

SPACE DEBRIS SYMPOSIUM (A6)
Measurements (1)

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A SMART PAYLOAD COLLABORATES WITH THE GROUND SSA OBSERVATION NETWORK TO
SIGNIFICANTLY IMPROVE DEBRIS SURVEY AND TRACKING CAPABILITIES

Abstract

CGS SpA (Compagnia Generale per lo Spazio, formerly Carlo Gavazzi Space) has consolidated an Italian Consortium, comprising DM (Dipartimento di Matematica Università di Pisa), SpaceDyS, CNR-IFAC (Istituto di Fisica Applicata “Nello Carrara” CNR) and INAF (Istituto Nazionale di Astrofisica), which has a recognised consolidated experience on Space Surveillance Awareness topics, as demonstrated by the successful outcomes of the SARA and TELAD studies performed for the European Space Agency. An argument strongly debated in the SSA Community, concerning the opportunity to implement a space based concept for the observation of space debris, was already analysed and presented to ESA in the TELAD Proposal framework, where an innovative idea based on a limited number of satellites, was illustrated for the observation of LEO positioned debris, in support and tight collaboration with an enhanced ground based optical observation network. In front of the positive assessment of ESA, this element is now a part of the innovative Space Based Observation key methodologies, adopted as study case by the ESA SSA CO-II activity. Our strategy, based on a strictly cooperative and ancillary function of the space based observations with the ground based asset, is further improved by the introduction of the Smart Payload key element. This work focuses on the Smart Payload Concept and its key characteristics with the aim to highlight the advantages offered by the proposed configuration, giving the opportunity to implement an effective cost to performance Space based SSA resource.