TraCSS Data and Information Policy
Draft v2 – November 14, 2024

1. Introduction

The Traffic Coordination System for Space (TraCSS) is being developed by the Office of Space Commerce to provide space situational awareness (SSA) data and services that support global spaceflight safety, space sustainability, and international coordination. This draft data and information policy was developed to support these objectives and to align with national and agency guidance, including Space Policy Directive 3 direction to enable greater SSA data sharing, consistent with national security constraints. This updated policy also incorporates feedback provided by the space safety community on the initial draft TraCSS Data Policy.

This policy describes the conditions under which TraCSS data will be made available, either openly to the general public, or on a more restricted basis to registered TraCSS users (i.e. spacecraft owner/ operators and government entities). The document also directly addresses the types of information that TraCSS will request from spacecraft owner/ operators and government entities registered in TraCSS.

Dissemination of the data, information, and products described in this draft policy are not planned to be implemented in the Phase 1.0 release of TraCSS to a beta set of users in September 2024. Dissemination may occur across Phase 1 of TraCSS (through September 2025) and/or in Phase 2 and beyond, depending on technical implementation and program priorities.

This policy emphasizes the importance of transparency and open data sharing to best promote spaceflight safety. In addition to furthering Space Policy Directive 3, this aligns with the:

- Foundations for Evidence-Based Policymaking Act (Evidence Act), Public Law 115-435, which describes responsibility of U.S. government agencies to make data "open by default,"
- NOAA Data Strategic Action Plan, which states: "Sharing NOAA data as openly and widely as possible, maximizing its utilization by NOAA partners, stakeholders, and the public, is foundational to NOAA's mission,"[1]
- American Institute for Aeronautics and Astronautics (AIAA) Satellite Orbital Safety Best Practices, which state, "predicted ephemerides with covariance should be generated and shared without restriction." They also note, "if a feature or approach is discoverable after launch, then it should be shared explicitly before launch."
- Space Safety Coalition Best Practices for the Sustainability of Space Operations, which encourage "spacecraft owners, operators and stakeholders to exchange information relevant to safety-of-flight and collision avoidance, including, at a minimum operator points-of-contact, ephemerides, ability to maneuver, and maneuver plans"
- World Economic Forum Space Situational Awareness Data and Information Sharing Principles, which state, "SSA data and information should be made open by default while remaining consistent with national laws and regulations."

[1] NOAA Data Strategic Action Plan 2022

Sharing TraCSS data openly to the maximum extent possible consistent with national security and applicable law ensures that data is available for all spacecraft owner/ operators, government and commercial space situational awareness (SSA) service providers, researchers, and members of the general public. Open sharing of this data:

- Promotes spaceflight safety and international cooperation by enabling straightforward and efficient coordination among spacecraft operators and global SSA providers,
- Enables research and innovation that can lead to improved SSA techniques and improve spaceflight safety and sustainability in the future,
- Promotes the growth of the commercial SSA sector, which can build on these basic data and information to develop and provide innovative new products and services,
- Supports public awareness of key issues of space safety and sustainability.

2. TraCSS Open Data

The majority of data, information, and products generated and used by the TraCSS system will be made openly available. Open data will be made publicly available with no restrictions on use under the Creative Commons 0 Public Domain Dedication (CC0 1.0), eliminating the need for a separate user agreement. It is currently envisioned that this data and information will be made available on the TraCSS website and will not require users to sign in or register for a TraCSS account. TraCSS intends to leverage the NOAA Open Data Dissemination (NODD) Program, so this data will reside in, and be available in, the cloud.

The following data, information, and products will be made openly available by the TraCSS Program:

- **DoD public element sets catalog (aka two-line elements (TLE) catalog)**
- **TraCSS-generated special perturbation (SP) ephemerides catalog without covariance**
- **DoD public satellite catalog (SATCAT)**, including satellite name and NORAD ID, launch date, launch location, international designator, apogee, perigee, period, inclination, and size (binned RCS) provided by the DOD
- **NASA mass and size catalog**, developed by NASA based on U.S. sensor data and additional sources
- **Satellite attributes provided to TraCSS by satellite owner/ operators**
- **Satellite ephemerides with covariance and maneuver plans provided to TraCSS by satellite owner/ operators**
- **TraCSS conjunction notifications (TCNs)** for all events that meet “alertable criteria” defined by TraCSS, including events involving operational objects and/or debris.
- Other publicly-available information, as relevant

Some of this data may be incorporated into a publicly-available database that includes information on spacecraft that can be queried to generate a wide range of derived products. Information on spacecraft location (e.g. element set catalog and SP ephemeris catalog), as well as “emergency event” conjunction notifications are expected to be updated on a 4-hour cadence.

3. TraCSS Restricted Data: Owner/ Operator Operational Contact Directory
Operational contact information provided by owner/ operators registered in TraCSS will be included in a directory made available to all TraCSS registered users (i.e. satellite operators and government entities). This information will also be shared with other national and regional SSA systems to simplify and facilitate more efficient coordination among the global spacecraft operator community. It may also be shared with the United Nations Office of Outer Space Affairs, consistent with the Guideline B1 of the UN Guidelines for Long-Term Sustainability of Outer Space. These entities may redistribute data to additional owner/ operators not registered in TraCSS to facilitate coordination in the event of a predicted conjunction.

4. TraCSS Restricted Data: Conjunction Data Messages (CDMs): CDMs are standard messages including spacecraft conjunction information. Access, use, and redistribution of CDMs will be subject to the following restrictions:

- CDMs are provided to spacecraft owner/ operators involved in the conjunction, for owner/ operators registered in TraCSS.
- Government entities registered in TraCSS can access information for all spacecraft affiliated with their nation. (Note that a single satellite may be affiliated with more than one nation.)
- Registered TraCSS users can only redistribute CDMs to contractors or affiliates with whom they have a contractual relationship (e.g. SSA providers providing services under contract). Note that this redistribution must be implemented directly by the spacecraft owner/ operator; redistribution to additional entities is not implemented within the TraCSS system.
- Derived products developed based on CDMs may be redistributed. (Note: Derived products are defined as those that involve sufficient processing and/or modification to ensure that extraction of the principal features and characteristics of the original information is not possible.)

4. Data Provided by TraCSS Registered Users
To become TraCSS registered users, spacecraft owner/ operators and government entities will need to provide selected information as part of the registration process. They will also be encouraged to provide additional information on an ongoing basis.

Spacecraft Owner/ Operators: Operational contact information, including individual names, phone numbers, or email addresses will be available to a restricted set of entities, as described above. All other information provided to TraCSS, including spacecraft attributes and predicted ephemerides with covariance and maneuver plans, must be provided to TraCSS under the Creative Commons 0 Public Domain Dedication (CC0 1.0). TraCSS will then facilitate broad public sharing of this information by making it openly available on the TraCSS website without restrictions. Access and use of this information will not require users to sign-in or register for a TraCSS account.

Government Entities: Upon registration in TraCSS, government entities will be asked to provide basic organizational information (organization name, location, contact information) as well as a

list of spacecraft (with NORAD ID) affiliated with their country (registered by that country in the UN, licensed by that country, etc.). Contact information, including individual names, phone numbers, or email addresses will be available to a restricted set of entities, as described above. Basic organizational information about the government entities registered in TraCSS (e.g. organization name and location) as well as the list of spacecraft affiliated with each entity will be made openly available under the Creative Commons 0 Public Domain Dedication (CC0 1.0). Data and information with this designation will be made available on the TraCSS website and access and use will not require users to register for a TraCSS account. [Note that government entities that own/ operate spacecraft will need to create a spacecraft owner/ operator account to provide information relevant to their spacecraft.]

5. Commercial SSA Data and Information

TraCSS is planning to make use of SSA data and information purchased from commercial SSA providers. The policy governing access to and use of this data will be defined in the applicable purchase agreement.