TRACSS

Traffic Coordination System for Space

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

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**

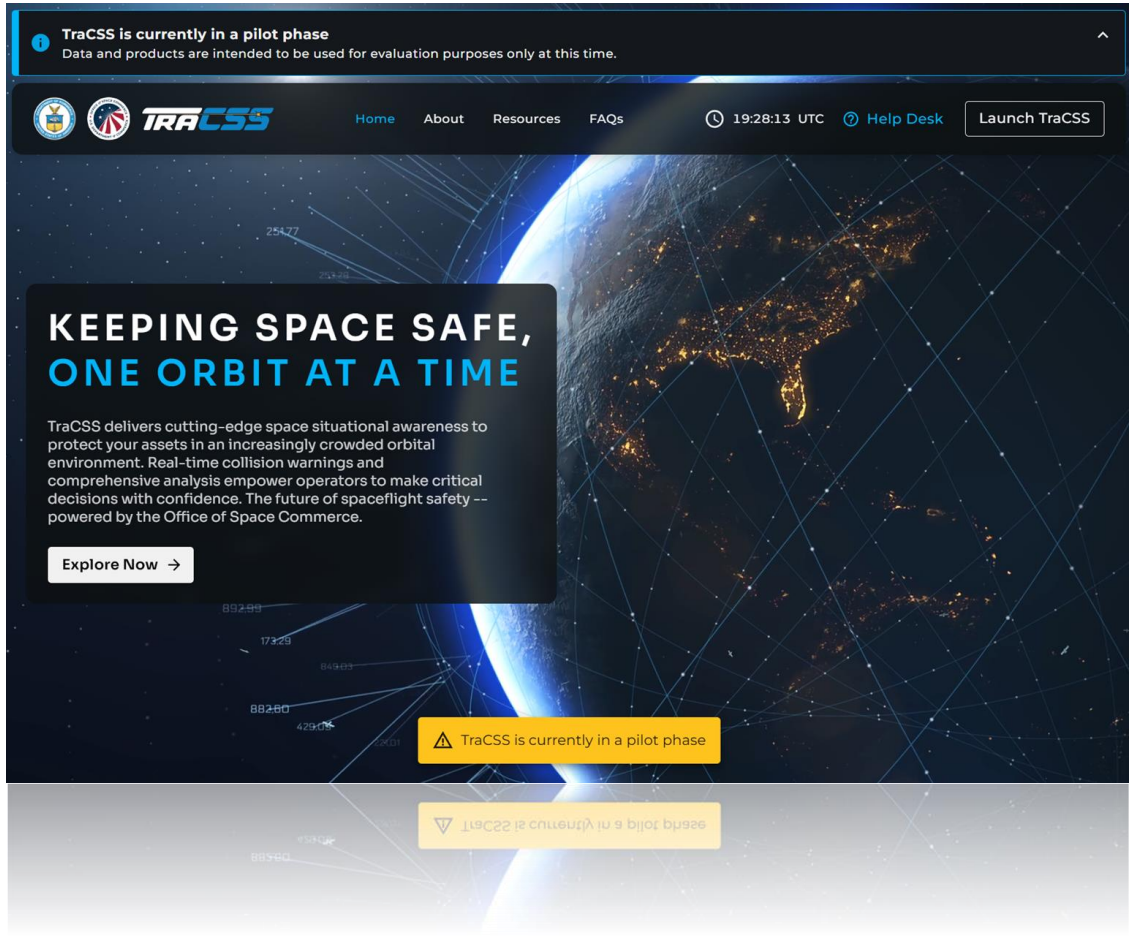
- **SPD-3** (2018) **calls for DoC to take on this responsibility, and *"make available basic SSA data and basic STM services*** *(including conjunction and reentry notifications)"*
  - Enables improvements in SSA to ensure space safety and ensure continued investment in space
  - Allows DoD needs to focus on maintaining access to and freedom of action in space

- **U.S. Space Superiority** (2025) **reaffirmed SPD-3 and called for *"enabling the sustainability of space operations through effective and responsible approaches to space traffic management"***

TraCSS' Safety Services

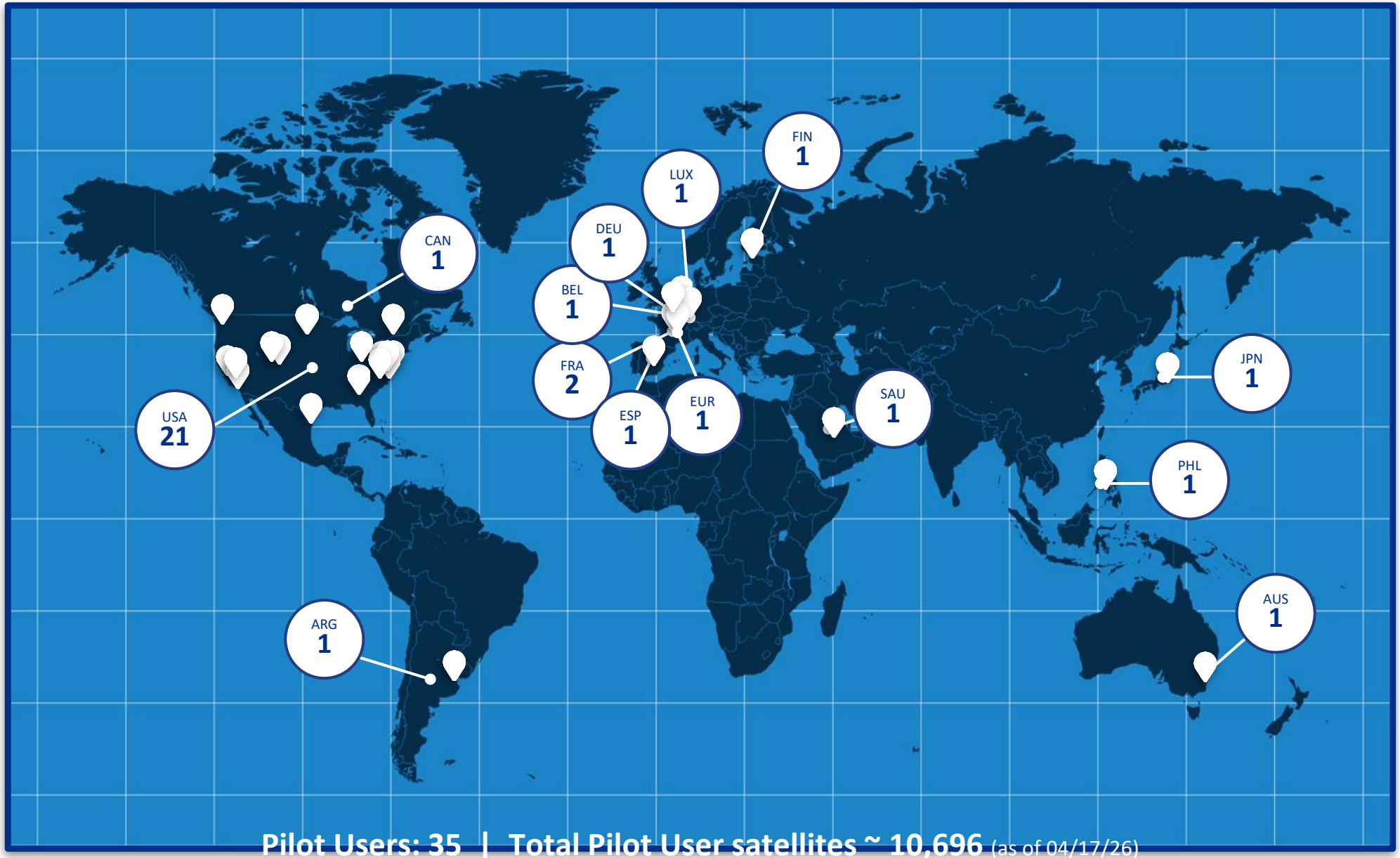
TraCSS provides spacecraft operators with services to support spaceflight safety, including:

- 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
- 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]*
  - Faciliates internal analysis and international coordination
- Re-entry and Launch [Future]



TraCSS will evolve using an agile process and incorporate additional capability over time.

Pilot User Map



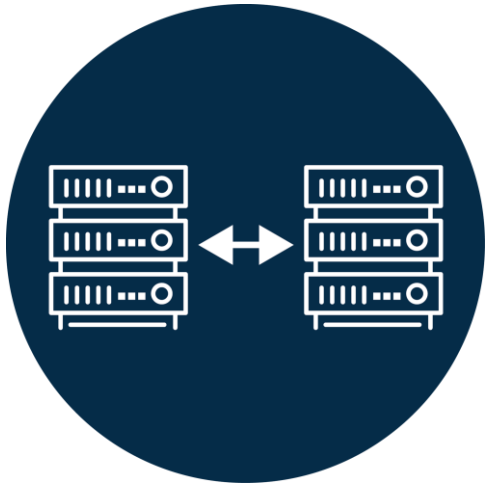
Pilot Users: 35 | Total Pilot User satellites ~ 10,696 (as of 04/17/26)

TraCSS Public Data

- **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

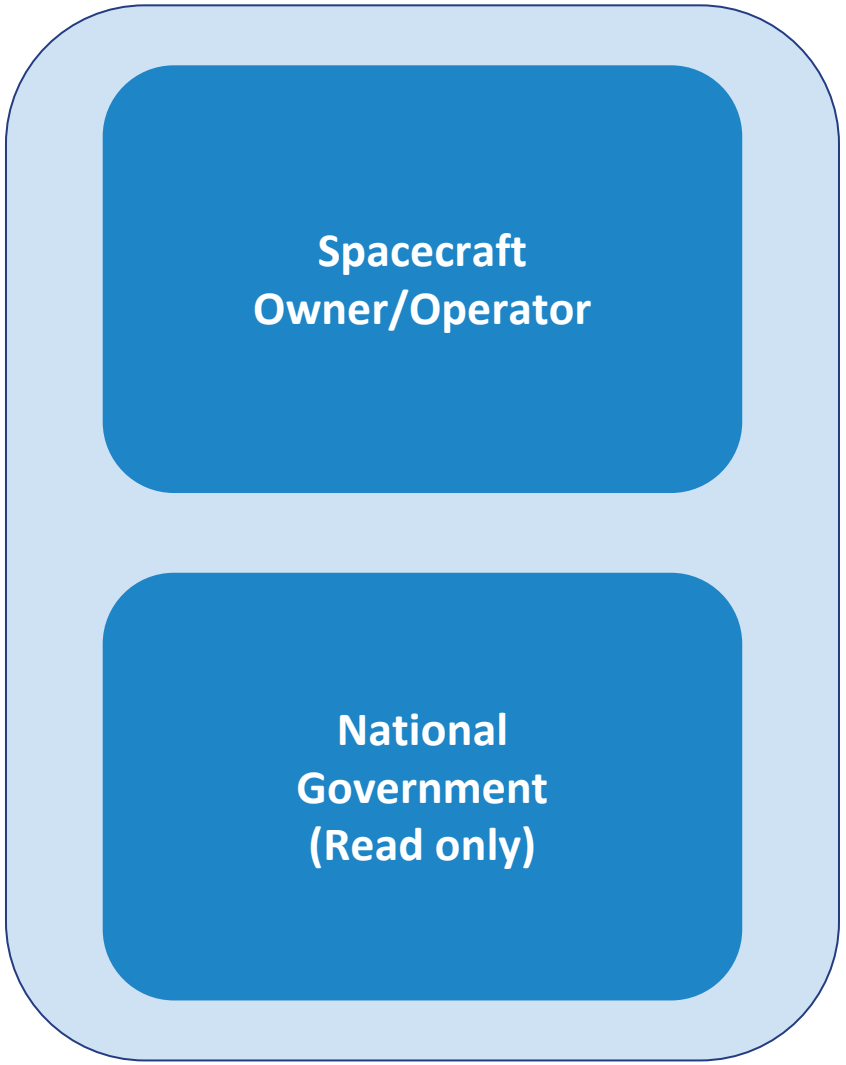
TraCSS Public Data Cont'd



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 about 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



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

- E.g. Iridium, ESA

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 Provider

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

- E.g. SpaceNav 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

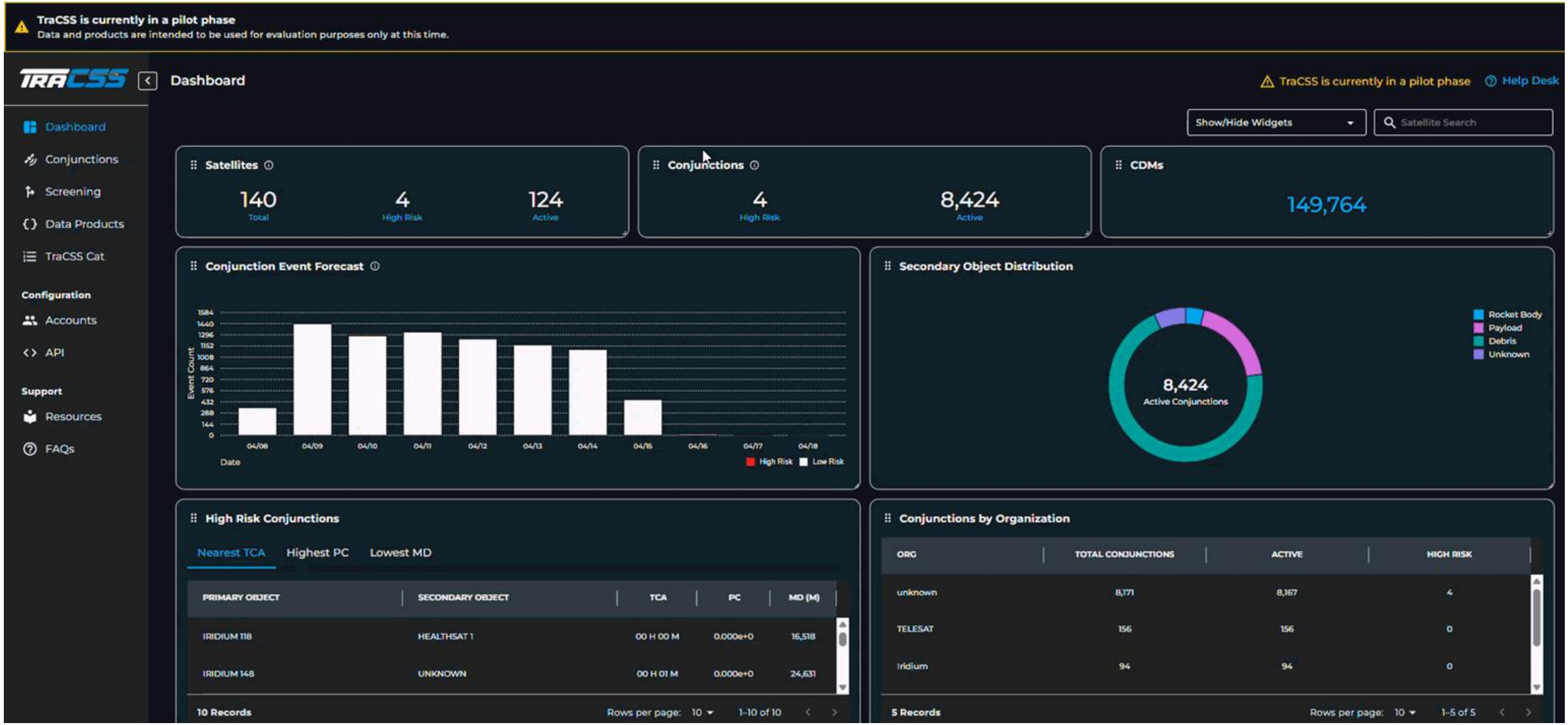
- Registered User account NOT required
- Provided open-data access to publicly available TraCSS data products

Join the TraCSS Waitlist

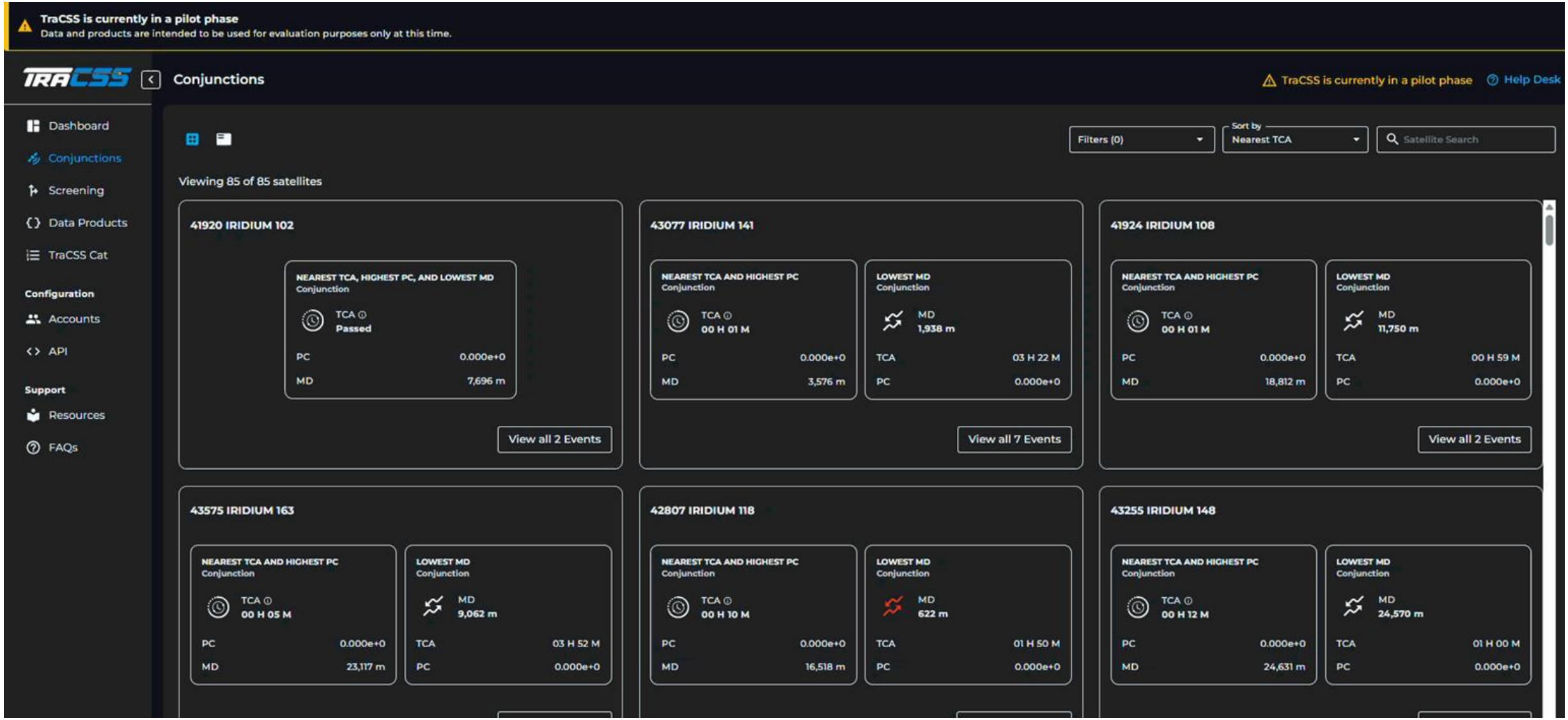
Join the TraCSS Waitlist

The waitlist is for spacecraft owner/ operators only.
National government accounts will be coming soon.

TraCSS App - Dashboard Page



TraCSS App - Conjunctions Page



TraCSS Public vs Registered User API

TraCSS Public API

Available to anyone interested in obtainting 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)

TraCSS and Private Industry

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.

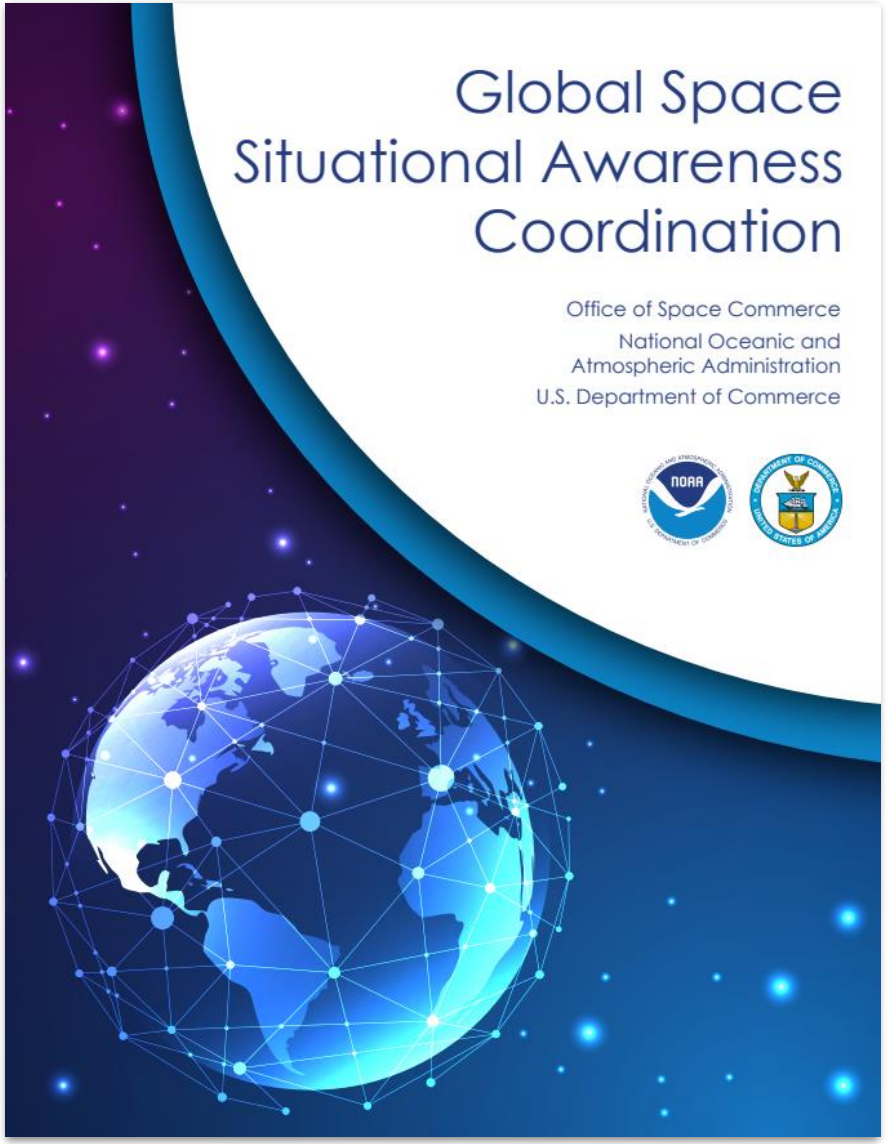
Uncoordinated national and regional SSA centers provide potentially conflicting info to operators

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

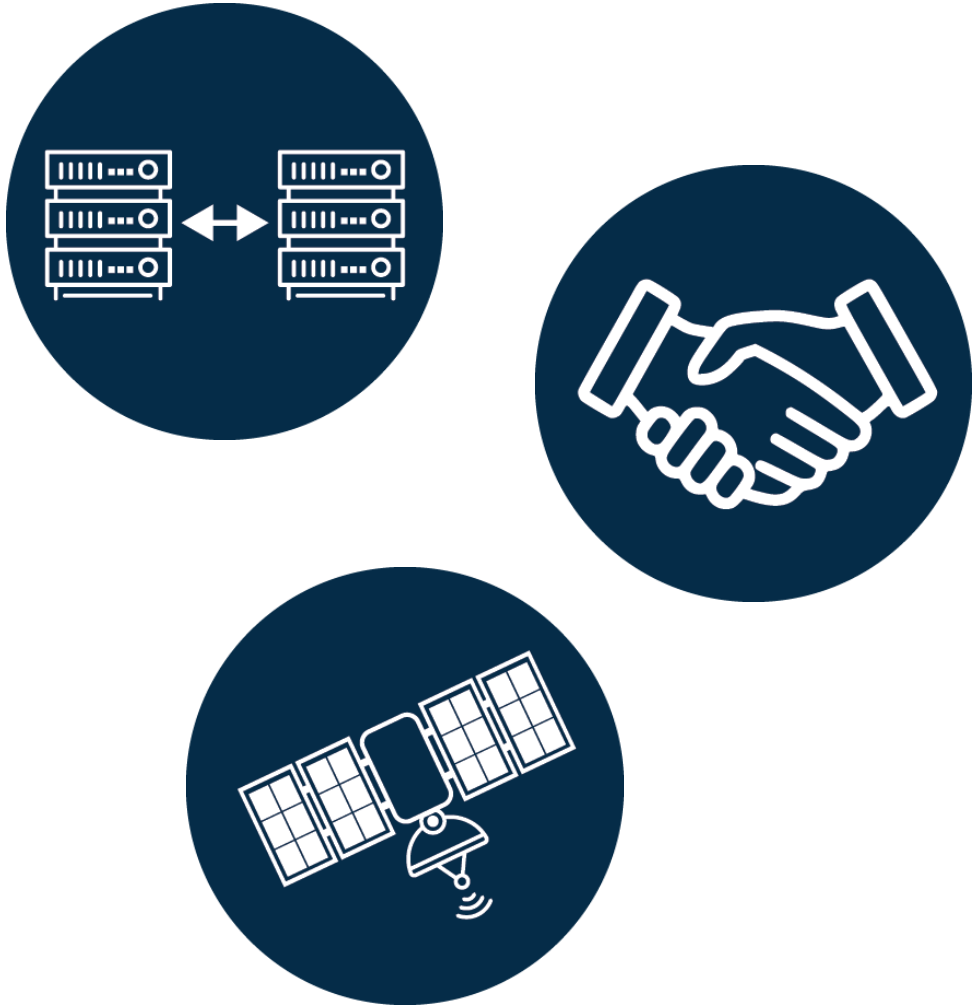
- Provide national insight into space safety
- Enable national capacity building

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

News, videos, and information on engagements, including past and upcoming public listening sessions

Email

tracss.outreach@noaa.gov

Submit TraCSS-related questions, comments, & feedback

Thank you