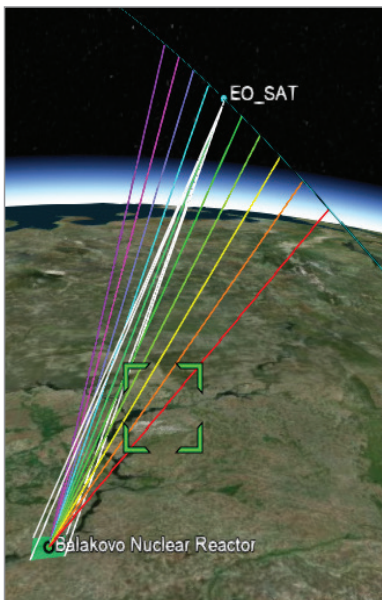# Accelerated Tasking Orchestration

We better match an ever-larger set of complex and dynamic intelligence needs to a disparate market of content suppliers to meet warfighting and intelligence needs within operationally relevant timelines.

Riverside Research's Collection Planning Suite (CPS) is an mission-agnostic modeling and simulation environment and an automated constellation orchestration tool for space-based GEOINT and Space Domain Awareness (SDA). The CPS leverages a rapidly growing cross-domain and diverse supplier market enabling greater flexibility to analysts to solve problems in unique ways and is operating in the National Geospatial-Intelligence Agency enterprise today.

CONSTELLATION ORCHESTRATION

The service-oriented CPS supports satellite collection research and analysis, feasibility studies, strategy development, and daily planning for a multi-phenomenology constellation. It is also ICD 503-compliant and supports multi-classification constellations in a single instantiation.

Using system models, the CPS can easily modify, manage existing, or quickly add new content providers. With our agnostic approach, we better match an ever-larger set of complex and dynamic intelligence needs to a disparate market of content suppliers to meet warfighting and intelligence needs within operationally relevant timelines.

The CPS creates optimized collection plans, aligning content suppliers against collection needs, using parameters and constraints including priority, geometry, solar/lunar lighting, and cyclic parameters, and accounts for real-time weather, local terrain, threats, and other conditions. Our more efficient supplier allocation results in higher probability of meeting the analytical intent.

SPACE DOMAIN AWARENESS (SDA)

Building upon our CPS technology, Riverside Research offers a containerized feasibility and orchestration solution that integrates SDA and GEOINT collection planning. With an impending surge of multi-purpose satellites, our solution better optimizes fleet performance to improve mission throughput and overall intelligence value.

HIGH-CADENCE GEOINT (HCG)

Riverside Research leverages our CPS technology to quickly order GEOINT content based on structured observations mixing in collects from national, commercial, foreign, and civil sources regardless of orbit, phenomenology, or classification to improve persistence, resiliency, and support varied campaigns and timelines. Our HCG solution capitalizes on a super constellation to offer pseudo persistence to better maintain custody of high-value mobile objects and understand adversary intent or activity pattern.
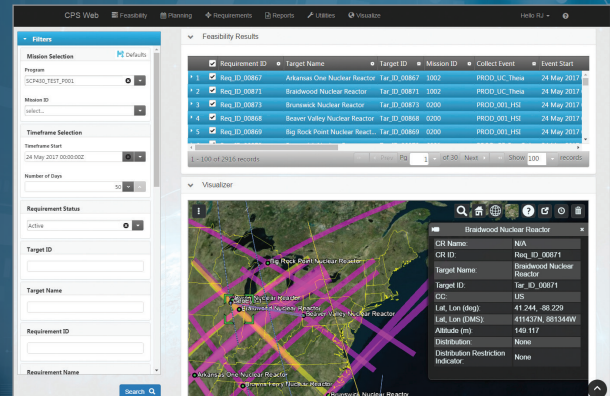
SPECTRAL FEASIBILITY

Given the ever-increasing capabilities of spectral sensors, Riverside Research collaborated with image scientists and spectral scientists to develop a spectral feasibility solution that uses community accepted, computationally rigorous radiation transfer algorithms and multiple commercial, government, and civil environmental datasets to model the spectral absorption, transmission, emission, and scattering characteristics of the atmosphere to improve the overall quality of the collected image and provide actionable information in a timely manner.

14 YEARS OF SUCCESS (TRL-9)

As an operational, license-free, TRL-9 system, CPS provides the Defense and Intelligence Community with collection feasibility analysis, planning, business analytics, and 4D visualization. Regardless of orbit or phenomenology, CPS automates and streamlines constellation orchestration in minutes.

Collection Orchestration

- » Automates single satellite or constellation planning
- » Orchestrates sources by performance, strategy, and conditions
- » Designs and tailors collection strategy to exceed info needs
- » Uses Tip-and-Cue capability for time-dominant operations
- » Conducts pre- and post-launch studies to measure performance
- » Finds best "athlete" to conduct collection across variety of sources
- » Determines feasibility before submitting a requirement
- » Performs collection gap and overflight planning
- » Orchestrates special collections on space-based targets
- » Manages needs internally or from an external source
- » Includes robust set of need parameters and constraints
- » Supports national, civil, commercial, classified, and foreign systems
- » Orchestrates multi-level classification and concealed needs

System Features

- » AWS/C2S compliant; scalable and elastic features
- » Windows Server application; mobile friendly
- » Oracle database; extensible to other type databases
- » ICD 503 multi-level security compliance
- » Authenticates using PKI, IAA, and/or LDAP
- » Role-based controls for all functionality
- » Agnostic models reflect system capabilities and limitations
- » Adds, modifies, and manages models without code changes
- » Source models support all phenomenologies
- » Easily integrates into your system of systems
- » Supports multiple interfaces and protocols, REST, SOAP and JSON, WSDL
- » Accepts data from and supplies to external partners (e.g., needs, weather)
- » Supports an interactive 4D globe and map
- » Uses WebGL technology– 4D without a client plug-in