

20th IAA SYMPOSIUM ON SPACE DEBRIS (A6)
Interactive Presentations - 20th IAA SYMPOSIUM ON SPACE DEBRIS (IP)

Author: Dr. Alexis Petit
France, alexis.petit@sharemyspace.space

Mr. Henri Tarrieu
France, henri.tarrieu@sharemyspace.space

Mr. Alexis Rolin
France, alexis.rolin@sharemyspace.space

Mr. Gilles Florentin
France, gilles.florentin@sharemyspace.space

Mr. Damien Giolito
France, damien.giolito@sharemyspace.space

Dr. Romain Lucken
France, romain.lucken@sharemyspace.space

MULTI-TELESCOPE OBSERVATION STATION TEST CAMPAIGN RESULTS

Abstract

Space Situational Awareness (SSA) is now recognized as a critical field within the space industry. Whether it is for orbital space sustainability, safety, or strategic purposes, detecting, tracking, and predicting the positions of Resident Space Objects is now becoming a mandatory feature for all major space actors. Optical detection systems are one of the promising technologies to enable space objects detection and to build a substantial catalogue. Optical systems are generally more affordable to build and operate than other technologies such as radar or lasers, with excellent detection capabilities.

Share My Space has developed a concept of Multi-Telescope Observation Station (MTOS) that is mainly designed for survey mode, which allows to catalogue objects that cannot be consistently detected by radar systems. This system is made of four telescopes that each feature an independent mount, camera, and controller, and that are coordinated to scan the sky continuously.

In this paper, feedback on the hardware and software setups is provided, including the optical tube, the camera, and the mount. The first tests on the four-telescope system are provided, and the complete processing chain is described. The angular precision and the accuracy of the orbit determination obtained for the first catalogued objects are presented and discussed.

Acknowledgments

The MTOS project has been partially funded by BPI France, the European Innovation Council and SMEs Executive Agency (EISMEA).