

The ABS satellite operations team has broad knowledge of satellites, unique experience and successful on-orbit satellite operations from handover to de-orbit. We now offer our TT&C facilities and satellite services expertise to satellite owners and operators through **ABSPlus SatOps**.

Satellite Operation Center

The ABS primary Satellite Operations Center (SOC) is housed in Subic Bay's teleport facility in the Philippines. A back-up SOC is located in Metro Manila, Makati City, and serves as a fully functional, redundant satellite operations center.

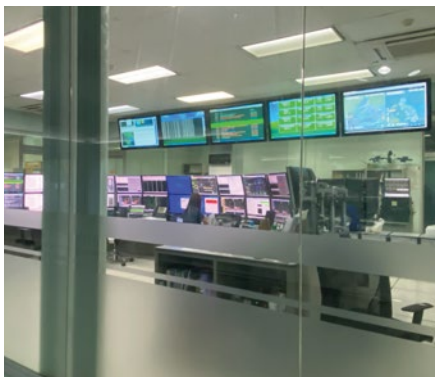
Services Available:

- Full turn-key satellite TT&C operations on a long-term basis
 - Satellite command, control and monitoring using state-of-the-art ground systems software and equipment.
 - Satellite orbit determination, maneuver planning, maneuver reconstruction and propellant management.
 - Satellite health analysis and reporting, anomaly resolution, performance trending, payload monitoring, payload management and reconfiguration.
- Short-term operations during satellite relocations to fill customers' coverage gaps or for disaster recovery.
- Equipment hosting areas for payload monitoring equipment including equipment set-up, reconfiguration and maintenance.
- Remote satellite monitoring via TT&C and M&C equipment or any other satellite or network operations required.
- Hindrance Analysis and Prediction (HAP) predicts interference within other GEO spacecraft domain and gives customers 100% confidence during their draft and de-orbit missions.



The ABS SOC's have fully-redundant connectivity to ABS' network of TT&C antennas spanning over three continents. Both SOC's utilize our network to access both a primary TT&C antenna and a geographically diverse back-up TT&C antenna, with each antenna dedicated to one satellite. These antennas can also be used for payload monitoring and commercial services to meet your needs. ABS can also use a customer-provided antenna for satellite TT&C operations.

SOC Features and Support:



- Both SOC facilities have fully redundant, independent data lines and uninterruptable back-up power with long duration generators
- Equipment hosting areas for TT&C or payload monitoring equipment are monitored around the clock, 365 days a year
- Fully controlled and monitored environment to maintain temperature and humidity.
- Staffed 24/7 with a team of experienced satellite controllers, satellite engineers and mission analysis professionals



Satellite Tracking Telemetry and Control Services

ABS operates and manages a fleet of six satellites through our own tracking, telemetry and command (TT&C) networks and satellite control centers. Our innovated experience has allowed ABS achieve many "Industry Firsts" in satellite operation:

- The first all-electric commercial satellite on-orbit
- The first operations outside of earth sensor linear range
- The first electric satellite to deplete xenon and continue on chemical propellant

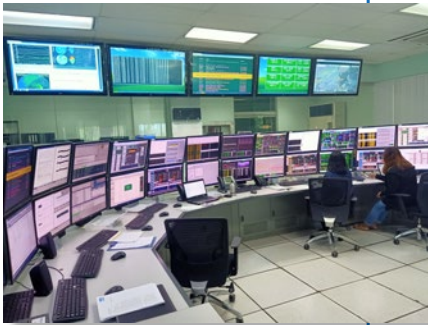
ABS has experience of operating spacecraft in adjoining station keeping boxes within the same orbital slot, operating spacecraft in extended inclined orbits, and has been the first operator for new bus and subsystem designs. We have successfully integrated both newly launched spacecraft following manufacturer handover and previously operated spacecraft from other satellite owners and operators. ABS is adequately prepared to integrate additional spacecraft into ABS' current operations.

ABS can offer full command and control of your on-orbit satellite from our state-of-the-art, fully redundant satellite control center located in Subic Bay, Philippines. We have experience with most major spacecraft busses and can support your satellite operational requirements, including any unique operations needed for your spacecraft.

Our team is highly qualified and can provide satellite TT&C facilities and expertise to support third party/your spacecraft on a long-term or short-term basis. We can also provide network equipment and satellite-compatible baseband units for a total turn-key solution or for interim short-term operations to fill your coverage gaps during satellite relocations or for disaster recovery.

For long-term operations, you can save the expense of owning and operating your own facilities and can keep control of your baseband and network equipment with minimum capital expenditure. You can feel confident that day-to-day operations, flight dynamics, and operations engineering functions will be executed by our experienced technical team to meet the spacecraft manufacturer's specifications as well as your requirements.

Turn-key Satellite Operations:



- TT&C systems and flight operations procedures preparation and maintenance.
- Daily satellite activity planning, scheduling and execution.
- Subsystems health and safety management and telemetry monitoring and trending.
- Space situational awareness activities.
- Satellite anomaly response, recovery, and investigation management.
- Satellite health and operations reporting and insurance and third-party support.
- Satellite mission changes, drift/relocation, and final safe retirement operations.

Contact: For further inquiries about **ABSPlus SatOps**, email to: ABSPlus@absatellite.com

About ABS

ABS is a global satellite operator and offers a complete range of tailored solutions including broadcasting, data and telecommunication services to broadcasters, service providers, enterprises and government organizations.

ABS operates a fleet of satellites; ABS-2, ABS-2A, ABS-3A ABS-4/Mobisat-1 and ABS-6. The fleet covers over 93% of the world's population across the Americas, Africa, Asia Pacific, Europe, CIS and Russia.

Headquartered in Bermuda, ABS has offices in the United States, UAE and Asia.