Simulation, Testing and Analysis of CAN-based Avionic Bus Systems

Vector now supports ARINC protocols 810, 812, 825 and 826 with its CANoe and CANalyzer development tools

STUTTGART, Germany, September 8, 2010 – Along with the CAN protocol, CANoe.CANaerospace 7.2 from Vector now also supports ARINC protocols 810, 812, 825 and 826. The development and test tool covers many task areas in developing CAN-based networks for the aerospace industry. These tasks range from network design to comprehensive network analysis and systematic testing of electronic units. In addition, multi-multiplexer functionality permits generic description of certain proprietary protocols.

Network designers, development and test engineers at aircraft manufacturers, system suppliers and component manufacturers can use the software tool CANoe over the entire development process, especially in the testing area. Versions 7.2 of CANoe.CANaerospace and CANalyzer.CANaerospace contain extensive functions for networking with ARINC protocols and the CANaerospace protocol. Developers can use these functions for tasks involved in creating simulations and analyzing and stimulating the bus traffic.

One of the primary applications of CANoe.CANaerospace is testing electronic units and networks – from simple interactive tests performed in design or implementation to systematic automated tests. Detailed test results are documented in an automatically generated test report.

The user assigns attributes in a project database to the messages and their data segments such as project-specific names, conversion formulas and
units. ARINC 825 profile files can be read-in and exported. Building upon this, it is possible to display messages and their data contents on the system level, service level and message level. Examples include Cabin Pressure Control, Water Waste, Body Pitch Angle, Boiler Water Temperature and many more. Sending of messages and their data contents is also parameterized in this way.

Moreover, Vector can also support its customers by conducting project work, e.g. projects to create test specifications or implement tests.

For more information on the Internet: [www.avionics-networking.com](http://www.avionics-networking.com)

### Background Information on Aerospace Protocols:

The ARINC organization manages and administers a number of specifications in the aerospace field. ARINC 810/812 is used to standardize communication between on-board galley inserts, for example. The focus here is on power management. Today's challenges in the development of on-board galleys involve the issues of increasing modularization, interchangeability and the disposal of aircraft electronics. ARINC 810 defines the physical interfaces for this and ARINC 812 the CAN-based Galley Data Bus. Among other things, it provides services and protocols for coordination of on-board Galley Inserts by the Galley Master Control Unit.

ARINC 825 specifies both the fundamental communication within CAN-based subsystems and between CAN subsystems, which might be interconnected by AFDX. It offers addressing mechanisms, communication mechanisms, a service structure, profile descriptions and much more.

ARINC 826 specifies Software Data Load over CAN. The mechanisms of ARINC 615A were adapted and optimized for CAN here.
AFDX (Avionics Full DupleX Switched Ethernet) will serve as the next generation aircraft data network. It is already being implemented in the A380, A350, B787 and other programs.

CANaerospace was developed by the company Stock Flight Systems. Key protocol applications are in engineering simulators, simulation cockpits and especially on drones (UAVs).

[Figure 1: CANoe.CANaerospace displays protocol-specific data in the Trace, Data and Statistics windows. Panels simplify the simulation. The communication behavior of the on-board galley inserts is simulated and analyzed.]
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[Figure 2: CANoe.CANaerospace supports the entire development process for CAN-based avionic networks – from planning to startup of entire distributed systems and their individual electronic units.]

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About Vector Group (Revised: September 1, 2010):
Vector is the leading manufacturer of software tools and software components for networking of electronic systems based on CAN, LIN, FlexRay, Ethernet and MOST as well as multiple CAN based protocols.
The Vector know-how is reflected in a wide range of tools as well as in integrated consulting services with software and systems engineering. Workshops and seminars complete the manifold training program.
Customers from the automotive engineering, the commercial vehicle, aerospace, transportation and control technologies around the world trust in the solutions and products from the independently-owned Vector Group.
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