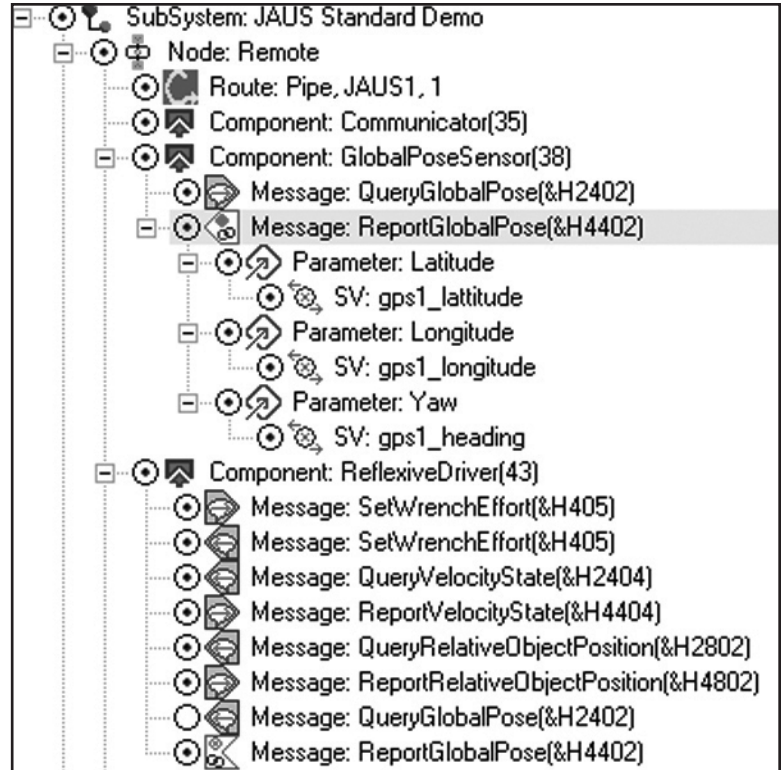# ProntoJAUS

One of the first of its kind, ProntoJAUS from Kairos Autonomi™ enables unique unmanned and robotic systems to communicate and operate with each other independent of design. ProntoJAUS provides a common conceptualized view of all robotics regardless of each robot's hardware or software. With this software, unique robots are able to share messaging schemes and information for optimal interoperability.

JAUS Builder hierarchy illustration.

Features

- JAUS interoperable
- Works with the Pronto4™ Strap-on Autonomy System
- Video transmission
- More than 50,000 lines of code
- Communications
  - UDP, IP
  - Named pipes
  - Serial: RS-232/422/485
  - Generic (MIL-STD-1553, MIL-STD-1760, etc.)
- Single JAUS-compliant DLL
- Application level shared memory variables
  - Active X, .NET
  - Assign shared variables to application specifics
  - Remote query of JAUS structure
- Programming
  - COM, COM+ technology
  - Visual Studio 6, Visual Studio 2005
  - Visual C++, Visual Basic, Delphi, C#
- Operating Systems: Windows 9x, NT, 2000, XP, Vista
- Interoperability with 3rd party, mainstream JAUS SDKs

Suite Components

- kJAUS DLL — self-aware of JAUS Reference Architecture 3.2
- kBuilder — Hierarchal JAUS structure configuration file generation
- kJAUS Workbench — JAUS exploration and implementation tool
- kJAUS ManualHead — Ad-hoc message generation and disassembly independent of "a priori" limitation
- JAUS Node — Create functional, stand-alone JAUS nodes
  - Source and Executables — Visual Studio 6/2005, Delphi
  - MinCode — Minimum implementation of kJAUS DLL
  - MinFile — Minimum configuration file usage of kJAUS DLL
  - MinVideo — Minimum video transfer usage of kJAUS DLL
  - kSample — Full featured sample of kJAUS DLL usage

The Kairos Autonomi™ ProntoJAUS is your first step in meeting the DoD mandate of unmanned system interoperability.

ProntoJAUS is based upon the Joint Architecture for Unmanned Systems developed by industry collaboration. Visit www.jaustechcenter.com for more information.
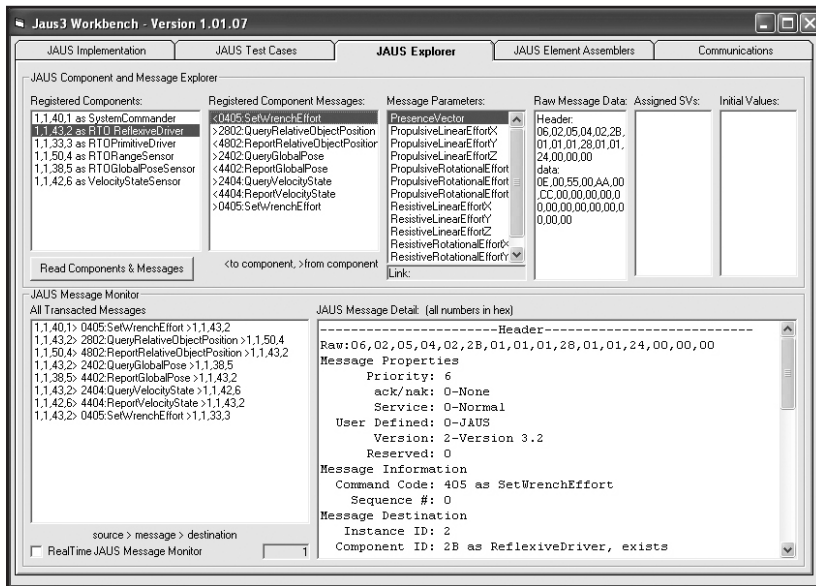
(MORE INFORMATION ON REVERSE SIDE)

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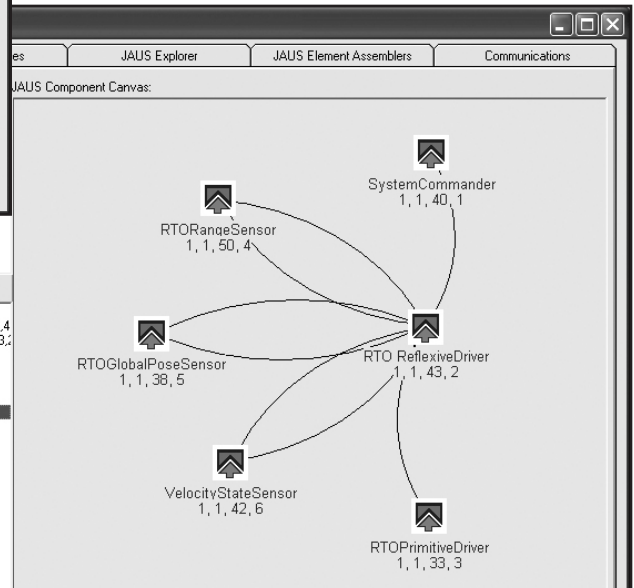
ProntoJAUS

The Kairos Autonomi™ ProntoJAUS suite consists of a primary DLL, supporting examples in various languages, implementation tools and a JAUS Workbench. The Kairos JAUS Workbench and DLL are the core of the JAUS development and implementation environment, while the DLL alone is required for usage in a run-time system. ProntoJAUS consists of a suite of software components, which provides for the discovery, exploration, development, implementation and maintenance of JAUS Reference Architecture 3.2 standard systems.

Compliance to the JAUS RA 3.2 standard is achieved through the usage of a JAUS communications driver layer that interfaces with local shared variables for complete control of vehicle operations. ProntoJAUS is tightly coupled with video over JAUS, as well as command / control messaging.

Implementation and Diagnostic Screens

Message traffic and message contents (left) can be examined historically or observed in real-time for proper operation and content with the JAUS explorer. As transactions occur they can be stored in history buffers for later analysis. A message disassembler breaks the message into its components for easy viewing. All messages can be captured, or you can use message filtering to focus on just those messages targeted to and from specific components.

The JAUS component object display (right) showing real-time message traffic connections is available from the main window of the JAUS Node executable. Message connections are shown in transitory fashion as they occur between components. Message sequencing and connections can be easily visualized. Service connections are shown as they are created, confirmed, activated, suspended and terminated.

ProntoJAUS applications range from creating a JAUS system with zero user-written software using existing executables, to creating stand-alone JAUS components with a software pipe interface, to utilizing an existing system with shared variables as the only interface, all the way to constructing a full system from the ground up. Implementation features include:

- Instantiate JAUS component in one line of code
- Instantiate entire JAUS system from one text file
- Shell classes for component customization
- Programmatically install service connections
- Core messages automatically handled
- Compilers for routes and messages

About JAUS

The Department of Defense (DoD) has mandated that all programs within the Joint Ground Robotics Enterprise (JGRE) use the JAUS standard, which enables interoperability among unmanned systems with unique hardware or software.

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