

# 2015 ILRS Technical Workshop

## **3 Space Debris session**

**Chairs: G. Kirchner, L. Grunwaldt, C. Marzo, T. Flohrer**

### **3.1 Laser ranging initiatives at ESA in support of operational needs and space surveillance and tracking**

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ESA conducts and supports various research and development activities for satellite laser ranging (SLR) to uncooperative targets.

The Space Debris Office at ESA is in charge of providing operational support to ESA missions and third party missions, and studies through GSTP activities the potential benefits of laser ranging to space debris objects to resolve close approaches to active satellites, to improve re-entry predictions of time and locations, and the more general SLR support during contingency situations. In addition the office studies the determination of attitude and attitude motion of uncooperative objects with special focus on the combination of SLR, light-curve, and radar imaging data. Further, the Space Debris Office is in charge of further developing and maintaining space debris environment models (such as ESA's MASTER) and is interested in exploring potential contributions by SLR.

ESA's Space Situational Awareness (SSA) program has the goal to research, develop, and deploy expert centres in the Space Surveillance and Tracking (SST) segment. These centre shall coordinate the contribution of system-external loosely connected telescope and SLR sensors, and shall provide back calibration and expert evaluation support to the sensors.

The position paper will revisit the motivation and objectives of the SLR-related space debris and SST activities at ESA, will outline the current status of these activities, and will provide an outlook to future key areas of research and development, operational support, and SSA/SST work on SLR.