

**Space BD**  
**Providing ISS “Kibo” External Use Service for R&D**  
**Demonstration Experiment of Secret Key Sharing**  
**Technology**

**One-stop support for launch, technical adjustment, and test review, with  
operations in orbit beginning September 4**

Tokyo—Space BD, a leading Japanese space startup, announces that we provided the service to use the Exposed Facility on the Japanese Experiment Module “Kibo” of the International Space Station (ISS) through SKY Perfect JSAT, one of the contractors in the research & development project being undertaken by the Ministry of Internal Affairs and Communications (MIC), and that operations began in orbit on September 4, 2023. The relevant companies under contract with MIC are working on a demonstration experiment of optical communication equipment to be used for research & development of quantum cryptography in satellite communications, leveraging the Exposed Facility use service.

A unique characteristic of this service, which utilizes the IVA-replaceable Small Exposed Experiment Platform i-SEEP located in the Exposed Facility of the ISS “Kibo,” is that it enables experiments to be conducted more quickly, at lower cost, and with less risk compared to experiments conducted by satellite. This is due to the fact that the resources needed for experiments, including power and communications, are supplied directly from the ISS.

■ **Services provided by Space BD in this project**

In addition to securing the JAXA launch opportunity and use slot for the Exposed Facility on ISS “Kibo,” Space BD also conducted the safety review to evaluate the safety of the device for the ISS itself and the crew on board the ISS in orbit, conducted the conformity review to evaluate the device’s compliance with i-SEEP interface requirements, and did the operational preparation to ensure reliable operations between the ISS in orbit and the ground, which were customized to meet the requirements of each of the companies involved.

Space BD makes use of the external operation cloud<sup>\*2</sup> developed by JAXA in the operations of this service. This allows the developer to communicate with the experiment device set up on the ISS from a location outside of JAXA that was pre-approved. Having Space BD provide a point of contact and support makes it possible to conduct a more efficient and straightforward in-orbit demonstration. Since this project called for a new communication method using an external operation cloud, Space BD coordinated with the developer, JAXA, and NASA, and made careful operational preparations, including bringing a mock-up of the experimental device to the NASA test facility,<sup>\*3</sup> which simulates the ISS and ground network, for testing.

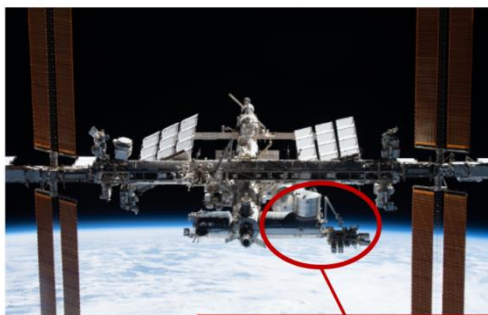
For this demonstration experiment, the plan is to mount the optical communication device on i-SEEP and demonstrate the capability of optical communication between the experiment device on the ISS and the optical ground station.

\*2 Reference URL (<https://space-bd.com/news/20221129.php>)

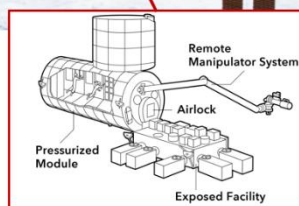
\*3 SONNY CARTER TRAINING FACILITY (©NASA)



#### ■ About IVA-replaceable Small Exposed Experiment Platform (i-SEEP)

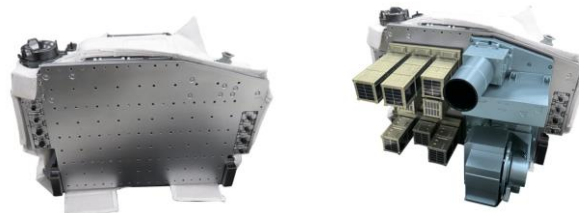


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The IVA-replaceable Small Exposed Experiment Platform (i-SEEP) is JAXA's Exposed Facility for Kibo. i-SEEP can provide power and communications directly from the ISS to the payloads.

More info about i-SEEP: <https://humans-in-space.jaxa.jp/en/biz-lab/experiment/facility/ef/i-seep/>



Space BD was selected by JAXA as the sole private sector operator for the i-SEEP utilization business, and since then Space BD has been working to develop the use of i-SEEP in a wide range of fields both in Japan and overseas, as well as to expand our services, including functions that enable use not only through JAXA facilities but also external operations by end users. Space BD will continue to contribute to the greater use of i-SEEP as well as the expansion of the use of space through i-SEEP, leveraging Space BD's specialist technical knowhow and our extensive business experience in the field of space.

#### Related Video

<https://www.youtube.com/watch?v=x0DLZ1k9xng>

#### <Contact>

### ■ Comment from Kyoichi Akiyama, Space BD Business Development Engineer



We are so pleased to announce that we completed the installation of the optical communication device on i-SEEP and have successfully begun the operational demonstration linking the ISS in orbit and the ground. We have achieved this milestone after many meetings and coordination with the developer, JAXA, and NASA to ensure the success of the mission for this device. We would like to express our sincere gratitude to everyone who has cooperated with us to this point, and we will continue to provide operational support for the optical communication device until all the demonstration experiments are completed.

### ■ About Space BD

We at Space BD are a one-stop provider of solutions for those in the space utilization field. Not only can we deliver payloads to space by a variety of methods and facilitate the use of International Space Station assets, but we can also assist with everything from business plans to hands-on technical operations. As of February 2023, Space BD's performance record marked over 70 satellite projects and over 300 orders.

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