## CoSAR-TS Scenario

Aim

Our overall aim is to explore the synergy and relationship of collaborative task support and domain;agent relationship modelling technologies from AIAI and UWF/IHMC using DAML and DAML-S technology with an "application" demo focus in a coalition search and rescue scenario based at the end of the events of the CoAX Binni 2002 scenario.

Given Coalition SAR Scenario Outline - Based on Notes by Jim Burdell, SPAWAR for AFRL/Rome, June 2002
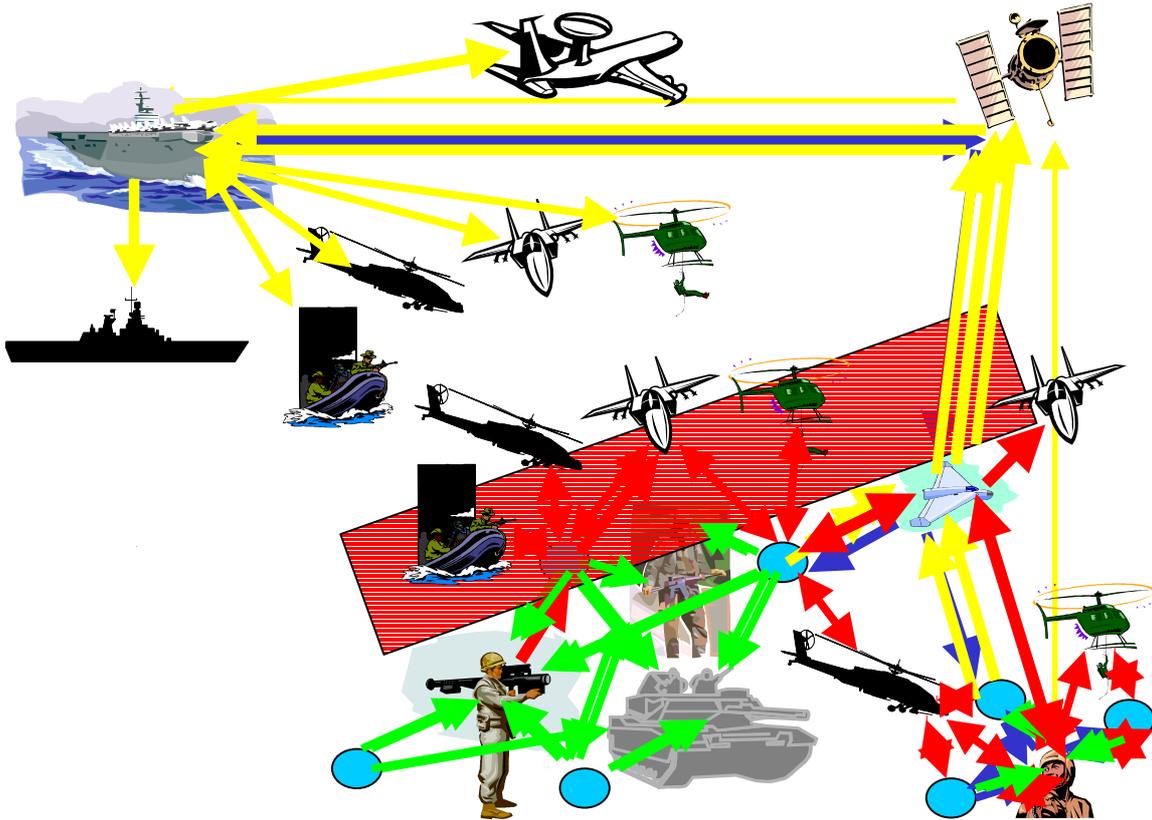
ESG Operational Sequence Diagram

1. The survivor lands safely and his rescue radio transmits location to the JTF Search and Rescue Coordination Center afloat.
2. Multi-source sensors note the signature of the events surrounding the survivor's predicament as well as the status and location of enemy forces in the area – this information is passed back via the sensor grid to the C2 grid as NRT situational awareness to JTF participants.
3. Based on at SRCC fusion of beacon information, ESG sensor information, and a priori information contained in distributed databases across the JTF, SRCC sensor manager commands ESG assets in vicinity of survivor to precisely locate and track survivor's location while locating and tracking hostile assets in vicinity of survivor.
4. Concurrently, ESG Sensor Agents in the local vicinity of the survivor identify, negotiate, verify, and validate with Agent in survivor's survival radio and then "grid" survivor into real time warning data from ESG. Verification, validation, and continuous location updates are passed back to SRCC via SRCC C2 agent.

5. Based on this information, SRCC accomplishes a rapid mission plan for a coalition rescue effort; as coalition forces are tasked with the CSAR mission by SRCC, they are included in C2 feeds of ESG data on survivor and threats negotiated by agents on the grid.
6. SRCC gives thumbs up on the CSAR mission plan and the coalition forces move into the tactical engagement zone. As the tactical forces move into the tactical range of nodes on the ESG sensor grid, platform agents and sensor agents identify, verify and validate each other and enter into Tactical (direct – real time –sensor to shooter) ESG grid – agents for each platform know their platform's intrinsic sensing capabilities and include non-duplicative data from ESG sensors while rejecting duplicative data – therefore the F-15 gets indications from ESG thermal sensors which monitor IR-guided manpad launches while rejecting electronic radar emissions already captured by the Eagle's on-board sensor suite.
7. As the extraction and close air support team approaches the survivor's location – agents aboard the rescue and CAS platforms grid with local ESG sensors and with the survivor, providing real time situational awareness and positive Combat Identification for all tactical participants.
8. The survivor is picked up, and as the CSAR forces retrograde, the ESG sensors return to their normal programmed mode of operation and continue reporting via NRT to C2 net.

Additional Notes by Austin Tate

We hope to look at two SAR scenarios - one downed 2 person crew in the water off Binni with a navy led rescue using coalition resources just after the events of the Binni 2002 demo, and then a more complex one with a downed airman in a sensitive location near the WMD site in Agadez with an Army medical rescue led effort (given the covert operations and sensitive nature of the area it would lead to all sorts of issues to be explored). The idea being that we have been covertly getting people in place on the ground around the WMD site that Agadez has (or is believed to have) near Suthertown near the Binni border. We got SOF into position using the cover of the 2001 "Elephants protection" aspects in the Laki Safari Park area to the West of the WMD site.

Given Jim Burdell's notes relating to his SAR image, I can see a possible thread of work on our task support, which could bring in mobile health monitors for the downed airman as used in CoAX Binni 2002 and that might link well to interests at IHMC.