

[Press Release]

Start of the Satellite Ground Network Services

PASCO to provide rental service for Satellite Ground Station facilities and operation system

PASCO CORPORATION (Headquarters: Tokyo, Japan; President and CEO, Kenichi Furukawa, hereinafter referred to as PASCO) will soon begin “Ground Station Network Service (Rental Services)” by utilizing two satellite ground stations located in Itoman City, Okinawa, and Chitose City, Hokkaido. PASCO will provide facilities and operational capabilities for the wide range of satellite operators and rocket companies.

“Satellite Ground Network Service” offers tracking and satellite operational services using ground stations for expanding the space business market.

■ Background

On May 29, 2017, the Japanese Government published its “Space Industrial Vision 2030”, and stated that the Space Industry will be one of the most growing industries for promoting the Fourth Industrial Revolution in Japan. The decreasing cost of the satellite manufacturing and launching cost have resulted in growing number of private sectors entering the satellite utilization service market. Also, private companies including ventures are starting to provide satellites and rocket launch services. Due to these trends, there is a further need for ground stations to provide an environment to download satellite’s Big Data from anywhere, anytime in the world.

PASCO has been operating Okinawa Satellite Ground Station since 2007 and Hokkaido Ground Station since 2011, having experience in downlinking satellite data, operating satellites and tracking rockets.

In addition to our current services, we hope to meet the market’s demands with our “Satellite Ground Network Service.”

■ Service Outline

The Satellite Ground Station serves as a crucial link between earth orbiting satellites and ground surface. But in order to operate a ground station, enormous investment, such as acquiring the land for operation, establishment of equipment and operation system, and furthermore high technical expertise and know-how are essential.



Also, communication periods between satellite and ground station are limited to when a satellite passes over the ground station. Therefore, it is necessary to establish network communication opportunities with multiple ground stations around the world.

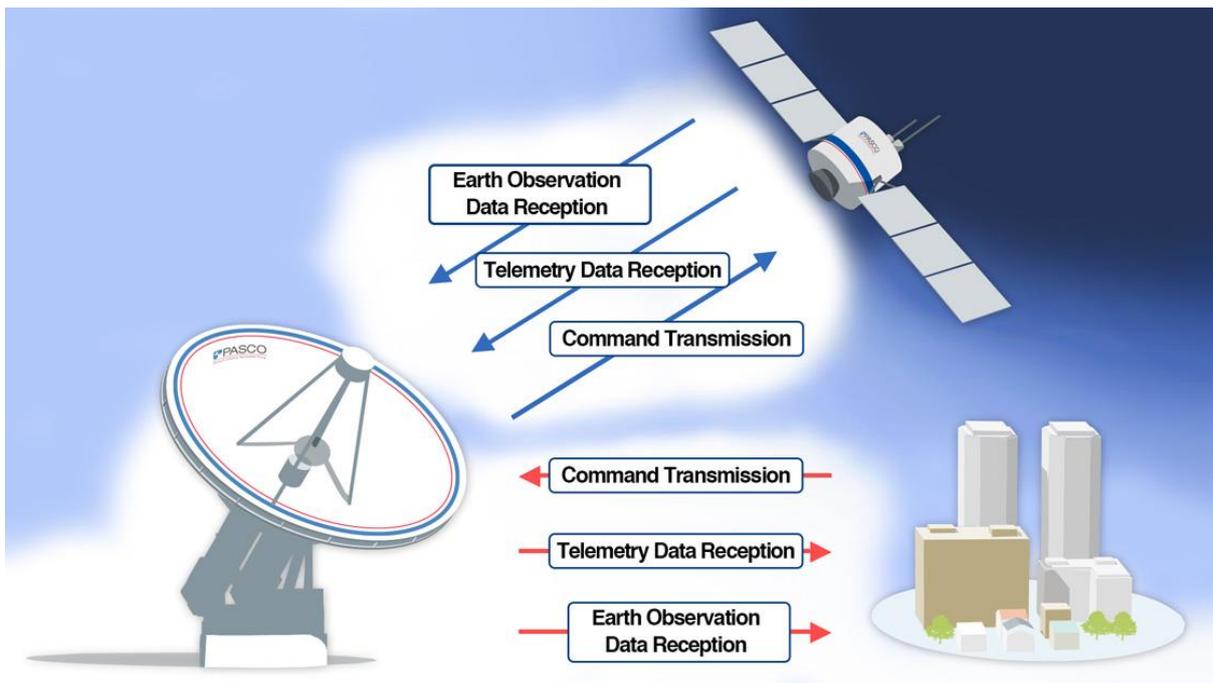
The two ground stations owned by PASCO can be accessed when the satellite passes over the Far East area including the entire area of Japan.

To ensure launch safety, rockets launched from Japan must face the sea, which means that many rockets often fly within visible ranges of PASCO's ground stations. By taking advantage of such geographical features, we are capable to provide rocket tracking services.

<Service Menu>

PASCO owns and operates 7.3m and 5.5m antennas with radomes at Okinawa ground station, and 7.5m antenna with radome in Hokkaido ground station.

By using these ground stations, PASCO is able to send command transmissions, receive Telemetry, Tracking, and Command (TT&C) and direct data reception of the earth observation data.



① Command Transmission (Sends observation commands to satellite)

Commands prepared by customer's operation center are sent to a ground station via ground network. Then, the modulated and power-amplified radio waves (S band) are transmitted to a satellite in space.

② Telemetry Data Reception (Receives satellite function monitoring data)

Receives radio waves (S band) from a satellite and transmits the demodulated data to customer's operation center via ground network.

③ **Earth Observation Data Reception (Receives remote sensing data from a satellite)**

Receives earth observation data (X band) and transmits the demodulated data to customer's data center via ground network.

④ **Rocket Telemetry Data Reception (Receive telemetry data from a rocket)**

Receives telemetry data (S band) from a rocket and transmits the demodulated data to customer's data center via ground network.

■ **Past performances and experiences**

Our satellite ground stations have been providing services such as data downlink and satellites operations for the satellites of Airbus Defense and Space (France and Germany, the Airbus Group) as listed below:

TerraSAR-X series (TerraSAR-X & TanDEM-X)

Pleiades series (Pleiades 1A & Pleiades 1B)

SPOT series (SPOT 6 & SPOT 7)

For currently operating ASNARO-1 satellite, PASCO has been implementing satellite control, downlinking data from its satellite control center for more than three years.

Also, PASCO performed the tracking of H2-A 37 Rocket launched on December 23, 2017, and 3rd Epsilon rocket launched on January 18, 2018. Downlinked telemetry data was transmitted to Tanegashima Space Center as part of support activity for the Japan Aerospace Exploration Agency (JAXA).

■ **PASCO Satellite Business**

PASCO started the satellite-based geospatial information business in 2005, and further expanded its full-fledged business after the launching of TerraSAR-X in 2007.

As of the end of January 2018, PASCO possess the rights to utilize 24 commercial satellites operated around the world, selling satellite imagery worldwide and providing solution services by utilizing satellite data such as for the landslide monitoring, ground deformation monitoring, urban change analysis and agricultural land management etc.

■ **Contact**

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