JAPANESE SPACE PROGRAM UPDATE

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The Space Exploration Promotion Team was formed at JAXA in 2015, and has conducted a comprehensive study for Japan's space exploration scenario, which was very recently proposed at the ISS/Space Exploration sub-committee on June 28, 2017. One of the most important outcomes of this study is that the overall architecture could change if there is some amount of water at the lunar surface and can be utilized as the fuel by electrolyzing to LOX/LH2 . (Water on the moon could be the game changer!)

Per our preliminary assessment, if there is water ice more than 0.5% of the lunar soil, the initial cost of transporting the ISRU plant for collecting the regolith, extracting water, and electrolysis to the LOX/LH2 to the lunar surface will be paid in case more than seven times of human lunar surface mission. The LOX/LH2 can be utilized not only for the fuel for roundtrip of human lander between lunar surface and the Gateway on the lunar orbit, but also for the fuel of transportation on the moon and for the fuel for transportation in the deep space including journey to Mars.

We will present the JAXA's overall moon exploration scenario, including the water utilization.