



Determination of an Optimal Commercial Data Bus Architecture

A10

Objective

Determine the optimal commercial data bus architecture that will lead to faster, better and cheaper data acquisition systems. Flight data systems could then be developed using commercial hardware and each program will be able to minimize the amount of program unique hardware design. This should save programs money and schedule.

Why Needed

It is anticipated that this research will result in the selection of one commercial data bus architecture that is versatile enough to meet the functional and environmental requirements of multiple programs. A prototype data acquisition system will be used to demonstrate the data bus architecture capabilities. This proposed research would be used to determine an optimal commercial data bus architecture. Once determined, the data bus architecture can be used to develop any type of flight data system. For example, the direct result of this research will be a data acquisition system. However, a system controller or a data storage unit could be developed. These applications could be used to control a small microgravity experiment or collect and store vehicle health data. This task is the first and probably most important step in developing a flight data system using commercial off the shelf components.

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