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UPDATE ON THE SYSTEM DESIGN OF THE ATHENA MISSION

Abstract

ATHENA, Europe's next generation x-ray telescope, is currently under Assessment Phase study with parallel candidate industrial Prime contractors, after selection for the 'L2' slot in ESA's Cosmic Vision Programme, with a mandate to address the 'Hot and Energetic Universe' Cosmic Vision science theme. This paper will consider the main technical requirements of the mission, and their mapping to resulting design choices at both mission and spacecraft level.

The result of the mission consolidation review will be described along with the mission baseline fitting the mass and cost envelopes. The main trades will be presented as well as the parametric analysis performed to reach the current consensus for the mission baseline.

Particular emphasis will be given to the Science Instrument Module (SIM) design, currently under the responsibility of the ESA Study Team. The SIM is a very challenging module due primarily to the need to provide to the instruments a soft ride during launch, and a very large (around 3 kW) heat dissipation capability at varying interface temperatures and locations.

Finally, a programmatic overview will be given of the on-going Assessment Phase leading up to adoption of the mission.