

# APEX™ COMMANDER

## GROUND STATION MANAGEMENT SYSTEM

SeaSpace currently supports processing of the following satellites:

- ALOS-PALSAR, PRISM, and AVNIR II
- Aqua/Terra-MODIS
- ERS-1 and 2
- Envisat-ASAR and MERIS
- JERS-1
- SPOT-2 and 4
- Radarsat-1 and 2
- EROS A and B
- Cartosat-2, 2A and 2B
- Resourcesat-1 and 2

Planned support for other missions includes:

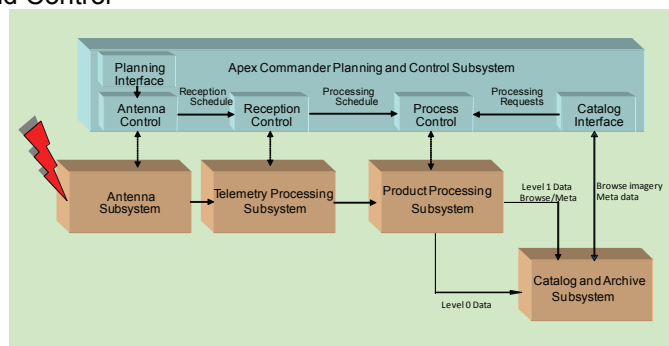
- GeoEye-1
- TerraSAR-X
- WorldView-1 and 2
- COSMO-SkyMed
- LDCM
- Komsat-2, 3, and 5

### PRODUCT OVERVIEW

SeaSpace's Apex™ Commander management system offers fully automated operation and control of a SeaSpace Apex™ ground station. Apex Commander is a flexible and complete integrated solution within a consistent, easy-to-use .NET-based graphical user interface accessible locally or over the internet via standard web browsers.

Apex Commander provides ground station control that includes:

- Acquisition Planning
- Antenna Scheduling and Control
- Telemetry Capture
- Image Processing
- Archive Population
- Image Cataloging
- Browse Image and Metadata Creation
- Product Ordering
- Operations Monitoring



Automated control and management of real-time and data processing events are performed by Apex Commander's Control Processor (COP). COP provides a flexible, configurable, multi-threaded, distributed task scheduler which manages all aspects of the Apex ground station.

### KEY FEATURES

- Comprehensive integrated ground station control software
  - Automates all functions
  - Consistent, easy-to-use .NET-based GUI
- Multi-threaded Control Processor
  - Real-time monitoring
  - Distributes processing across multiple computers
- Multi-mission Acquisition planner
  - STK-based
  - Plans satellite passes and sensor acquisitions
- Intelligent Antenna Scheduler
  - Coordinates antenna reception across multiple satellites and antennas
  - Calendar-like scheduling interface
- Image Catalog and Browser
  - SQL server-based meta-data queries
  - Browse image display
  - Automatic population of catalog and archive
  - Supports on-line and off-line media
- Efficient product ordering interface
  - Automatically generate image products
- Certified Image Product Processors
  - Supports virtually all satellite missions
  - Generates Level 0-2 standard image products
  - Easily upgradeable to add additional sensors
  - Advanced image exploitation algorithms



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EARTH ON DEMAND



# APEX COMMANDER™

## GROUND STATION MANAGEMENT SYSTEMS

Acquisition planning is accomplished with Apex Commander's easy-to-use swath planner tool. The integrated STK-based swath planner assists users in planning satellite acquisitions by showing the observation area of a given satellite pass depending on such parameters as date, orbit, and sensor characteristics.

Once acquisitions are scheduled and confirmed, Apex Commander's intelligent antenna scheduler can task and optimize multiple downlink antennas. Using a calendar-like interface, users can review reception schedules, set priorities, and schedule antenna hand-offs.

Apex Commander includes a complete image catalog and archive system for browse and metadata processing, catalog queries, and hierarchical image storage management. The SQL Server RDBMS-based catalog is automatically populated during ground station operations. As data is received it is processed to generate browse images and extract metadata. Using the catalog GUI users may:

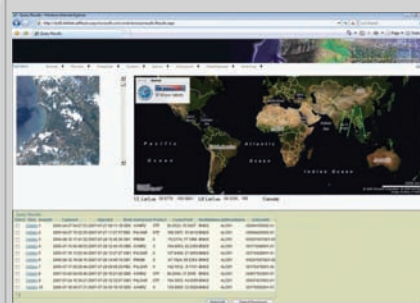
- Enter search criteria to find images
- Select images of interest
- Order higher-level products
- Include user-defined processing

Apex Commander's image archive, based on Symnatec Backup Exec, interfaces between image processing functions and the catalog. The archive keeps track of all products generated in the ground station and cross-references them with the catalog. The archive is specially designed for storage of image data, keeping data sets together to save time when recalled for processing. The archive supports a hierarchical storage management approach and may be linked to:

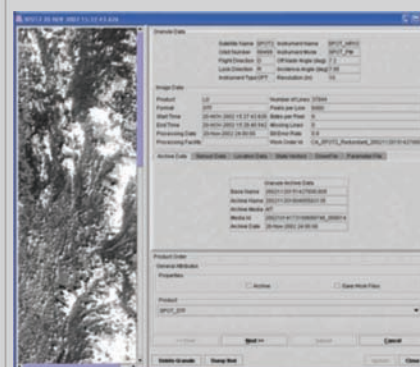
- An on-line disk array
- A single-drive off-line unit (tape drive, CD-RW, etc)
- A robotic library
- Or any combination

Apex Commander's production order interface is an extension to the catalog that allows users to interactively order data processing.

Apex Commander seamlessly integrates world-class SAR and optical image processing systems. Customers can select basic and value-added processing, supporting Level 0 through Level 2 products, incorporating sensor-specific radio-metric geometric corrections to produce standard certified image products.



Apex Commander assists in planning satellite acquisitions through its swath planner GUI



Apex Commander GUI shows browse and metadata results from a catalog query