

IAF SPACE SYSTEMS SYMPOSIUM (D1)
Innovative and Visionary Space Systems (1)

Author: Ms. Rania Toukebri
Airbus D&S, Germany, rania.toukebri@spacegeneration.org

NEW GENERATION OF ONBOARD COMPUTERS FOR LONG MISSIONS

Abstract

The upcoming space exploration projects are targeting the moon, Mars, the moons of Jupiter and far away planets. The current technologies are still lacking reliability and high performance for long term missions. Among the most important units we need to consider is the onboard computer of spacecraft. This unit will manage the communication of data between units during the mission.

The current onboard computers have numerous challenges in terms of data processing, power consumption, size and storage capacities. We need then to improve the current architecture using the neuromorphic platforms that will solve several issues we previously had in our traditional OBC architecture.

This paper will analyze the challenges we had in the current OBCs and propose a new generation of OBC using the neuromorphic platform, taking in consideration its reliability in space conditions.