

A new Australian conjunction assessment and threat warning service

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This paper reports the progress of the development of a new Australian conjunction and threat warning service for satellite operators. At SERC the goal is to contribute to the mitigation of the debris environment by using high powered continuous wave lasers to apply photon pressure to perturb objects on orbit so that they avoid a collision. To realise this goal, a reliable conjunction and threat warning service is needed in order to perform the manoeuvre demonstration safely.

The characteristics and status of the components of the service are described including: the network of tracking sensors, the space object catalogue, automated sensor scheduling, automated ephemeris generation, error covariance propagation, and conjunction assessments. The conjunction assessments service is demonstrated using Optus satellite assets and the results of the conjunction assessments are presented.