

IAF HUMAN SPACEFLIGHT SYMPOSIUM (B3)
Utilization & Exploitation of Human Spaceflight Systems (3)

Author: Ms. Sayaka Umemura
Japan Aerospace Exploration Agency (JAXA), Japan, umemura.sayaka@jaxa.jp

Ms. Shiho Ogawa
JAXA, Japan, ogawa.shiho@jaxa.jp
Dr. Masaki Shirakawa
Japan Aerospace Exploration Agency (JAXA), Japan, shirakawa.masaki@jaxa.jp

Mr. Kunihiro Matsumoto
JAXA, Japan, matsumoto.kunihiro@jaxa.jp
Dr. Izumi Yoshizaki
Japan Aerospace Exploration Agency (JAXA), Japan, izumi.yoshizaki@jaxa.jp
Mr. Yasushi Hisadome
Japan Aerospace Exploration Agency (JAXA), Japan, hisadome.yasushi@jaxa.jp

KIBO UTILIZATION STRATEGY TO MAXIMIZE OUTCOMES

Abstract

The circumstances surrounding the Japanese Experiment Module Kibo have changed dramatically as reflected by changes in Japan's space policies in order to maximize Japan's RD outcomes and by changes in many countries' activities toward commercially- or government-led Low Earth Orbit (LEO) platforms. In response to such changes, the Japan Aerospace Exploration Agency (JAXA) has devised the Kibo Utilization Strategy as a guideline for expanding and promoting Kibo utilization toward maximized outcomes. Our goal is to establish Kibo as a valuable RD basis for science technology innovation by 2020 and to shift a part of the Kibo utilization platforms' service to become independent of JAXA by 2024. After the end of the ISS, a public-private joint venture will perform microgravity experiments in LEO. To achieve this goal, JAXA identified and prioritized the prospective four utilization areas as platforms: Drug-Design Supporting Platform, Aging Research Supporting Platform, Small Satellite Deployment Platform, and Exposed Facility (EF) Port Utilization Platform. Improvement in experiment technology is also important to achieve the goal and to support the prioritized utilization. JAXA has strengthened the main capability related to experimental technology based on quality, quantity, and variety. Kibo utilization is expanding and commercialization are progressing; Small Satellite Deployment Platform commercialization RFP; collaboration with a pharmaceutical venture on Protein Crystal Growth, a beverage company on Immune function, an electric company on optic communication demonstration and so on.

JAXA also promotes international cooperation through Kibo. In 2015, the governments of Japan and the United States (US) established a new partnership program, Japan-U.S. Open Platform Partnership Program (JP-US OP3), recognizing the strategic and diplomatic importance of the ISS. Under the JP-US OP3, JAXA and NASA have expanded areas of JAXA-NASA cooperation, such as sharing in mice and microbial samples, collaborative testing of technology for exploration, and future collaboration in utilizing the rodent research capabilities of both agencies. Collaboration with other countries (in Asia, Africa and South America) and with the United Nations (UN) is also prioritized. JAXA is utilizing the unique capability of Kibo to deploy the first satellites for some of those countries as part of either the Joint Global Multi-Nation Birds Satellite Project (BIRDS Project) and the UN KiboCUBE Project. In addition to small CubeSat deployment, other collaboration, such as material exposure to space environment, can provide access to space for developing countries.