

## 24th IAA SYMPOSIUM ON SPACE DEBRIS (A6)

## Operations in Congested Space: Situational Awareness and Space Traffic Management – SSA (4)

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## EU SST – TRACSS JOINT STUDY ON OPERATIONAL INFORMATION EXCHANGE

**Abstract**

The previous study between EU SST and TraCSS discussed the importance of information exchange among national and regional SSA centers. Information exchange can improve the quality of spaceflight safety services for users of both systems. Information sharing also reduces the extent to which spacecraft operators receive conflicting information regarding potential collision events from different SSA providers, which is critical to global spaceflight safety. In this follow-on study, we will demonstrate the ability to exchange information on an operational basis between two major national or regional SSA centers – EU SST and TraCSS. In doing so, we will generate important lessons learned for operational information exchange that can help inform broader international coordination. As a secondary objective, we aim to measure the impact this information exchange has on the degree of alignment of conjunction messages from the two systems. While we expect that differences in conjunction predictions will remain, this study will demonstrate the concrete benefits of information exchange, as well as the extent of residual differences in conjunction prediction.

The activities within the joint study will be:

- We will identify two spacecraft operators (one U.S., one European) interested in participating in this study. /
- Initial exchange satellite attributes and o/o ephemerides information for both spacecraft operators EU SST and TraCSS will compare information on key spacecraft attributes (e.g. hard body radius) to ensure alignment.
- EU SST will provide o/o ephemerides for the European operator by uploading these in the TraCSS system. EU SST will also gather ephemerides for the U.S. operator from TraCSS and screen them in EU SST. Our team will document lessons learned in this process.
- Collect CDMs for both operators in both systems Regular exchange of o/o ephems will continue for a one-month period.
- Analyze CDM data: Compare CDMs generated by the two systems for the two spacecraft operators. (By comparing CDMs generated with or without o/o ephems in each system, we can also determine the extent to which sharing information has improved CDM alignment.)

The results will be presented in a comprehensive way, useful for other SSA systems and operators.