

SPACE DEBRIS SYMPOSIUM (A6)
Measurements (1)

Author: Prof. Thomas Schildknecht

Astronomical Institute University of Bern (AIUB), Switzerland, thomas.schildknecht@aiub.unibe.ch

Dr. Johannes Herzog

Astronomical Institute University of Bern (AIUB), Germany, johannes.herzog@dlr.de

Dr. Martin Ploner

Astronomical Institute University of Bern (AIUB), Switzerland, martin.ploner@aiub.unibe.ch

Dr. Alessandro Vananti

Astronomical Institute University of Bern (AIUB), Switzerland, alessandro.vananti@aiub.unibe.ch

Mr. Emmet Fletcher

European Space Agency (ESA), Spain, emmet.fletcher@esa.int

COORDINATED OPTICAL GEO SURVEY FOR EUROPEAN SSA PRECURSOR SERVICES

Abstract

An important objective in the framework of the European Space Situational Awareness (SSA) Preparatory Program is the acquisition of observations by federating existing sensors in Europe. Such observations will be required as input to currently developed SSA precursor services. Observations from a series of European optical sensors were acquired during a coordinated campaign and were used to emulate the build-up and maintenance of a temporally and spatially limited object catalogue. The catalogue was designed to concentrate on objects in the geostationary orbit region (GEO). Given the very different nature of the participating sensors both, in terms of their performance characteristics and operational use, a major challenge consisted in coordinating the operation of these sensors and fusing the heterogeneous data.

The paper will present the procedures used to initiate and maintain a limited GEO catalogue without the use of external information. The discussion will include the scheduling of the heterogeneous sensor network, the processing of the observations from the observing sites and their integration into a successive catalogue. Results from the actual observation campaign will illustrate the performance of the very limited sensor network and the used cataloguing procedures, as well as the temporal and spatial limitations of such a catalogue.