

Questions	Telesat Response
Category A: Scope of Basic Services	
Does the proposed basic safety SSA service provide sufficient data to allow ongoing operations of orbital assets at a level equal to or beyond that currently provided by the DoD?	The proposed "Included" services will satisfy and exceed the current DoD offering provided services #3 (Routine Collision Assessment (CA) Screening and Conjunction Data Message (CDM) Production), and #4 (Special CA Screening and CDM Production) are provided in a timely and frequent manner.

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<p>What proposed basic safety SSA services are essential to your ongoing operations? If the U.S. Government were to prioritize the delivery of individual services as part of TraCSS, which ones should be provided soonest?</p>	<p>For Telesat's current SSA operations, proposed TraCSS services:</p> <p>#1 (Satellite Attributes, Capabilities, Status, and Point of Contact) is required to ensure proper propagation modelling and Collision Avoidance (COLA) maneuver cooperation with an active secondary object</p> <p>#3 (Routine Collision Assessment (CA) Screening and Conjunction Data Message (CDM) Production) is required to receive CDMs for possible conjunctions of concern. We assume the data used for CDM generation is at the least on par with what the DoD currently offers.</p> <p>and</p> <p>#4 (Special CA Screening and CDM Production) is required to ensure safe COLA operations.</p> <p>Generally speaking, no O/O can perform screening services, whether primary screening (#3) or follow-up screening (#4).</p> <p>Beyond the required, Telesat would like to see the additional "Included" services made available sooner than later; particularly:</p> <p>#2 (Receipt and Sharing of Predictions O/Os Ephemerides) - hopefully O/O participation in TraCSS will standardize OEM deliveries to include covariance and maneuver information for optimal SSA screening and COLA planning.</p>

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<p>What, if any, additional capabilities beyond those currently provided by the DoD should be included in the TraCSS?</p>	<ul style="list-style-type: none"> - Standardization of O/O ephemeris (OEM) sharing should be enforced. Free participation in TraCSS should warrant O/Os to follow OEM standards that include 1) covariance and 2) predicted maneuvers (#2 - Receipt and Sharing of Predictions O/Os Ephemerides). - Supplemental tracking data to that gathered by the DoD will improve data quality further, thereby reducing risk. Telesat would like to see these features implemented in TraCSS. Proposed services #7 (O/O Ephemeris Generation and Curation with Covariance) and #11 (Conjunction Object Solution Improvements with Additional Tracking) would be welcomed additions. - Faster on-demand screening for conjunctions to verify different avoidance plans (currently ~4hrs)
<p>Are there any additional capabilities not listed that should be included in the basic SSA safety service to provide a baseline level of safety for owners and operators?</p>	<p>A service for O/O users to query the TraCSS system on status of the O/O ephemeris, screening, or CDM inquiries or requests.</p> <p>Depending on the time TraCSS services can be provided, O/Os would like to have insight to ensure data was received or being processed by TraCSS.</p>

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<p>Where applicable, at what level or how often should the service be performed? For example, comments may address how often routine collision assessments should be conducted as part of the basic SSA safety service. DoD currently provides these assessments three times a day. How often should OSC's basic safety SSA service provide these assessments?</p>	<p>Ideally screening services should routinely be provided twice a day, provided new tracking/SSA data is available to utilize.</p> <p>O/O On-demand screening requests should be processed in near real-time. The current DoD processes O/O re-screening requests anywhere from 2-6 hours. Though appreciated, this won't be feasible for constellation operations, and Telesat is seeking services that can provide re-screening results within seconds.</p>

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<p>Category B: Impacts of Proposed Basic SSA Safety Services on Commercial SSA Providers</p>	
<p>Are any of the basic SSA safety services readily available from the current U.S. SSA industry? If so, is the service affordable to owners and operators of spacecraft?</p>	<p>The U.S. SSA industry does provide similar and supplemental services to what the DoD currently offers, but their price points can be out of reach for medium to small O/Os.</p> <p>Telesat SSA operations currently is looking for SSA services to supplement the current DoD offering, specifically for shorter re-screening times and supplemental tracking data to better SSA data quality. If TraCSS can provide these upgraded services, than many O/Os would be inclined to use that service.</p>
<p>For commercial SSA service providers, does the current SSA capability offered by the DoD have any impacts on your current or future product offerings?</p>	<p>N/A</p>
<p>For commercial SSA service providers, do any of the basic SSA safety services identified for inclusion in TraCSS have any impacts or implications on your current or future product offerings? If so, which services proposed to be part of TraCSS would have an impact on your offerings and why?</p>	<p>N/A</p>

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<p>For O/Os, are any of the basic SSA safety services identified for inclusion in TraCSS duplicative of what O/Os of spacecraft are already responsible for obtaining or providing?</p>	<p>Proposed SSA analyses that CAN be performed by individual O/Os given CDM data are #5 (Data Quality Evaluation), #9 (Precision Probability of Collision Calculation), #13 (Risk Assessment Time History Plots), and #14 (Space Weather Sensitivity).</p> <p>However, given some of these analysis can be complex or time consuming, Telesat believes having these services included in TraCSS is beneficial so more O/O can utilize these additional analysis for risk assessments.</p>
<p>Are there unique advantages to the government purchasing and redistributing certain commercial services rather than leaving these to the commercial marketplace?</p>	<p>An SSA service can only provide data based on observations without participation of O/Os, which does not provide a full picture of the SSA environment. Telesat believes a free and trusted SSA service that provides a service for centralized and vetted O/O information will be a significant improvement in global SSA operations. If TraCSS can offer improved SSA services that will draw more O/O to participate and share their data, this will help minimize risk in the SSA environment. So providing SSA services that would otherwise be behind a paywall will be beneficial for O/Os and the SSA environment as a whole.</p>

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<p>Category C: Tenets of Participation and Receipt of Basic SSA Safety Services</p>	
<p>Which basic SSA safety services identified for inclusion in TraCSS should be made publicly available?</p>	<p>None - given the sensitivity of the information provided by operators</p>
<p>What, if any, information should owners and operators of spacecraft be required to provide to OSC to participate in TraCSS?</p>	<p>OSC suggestion of properly generated OEMs with covariance and predicted maneuvers at regular intervals is an excellent starting point.</p> <p>Points of Contact for O/O operations would also be beneficial for conjunctions of to operated objects.</p> <p>BASIC physical satellite properties required to accurately assess conjunctions/propagations</p>
<p>What, if any, actions should owners and operators agree to take to participate in TraCSS as part of the tenets of participation?</p>	<p>Ensure the information provided is updated regularly for orbit/OEM information and follows a standard of data to be included in the OEMs - covariance and maneuvers.</p>
<p>What should happen when owners or operators fail to provide the relevant information to OSC or fail to take actions consistent with the tenets of participation?</p>	<p>Flag O/O objects as not compliant on the platform, visible to other users.</p>

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<p>Category D. General Feedback OSC welcomes feedback about any other related topics. For example, are there any matters not discussed above that OSC should or must consider before it provides basic SSA safety services through TraCSS?</p>	<p>The OSC proposed TraCSS service is a very promising SSA platform that will address all Telesat concerns with the current SSA DoD services, and will provide additional features that Telesat will like to utilize. The OSC proposal to have data sharing as the cost of admission is also a promising aspect of TraCSS - Telesat believes doing so will provide two benefits: better O/O shared data for SSA analytics, and with a lower financial burden on O/Os more will join making it a comprehensive service - overall benefiting the space environment for all O/Os.</p> <p>We hope that despite the scope this initiative being large, that it is able to see the light of day in a realistic time-frame. The need for such enhanced tools could certainly outpace their development.</p>