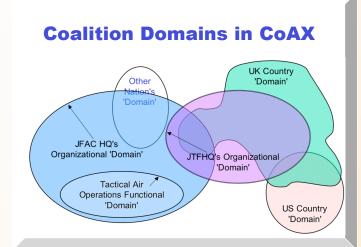


Policy-Based Management of Coalition Domains using KAoS

Jeffrey M. Bradshaw, Andrzej Uszok, Niranjan Suri, and Pat Hayes Institute for Human and Machine Cognition, UWF, Pensacola, FL



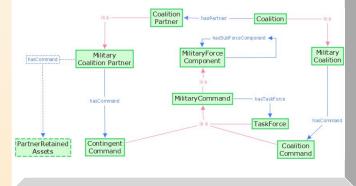
Description:

- KAoS Policy-Based Domain Management services can:
 - structure complex agent relationships using DAML
 define, deconflict, and enforce coalition policies
 - be easily used by any CoABS grid agent
 - support any agent platform (CoABS grid, CORBA, Cougaar, NOMADS, Voyager, etc.)
 - be administered through highlevel tools

Results:

- Rapid integration of new coalition partners
- Complex relationships among coalition partners and their agents represented as KAoS domains
- Policies demonstrated for
 Secure communication and
 access control
 - Resource management
 - Content filtering
- Policy conflict resolution assures consistency among policies
- KAoS Policy Administration Tool (KPAT) eliminates the need to understand the details of DAML

DAML Representation of Coalition Domains and Policies



KAoS Policy Conflict Resolution

Root Arabello-HQ Arabello-HQ Arabello-Coalition-Contin Arabello-Sensors	COAXE	-f96914b4-00f0-0000-8000-0000deadbeef into Policy1Harmonized3	
P B 6927cld0la67cda	CoAXF	olicy1Harmonized1 olicy1Harmonized4 OK	fad3:-7fef
D Australia-HQ D Binni-Coatibon Gao-HQ UK-HQ UNSGO US-HQ		and Distributing Policies the policy commit: 42453ms Cancel	
		Type DAML Add Edit Remov	ve Duplicate Load
Add Domain Delete Domain		Changes	Commit Refresh

Future:

- Simplify and streamline KPAT user interface
- Performance enhancements to reasoning mechanisms
- Continue R&D on obligation policies, adjustable autonomy, and human-agent/human-robotic teamwork
- Leverage results to other DARPA and NASA research programs
- Explore opportunities to participate in future experimentation with Joint and Coalition Forces demonstrations

DARPA CoABS CoAX Binni 2002 Demonstration