

SPACE SYSTEMS SYMPOSIUM (D1)
Enabling Technologies for Space Systems (2)

Author: Dr. Yunlong Lin
York University, United States, Yunlong.frank.lin@gmail.com

UNDERSTANDING THE SPACE ENVIRONMENTAL ISSUES FOR THE FLYING BY WIRELESS

Abstract

As the demand for smaller and more economical, efficient and complex spacecraft increases the need for small and efficient spacecraft is also on the rise and yet the progress of several of the current standards in terms of speed and data load has been impeded by their physical and mechanical constraints. One effective solution proposed here is to fly by wireless buses, i.e. the space platform would be more flexible for configuration using wireless data bus, specifically a Bluetooth data bus. This reduces both volume and complexity, while maintaining the integrity of the design. Some of the implications of a Bluetooth bus would be: (1) Reduction of at least 10

Here we focus on issues that involve the data handling matters such as radiation hardening, interference and jitter management and security implications posed by the space environment, followed by the modeling of LEO radiation environment, computational simulation to support future ground experimental tests. A build standard which will include the descriptions of parts, interface design, electronics design and test process due to the space environmental issues is described as well.