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LUNAR SURFACE ACCESS SERVICE (LSAS) – UPDATE ON THE OHb-IAI COLLABORATION ON
COMMERCIAL LUNAR LANDERS

Abstract

The continued exploration of the Earth's moon will rely on the one hand on institutional missions – such as through the US's, China's, India's and Russia's space programs – but on the other hand on a strong commercial element. Several actors are in advanced stages of developing lunar orbital and landing spacecraft for uncrewed missions. Of all the commercial lunar mission actors, SpaceIL with Israel Aerospace Industries (IAI) was the first to launch a privately funded lunar landing spacecraft, being the Beresheet lander. In January 2019, OHb System and IAI have signed a teaming agreement for offering a Lunar Surface Access Service (LSAS) based on the "Israeli Lunar Lander" ILL that itself is derived from Beresheet. The OHb-IAI consortium during the second half of 2019 has downselected a payload suite of technological and science instruments amounting to about 40 kg in mass which focuses on the first ever demonstration of several techniques to use the lunar regolith as feedstock for resource extraction and for making physical parts, achieving an important ISRU demonstration (in situ resource utilization) in the very near term. Detailed accommodation of this payload suite has meanwhile been performed, the necessary adaptations of the ILL platform have been addressed, and launch scenarios have been investigated with launch service providers. Talks with a commercial customer, with private supporters and with space agencies are at an advanced stage. OHb will lead the project, will manage the payload instrument teams, and will integrate the payload suite into the lander spacecraft at OHb's premises. This talk will describe the LSAS mission definition and its programmatic status. The key advantage of the LSAS under the OHb-IAI collaboration is the already available flight heritage through Beresheet, providing a significant edge in terms of risk and schedule.