



CAPABILITY
BRIEF

Accelerating Mission-Ready Collaborative Teaming

SOFTWARE COMMUNICATIONS STARTER KIT FOR IMPLEMENTING DISTRIBUTED AUTONOMY

The RTI Autonomous Collaborative Teaming (ACT) Starter Kit helps developers quickly implement collaborative autonomy capabilities, including teaming and swarming. Built on RTI Connex[®], it packages reference data models, network configuration profiles and communication libraries for integrating autonomy applications across platforms and with C2 systems.

HIGHLIGHTS

- » Get started quickly with a complete reference implementation
- » Connect platforms, autonomy applications and C2 systems with a modular architecture built on open standards
- » Reduce custom integration work and move faster from initial development to coordinated mission capabilities
- » Easily communicate over satellite, mesh and tactical links with Zero Trust security
- » Dynamically optimize and prioritize data flows as missions evolve to conserve bandwidth over constrained and degraded networks

Autonomous Mission Success Depends on Coordinated Teams

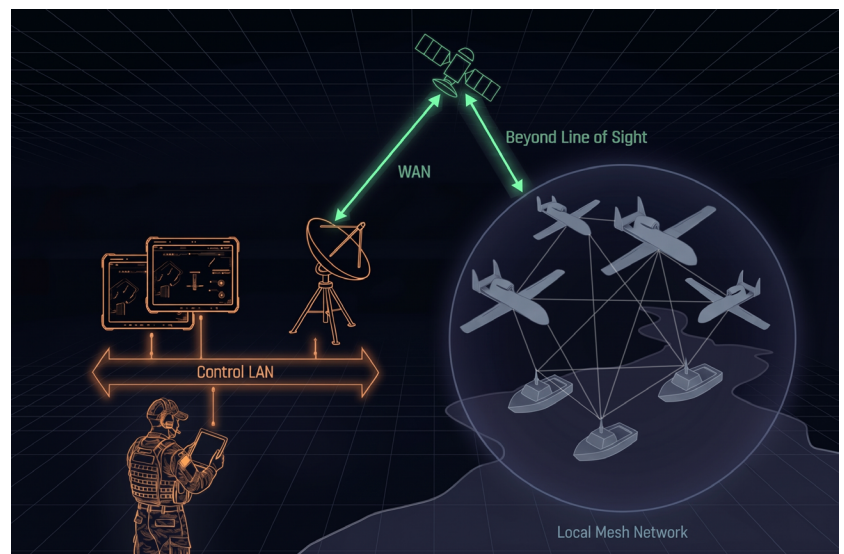
Fielding autonomous platforms does not automatically create a coordinated team. Platforms must share mission intent, status and sensor information as tasks change and communications become constrained. The challenge is keeping the team coordinated without requiring operators to manage every vehicle individually. Doing so requires a software foundation that supports information sharing across the team and with C2 systems as mission conditions evolve.

A Practical Starting Point for Collaborative Autonomy

Built on RTI Connex and RTI Routing Service, the ACT Starter Kit provides a ready-to-use foundation for orchestrating data exchange across autonomous teams. Developers can configure and extend its capabilities to meet their mission needs.

Connect the Team

Establish seamless data sharing across platforms, autonomy applications and C2 systems. ACT connects multi-domain teams, allowing UAVs, UGVs and USVs to operate within the same mesh. Built-in network traffic management prevents overload when scaling swarms, while a common data architecture ensures teams reliably exchange mission intent, status and sensor feeds.



Manage Mission Information

Optimize constrained-network utilization by controlling what information is shared, where it goes, and how it is prioritized, including preserving bandwidth for command and mission updates. Connex provides extensive Quality of Service (QoS) controls, dynamic content filtering and configurable down-sampling to conserve bandwidth under active jamming – helping ensure that critical strike and C2 orders get through.

Adapt as Teams Change

Reconfigure data flows as platforms join, team assignments change and mission requirements evolve. For example, local team communications can be isolated from wide-area C2 traffic. These policies can be adjusted to support different team configurations and communications constraints.

What's Included

The ACT Starter Kit includes network simulation and visualization tools that allow teams to stress-test swarm data flows and network limits before entering the field. Out of the box, developers also receive:

- **Reference Data Models:** Pre-defined data types for status, intent and sensor sharing eliminate months of writing custom integration code.
- **Pre-Configured Network Profiles:** Built-in settings for satellite, tactical radio and onboard networks automatically keep data moving smoothly across slow or degraded connections.
- **Seamless C2 Connectivity:** Edge routing software to intelligently distribute data and messages between local peer-to-peer team networks and with operational C2 systems.

Accelerating the Path to Field Deployment

Transitioning distributed autonomy from testing to operational platforms often stalls during network integration. The ACT Starter Kit de-risks development at every stage and speeds deployment to the field. It allows developers to prototype, simulate and test collaborative workflows in the lab, and deploy to theater with the exact same communications backbone that powers combat-proven systems.

A trusted and well-established solution, RTI Connex is field-proven, TRL-9 communications software utilized to connect, secure and manage real-time data flow across major U.S. defense systems including autonomous vehicles in all domains, air & missile defense and C2.

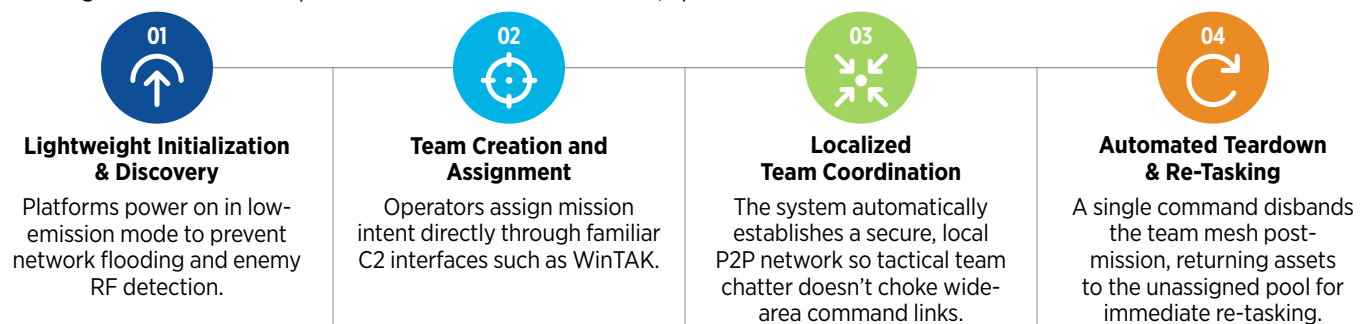
Connex is built on the open Data Distribution Service (DDS®) standard, aligning with a Modular Open Systems Approach (MOSA). This eases integration with other DDS-compatible standards and frameworks. These include the Robot Operating System (ROS 2), Autonomy Government Reference Architecture (A-GRA), Ground Combat Systems Common Infrastructure Architecture (GCIA), Generic Vehicle Architecture (GVA), Sensor Open Systems Architecture (SOSA®) and The Open Group Future Airborne Capability Environment (FACE®).

Visit rti.com/A+D

Contact your RTI ACT expert to learn more.

The Automated Teaming Lifecycle

A four-stage execution flow simplifies how autonomous teams form, operate and disband in the field:



ABOUT RTI

RTI is the real-time data streaming company for intelligent distributed systems. RTI Connex® software is the critical nervous system for over 2,000 designs across Aerospace and Defense, MedTech, Automotive, and Robotics.

RTI, Real-Time Innovations and the phrases "RTI Runs a Smarter World" and "Your systems. Working as one," are registered trademarks or trademarks of Real-Time Innovations, Inc. All other trademarks used in this document are the property of their respective owners. ©2026 RTI. All rights reserved. CB-048 V1 1026

2 • rti.com