MIL-STD-1553 Present and Future

Abstract

MIL-STD-1553 is a serial data bus that has been used as the primary command and control interconnect in military aircraft for the past three decades. MIL-STD-1553's robust performance, high level of interoperability, large installed based, and well established infrastructure of vendors has made MIL-STD-1553 the network of choice for military avionics systems around the world.

The use of MIL-STD-1553 is not limited to military aircraft. MIL-STD-1553's use is pervasive in military ground vehicles, military ships, UAVs, missiles, and satellite systems. More recently MIL-STD-1553 has been selected for use in the primary flight control system for a commercial aircraft(1). All of these applications share common requirements for a reliable, fault tolerant data bus that will operate in relatively harsh environments. Aircraft applications have unique environmental requirements such as lightning immunity, wide temperature range, high vibration, and high electromagnetic interference (from sources such as radar). MIL-STD-1553 was explicitly designed to operate in these demanding environments.

The presentation will talk about the history and the future of Mil-Std 1553, will explain the benefits of Mil-Std 1553 and show the evolution of this data bus standard over the time. It will discuss modern ASIC and embedded products with current application examples.

Today's Market observations will lead into potential future technologies suitable as a future "alternative" to Mil-Std 1553.

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