



GNAVE

Game-based Nation-state Analysis and Visualization Environment



Visualizing Complex Scenarios from Multiple Viewpoints

GNAVE is a prototype for a **dynamic visualization** system that exploits the latest strategy-game designs to present intelligence analysis results to decision-makers.

- Supports analysis of complex, international scenarios involving the fusion of multi-source intelligence products
- Lets user assume the role of various observers and model different viewpoints of the same situation
- Draws on strategy-game presentation paradigms; rapidly conveys the information that leads to informed decision-making
- Correlates data across three scales: all data, focused subset, single element
- Retains links to underlying intelligence data products
- Underlying flexible data model supports multiple scenarios and "what if" games

Game Technology to Model Points-of-View

GNAVE integrates intelligence data from many sources into a picture of a local observer's perspective on a situation. GNAVE helps users interpret information by capitalizing on the most successful strategy-game technologies, presenting geospatial information through the geospatial visualization paradigm. It provides information ranging from detailed to general, while retaining the problem context for the user.

By allowing the analyst to present different visual interpretations of the same situation as seen from the viewpoints of different observers, GNAVE can provide a deeper understanding of complex problems. GNAVE always shows data in the context of a larger problem while retaining observer's orientation. GNAVE's visual models can be used to develop alternate future scenarios, demonstrate alternate interpretations of intelligence results, and provide rapid understanding of the analysis.

Seeing the Basis for Each Viewpoint

GNAVE retains embedded drill-down links to intelligence data and analysis data products so the analyst can present supporting data for each conclusion and identify feasible alternate future scenarios. Different viewpoints can be presented directly to show the impact of an observer's culture and perceptions on the same emerging situation. GNAVE also represents the impact of different intelligence products and analyses on the conclusions, and on the analyst's confidence in the results.

Implementing GNAVE

GNAVE is based on a flexible and extensible architecture:

- Uses OpenGL strategy-game visualization engine and game-based modeling tools
- Designed for the Windows desktop, extensible to Client-Server for collaborative use
- Extensible XML-based drivers facilitate links to other models and scenarios
- Supports preliminary spreadsheet-based scenario-development

SoarTech POCs

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