San Fernando Laser station: News and improvements

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San Fernando laser station has been working on this geodesic technique for more than 4 decades. In 2015, a new field of work was opened, such as the monitoring of non-active collaborative objects. It marked a first step towards space debris tracking. Since then, several changes and improvements have been made on the station, such as the incorporation of two new laser benches, and a severe modification of the hardware and mainly on the software which controls the station.

The exponential increase of the number of artificial satellites has led to an even more remarkable increase in the number of inactive objects orbiting the outer space (mainly at LEO segment). This is a major issue for our society. It is a serious threat to the constellation of currently active orbiting objects, and to the future space missions. In 2016, this station joint the European Union (EU) effort on SST (Space Surveillance and Tracking) activities, as one of the 40 sensors provides by Spain to space debris monitoring. Since then we have participated in several campaigns on a regular basis.

Currently our major limitation refers to the laser-telescope mount. Recently we have got funding to carry out its replacement and we hope it will be a reality in the next coming months. It means that San Fernando station will be out of activity temporarily for some months.

This project will be a turning-point as it will enhance our angular resolution, reaching 2 or 3 arcseconds. We hope that our observational performance will be very clearly improved, opening the possibility of daytime and blind tracking on active objects and space debris as well. In this presentation, we will show the modifications already carried out, results obtained and the perspectives of the station for the immediate future.