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THE LUNAR SURFACE INNOVATION CONSORTIUM (LSIC)

Abstract

The Lunar Surface Innovation Consortium was established in 2020 by NASA's Space Technology Mission Directorate (SpaceTech) to bring together universities, non-profit institutions, commercial companies, NASA, and other government agencies to identify the technical capabilities and challenges involved in establishing a sustained presence on the Moon. LSIC is managed by the Johns Hopkins Applied Physics Laboratory and supported by Space Tech to serve as a central hub of information to provide efficient communication of NASA's technological needs to the community as well as timely input to NASA on what technologies are available for deployment. LSIC is also intended to enable team building, pulling from a diverse community that encourages networking, partnering, and collaborations to amplify the results of individual efforts at technology development for lunar exploration.

LSIC is focused on identifying and catalyzing the deployment of components, systems, and technologies for use within the architecture of a sustained presence on the Moon's surface, both human and robotic. LSIC is made up of focus groups aligned with Lunar Surface Innovation Initiative's (LSII) capability areas: Surface Power; Dust Mitigation; In-Situ Resource Utilization; Excavation and Construction; Extreme Environments; and Extreme Access. Each focus group meets monthly to share technical presentations, foster networking and partnerships, and identify key issues that need more in-depth research or development. These discussions feed into technical workshop or subgroups geared towards providing findings or recommendations to NASA (e.g., recommendations for flight demonstrations, funding investments, etc.). LSIC currently has over 1600 participants, from throughout the United States and over 40 countries. While discussions are focused primarily on technology, findings from consortium-wide meetings include identifying areas of concern, such as standardization and interoperability, that are potential roadblocks for developing or deploying infrastructure that may serve many different users on the lunar surface. For topics beyond the scope of LSIC, such as space law and policy, LSIC provides resources such as links to other organizations and/or panel discussions at semi-annual meetings to help connect community members with other experts. We will present an overview of the technical discussions and workshop findings from each of the six focus areas over the last year, including high-priority areas for research and development.