



CAPABILITY BRIEF

Commercial Avionics

USING OPEN ARCHITECTURE TECHNOLOGIES TO ACCELERATE
AIRBORNE SYSTEMS DEPLOYMENT

HIGHLIGHTS

Proven, secure, high-performance connectivity framework for reliable, interoperable data exchange

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

Proven maintainability and extensibility capabilities

Robust safety, security and reliability solutions

Open standards support including DDS, ARINC 653, and POSIX

RTI Connex[®] DDS enables the real-time data connectivity that runs today's commercial aircraft. Its military-grade connectivity framework seamlessly and securely exchanges real-time data exchange from ground and air systems. Built on the OMG DDS standard, it offers a path to RTCA DO-178C and EUROCAE ED-12C DAL A certification and runs on top of commercial avionics software standards including ARINC 653 and POSIX for rapid updates with minimal downtime.

SECURE, REAL-TIME CONNECTIVITY FOR COMMERCIAL AVIONICS

Modern commercial aircraft is 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 differentiating systems. In addition to these complex new technical challenges, avionic developers must be able to certify and maintain global aircraft to achieve high in-service rates.

Meeting these rigorous commercial avionics operational demands requires three capabilities:

1. To acquire and consolidate a competitive set of aircraft capabilities that provide aircraft operational efficiency, passenger comfort and aircraft model competitiveness
2. To reliably certify software systems to RTCA DO-178C and EUROCAE ED-12C DAL A standards
3. To enable updates and maintenance to all connected systems with minimal downtime and certification risk

RTI Connex[®] DDS supports open architecture commercial avionics systems by providing fast, scalable, reliable and secure connectivity between integrated platforms. Based on the Object Management Group (OMG[®]) Data Distribution Standard (DDS[™]), Connex DDS runs on top of commercial avionics software standards, including ARINC 653 and POSIX, for rapid integration and maintainability of airborne assets.

To accelerate airworthiness, Connex DDS offers commercial-off-the-shelf (COTS) RTCA DO-178C and EUROCAE ED-12C DAL A certification evidence containing over 5,000 audited hyperlinked files for rapid and reliable review. This evidence drives down airworthiness risk in programs requiring safety certification through design documents, high- and low-level requirements, project documents, software quality assurance SQA audit memos, test results and more.

Connex DDS 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.

Standard-based Security

Connex DDS is the first connectivity platform to comply with the new OMG DDS Security specification. These security plug-ins provide authentication, access control, encryption, data tagging and event logging without modifying the existing DDS network infrastructure. It provides data confidentiality and integrity while protecting information from multiple security domains from unauthorized access and tampering.

Proven in More Than 1,200 Unique Designs

Connex DDS is used in mission-critical systems throughout the world, including:

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 Connex DDS is used to integrate advanced software and controls into an open, adaptable architecture.



Airbus Vahana

Airbus Vahana is developing the first certified, electric, self-piloted vertical take-off and landing (VTOL) passenger aircraft. RTI Connex DDS addresses diverse systems with the same technology, greatly simplifying design integration and modularity.



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

ABOUT RTI

Real-Time Innovations (RTI) is the Industrial Internet of Things (IIoT) connectivity company. The RTI Connex[®] Databus is a software framework that shares information in real time, making applications work together as one, integrated system. It connects across field, fog and cloud. Its reliability, security, performance and scalability are proven in the most demanding industrial systems. Deployed systems include medical devices and imaging; wind, hydro and solar power; autonomous planes, trains and cars; traffic control; Oil and Gas; robotics, ships, and defense.

RTI lives at the intersection of functional artificial intelligence and pervasive networkingSM.

RTI is the largest vendor of products based on the Object Management Group (OMG) Data Distribution Service[™] (DDS) standard. RTI is privately held and headquartered in Sunnyvale, Calif.

Download a free 30-day trial of the latest, fully-functional Connex DDS software today: <https://www.rti.com/downloads>.

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