

19th IAA SYMPOSIUM ON SPACE DEBRIS (A6)
Space Debris Detection, Tracking and Characterization - SST (1)

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A PORTUGUESE RADAR TRACKING SENSOR FOR SPACE DEBRIS MONITORING

Abstract

The increase in space debris is a threat for space assets and space based-operations and led to space agencies to develop programs for dealing with it. As part of the national SST project led by the national Ministry of Defense, Instituto de Telecomunicações is developing ATLAS, a new monostatic radar tracking sensor located at the Pampilhosa da Serra Space Observatory, Portugal. The system operates at 5.67 GHz and aims to provide information on objects in LEO orbits upto 10 cm² of cross section at 1000 km radar range. The Space Observatory houses all the necessary equipment to connect it to the research and development team in Aveiro and to the EUSST network through the Azores operations center. The system features digital waveform synthesis, power amplifiers using GaN technology, fully digital signal processing and a highly modular architecture that follows an Open Systems philosophy and uses Commercial-Off-The-Shelf technologies. ATLAS establishes a modern and versatile platform for fast and easy development, research and innovation.