

I2AT - Intelligent Interoperable Agent Toolkit

Lockheed Martin Advanced Technology Laboratories http://www.atl.lmco.com

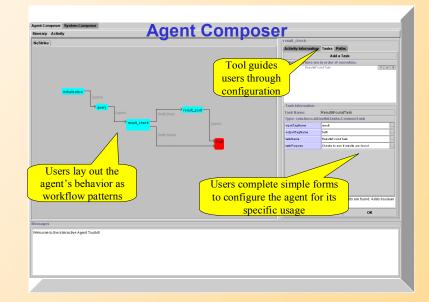
Agent-Oriented System Development Requisition Components Driven by User Requirements **Build Agent** Compose Configure Compose Personalize Components Agents System Deploy **Provide Components** 1 Week ~ 1 Month 1 Week 1 Day 10 min I2AT Single Task gent System Host Custom apabili **Template** Agent Compose Forms System Engineer/ System IT Staff IT Staff User Contractor Engineer Increase flexibility and adaptability of C4ISR System · Reduce cycle time of software system

Vision:

- Cycle time for insertion of new capabilities and/or tailoring of systems is too slow.
- Invent a new system of systems life-cycle model based on agentbased
 - workflow automation
 - ◆ large-scale interoperability
 - ◆ rapid deployment
 - decision support
- Create tools that support the full spectrum from end users to developers

Capability:

- An agent-oriented system development paradigm that works "middle-out," starting with systems specification
- Agent System Composer orchestrates agent-agent and agent-C2 system interoperation
- Agent Composer graphical specification of agent workflow patterns
- Repository of reusable, configurable agent behavior components



FBE-J C2 System Interoperability Shared Situational **FBE-J Coalition C2 Process** Awareness Focus on ASW C2 in FBE-J • Faster C2 Track Picture Synchronization: - Near real-time track sharing Operator Collaboration: - Tighter collaboration - Task assignments - Complete Logs Amplifying reports CoABS/CAST Despite intermittent connectivity Despite network problems GCCS-M (C2PC) **HORIZON** MTP **HORIZON** UK

Demonstrated Impact:

- ◆ After four hours of familiarization, NUWC and SPAWAR developers effectively built agent systems.
- Two days reduced to two hours for typical agent workflow development
- Greater than 50% reuse of agent components within a typical agent system
- Simplified, remote agent system deployment to distributed sites

