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ACQUIRING OBSERVATIONS FOR TEST AND VALIDATION IN THE SPACE SURVEILLANCE AND TRACKING SEGMENT OF ESA'S SSA PROGRAMME

Abstract

This paper describes selected current and planned optical, both passive and laser ranging, and radar observations data acquisition campaigns conducted by ESA's SSA Programme. One of these initiatives comprises the qualification of optical sensors. First qualification results from several telescopes are presented. The concept of an Expert Centre interfacing the SSA Space Surveillance and Tracking (SST) data centre and external sensors (optical passive telescopes and laser ranging sensors) is described that is found relevant for the community of optical observers in SST. Results from the validation and qualification campaigns performed to Borowiec laser station and ESA's Test-bed telescope in Cebreros are reported. ESA's two half-metre class telescopes on robotic mounts have been integrated in the frame of a technology development programme. Following an in-factory qualification programme, under human supervision and involving commercial, off-the-shelf processing software, for full-end autonomy and robustness testing, the deployment to final sites, covering both hemispheres, is expected to finalise in 2018. Main figure of merits of these robotic telescopes are described. ESA's test-bed radars also participated in several coordinated campaigns. We present first results of the quality assessment in this paper.