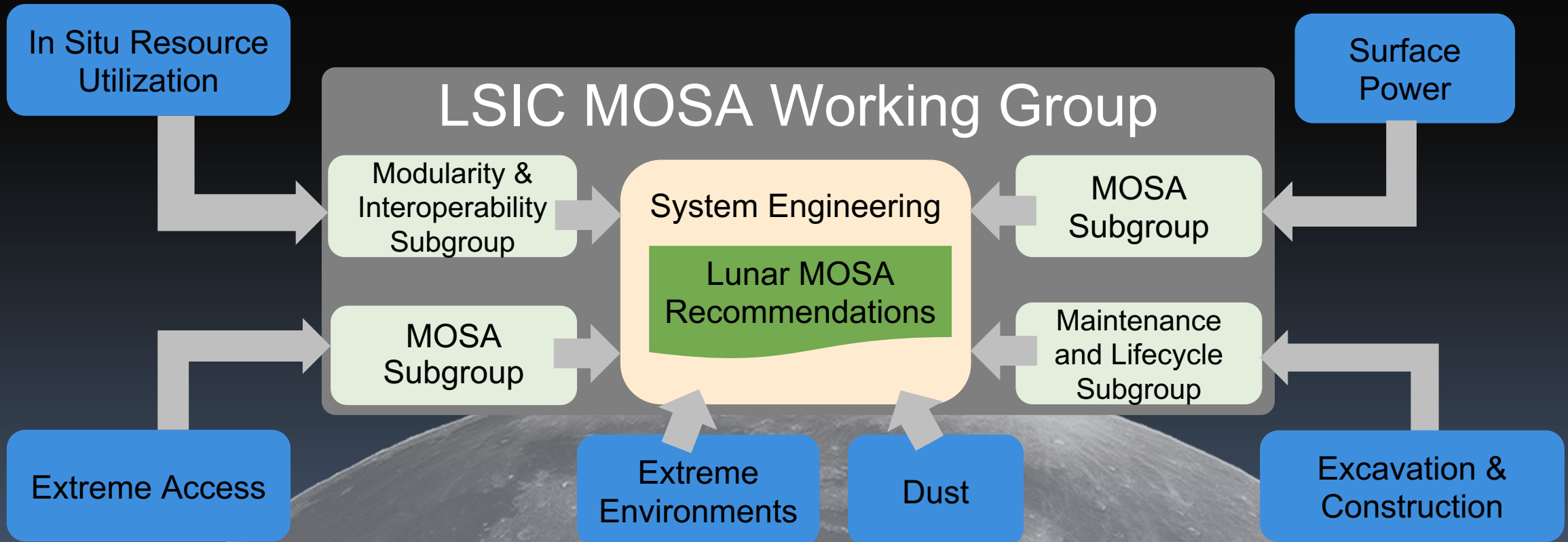
NASA Innovative Advanced Concepts (NIAC) 2023 Phase I

Space Technology Research Institutes (STRI) Solicitation

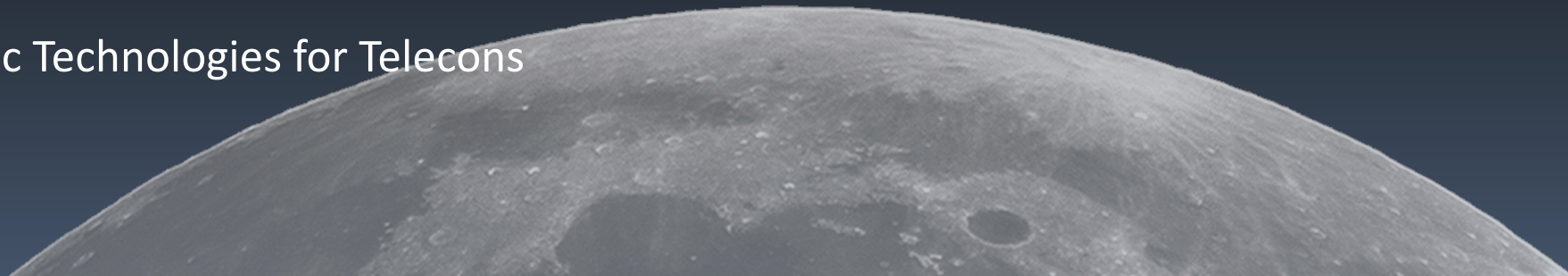
LSIC | Modular Open System Approach (MOSA) Working Group



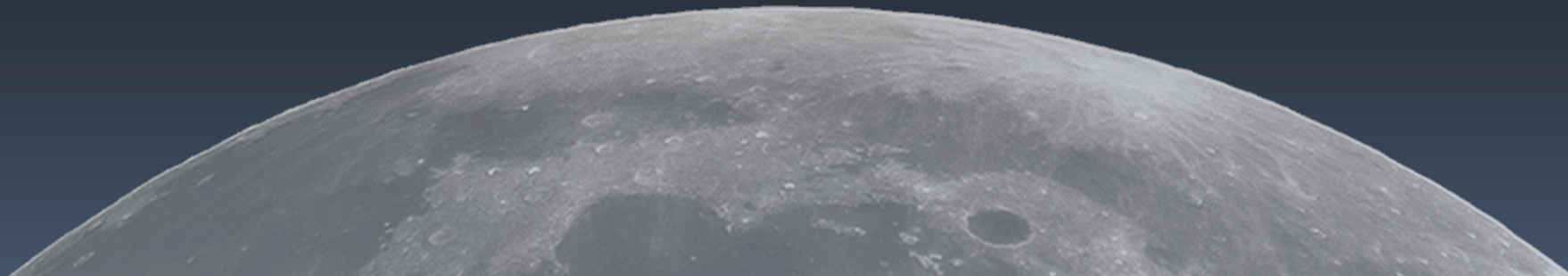
On April 6th at 11:00AM ET the LSIC MOSA working group is hosting a telecon featuring Chad Thrasher, NASA's Artemis Campaign Development Division, Systems Interoperability Lead. He will be presenting Artemis' Graphical User Interface (GUI) standards along with their plans for other interoperability standards for Artemis.



- **Summer workshop: Low Temperature Power and Energy Storage for the Lunar Surface**
 - Enable survival through the night via quiescence / managed wake-up
 - Operations that cannot hibernate
 - Comms, ECLSS, cryogen storage
 - Extensions beyond the lunar surface: Mars, outer planets and moons.
- Other themes that came from the February telecon include
 - Telecons from outside stakeholders
 - International Power Activities, DoD, HEO engagement
 - Testing needs and methods
 - Specific Technologies for Telecons



- Ian Jacupka: NASA GRC
 - Fuel Cell Technology Lead at the NASA Glenn Research Center





JOHNS HOPKINS
APPLIED PHYSICS LABORATORY

