



TRACSS

Traffic Coordination System for Space

Office of Space Commerce
U.S. Department of Commerce
September 2026

Ethan Baumann
TraCSS Program Manager
Acting

Enabling the U.S. Space Industry



The Office of Space Commerce (OSC) **enables a world-leading U.S. space industry** and **ensures that the United States remains the flag of choice** for space businesses and operations.

Advocate

- **Coordinates space commerce policy issues and actions** within the Department of Commerce.
- **Engages with industry to expand commercial markets** & drive investment into the sector.
- **Act as an industry advocate** within the Executive Branch.

Operator

- **Provides an open, trusted source of space safety data** for all non-U.S. Government operators.
- **Leads the global conversation on space traffic coordination**, supporting a long-term vision where safety operations.

Regulator

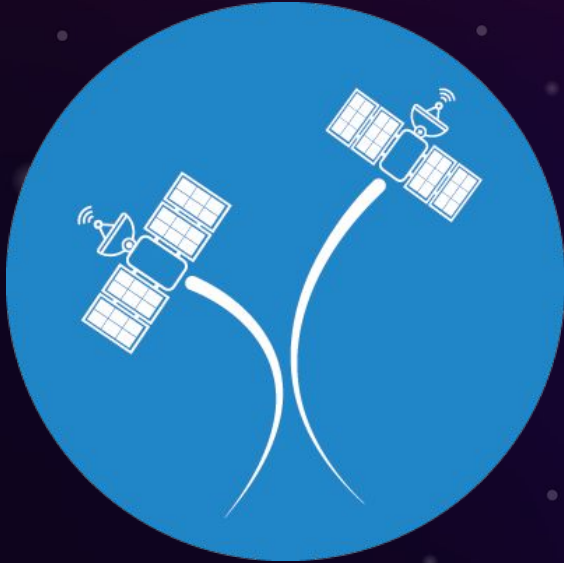
- **Provides light-touch regulation** to license U.S. operators of private remote sensing systems.
- **Monitor licensees** for compliance with U.S. law and regulation.
- **Protects national security**, foreign policy, and international obligations.



The Traffic Coordination System for Space



The Traffic Coordination System for Space (*TraCSS*) is the U.S. Department of Commerce's civil space situational awareness capability - built to improve spaceflight safety and support growth in the U.S. commercial space industry.



**Provides an open,
trusted source of
space safety data**



**Spaceflight safety
services available
on [TraCSS.gov](https://tra-css.gov)**

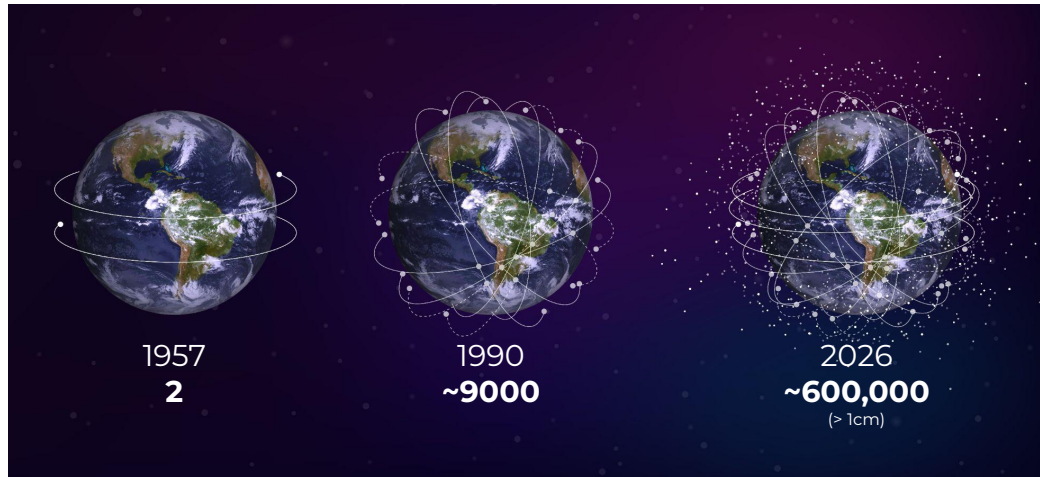


**Leads the global
conversation on space
traffic coordination**

Space Situational Awareness (SSA) and the Office of Space Commerce



- Number of objects in space has been increasing rapidly



- OSC supports international coordination and transparency on SSA and the growth of U.S. commercial SSA sector

- **SPD-3 (2018) calls for DoC to take on this responsibility, and “make available basic SSA data and basic STM services (including conjunction and reentry notifications)”**
 - Enables improvements in SSA to ensure space safety and ensure continued investment in space
- **Executive Order on “Ensuring American Space Superiority” (2025) reaffirmed SPD-3 and called for “enabling the sustainability of space operations through effective and responsible approaches to space traffic management”**

Traffic Coordination System for Space



TraCSS Timeline



September 2024

TraCSS Minimum Viable Product goes live with 9 initial beta users

August 2025

TraCSS Presentation Layer integrated; transition to pilot program status

March 2026

TraCSS Production Environment Released with **17** initial Pilot Users

April 2026

TraCSS.gov goes live
Onboarding of waitlisted spacecraft owner/ operators

May 2026

TraCSS.gov registration open to all spacecraft owner/ operators for pilot program access

June 2026

First National Government Accounts added

Present

TraCSS pilot phase and onboarding continue
70+ pilot users
10+ national government accounts

During the Pilot Phase, TraCSS Data and Data Products are to be used for Evaluation Purposes Only

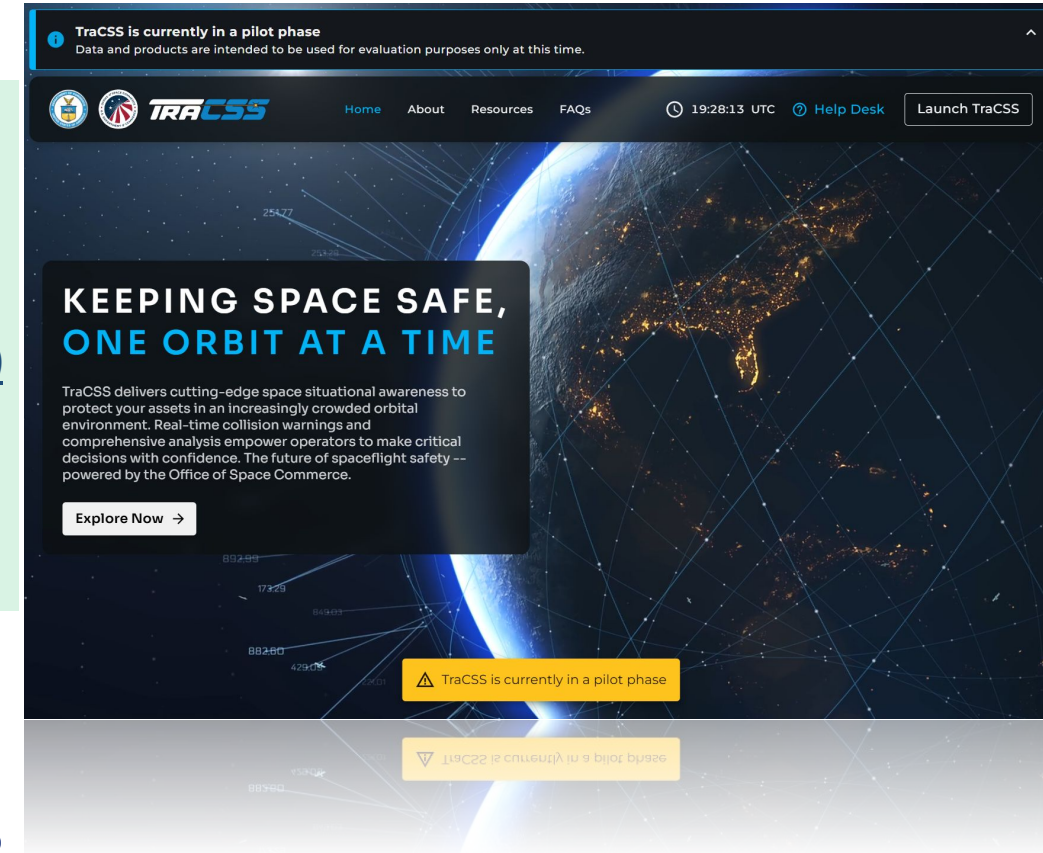
TraCSS' Safety Services



TraCSS provides spacecraft operators with services to support spaceflight safety, including:

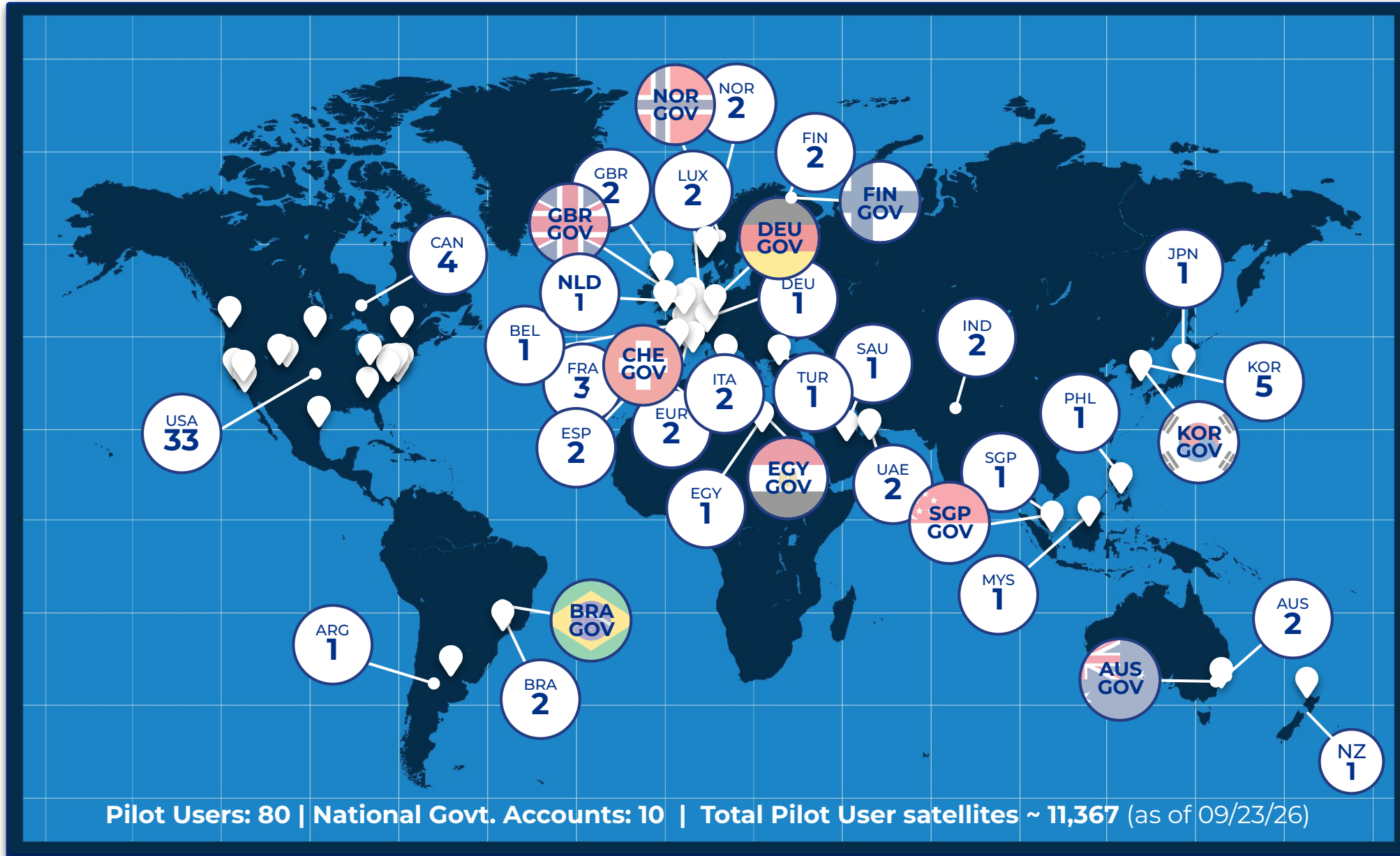
Currently Available to Pilot Users

- ✓ **Conjunction screening every four hours using catalog and O/O ephemerides, and updated space weather info**
 - Twice as frequent as current system
 - Enables more timely, accurate conjunction info
- ✓ **Operational & Candidate maneuver screening (on demand)**
 - Results in seconds or minutes, not hours
- ✓ **Owner/Operator contact directory**
 - Enables coordination with other operators
- **Public SSA data and information *[Coming Soon]***
 - Facilitates internal analysis and international coordination
- **TraCSS Operations Team staffed 15 hours / 7 days a week to support Pilot User questions and system monitoring**



During the Pilot Phase, TraCSS Data and Data Products are to be used for Evaluation Purposes Only

TraCSS Pilot User Organizations - HQ Map



- **In accordance with SPD-3 and U.S. law, TraCSS prioritizes transparency and data sharing**

- Information is made openly available unless there is a specific security or proprietary need to restrict access

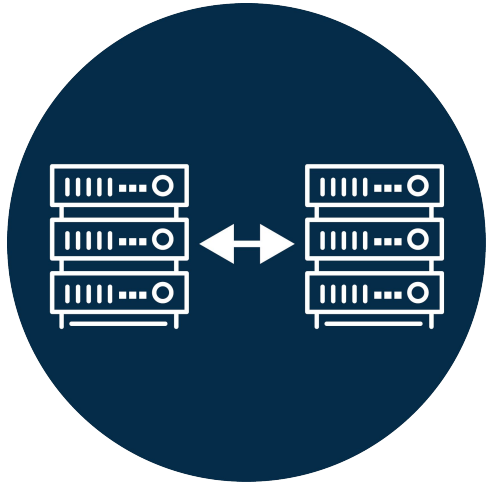
- **Benefits multiple user groups:**

- Operators that want to do their own analysis
- Entrepreneurs and commercial SSA providers that use data and information as foundation for new products and services
- Research community that uses data and information to advance the state of the art for spaceflight safety
- Other national and regional SSA providers that can use the data and information to improve coordination and alignment among SSA systems to provide more consistent information to spacecraft operators



Open data shared:

- TraCSSCat - List of all unclassified objects in space, including spacecraft attributes provided by owner/ operators, NASA, and other sources
- Spacecraft location information in TLE format (aka TLE catalog)
- High-accuracy spacecraft location (aka SP Ephemerides w/o covariance)
- TraCSS Conjunction Notifications (TCNs): CDMs for events above a set risk threshold
- Owner/ operator ephemerides with maneuver plans: O/O's own information about where they are located and where they are going
 - In-line with industry best practices, we facilitate open sharing of ephemerides - provide them to TraCSS and we make them publicly available
 - Enables operator analysis, ensures commercial and international SSA systems have accurate information without need to upload to every system individually



TraCSS Registered User Account Types



**Spacecraft
Owner/Operator**

Any entity with legal decision-making authority over the operation of a spacecraft (government or private)

- E.g. Iridium, ESA

**National
Government
(Read only)**

Governmental entity (or entities) from a single country interested in monitoring the space safety situation of all spacecraft affiliated with their country. This is a 'read-only' account.

- E.g. France, Thailand

TraCSS 3rd-Party Access & Open Data



3rd-Party Partner

3rd-party organizations with a contractual relationship with a TraCSS Registered User

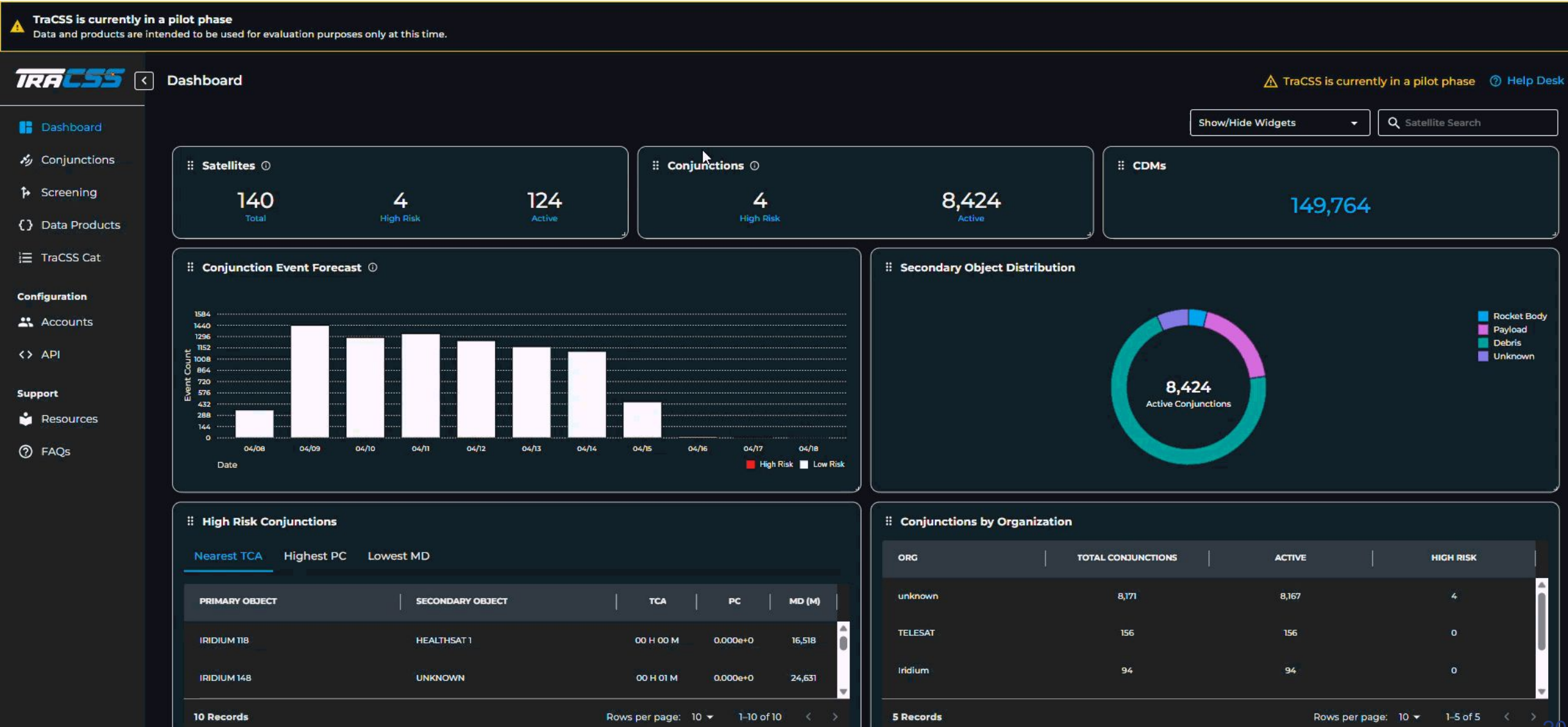
- E.g. Company with a contractual relationship to provide SSA services for Satellite Owner/ Operator
- Added as a sub-user by the satellite owner/ operator
- Provided access to subset of satellites determined by O/O

Open-Data User

Person(s) or organization(s) that do not fall under the O/O, National Government, or 3rd-Party Provider category

- Registered User account NOT required
- Provided open-data access to publicly available TraCSS data products

TraCSS App - Dashboard Page (GIF)



TraCSS App - Conjunctions Page (GIF)



TraCSS is currently in a pilot phase
Data and products are intended to be used for evaluation purposes only at this time.



Conjunctions

TraCSS is currently in a pilot phase [Help Desk](#)

Dashboard

Conjunctions

Screening

Data Products

TraCSS Cat

Configuration

Accounts

API

Support

Resources

FAQs



Viewing 85 of 85 satellites

Filters (0)

Sort by
Nearest TCA

Satellite Search

41920 IRIDIUM 102

NEAREST TCA, HIGHEST PC, AND LOWEST MD
Conjunction



TCA Passed

PC

0.000e+0

MD

7,696 m

View all 2 Events

43077 IRIDIUM 141

NEAREST TCA AND HIGHEST PC
Conjunction



TCA 00 H 01 M

PC

0.000e+0

MD

3,576 m

LOWEST MD
Conjunction



MD 1,938 m

TCA

03 H 22 M

PC

0.000e+0

View all 7 Events

41924 IRIDIUM 108

NEAREST TCA AND HIGHEST PC
Conjunction



TCA 00 H 01 M

PC

0.000e+0

MD

18,812 m

LOWEST MD
Conjunction



MD 11,750 m

TCA

00 H 59 M

PC

0.000e+0

View all 2 Events

43575 IRIDIUM 163

NEAREST TCA AND HIGHEST PC
Conjunction



TCA 00 H 05 M

PC

0.000e+0

MD

23,117 m

LOWEST MD
Conjunction



MD 9,062 m

TCA

03 H 52 M

PC

0.000e+0

42807 IRIDIUM 118

NEAREST TCA AND HIGHEST PC
Conjunction



TCA 00 H 10 M

PC

0.000e+0

MD

16,518 m

LOWEST MD
Conjunction



MD 622 m

TCA

01 H 50 M

PC

0.000e+0

43255 IRIDIUM 148

NEAREST TCA AND HIGHEST PC
Conjunction



TCA 00 H 12 M

PC

0.000e+0

MD

24,631 m

LOWEST MD
Conjunction



MD 24,570 m

TCA

01 H 00 M

PC

0.000e+0

TraCSS Public vs Registered User API



TraCSS Public API

Available to anyone interested in obtaining TraCSS open data products. A registered user account is not required.

- Available through the Public Data service
- Access / download the TraCSS Cat
- Access / download O/O provided operational ephemeris via the OCM file format with covariance
- Access / download Orbit Mean Elements Messages (OMMs) with Two-Line Elements (TLEs) included
- Access / download Break-Up Notifications (BUNs)

TraCSS Registered User API

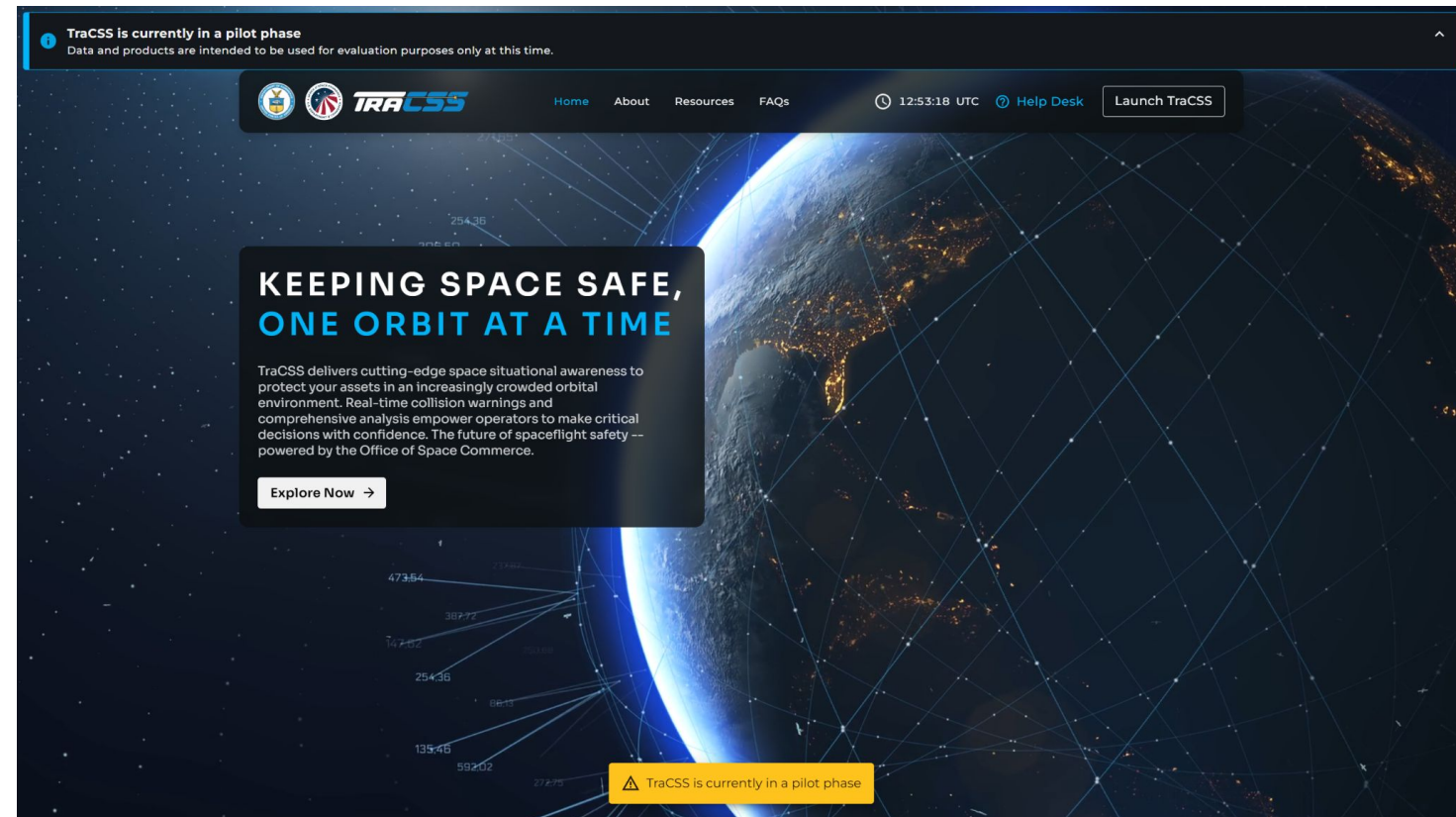
Available to Satellite O/Os and 3rd-Party Providers who have registered for an account on TraCSS and claimed operational satellites

- Access to all Public API data and services
- Access / download full CDMs for your spacecraft
- Access to the TraCSS O/O Contact Directory
- Upload ephemeris to TraCSS via the OCM format
 - Routine and On-Demand Screening
 - On-Demand Screening - Candidate and Operational (Singular and Batch screening)
- Access / download Tracking and Impact Prediction Messages (TIPs)

Sign Up for TraCSS



Onboarding is available for spacecraft owner/ operators
and national government users on TraCSS.gov



O/O Sign-Up Process



Visit app.tracss.gov and select “Sign-Up”

- Organization Name
 - If not in drop down, please contact the TraCSS team to be added at tracss.outreach@noaa.gov
 - Name can be changed after sign-up
- User Agreement
 - You must scroll through to acknowledge
- First person to sign-up will be granted admin role
- Subsequent users should not register for an account, they should be added by the organization’s admin(s)

The screenshot shows the 'Sign Up' page of the TraCSS application. At the top is the TraCSS logo. Below it, the heading 'Sign Up' is followed by the instruction 'Request an account to access TraCSS'. A note states: 'If your organization is already registered in TraCSS, contact your organization's administrator to request access instead of completing this form.' The form contains five input fields: 'First Name', 'Last Name', 'Email', and 'Phone Number'. Below these is a checkbox labeled 'Agree to User Agreement'. A 'Continue' button is at the bottom. At the very bottom, there is a link: 'Already have an account? Sign In'.

The screenshot shows the 'Sign Up Continued' page of the TraCSS application. At the top is the TraCSS logo. Below it, the heading 'Sign Up Continued' is followed by a 'Select Role' dropdown menu with 'Owner/Operator' selected. Below this are three more dropdown menus: 'Organization Name', 'Position Title', and 'Headquarters'. At the bottom are two buttons: 'Back' and 'Continue'. Below the buttons is a link: 'Already have an account? Sign In'.

O/O Sign-Up Process - TraCSS Satellite File



Complete the TraCSS Satellite File

- Template provided in the sign-up page
- For cataloged objects, it provides an opportunity to update outdated information in the TraCSSCat
- For new objects, enables O/Os to share information about their spacecraft
- Minimum required fields:
 - NORAD ID and Satellite Name
- Highly encouraged to provide as much information as possible
- Some TraCSSCat fields accept binned values
 - Hard Body Radius (HBR) - small, medium, large
- For guidance, see the “How To Complete Your TraCSS Satellite File” document on tracss.gov/resources

← **56730 IRIDIUM 179**

View TraCSS Cat For Definitions and Parameters

Showing only 24 of 34 editable satellite characteristics. Add more details to strengthen the database and support the operator community.

Satellite Basics

Name	NORAD ID	International Designator	Alternate Names
IRIDIUM 179	56730	2023-068W	SV179
Country of Launch License	Country Providing Communication License	Country Of UN Registry	Countries Of Affiliation
US	US	US	US

Launch Information

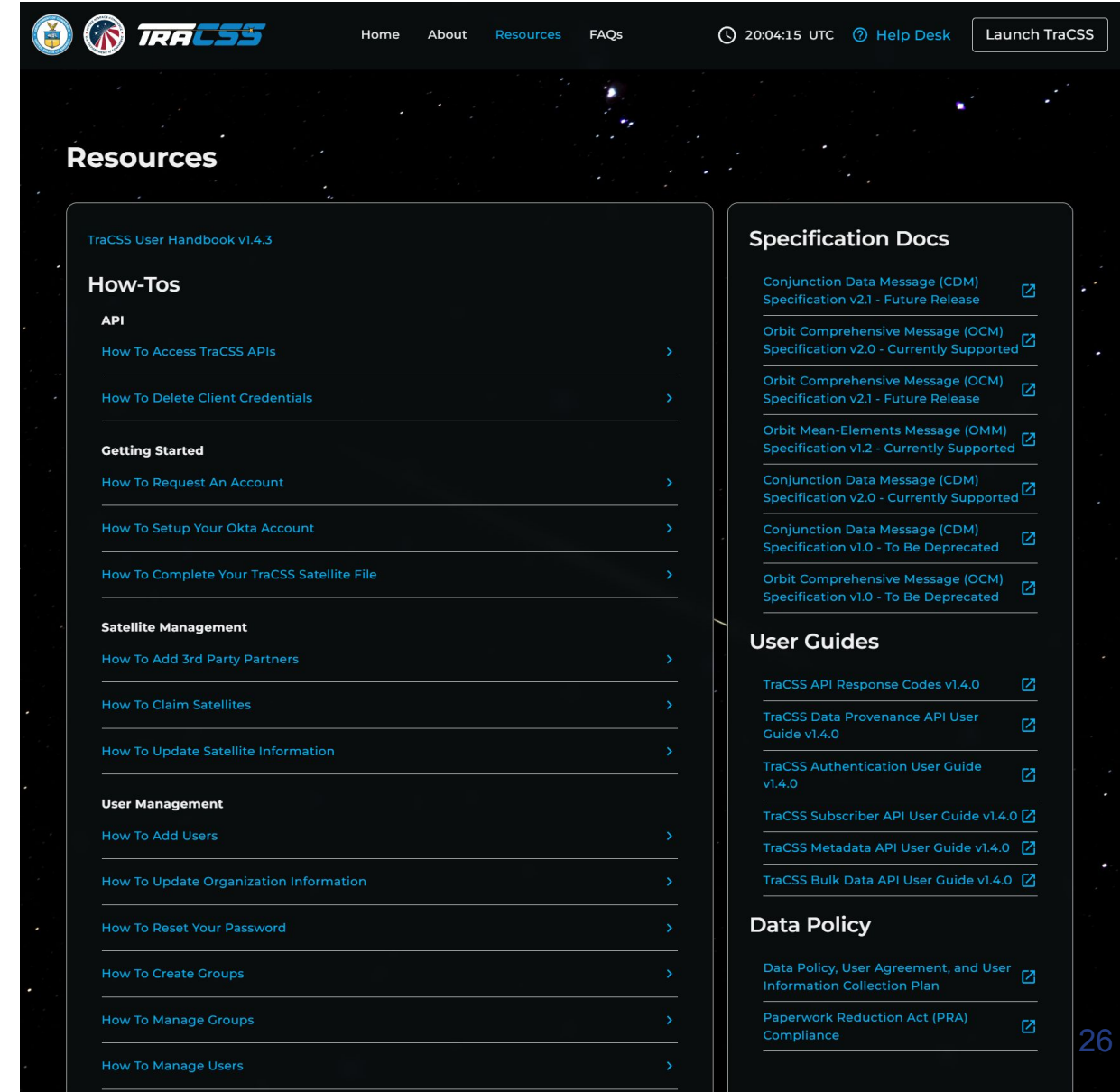
Launch Provider	Launch Vehicle	Launch Date	Deployment Date
SpaceX	Falcon 9	2023-05-19	2023-05-19
Expected Operational Mission Lifetime (years)	Additional Deployments	Launch Piece	
17.5	NO	W	

Satellite Characteristics

Object Type	Hard Body Radius (m)	RCS Size	Wet Mass (kg)
Payload	4.8396	Medium	809
Conjunction Mitigation Capabilities	Constellation	Operational Status	General Function
chemical propulsion, differential drag	Iridium	BACKUP_STORAGE_STANDBY	spacecraft engaged in practical applications and uses of space technology such as weather or communications

TraCSS App partial view of TraCSSCat Information

- TraCSS.gov/resources
- Handbook
- “Getting Started Section”
- Procedural How-Tos
- API User Guides
- TraCSS System Specs



The screenshot displays the TraCSS Resources page. The header includes the TraCSS logo, navigation links (Home, About, Resources, FAQs), a clock showing 20:04:15 UTC, a Help Desk link, and a Launch TraCSS button. The main content area is titled "Resources" and features a sidebar with categories: How-Tos, API, Getting Started, Satellite Management, and User Management. The main content area is divided into two columns. The left column lists various documents and guides, while the right column lists Specification Docs and User Guides. The bottom right corner of the page shows the page number 26.

Resources

TraCSS User Handbook v1.4.3

How-Tos

API

- How To Access TraCSS APIs
- How To Delete Client Credentials

Getting Started

- How To Request An Account
- How To Setup Your Okta Account
- How To Complete Your TraCSS Satellite File

Satellite Management

- How To Add 3rd Party Partners
- How To Claim Satellites
- How To Update Satellite Information

User Management

- How To Add Users
- How To Update Organization Information
- How To Reset Your Password
- How To Create Groups
- How To Manage Groups
- How To Manage Users

Specification Docs

- Conjunction Data Message (CDM) Specification v2.1 - Future Release
- Orbit Comprehensive Message (OCM) Specification v2.0 - Currently Supported
- Orbit Comprehensive Message (OCM) Specification v2.1 - Future Release
- Orbit Mean-Elements Message (OMM) Specification v1.2 - Currently Supported
- Conjunction Data Message (CDM) Specification v2.0 - Currently Supported
- Conjunction Data Message (CDM) Specification v1.0 - To Be Deprecated
- Orbit Comprehensive Message (OCM) Specification v1.0 - To Be Deprecated

User Guides

- TraCSS API Response Codes v1.4.0
- TraCSS Data Provenance API User Guide v1.4.0
- TraCSS Authentication User Guide v1.4.0
- TraCSS Subscriber API User Guide v1.4.0
- TraCSS Metadata API User Guide v1.4.0
- TraCSS Bulk Data API User Guide v1.4.0

Data Policy

- Data Policy, User Agreement, and User Information Collection Plan
- Paperwork Reduction Act (PRA) Compliance

26

SPD-3 Directed the Office of Space Commerce to foster “continued growth and innovation in the U.S. commercial space sector, which includes S&T, SSA, and STM activities.”

Private Spacecraft Operators

- More than 70% of spacecraft in orbit are non-governmental
- Continued private investment in space requires a safe, sustainable environment
- TraCSS enables this by ensuring that all spacecraft operators around the world have access to the basic safety information they need to avoid collisions
- TraCSS works directly with private industry spacecraft operators to understand their needs

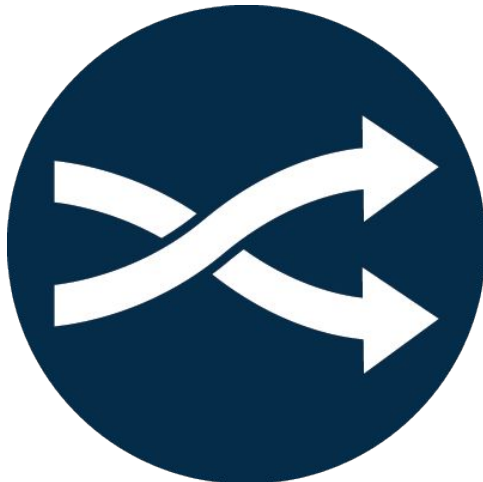
Commercial SSA Providers

- The U.S. currently has a vibrant commercial SSA sector that provides unique data and advanced capabilities
- TraCSS directly incorporates commercial SSA capabilities into its system, for example with its user interface
- TraCSS only provides a core set of safety-oriented services, we recommend owner/operators go to the commercial SSA sector for tailored and advanced services
- We provide access to information (catalog, o/o ephemerides, etc.) that commercial entities can build on and use to provide new innovative products

Need for Improved Global SSA Coordination



Spacecraft operators often aren't able to coordinate effectively with operators in other countries.



Uncoordinated national and regional SSA centers provide potentially conflicting info to operators

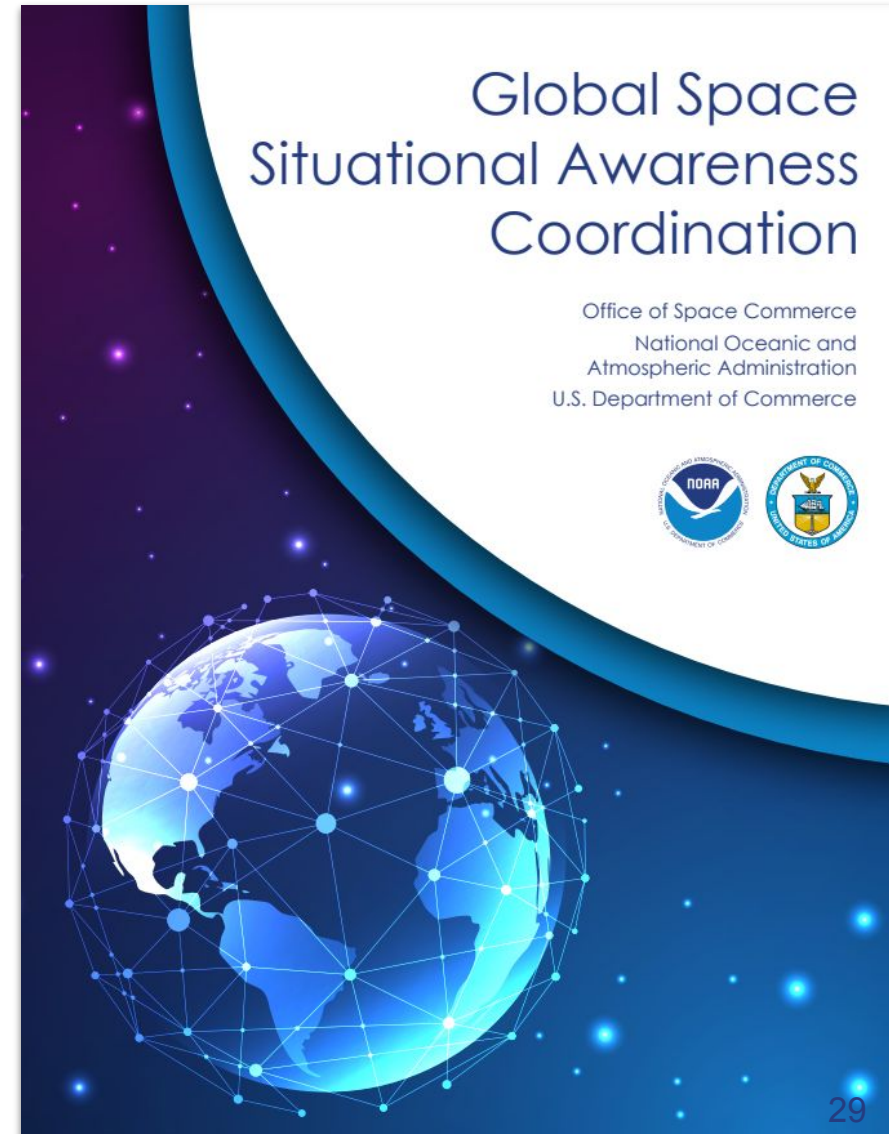
Vision for Global SSA Coordination



Global coordination is needed to **minimize the potential for spacecraft operators to receive conflicting information about potential conjunction events.**

Global coordination also helps to **enable effective coordination** among spacecraft operators and nations.

We envision a global coordinated system of space situational awareness providers, with a series of national or regional hubs providing information and services to spacecraft operators. These centers will be supported by networks of international and commercial partnerships



Global Coordination Implementation



TraCSS Open and Transparent Data Sharing

- SP Catalog w/o covariance, O/O ephemerides, TraCSSCat, High-Risk CDMs

TraCSS National Government Accounts

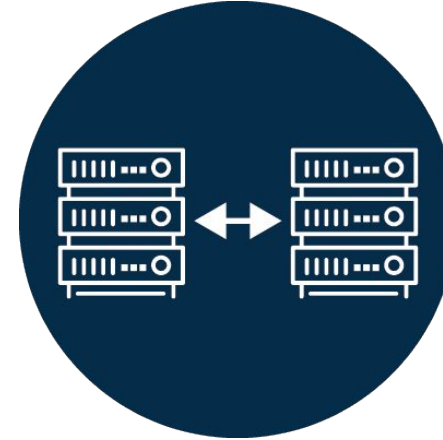
- Provide national insight into space safety
- Enable greater understanding of SSA information

Bilateral Partnerships and Technical Coordination

- Coordination with many countries
- Joint technical studies with EU SST

UN COPUOS SSA Expert Group

- Active engagement of OSC and private sector



Engage with OSC on TraCSS



TraCSS webpage

TraCSS.gov

Explore the new home
for space situational
awareness from the
Office of Space
Commerce



Email

tracss.outreach@noaa.gov

Submit TraCSS-related
questions, comments, &
feedback



TraCSS Registration

app.TraCSS.gov

Register for a Spacecraft
Owner/ Operator or
National Government
account today!



OSC Homepage

Space.Commerce.gov

For more information
about the Office of
Space Commerce and all
of our other activities