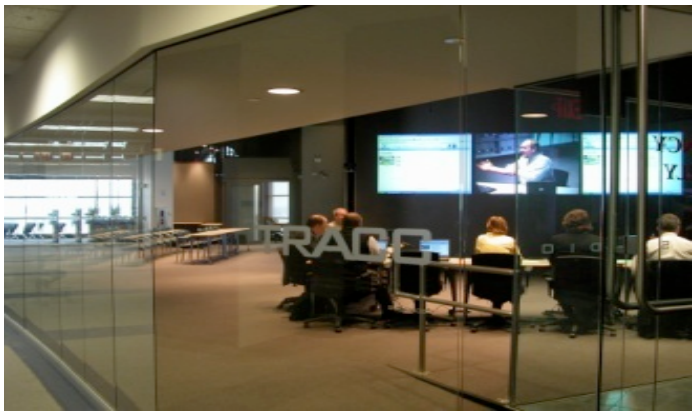
Argonne NATIONAL LABORATORY

Advanced Visualization and Communications Facilities Supporting Collaboration – The TRACC Collaboratory

Benefits to Users

The TRACC Collaboratory can enrich the meeting experience for all participants. Events that benefit from sharing both video/audio and data among geographically distributed participants are prime applications for the technologies housed at TRACC. The venue can be the TRACC Collaboratory and/or may include distributed sites. Broadband connectivity provides the opportunity to utilize available technologies to collaborate with remote clients, colleagues and partners regionally and globally, without having to physically travel to one specific site, thus making efficient use of time and travel.



The integration and deployment of multiple advanced visualization and communication technologies is unique to the TRACC Collaboratory. This capability allows the Collaboratory to offer dialogues, remote collaboration, formal courses and professional events, including distributed meetings and workshops.

TRACC Collaboratory staff work with users to determine the optimal meeting experience. The staff develops the technical requirements for participating sites and assists in identifying and enabling those sites available to participate in events.

Examples of Hosted Events

Training Classes: Transportation research applications produce education and training materials that are valuable to share among collaborators. The TRACC Collaboratory is equipped to service this need using the communication technologies resident in the facility. Examples of training classes previously hosted include: transportation simulation, computational structural mechanics, and computational fluid dynamics. The instructor and local students attend at TRACC, with remote students participating from their computers and web browsers. The technology employed is *Adobe Acrobat Connect*. Using the TRACC Collaboratory has proven to be a cost-effective way to disseminate training information.

Meetings: There is often a need for regular meetings among collaborators. Through the technologies available, TRACC can serve as a host site connecting

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distributed participants who can share both video and data. Examples of recent meetings hosted by TRACC include: project updates, quarterly reviews, monthly staff meetings and seminars. Multi-site H.323 videoconferencing technology in concert with H.239 data sharing is often employed.

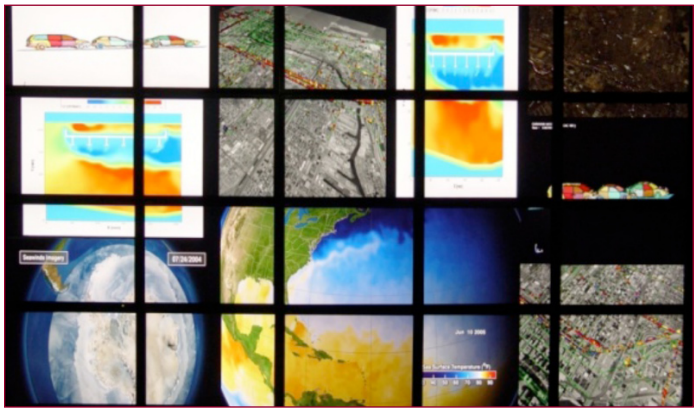
Conferences/Workshops: As an example of a conference with several distributed sites including speakers and presentations from many locations, TRACC hosted a TRANSIMS workshop allowing researchers and developers to meet virtually and share research project information. The conference had four participating sites (Louisiana, Illinois, New York, and Virginia) and used AccessGrid technology.

TRACC Collaborative Resources

The TRACC Collaboratory offers expanded outreach, training, collaboration, visualization, and technology enablement activities to users, collaborators, and USDOT partners by providing:

- State-of-the-art outreach and training facilities
- Collaboration facilities for distributed research teams, using advanced visualization and communication technologies
- Distribution of simulation and modeling results in real-time to various state and regional departments of transportation, university and federal transportation research centers

The Collaboratory capabilities include wireless networking and broadband access to global research and education networks.



Demonstration and Training Theaters:

- Two 15' x 18' rear-projection display walls
- Video production and streaming system
- Multiple cameras (including high definition)

High-end Visualization:

- Passive stereo virtual reality display
- High-performance graphics cluster (20 panel LCD tile display; 8000 x 4800 pixel resolution)
- High-definition stereo theater projection system (1920 x 1080 pixel resolution)

Multi-site Videoconferencing Technologies:

- Web conferencing *(Adobe Acrobat Connect)*
- Multiple Polycom® videoconferencing systems (H.323), including high-definition (HDX 8004 and 9004 systems)
- Multiple AccessGrid (AG) nodes (also portable AG node equipment)

These facilities are available to universities and private organizations performing transportation research; organizations funded by federal, state, and city departments of transportation; USDOT R&D programs, and other federal agencies.

TRACC staff assist users to plan, facilitate, implement and deploy TRACC capabilities to their organizations.

For further information, contact

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