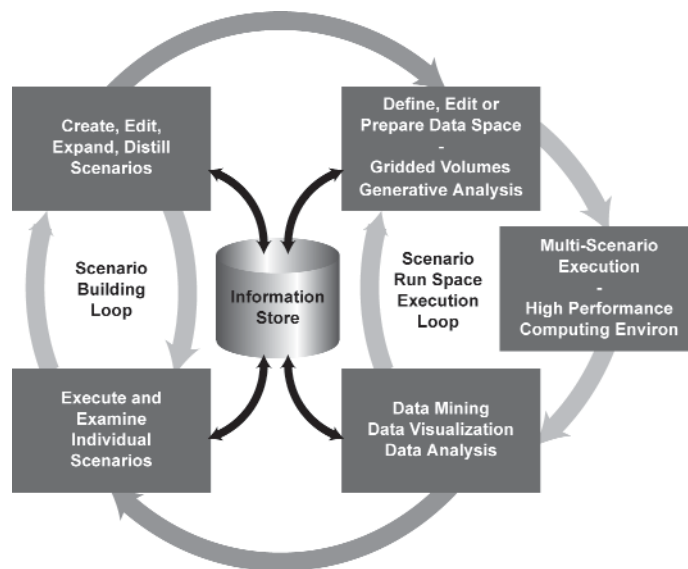


Project Albert - MITRE Support

In 1998, General Charles Krulak, then Commandant of the Marine Corps, recognized the inherent non-linearity of war and that many of the existing combat models and simulations were archaic or inappropriate given the asymmetric nature of modern combat. For a few years leading up to his comments, the United States Marine Corps (USMC) led the development of ideas to capture answers not provided by traditional models.

Project Albert is the USMC's effort to leverage new technologies and sciences to enhance decision support by applying new modeling methods, associated analytic tools, and the technique of data farming. Data farming is the process of using high-performance computing to execute a model over a large parameter space in order to gain insight into the full breadth of potential outcomes.

A MITRE team is working with the Marine Corps and other Project Albert collaborators to develop and refine the methods, concepts, and technology of data farming to support operational applications. This work spans various avenues of research, including agent-based modeling and model construction, high performance computing technologies, data mining capabilities, design of experiment research, and high-dimensional data visualization.



Data Farming Loop

Another focus of Project Albert is to research and prototype the interfaces and architectures, human and software, which will allow modelers to easily submit and execute models, design experiments, and collect and explore the results.

MITRE supports Project Albert in addressing real questions. MITRE team members have built models or provided analysis of data farming results to seek insight into questions such as:

- When is decentralized (vs. centralized) command and control desired or preferred?
- What is the role of trust, or other so-called “intangibles,” on the battlefield?
- How can we best protect our homeland from a martyr-based offense?

- How can a bio-terrorist attack be mitigated in a free society?
- What system characteristics are important in military convoy protection systems?
- How can groups co-exist peacefully?

Project Albert is not about running specific models for predicting a final “answer.” Project Albert is about data farming any model to gain insight into potential outcomes and experimentation with emerging methods. Data farming, by providing the ability to process large parameter spaces, makes possible the discovery of surprises (both positive and negative) and potential options.



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