DATASHEET

RTI in Aerospace and Defense

OPEN STANDARD CONNECTIVITY FRAMEWORK FOR CRITICAL SYSTEMS

HIGHLIGHTS

Ideal for integrating manned, unmanned and machine-to-machine (M2M) systems

Rapid technology insertion, maintainability and extensibility capabilities

Robust TRL 9 safety, security, interoperability and resilient network solution

Easy-to-deploy, standards-based layered security

Commercial RTCA DO-178C DAL A certification evidence

Open standards support, including DDS, FACE, GVA, OMS, SOSA, UCS, and UMAA

RTI Connext provides an open architecture connectivity framework that is fast, scalable, reliable, and secure, both within the network and between land, sea, air, cyber and space-based systems. With its interoperability, portability, loose-coupling and real-time Quality of Service (QoS), Connext is the preeminent software connectivity framework for mission-critical aerospace and defense systems.

CONNEXT IN CHALLENGING AEROSPACE & DEFENSE APPLICATIONS

RTI Connext®, based on the open DDS standard, is the commercial leader in real-time software frameworks for Aerospace and Defense systems. It provides fast, scalable, reliable, and secure connectivity within and between land, sea, air, cyber, and space-based systems. Based on the open Object Management Group® (OMG®) Data Distribution Service (DDS™) standard, Connext advances the Modular Open Systems Approach (MOSA) and accelerates systems development by rapidly integrating both new and legacy system assets.

Connext is proven in a wide range of application segments. In Defense systems, Connext is deployed in:

- Naval surface vessels and systems
- Military Avionics with Future Airborne Capability Environment (FACE™) and/or DO-178C certification requirements
- Integrated Air & Missile Defense (IAMD) systems
- Joint All-Domain Command and Control (JADC2) systems

- Military Networks with Multi-Domain Operations (MDO) and Pan-Domain Capability (PDC) requirements
- Military Ground Vehicles based upon the Generic Vehicle Architecture (GVA) and NATO GVA standards (based on DDS)
- Modeling, Simulation, and Training (MS&T) systems using HLA, DIS, and TENA standards, and Unity® and Epic Games® Unreal Engine® gaming engines
- Special Operations Forces (SOF) training and deployment environments
- Autonomous undersea robotics and Unmanned Maritime Autonomy Architecture (UMAA) platforms

Connext prioritizes interoperability as a primary business attribute, which promotes innovation and competition for Defense systems. The data-centric architecture of DDS naturally enables the efficient delivery of secure data-in-motion information from multiple security and operational sources. This multi-supplier and multi-domain interoperability increases cross-service collaborative efforts and reduces the total lifecycle costs and total cost of operations of networked platforms, making Connext ideal for MDO and JADC2 deployments.

Connext is also used in Commercial Aerospace systems, including:

- Commercial Avionics
- Space Systems, including Launch Systems and Vehicles
- Urban Air Mobility (UAM) and eVTOL Vehicles
- UAM and eVTOL Infrastructure

STANDARDS-BASED SECURITY FOR DATA-IN-MOTION

Also part of the Connext product suite, RTI Connext® Secure is the first solution to comply with the OMG DDS Security specification. Connext Secure plugins provide authentication, access control, encryption, data tagging and event logging without modifying the existing DDS network infrastructure. The DDS security plugins are configured via XML and can be deployed dynamically into operational systems, allowing for rapid responses to changes in the security threat landscape.

RTI has an optional SDK for Connext Secure that provides custom plugins, crypto modules and support for custom hardware such as crypto accelerators and TPMs. These capabilities ensure data-in-motion confidentiality and integrity while protecting information across multiple security domains from unauthorized access and tampering.

PROVEN IN MISSION-CRITICAL DEPLOYMENTS

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

U.S. Navy
The U.S. Navy's Ship Self Defense System (SSDS) is the "last line of defense" coordinating high-speed radar systems, targeting defensive missiles and directing 1,000+ rounds/second at incoming cruise missiles. Connext delivers these critical messages in real-time.

Zumwalt DDG 1000
Connext software coordinates and manages complex, diverse onboard hardware and software systems. These include hundreds of computers, thousands of applications and more than 10 million publish-subscribe pairs.

General Dynamics Littoral Combat Ship (LCS)
RTI's software connects disparate systems, interoperates across multiple programming languages and operating systems, and handles disadvantaged links and legacy interfaces for the US Navy LCS.

Raytheon Ship-Wide Area Network (SWAN)
The SWAN on the US Navy LPD-17 runs machinery, damage control, steering, magnetic signature, mission control, navigation and communications. Connext supports redundant networks, data and sensors without servers.

National Aeronautics and Space Administration (NASA)
RTI Connext provides communications software that is a critical core component of the launch-certified Spacecraft Command and Control System (SCCS) for NASA's Artemis 1 Mission. During loading and launch, Connext delivers command and status data in real-time, meeting the demanding availability, reliability, and latency requirements of the SCCS.

NASA's Artemis 1 Launch

NASA's Human-Robotic Systems Program prototypes robots for extraterrestrial surfaces. The project coordinates four NASA centers building different robots to operate in realistic environments including over low-bandwidth, high-delay communications. Connext provides these systems with one common architecture.

COMPLIANCE
DUNS: 797735883   CAGE: 03FH8

NAICS Codes:
- 511210 Software Publishers
- 541511 Custom Computer Programming Services
- 541512 Computer Systems Design Services

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 real-time 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.

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