Analytic Orchestration

Automated tip-and-cue for imagery collection orchestration

The US government is faced with large amounts of data from multiple commercial vendors with limited ability to process that data. Tasking, collection, processing, and dissemination of data is challenging within tactical timelines.

Riverside leverages our knowledge of commercial providers through a vendor dashboard to aid decision makers. That information is then passed to open-source modeling tools to analyze collection opportunities and select the best imagery for a specific use case. This automation of important analytic steps increases efficiency and delivers information faster.

Procedure

- Receive wide field-of-view (WFOV) sensor detection
- Analyze collection opportunities and automatically select the best option
- Automatically send a tasking message to the vendor to collect and disseminate the imagery

Incorporating multiple domains.

Key Features

- User-friendly vendor dashboard
- Open-source and vendor agnostic solution
- Automation of analytic processes
- Dynamic tasking of imagery collection

RIVERSIDE RESEARCH

Analytic Orchestration

Previous efforts addressed the technologies to enable the ingestion and processing of data but did not showcase applications specific to the Space Domain. Hiring developers and subject matter experts allowed this IRAD to deliver targeted capabilities and prototypes for customer demonstrations and past performance scenarios.

Commercial Space Domain Awareness (SDA): Developing integrated processing and analysis software to extract insights from WFOV space-based commercial sensors to enable automated tipping and cueing of commercial satellite systems.
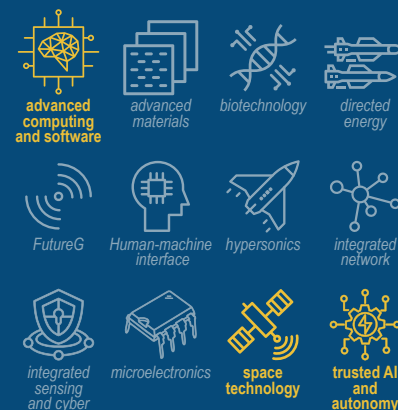
Next Steps

Research in this area will continue throughout 2025 and into 2026 as additional capability gaps are identified. AI and automation will be key drivers of innovation in this area, and it is expected that new algorithms will be developed to address customer specific needs.
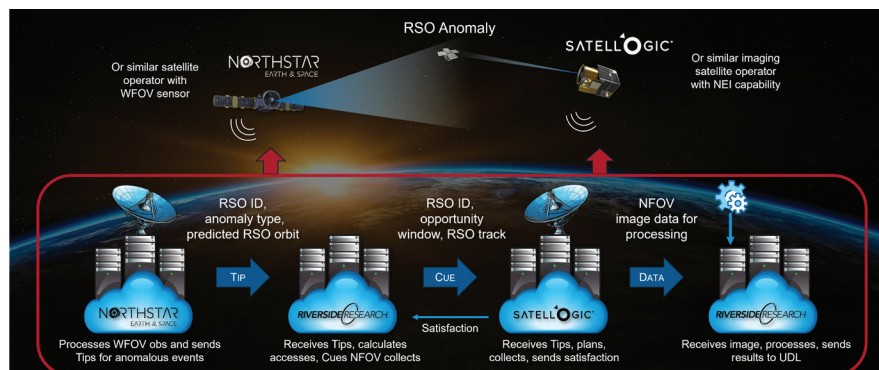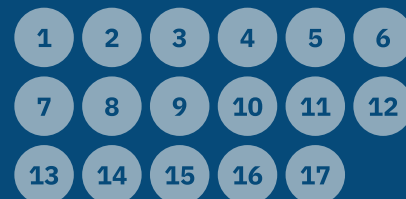

Lifting all WFOV SDA anomaly detection and tip-and-cue processing to run on-orbit enables commercial non-Earth imaging collection against resident space objects (RSOs) at tactically relevant timescales.

Critical Tech Areas

advanced computing and software

advanced materials

biotechnology

directed energy

FutureG

Human-machine interface

hypersonics

integrated network

integrated sensing and cyber

microelectronics

space technology

trusted AI and autonomy

DoD Priorities

1 2 3 4 5 6
7 8 9 10 11 12
13 14 15 16 17

1. Southwest Border Activities
2. Combating Transnational Criminal Organizations in the Western Hemisphere
3. Audit
4. Nuclear Modernization (including NC3)
5. Collaborative Combat Aircraft (CCAs)
6. Virginia-class Submarines
7. Executable Surface Ships
8. Homeland Missile Defense
9. One-Way Attack/Autonomous Systems
10. Counter-small UAS Initiatives
11. Priority Critical Cybersecurity
12. Munitions
13. Core Readiness, including full DRT funding
14. Munitions and Energetics Organic Industrial Bases
15. Executable INDOPACOM MILCON
16. Combatant Command support agency funding for INDOPACOM, NORTHCOM, SPACECOM, STRATCOM, CYBERCOM, and TRANSCOM
17. Medical Private-Sector Care