



# Case Study

## Automatic CAN Bus Tester Significantly Reduces Test Effort at Airbus

### The Customer

Airbus is the world's leading commercial aircraft manufacturer whose customer focus, commercial know-how, technological leadership and manufacturing efficiency have set the standard for the aviation industry. Ensuring the company's full range of jetliners remains at the cutting edge of performance, Airbus is continuously developing product innovations to meet its customers' needs. Airbus' modern and comprehensive product line comprises highly successful families of aircraft ranging from 100 to more than 500 seats.

### The Challenge

#### Reduce time of CAN bus data traffic and signal quality testing

The specific process for developing CAN networks at Airbus requires test and verification procedures. Since the A380 program, continuous enhancements have been implemented to execute the test procedures more easily and efficiently. Automated test procedures are a requirement to provide a further reduction in test times.

### The Solution

#### Automation of test procedures and report generation

CANoe with the Scope option, PicoScope oscilloscope hardware and the VN1630 network interface represented the starting point for developing automatic procedures to conduct the following tests:

- ▶ LRU physical layer and data layer tests to analyze and evaluate the signal quality
- ▶ Data traffic tests to verify the CAN traffic against network specification
- ▶ Live data testing to determine if LRUs are transmitting Tx frames

Data obtained from the testing process are stored in an auto-

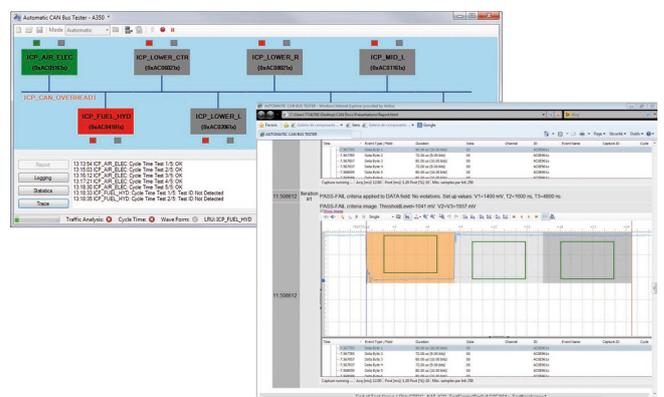
matically generated XML file which is then used to seamlessly generate the resultant test report.

### The Benefit

#### Test time reduced by one-half

The customized automatic CAN bus tester reduced the amount of test time by one-half. In some test cases Airbus was able to realize a reduction in total test time from 8 hours to just 15 minutes, including report generation. The primary reason for this improvement was to set the oscilloscope's start trigger automatically for each frame and not manually.

The tool is a stand-alone, light-weight and robust test unit that makes it easier to conduct the tests in harsh, cramped and limited spaces in the aircraft. Extensive test reports were automatically generated by CANoe in specified templates and layouts.



Automatic CAN Bus Tester main user interface showing the summary verdict of each LRU