

## COSMOS/SIM

Computational Simulation and Modeling of Society / Social Intelligence Modeling

The Computational Simulation and Modeling of Society (COSMOS) project researches algorithms and models for social simulations that can faithfully model real-world social interactions. Beginning in Government FY2014 this work will be known as the Social Intelligence Modeling (SIM) project.

COSMOS has explored the modeling and simulating of both small- and large-scale social interaction, based on the hypothesis that social entities, individuals or groups, can be modeled as goal-seeking decision-makers that have beliefs about other entities. Based on this hypothesis, a framework for crafting social simulations has been developed, PsychSim, that has been used in a range of transitioned applications such as ICT's UrbanSim and BiLAT projects.

New research directions in the SIM project will:

- Develop general-purpose algorithms that can suggest to an author possible changes to the scenario models that remove the discrepancies between the model and the pedagogy or real-world data.
- Compare models of action effects against real-world data in order to facilitate data-driven approaches to modeling.
- Model the cognitive consequences of emotion, coping behavior.
- Integrate with Cerebella (ICT's new and more capable behavior generating system that replaces the previously-used Non-Verbal Behavior Generator)
- Provide agent modeling for the Cognitive Gym concept, wherein future trainees would be able to engage in a series of standard leadership exercises (such as those used in both business and military leadership courses) but with cognitively, socially- and emotionally-competent virtual role players.

Due to the increased use of simulation methods in the study of social systems, our efforts aim to benefit fundamental research in both social science and computer science while leading to improved simulations.

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