

How Lunar Society in 2040 will be operated and Managed?

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In 2040, a world where 1,000 people stay on the moon all the time and 10,000 people visit every year is imagined and its feasibility and technology roadmap are discussed.¹ In such a world, not only the minimum infrastructure (habitation space, transportation, electricity, communication, clothing, food and living etc.) necessary for residents and travelers to live, but also comfortable living and entertainment are required. In addition, replenishing resources and supplies necessary for such activities from the earth each time has enormous costs. Therefore, when building such a sustainable lunar society, not only the individual elements such as in-situ use of resources (ISRU) technology and closed circulation system, which are currently being researched and developed all over the world, but it is also important to operate and manage the infrastructure and facilities on lunar surface, lunar orbit, low and geo-stationary earth orbit so that they work together in an organic manner to improve efficiency and optimization as a whole. In this session, we will present one way of thinking about the comfortable lifestyle for residents in the 2040 lunar society, and the overall operation and management that enables a sustainable lunar society¹

[1] Business Consortium for Space Frontier, Roadmap to Space Resource Business, <https://www.mri.co.jp/seminar/20181002.html> (Nov. 1st, 2018)

Business promotion on the Moon - An Overview of the Business Consortium for Space Frontier Activities -

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The global trend which consider the space exploration, especially moon and cis-lunar exploration, from a business perspective, is increasing. Each national government is moving toward working with private entities on space exploration. Given these situations, it is an essential element for future exploitation to cooperate with private entities and to add industry perspective. Based on the background mentioned above, Mitsubishi Research Institute, Inc. and ispace, inc. have jointly created the business consortium for space frontier, called “frontier business consortium” at the end of 2016, aiming at considering business at moon and cis-lunar region on the initiative of industry. During about 3 years activities, we achieved various results, such as creating the future image of Moon and Cis-Lunar around 2030, evaluating the business potential of the natural resources (hydrogen fuel and regolith) and the resort hotel on the Moon, etc., and through this period, the number of participating companies increased from 10 to 30 in anticipation of future markets. In the presentation, an overview of the frontier business consortium such as goal, history and members as well as activities, achievements, outreach and future plans are explained.