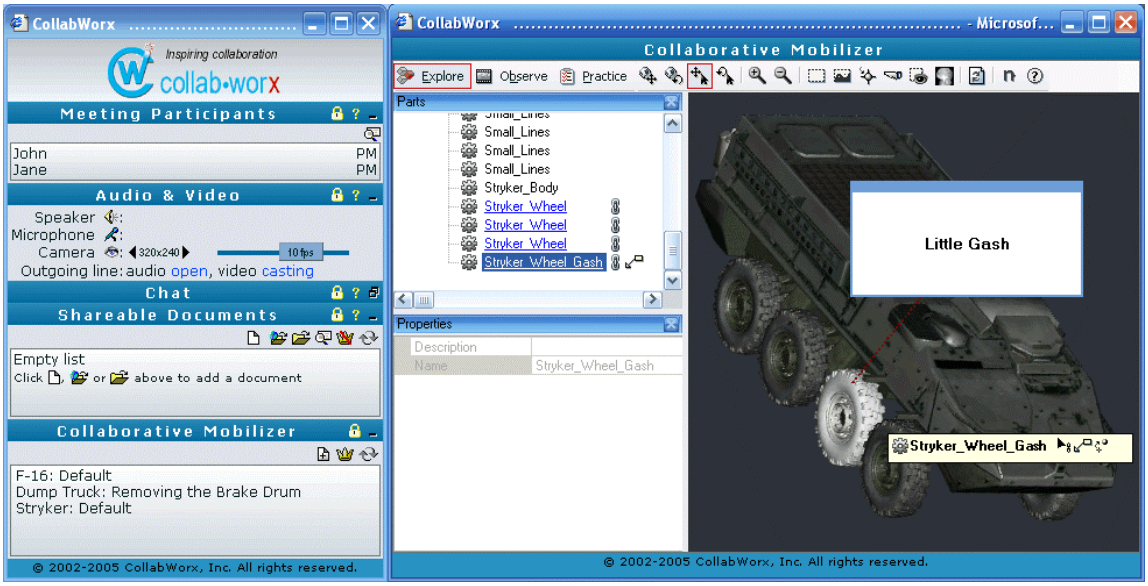
Collaborative Visualization and Distance Learning

ADVANCED 3D COLLABORATION FROM NGRAIN AND COLLABWORX

CollabWorx provides a secure real-time collaboration and distance learning platform that enables live interaction between field-deployed soldiers and remote instructors. The contextual collaboration framework integrates NGRAIN interactive 3D Knowledge Objects with simultaneous voice, video, and instant messaging in a single shared environment that runs on standard PCs and laptops.

The CollabWorx-NGRAIN integrated solution has highly efficient and scalable bandwidth utilization throughout the blended learning experience where multi-user video and 3D interactions are instantly available, on-demand, from anywhere in the world. All real-time communications are highly secured, with a proven military-certified approach. CollabWorx has full Authority to Operate and NETCOM Networthiness certificates.



SOLUTION BENEFITS

The integrated CollabWorx-NGRAIN solution addresses a number of challenges faced by the military when deploying distance learning solutions to remote locations:

- CollabWorx provides a **military-grade secure communications platform** that allows instructors and soldiers to communicate and collaborate from a foreign hotel, wireless hotspot, from reservists' homes, and other non-secure networks all the way to military and commercial network edges.
- Students and instructors can work together as if they were in the same room. Students receive **immediate feedback** through the multimedia interfaces that can include video, audio, and messaging.
- Students and instructors can manipulate and interact with 3D models at the same level of **interactivity** as if they were running a stand-alone application. CollabWorx preserves bandwidth by retransmitting event-driven logic rather than transmitting screen-refreshes. The 3D models are updated instantly on both the instructor's and students' screens.

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- **Multiparty (group) online meetings** and learning are available so that collaboration is not limited to two parties.
- **Collaboration** allows students to ask questions and receive answers and clarifications in real-time.
- Collaboration is **instantaneous**. CollabWorx' modular on-demand architecture optimizes distribution of required application components and data files to meeting participants during or prior to a session.
- Multi-user video sharing requires considerably **less bandwidth** than alternatives enabling either more participants or more content at the same cost.
- Students and instructors can **personalize** their own layout.

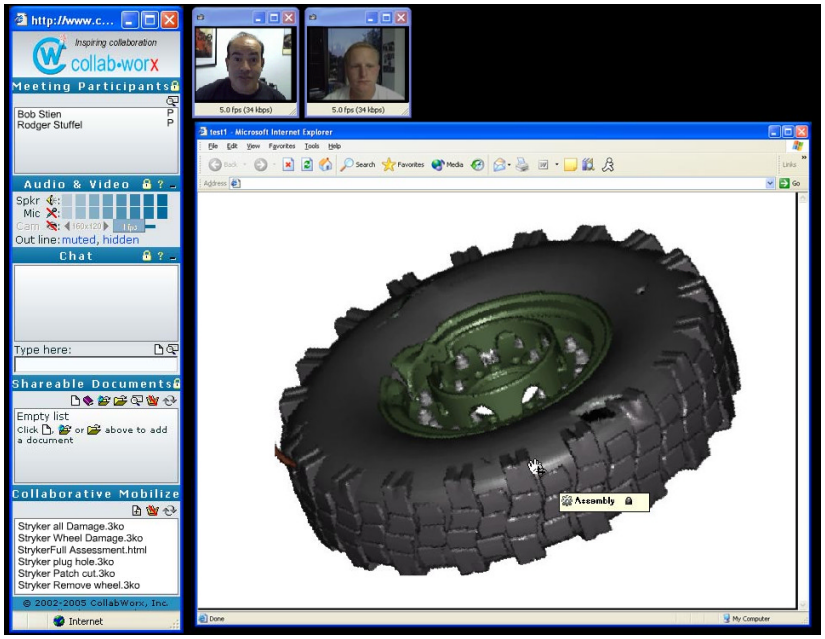
The collaborative 3D event-sharing platform can be easily customized and extended in ways not available with any desktop-sharing approach. For example, independent views of the shared 3D object, role-based access to parts of the model or multi-party mark-up on the shared 3D models are either easier to develop or are only possible with the event-based sharing approach selected by CollabWorx and NGRAIN.

IMPLEMENTATION

The CollabWorx-NGRAIN collaboration solution enables one or more meeting participants to view and interact with 3D models independently from one another or jointly, in a synchronized fashion.

The easy to use interface consists of a toolbar for performing control and management operations as well as a list of links from which users initially launch 3KO models. The user that "holds the floor" can interact with the 3D model, which then automatically and instantly updates all other participants' screens. The integrated solution allows users to perform the following actions in an interactive, shared 3D environment:

- Move and rotate the model and individual parts
- Select and highlight parts
- Open a link to reference materials
- Perform model assembly and disassembly tasks



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