

SPACEWIRE IN THE SIMBOL-X HARD X-RAY MISSION

Session: SpaceWire missions and application

Short Paper

Cara Christophe, Pinsard Frederic.

CEA Saclay DSM/IRFU/Service d'Astrophysique,

bât. 709 L'Orme des Merisiers, 91191 Gif-sur-Yvette, France.

E-mail: christophe.cara@cea.fr, frederic.pinsard@cea.fr

ABSTRACT

SIMBOL-X is a hard X-ray mission, operating in the 0.5–70 keV range, which is proposed by a consortium of European laboratories for a launch around 2013. Relying on two spacecrafts in a formation flying configuration, SIMBOL-X will allow to elucidate fundamental questions in high energy astrophysics, such as the physics of accretion onto Black Holes, of acceleration in quasar jets and in supernovae remnants, or the nature of the hard X-ray diffuse emission.

The instrument combines three type of detectors: a Silicon low energy detector on top of a CdTe high energy detector and a scintillator which surrounds them except for the solid angle corresponding to the focused beam from the mirror. Instrument performance is expressed in particularly in term of dead time, which defines in turn the time tagging resolution and relative accuracy of the events from the three detectors. Therefore the SIMBOL-X instrument requires an accuracy of 100 ns. In the presentation we will focus on the SpaceWire standard Time-Code use limitation and provide a way to improve it with a minor upgrade of the standard to reach the expected performances.