

Authoring By Cultural Demonstration



EXHIBIT FACT SHEET

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Modern military missions require Warfighters to communicate effectively and at a personal level with people whose cultures, languages, lifestyles, and beliefs are very different from their own. Warfighters must interact with host-nation persons who are likely to recognize them as outsiders, but will appreciate their efforts to understand a different culture, avoid giving offense, and demonstrate acceptance and respect for beliefs, customs, and way of life. Computer-based training using virtual and game-based environments has the potential to help, but constructing suitable, game-based, culturally-relevant scenarios to prepare soldiers for effective communication is difficult, time-consuming, and expensive.

Authoring By Cultural Demonstration (ABCD) is an innovative combination of cognitive science, technology, and Commercial-Off-The-Shelf (COTS) scenario-authoring tools that enables Warfighters and instructors to author culturally relevant training scenarios in a game-engine agnostic environment. With ABCD, deployed personnel with no special training in game development may quickly create scenarios that express what they have learned – allowing immediate capture of current and meaningful experience from the field. The

captured scenarios can then be easily refined and enhanced by cultural experts and instructors, creating an expanding repository of 3D training scenarios.

ABCD Prototype Interface

A key innovation in ABCD is the division of authoring into four key components:

- 1) Machinima Tools require only that Warfighters describe their experience with the basic information that would be in a movie script: location, characters, dialog, and similar information. A portion of these tools is built around an extension to CAMBOT, a cinematography AI application from Georgia Tech. This enables input of real events to support generation of a single non-interactive plot script, output as machinima. The tool then automatically performs the job of a cinematic director by positioning characters, arranging for dialog, gestures, and animations to play at the right time, placing cameras and lights, and other activities required for creating movies.
- 2) Interaction Tools add possible interactions and resultant decision paths that are drawn from the radial taxonomy of interactions. These consist of strategically inserted interaction triplets involving Stimuli, Responses, and Consequences.
- 3) Contrasting Cases Tools assist the instructor in matching scenario elements such as location, characters, and actions



to the same interaction pattern to create meaningful contrasts. Contrasting cases is a technique within constructivist educational practice in which two problems (cases) are presented to a trainee that differ along some key dimension that illustrates the training objective.

4) An Asset Library provides culturally relevant physical locations, avatars, props and a representative set of behavioral elements to support scenario authoring. The Asset Library will also contain sample Warfighter vignettes and expanded training scenarios.

When complete, ABCD will provide users a means for convenient, easy authoring of cultural lessons learned, presented in a serious games context, and without the need for special skills or training. ABCD is a cultural game authoring environment designed to compress the training lifecycle. Warfighters can create experience-based scenarios quickly, taking advantage of current field knowledge. The use of contrasting cases enhances transfer of training principles. The program is based on a flexible, extensible, game engine agnostic architecture.

There are several efforts underway to enhance the technologies used to deliver serious cultural games, most notably speech and gesture input and intelligent cultural agents controlling Non-Player Characters (NPCs). With minimal effort, ABCD can be adapted to use these enhancements. For example, ABCD could be used as a means for easy programming of the intelligent cultural agents. At the same time, ABCD does not require these enhancements. It is aimed at quick and easy authoring of cultural scenarios which can be very effective even without enhancements to the delivery technology.