

IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)
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NODE 1: A NEW HIGH PERFORMANCE 5G COMMUNICATIONS SYSTEM FOR
NANOSATELLITES**Abstract**

In this paper Node 1 system is introduced as the Open Space Network Foundation that will take the first step in building the base infrastructure for the next space revolution. Node 1 is the next generation of SDR, with fastest data speeds plus the most advanced sensors; allows innovators to connect and share resources with Distributed Computing systems, Networks or Collaborative Systems and enhance their spacecraft's through standard connectors.

Node 1 is a two card system: the 256 cores Massively Parallel Processor Array (MPPA) running at 600 MHz named as the MCC (MISSION CONTROL COMPUTER); and the Space AI Comm Card, that is the most powerful SDR communications system, both fully compatible with Cubesat standard.

The article will describe the main functionality of the MCC and will make a detailed revision of the Space AI Comm Card, with 4 FDD TDD LTE at 50Mbps, 5G ready (4G, 3G and 2G support included), wideband communications capabilities from 300 MHz to 6 GHz and geolocation services. Also will describe the Space Operating System (SOS) as an innovative proposal to have a collaborative open environment in space.