CLIENT **MBS Electronic Systems**

PROJECT **White Paper: "A Way to Triple the Life of Avionic Test Systems"**

OBJECTIVE **Persuade avionics testing managers of the superiority of Avionics-to-Ethernet module as an avionics interface solution in test stations.**

COPY EXCERPT

How Rapid Computer Evolution/Obsolescence Has Cost Test & Maintenance Organizations


A Way to Triple the Life of Avionic Test Systems

HOW AVIONICS-TO-ETHERNET INTERFACE SOLUTIONS SLASH UPGRADE COSTS BY DECOUPLING TEST SYSTEMS FROM THE RAPID OBSOLESCENCE OF COMPUTER TECHNOLOGY

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TABLE OF CONTENTS

INTRODUCTION

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For almost 30 years, test system manufacturers have made use of the latest consumer computing technologies to keep costs down. From PC-XT and PC-AT in the early 1980s, to PCI and PCI-X… each new generation has brought greater performance at a lower price.

And once again, this cycle is repeating itself. The world is moving away from PCI and even PCI-X. The shift is on toward high-speed serial buses like PCI Express. Already, we're finding fewer PCI slots in our personal computers and work stations.

This rapid progress has been a boon for consumers, bringing ever greater capability and ease of use. But it often creates huge headaches for aircraft testing organizations.

Here's the problem. For years, the only way to move data between an avionics data bus and a PC, for testing and analysis, was through an interface card installed in the PC (i.e., connected to the PC bus).

PC bus technologies typically last less than 10 years before being phased out. When that happens, all the equipment that relies on that bus technology – including avionics interface cards – become obsolete and are phased out by their manufacturers.

Thus, avionic test systems built on PC technology have a lifespan of about 10 years. But the aircraft equipment they test remain in service for an additional 20 years or more. As test systems get old, it becomes harder and harder to replace parts when failures occur.

An expensive proposition

Unfortunately, test and maintenance groups often can't afford to upgrade their test systems when the computers in them become obsolete.

The costs go far beyond the price of the computers themselves.

Replacing an obsolete computer that hosts a data bus interface card means replacing the card, its custom controller software and its bespoke cables, as well.

On top of that, there's the cost to write new software that interfaces the new card's controller software with the test engineers' analysis tools. Rarely do the analysis tools supplied – and usually sold separately by card vendors – provide all the capability needed.

In a recent telephone conversation with MBS, a maintenance manager complained he could not find a new interface card that would work with his test system. He was still using PC-AT computers, because all his test software had been written for that standard. He was afraid if it broke down, he would be unable to test and maintain his equipment…