For decades, single vendors have managed requirements for airborne systems. However, as budgets tighten and warfighter environments become more dynamic, we must overcome the limitations of the resultant stovepipe development processes.

Future Airborne Capability Environment (FACE) Conformance is the answer. The aviation-focused FACE Consortium managed by The Open Group includes leading U.S. industry suppliers, customers and users. Its primary purpose is to promote government acquisition flexibility by enabling the re-use of capabilities through portable applications.

As an active contributor to the FACE Consortium, RTI proudly strives to reduce the time and cost to develop, integrate and launch avionics capabilities for military applications.

**RTI Support for FACE Requirements**

- RTI provides a variety of resources to advance FACE Consortium goals.
- Introduction to the FACE Reference Architecture
  - Three-day course covering the fundamentals of the FACE Reference Architecture.
- Requirements Analysis for FACE Transport Services Segment (TSS)
  - Results in a formal description of a program's TSS requirements. Combines training and expert architectural guidance to help your team deliver FACE TSS functionality cheaper and faster.
- Design Services for FACE TSS
  - Results in the production of systems engineering and design documentation to pass all formal review milestones and gates.
- RTI Transport Services Segment
  - TSS implementation built on the RTI Connext™ DDS product family. Safety certifiable under DO-178C Level A.

**Overcoming Challenges**

Established stovepipe development processes generally result in longer lead times, extended innovation schedules and an inability to re-use hardware and software between aircraft platforms.

The FACE Consortium has developed a vendor-neutral, technologically-appropriate reference architecture for a software Common Operating Environment (COE) standard. It also provides a business model to support and advance these new approaches.

**Emerging Results**

With broad industry and sponsor support, FACE Consortium efforts represent an inevitable advantage to:

- Provide inherent interoperability through open standards and standard software interfaces
- Improve warfighter capabilities faster
- Increase software portability and reuse
- Reduce project lifecycle and deployment costs
- Foster further innovation
RTI Transport Services Segment

The TSS is an abstraction layer in the FACE Reference Architecture. It provides a standard interface between portable applications, common services and platform-specific services. This approach ultimately allows portable avionics applications to be affordably integrated with disparate architectures and aviation platforms.

RTI applies its core technology to the FACE TSS. This core technology is built on the Data Distribution Service (DDS) standard developed by the Object Management Group (OMG). A TSS built on RTI Connext DDS eases systems integration and maximizes deployment flexibility:

- Efficient and scalable real-time data distribution with publish-subscribe
- Selectable underlying transport (shared memory, APEX ports or sockets) during configuration
- Optimized intra-process, inter-process, inter-partition and inter-node communication
- Robustness and high availability by providing applications with a consistent view of shared state (single version of truth)
- Comprehensive control over Quality of Service (QoS), including message delivery reliability, deadlines, fault tolerance, access to historical data and resource utilization

FACE Reference Architecture with RTI TSS

About RTI

RTI is the world leader in delivering fast, scalable, communications software that addresses the challenges of building and integrating real-time operational systems. RTI Connext solutions meet the needs of enterprise-wide integration — from the operational edge to the enterprise data center. The RTI standards-based software infrastructure improves the efficiency of operational systems while facilitating better decisions, actions and outcomes for the business enterprise.

For over ten years, RTI has delivered industry-leading products and solutions for customers in markets ranging from Aerospace & Defense, Process Automation, Financial Services, Energy, Automotive, Health Sciences and Transportation Management.

Founded in 1991, RTI is privately held and headquartered in Sunnyvale, California.