

4Real Call for Fire

Real Language + Real Gestures + Real Behavior = **Real Training**

About Raytheon BBN Technologies

For over 50 years, the BBN name has been synonymous with technical innovation. Since implementing and operating the ARPANET, the forerunner of today's Internet, we have pioneered a number of firsts: the first packet switch, the first router, and the first person-to-person network email, which established the @ sign as an icon for the digital age.

Raytheon BBN Technologies is also a leader in the research, development, and deployment of immersive learning technology for military training in both kinetic and non-kinetic operations and for other serious purposes. Raytheon BBN has offered experience, expertise, and technologies in immersive learning since the pioneering days of networked, multiplayer immersive training with the BBN-developed SIMNET training simulator.

Forward Observer Training

Call For Fire is a demonstration of Raytheon BBN's 4Real technology to support realistic and natural interactions with virtual environments. This demonstration features training for Forward Observers (FOs), allowing trainees to use natural speech to call for fire while immersed in a realistic, virtual environment. The system includes a virtual Fire Direction Control (FDC) agent who interacts verbally with the FO and then directs the artillery gun-line as requested. Call For Fire also incorporates a virtual instructor to provide real-time guidance, feedback, and assessment.

Train As You Fight

4Real maintains virtual world immersion by eliminating clunky dialog menu interfaces or textboxes. 4Real Call For Fire lets you use standard communications in accordance with Call for Fire mission-training standards to verbally:

- Call for Fire (6 elements, 3 transmissions)
- Respond to Message to Observer and Shot Out transmissions
- Adjust fire
- Record as target, Refine, End of Mission, Surveillance (RREMS)

Your radio transmissions are properly acknowledged by the virtual FDC, and assessed by a virtual instructor for appropriate content and syntax.



Screenshot from 4Real Call For Fire with VBS2™ and VBS2Fires™

Integrating Technologies to Deliver Training

Call for Fire brings together a suite of speech solutions, artificial intelligence, and game-based technologies to deliver Forward Observer training on a low-cost platform with minimal need for human instructors or role-players. It combines several off-the-shelf technologies, including:

- VBS2™ or VBS2Fires™ – VBS2™, the game-based simulation environment was selected by the US Army as its primary, PC-based training platform (the “game-after-Ambush”). VBS2Fires™, a Call for Fire simulation system built on the VBS2 engine.
- AVOKE™ NTX – Raytheon BBN’s finite-state grammar-based speech recognizer.
- BBN Group Voice™ (BGV) – A multi-user, Voice over IP (VoIP) application, providing spoken multi-channel communications across networked computers. Communications can be saved for playback, converted to text and searched.

Future Directions

The Call For Fire demonstration of Raytheon BBN’s 4Real technology highlights the technical feasibility and training benefits of supporting natural speech communication with artificial intelligence agents to relieve the burden placed on human role-players and instructors. For the implementation of a full-featured Forward Observer training system, the virtual Fire Direction Control would be extended to understand and react appropriately to a wider range of call for fire communications.

4Real Call For Fire capabilities can also be integrated with existing fully immersive simulator systems to provide natural speech interactivity and intelligent virtual agents. The integration of Raytheon BBN’s real-time, large vocabulary, statistical grammar speech recognition technology seen in the 4Real checkpoint scenario demonstration enables additional training domains requiring more unstructured communications, such as Forward Air Controller talk-on skills,

Working with You

Raytheon BBN has successfully developed PC-based training systems used by the Army, Navy, and Marines. We have also performed training research for DARPA, ONR, and AFRL. We understand that every training application has special requirements, but that everyone needs a strong emphasis on pedagogy, measurability, and usability. If you have a training need and are interested in an immersive, lightweight solution, we look forward to speaking with you.

Talk to us!

To learn more about the 4Real and Raytheon BBN’s capabilities to support lightweight immersive training, please call or write:

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