Testing Serial Data-bus Wires During Flight

- **Detects Intermittent Wiring Problems Before Functionality is Hurt**
- **Shortens time to fix data-bus wiring problems**

- Detects wiring problems before functionality is hurt
- Pin-points location of a problem
- Continued testing during flight
- Increases data-bus reliability
- Reduces maintenance costs
- Shortens time to fix bus wiring problems

Detect and locate
wire faults in a complex system

Live diagnostics
while the system is operational

Realtime Prognosis
Capture intermittent failures and prevent costly platform shutdowns

Supported Networks:
- MIL-STD-1553
- ARINC429
- ARINC825
- CAN
- CAN-FD
- CAN OPEN

Sital's Passive TDR Technology for Wire Testing

The Problem
Aircraft downtime causes millions of dollars in lost revenue and hundreds of aborted missions every year

Aging wiring degradation, environmental effects and human faulty installations are the leading factors to wired network malfunctions in cars, aircrafts, boats and industrial machinery. Traversing long wires to pinpoint the fault location is a lengthy process requiring a **complete vehicle standstill,** massive **removal of avionic/ECU systems** and creating **unnecessary collateral damage**

The Solution

Sital's Passive TDR (pTDR™) technology is capable of detecting physical wiring problems such as disconnections, short-circuits before the functionality of the system is hurt.

Unlike other wiring testing systems, pTDR does not generate any pulses to the bus. Instead, it monitors the existing communications and measures reflections created by the normal transmissions. The Sital pTDR can quickly define the **nature and location** of the fault.

Key Benefits:

- **Vehicle/Aircarft network topology creation**
- **Capture first wire intermittent failure**
- **Early detection of wires faults**
- **Reduce "No-Trouble-Found" for wires failures**
- **Distinguish wire vs. module failures**
- **Increase repair efficiency**
- **Reduce false module replacement**
- **Added diagnostics capabilities**
- **Improve customer satisfaction**

"I am the shop foreman at a GM dealership in Canada. A GM field engineer is here working on a intermittent data line fault which we have spent months trying to fix. He has brought with him your Buffalo pTDR tool and I have to say, it has blown me away. It is an amazing tool with so much potential!"
Colin Chilibeck, GM Canada

Bus Fault reporting in a car manufacturing plant:

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SITAL Technology

How can you leverage pTDR?

The Sital pTDR is available for integration in **assembly production lines** or as **embedded hardware for real-time intermittent wiring fault detection**

Assembly Lines and Field Engineering

The Sital pTDR technology is embedded within the BUFFALO product.
The Buffalo is a ruggedized handheld device for rapid diagnostics of physical wiring faults. It encapsulates the capabilities of the the pTDR technology along an oscilloscope and Sital's software package for best in class debugging of physical wiring issues.

BUFFALO Wiring Fault Detection

The Buffalo **speeds up repair time** and **reduces collateral damages** by pinpointing the location of the wiring fault on a platform topology within seconds

The BUFFALO support all major serial communication buses for avionics, automotive and industrial applications including

MIL-STD-1553
ARINC 429
ARINC 825
CAN
CAN-FD
NMEA 2000
CANOpen
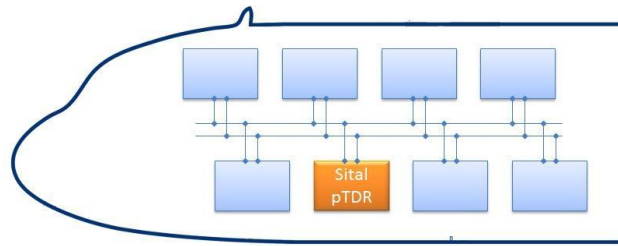
Embedded OEM Solution

Sital offers a compact hardware solution for integration with existing ECUs. Tier-1 ECU suppliers for aircraft and automotive platforms can extend their product offerings with real-time detection of intermittent wiring faults and their locations. The Sital pTDR chipset is capable to monitor the entire bus regardless of it's length or number of stubs providing an extremely scalable and cost effective maintenance solutions.

Sital's Embedded pTDR chipset provides **real-time detection for intermittent wiring disconnects** and **improves network quality**, **reduces repair costs** and **minimizes cost of warranty**

Fault Location Software

Sital's pTDR technology is accompanied by a powerful software package for creating and maintaining aircraft/car topologies.
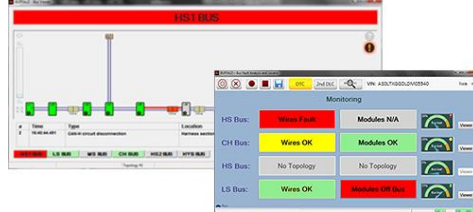
Once integrated, the solution provides visual indication of the fault type and specific location on the wired network.

The pTDR software provide **automatic visual indication of the wiring fault type and location** and provides **API for integration with service operation centers (SOC) for fleet maintenance**