CAPABILITY BRIEF

Commercial Avionics

USING OPEN ARCHITECTURE TECHNOLOGIES TO ACCELERATE AIRBORNE SYSTEMS DEPLOYMENT WITH HIGHER LEVELS OF AUTONOMY

RTI Connext is the real-time data connectivity framework that enables seamless and secure data exchanges from airborne and ground systems. Connext offers a proven path to RTCA DO-178C and EUROCAE ED-12C DAL A certification and runs on top of commercial avionics software standards such as ARINC 653, ARINC 661 and POSIX for rapid integration.

HIGHLIGHTS

Open architecture high-performance connectivity framework for avionics and autonomous air vehicles

Commercial RTCA DO-178C and EUROCAE ED-12C DAL A certification evidence

Provides field-proven connectivity for mission-critical UAM and eVTOL programs

Standards-based security for data-in-motion

Supports open standards such as ARINC 653, ARINC 661, DDS, and POSIX

Scales to support higher levels of autonomy and sensor fusion in airborne platforms

Powerful partner ecosystem enables rapid certified systems prototyping, development and deployment

SECURE, REAL-TIME CONNECTIVITY FOR COMMERCIAL AVIONICS

Modern commercial aircraft are transitioning from hardware-defined federated systems to software-defined, integrated modular avionics (IMA) systems. With this comes an increased demand for low latency, high-reliability networks that connect capabilities to control the performance, efficiency and safety of airborne platforms. In addition to these complex new technical challenges, avionic developers must be able to reliably certify and maintain global aircraft to achieve high in-service rates. Meeting these rigorous commercial avionics operational demands requires three capabilities:

- To acquire and consolidate a competitive set of aircraft capabilities that provide aircraft operational efficiency, passenger comfort, higher levels of autonomy and aircraft model competitiveness
- To reliably certify software systems to RTCA DO-178C and EUROCAE ED-12C DAL A avionics safety
- To enable upgrades to existing airborne systems to include increased sensor capabilities to support increased autonomy and lower pilot workloads

RTI Connext® supports open architecture commercial avionics systems by providing fast, scalable, reliable and secure connectivity between integrated platforms. Based on the Data Distribution Service (DDS™) standard, Connext enables the integration of legacy and new systems, including platforms and sensors that increase the autonomy, reliability and safety of flight systems.

Connext includes a rich set of tools that accelerate module- and system-level development, debugging, testing, integration and optimization. RTI tools provide users with the ability to visualize system modules, interconnectivity and health, as well as to introspect and inject data into avionics platforms.

Standards-based, certification-ready software

To accelerate airworthiness, Connext offers commercial RTCA DO-178C and EUROCAE ED-12C DAL A certification evidence audited by a third party for rapid and reliable review. This evidence contains design documents, high and low level requirements, project documents, project plans, project standards, project certification documentation, tool qualification documents, development and verification artifacts, and more, which drives down the certification risk, and accelerates time to commercial service.

Standards-based security

Connext complies with the OMG® DDS Security™ specification. These security capabilities provide authentication, access control, encryption, data tagging and event logging without modifying the existing DDS network infrastructure. Connext provides data confidentiality and integrity at the data topic level while protecting information from multiple security and intellectual property domains from unauthorized access and tampering.

Proven in Unique Designs

RTI Connext is in use in over 1,800 global design wins and over 250 autonomous systems, including the following mission-critical commercial aerospace programs.

Aurora Flight Sciences

Aurora Flight Sciences ALIAS (Aircrew Labor In-cockpit Automation System) is a minimally-invasive robotic copilot that combines manipulation and machine vision to actuate aircraft controls and perceive aircraft instruments. RTI Connext is used to integrate advanced software and controls into an open, adaptable architecture.

General Atomics Aeronautical Systems, Inc

The General Atomics (GA) Advanced Cockpit Ground Control Stations deliver real-time data acquisition, analysis and response for unmanned aircraft systems. GA selected RTI Connext to simplify application code and speed development. The solution was delivered in less than 14 months, significantly faster than relying solely on in-house development or alternative software.

Airbus Group

The Airbus A^3 Vahana was the first certified, electric self-piloted vertical take-off and landing (eVTOL) passenger aircraft. RTI Connext was implemented as the airframe connectivity framework, integrating the aircraft's diverse systems with an open standard technology, greatly simplifying platform modularity and design integration.

Ground and Traffic Control Systems

RTI Connext is deployed in multiple airport ground control systems and air traffic control systems worldwide.

Please contact your RTI representative or visit www.rti.com to learn how Connext can help optimize your commercial avionics systems.

ABOUT RTI

Real-Time Innovations (RTI) is the largest software framework company for autonomous systems. RTI Connext is the world's leading architecture for developing intelligent distributed systems. Uniquely, Connext shares data directly, connecting AI algorithms to realtime networks of devices to build autonomous systems.

RTI is the best in the world at ensuring our customers' success in deploying production systems. With over 1,800 designs, RTI software runs over 250 autonomous vehicle programs, controls the largest power plants in North America, coordinates combat management on U.S. Navy ships, drives a new generation of medical robotics, enables flying cars, and provides 24/7 intelligence for hospital and emergency medicine. RTI runs a smarter world.

RTI is the leading vendor of products compliant with the Object Management Group (OMG) Data Distribution Service (DDS™) standard. RTI is privately held and headquartered in Sunnyvale, California with regional offices in Colorado, Spain and Singapore.

Download a free 30-day trial of the latest, fully-functional Connext software today: www.rti.com/downloads.

Your systems. Working as one.

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