OVERVIEW

Braxton’s ControlPoint™ (AceCP) is an Automated Space Vehicle and Ground Station Command and Control (C2) application with a “plug-in” architecture which provides nearly lights-out Telemetry, Tracking and Commanding (TT&C) operations. ControlPoint™ seamlessly integrates with Scheduling Tools or other Mission Requests to allocate resources and initiate mission tasks. ControlPoint™ then configures the appropriate equipment, collects tracking and telemetry data, and automatically sends spacecraft commands. Once ControlPoint™ collects the applicable data such as telemetry, tracking, dump data, or anomalies, it automatically forwards the data for analysis. Finally, ControlPoint™ de-configures and releases the equipment for the next operation. ControlPoint™ supports a “plug-in” architecture which scales as our customer’s system scales to accommodate specific mission requirements. As an integrated package, ControlPoint™ offers a turnkey TT&C solution combined with automation of common tasks to reduce workloads, minimize errors, and streamline mission operations.

HIGHLIGHTS

- Automated Integration with Antenna Scheduling
- Automated Ground Station Control and Status
- Automated Data Forwarding for Analysis
- Automated Command Plan Execution
- Automated Anomaly Detection
- Automated Turnkey TT&C System

BENEFITS

- Reduces Integration Time and Cost
- Reduces Manpower for Operations
- Improves Ops Efficiency and Performance
- Reduces Potential for Operational Errors
- Reduces Interruption of the Mission
- Rapid Delivery without Expensive Integration Costs

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CAPABILITIES

- **Automation**: Provides the capability to automate the cycle of operations from Scheduled Tasks, Control and Status the Ground Station equipment and functions, and SV Command and Telemetry Operations through the use of Electronic Command Plans (ECPs).

- **Ground Station Control and Status**: Provides the capability to control and status the Ground Station equipment and functions. The operator has situational awareness by utilizing the tabular displays and controls to view the real-time status information received from the ground station.

- **Ground System Hardware Control and Status**: Provides the ability to control and status the ground system hardware within the Space Operations Center (SOC). In addition to providing a control and status interface to the Braxton family of ground system hardware, the Ground Control and Status Plug-in provides interfaces to other Front End Processor (FEP) vendors.

- **Ground Track**: Provides a visual representation of the ground track of the SV for the current contact. The ground stations which constitute the ground control network for the SV are also visible on the world map. The Ground Track also plots the expected versus actual azimuth and elevation of the SV at the selected ground station in real-time.

- **Telemetry Views**: Provides a hierarchical set of displays to monitor the SV telemetry. Telemetry data is displayed on hierarchical telemetry screens which provide an Out of Limits (OOL) roll up capability, providing the operator with excellent situation awareness of SV health and status. Telemetry can be viewed during real-time SV contacts, or during playback of recorded telemetry. Additional capabilities within the telemetry plug-in include: OOL color coding, Telemetry metadata display, Telemetry decryption device control and status, Telemetry recording and playback, and Derived telemetry algorithms.

- **Commanding Database**: The Commanding Database plug-in provides the user interface for sending command messages to an SV. The Commanding Database plug-in provides the capability to send any array of commands, from a single to a complex upload to the SV.

- **Electronic Command Plans**: An ECP consolidates a series of SV commands into a graphical pass plan which the operator creates to meet the mission concept of operations. The ECP can be automatically executed by ControlPoint™, performing all of the mission operations. Each step can be checked for off-nominal conditions thereby ensuring mission integrity.

- **Supporting Functions**: Provides System Logging, User Manager & System Status, and Real-Time Asset Schedules.

HIGHLIGHTS

**Schedule Plugins**
- Timeline Support Window
- Schedule Status
- Edit/Delete Scheduled Tasks
- Add New Tasks

**Ground Site & Equipment Plugins**
- Ground Station Checklist
- Ground Equipment

**Configuration & Deconfiguration**
- Time Configuration: Simulation vs. Real-time Operations
- Site Status and Control
- Geodetics

**Satellite Plugins**
- Angle Status
- Once-Per-Second Antenna Status
- SV Tracking Status
- Antenna Polar View
- Ground Track View
- Vehicle Trajectory
- Telemetry Status
- Telemetry Limit Sets
- Telemetry Playback
- Command Database Ingest
- Commanding Database
- Sending Commands

**Prepass Operations**
- Telemetry Tests
- Command Tests
- Slave Tests

**TLE Tools**
- TLE Creation/Ingest/Save
- TLE Bias
- Look Reports

**System Logging**

**User Management**

**System Status**