

Response to "Request for Information on Scope of Civil Space Situational Awareness Services"

I have 2 unrelated suggestions on TraCSS:

1. The only mention of object mass I see is with respect to a “database of primary (protected) assets.” I suggest also estimating and listing approximate mass of tracked debris fragments, at least in LEO. Some tracked LEO debris objects may weigh only a few grams. They may disable a spacecraft but not shred it, while a 1 kg object is likely to shred it, and contribute significantly to new tracked and untrackable but lethal debris. One can estimate the mass of tracked debris fragments by using their radar cross-section plus orbit decay rate data. Knowing estimated debris mass should allow better avoidance margins by operators. This may be particularly useful if the tracking threshold drops well below 10 cm, and hence includes far more low-mass debris.
2. TraCSS plans are justifiably focused on providing timely data to “satellite owner/operators.” But there are many other potential users and uses of orbit catalog and related data. I was never a satellite owner/operator, but I worked on the mission and orbit design of 5 orbital flight tests, and used catalog data to reduce their larger-than-usual collision risks. TraCSS may be more useful if much of its data is freely available to aerospace professionals, students, teachers, insurers, and investors, both in the US and abroad. And many in those categories may (like me) even start out as hobbyists. TraCSS should be more effective at broadening global awareness and effectiveness of space traffic management if most of its data is available to a far wider community than just satellite owner/operators. I suggest that the Office of Space Commerce consider what TraCSS data should not be freely available to all, as well as what should be available as a free service.