
The Space Situational Awareness Programme and Evolution

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Résumé

In the last decade Space Situational Awareness (SSA) activities in Europe have undergone a major reassessment. At present monitoring the space debris (SST – Space Surveillance and Tracking) population is carried out mainly at EC level through an inter-agency consortium while the NEO (Near-Earth Object) and Space Weather hazard is addressed by the ESA SSA Pre-operational services have been started in all SSA segments by establishing the corresponding operational centres. They rely on sensors (telescopes and radars) either existing or whose upgrade is planned and/or on-going; the deployment of new assets, such as the flyeye telescope, is also foreseen. National and European R&D initiatives focused on mitigation (e.g. the EC H2020 NEOShield project) have been also carried out.

As far as NEO and space debris are concerned, the strong commonalities in the ground-based assets needed for mitigation and scientific purposes offer several opportunities for cooperation. In particular the future scenario looks forward the realization of integrated ground-based networks where the detection of celestial objects (either natural or man-made), their astrometric follow-up and physical characterization are performed in close loop and with quick reaction times. Ground based observations are, in turn, essential for properly planning space activities devoted to both science (e.g. exploration missions, in-orbit servicing) and mitigation (active debris removal, deflection missions). On the other hand Space Weather is focussed on the realization of the so-called "Lagrangian Mission" which plans to send a spacecraft on one of the triangular Lagrange points of the Earth-Sun system for the early warning of solar disturbances.

Within this framework an overview of the status and on the future development of the SSA Programme is given with special attention to the recent proposal to establish an European "Space Safety" Programme encompassing both, ground and space SSA systems.

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