

Standard Spacecraft Wireless Protocols

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Abstract: "Standard Spacecraft Wireless Protocols":

The vast majority of existing wireless protocols are not designed to meet avionics and spacecraft design specifications. Factors such as low bandwidth, non self-synchronized wireless network, non existing lost data recovery mechanisms, overlapping band frequencies (2,4hhz), unreliable Medium Access (CSMA/CA mechanism) and non adapted modulation techniques to spacecraft environment call for the introduction of innovative technological platforms based on newer standards. Such platforms are already being designed and tested by Beanair Research laboratories in conjunction with major partners and operators. The main task of the newly designed, "spacecraft dedicated" platform is to challenge existing technologies by introducing a reliable, ultra-low power and self-synchronized (synchronization < 2 μ s) wireless network particularly adapted to dynamic measurement (10-20K KHz).

Key words: wireless, protocol, sensor network, time-synchronization, ultra-low power

Requirements for Spacecraft Applications

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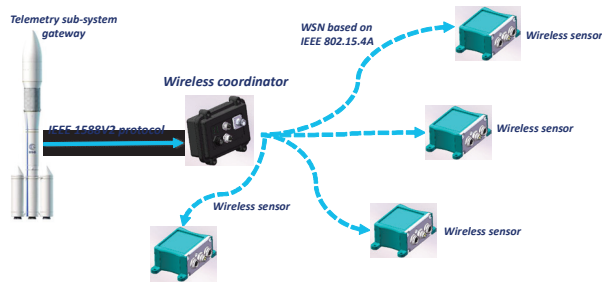


Figure 1: Architecture of WSN for Spacecraft