

NASA SBIR/STTR Technologies



ACES Model Composition and Development Toolkit to Support NGATS Concepts Intelligent Automation, Inc. – Rockville, MD

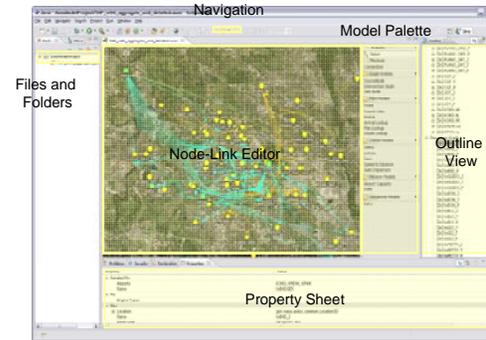
PI: Dr. Vikram Manikonda

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Identification and Significance of Innovation

Developed innovative model composition system that allows concept developers to fully harness the power of complex simulations such as the ACES (Airspace Concept Evaluation System) . Benefit includes:

- Increases the overall flexibility and usability of ACES
- Reduce the lead time and cost associated with developing new concepts and/or inserting new models into ACES.
- Reduce the need for ACES users to know Java to develop and configure agents in ACES
- Allow integration and reuse of legacy models and external dynamic languages such as Matlab



ACES Model Composer

Technical Objectives and Work Plan

- Formulation of a generalized framework for model composition of agent, activities and simulation element composition based on requirements derived from ACES and general large-scale discrete event simulations requirements.
- Design of a "physical adapters" that will allow users to execute models developed in Matlab in conjunction with ACES.
- Development of a Graphical Editor using the Eclipse IDE that will allow users to use a GUI to load, compose, and edit multiagent simulation configurations.
- Development of example models demonstrating pluggability into ACES-X framework using the proposed model composer
- Demonstrate the proposed innovation through ACES-X integration

NASA and Non-NASA Applications

NASA Applications

- Increase modeling productivity and flexibility through enhancing ACES usability and flexibility for end users, concept developers, analysts and system developers.

Non-NASA Applications

- Provide general modeling framework for software development of agents systems
- Integration with IAI's networking simulator (Netsim), Diva modeling framework, and extensive suite of Cybele agent-based development tools and computational toolboxes

Firm Contacts

NON-PROPRIETARY DATA