

P1.44 VISITVIEW- CONNECTING INSTRUCTORS WITH OPERATIONAL FORECASTERS

Anthony Mostek*
National Weather Service - Office of Climate, Water, and Weather Services
Boulder, Colorado 80307

Scott Bachmeier and Tom Whittaker
Cooperative Institute for Meteorological Satellite Studies
Madison, Wisconsin

Dan Bikos and Dan Lindsey
Cooperative Institute for Research in the Atmosphere
Ft. Collins, Colorado

John Weaver and Mark DeMaria
NESDIS - RAMM Branch
Ft. Collins, Colorado

Brad Grant and Jim LaDue
National Weather Service – Warning Decision Training Branch
Norman, Oklahoma

1. INTRODUCTION

The results of the first 3 years of teletraining by IST PDS and VISIT programs are:

- **541 sessions conducted**
- **Over 2600 participating offices**
- **Over 9000 certificates issued**

This article describes the rapid rise in the use of teletraining by the National Weather Service (NWS) training program. The teletraining activity is conducted by the Integrated Sensor Training (IST) program professional development series (PDS). The IST PDS represents a concerted effort by the NWS to bring together diverse training activities that have traditionally focused on individual sensors such as radar, satellite, and other observing systems. The IST PDS works closely with the Virtual Institute for Satellite Integration Training (VISIT), comprised of staff from the Cooperative Institute for Meteorological Satellite Studies (CIMSS), the Cooperative Institute for Research in the Atmosphere (CIRA), and the NWS training centers. Information on the IST PDS can be accessed at meted.ucar.edu/ist.

An interactive training tool called VISITview (Whittaker 1999) was developed by the VISIT program. The VISIT program is supported by the NWS and the National Environmental Satellite, Data, and Information Service (NESDIS). VISITview is a platform-independent distance learning and collaboration software program that allows multiple users to view and manipulate the same series of pages containing images, animations, graphics and text.

Based on the extensive feedback received from the operational forecast offices, the strength of the VISITview teletraining instructional approach is the ability to put the instructor directly in touch with the students. The direct interaction between instructors and students establishes an active link with the student that is difficult to achieve other than with face-to-face instruction. The benefits of this direct interaction are well worth the effort involved in developing and using the teletraining approach. This article focuses on the teletraining approach used by the IST PDS and VISIT programs.

*Corresponding author address: Anthony Mostek,
NCAR/COMET, P.O. Box 3000, Boulder, CO
80307; email: mostek@comet.ucar.edu

2. VISITVIEW – AN EVOLVING TELETRAINING TOOL

The VISITview teletraining software (www.ssec.wisc.edu/visitview/) is developed by VISIT with support from the IST PDS program. VISITview is designed to provide instructors and students with a set of easy to use tools for creating, conducting and taking teletraining sessions. VISITview is written in Java and can be used in two modes: with the data files located on a central server or with these files residing on a local disk drive. In the latter case, only the VISITview commands are sent over the Internet.

Most NWS offices have reliable bandwidth connections but they usually are congested moving large data files. The high volume of data restricts the amount of information that can be transmitted in real-time to support live teletraining sessions. To avoid this limitation, the files used for the sessions are put into a zip archive file and distributed via FTP to the training sites. These files can be large (over 90 MB for some sessions). Once at the training site, the zip archive file is expanded into a local directory. The session may be previewed at the convenience of the office staff to ensure that the lesson runs properly. The students can view the session at any time after the live-interactive session to review the materials or for local training. There is a user's guide available on the web for each session.

The VISITview software provides the following functions (see Figure 1):

- a complete set of animation controls
- image zoom
- multiple panel displays with animation
- drawing tools with various color choices
- erase previous drawing; adding text
- change enhancement or colorization of images
- add/remove overlays
- chat window
- quiz questions with feedback
- view status of all session participants
- recorded audio/graphics for future playback
- open web browser with link to selected site
- and image combinations with fade between images

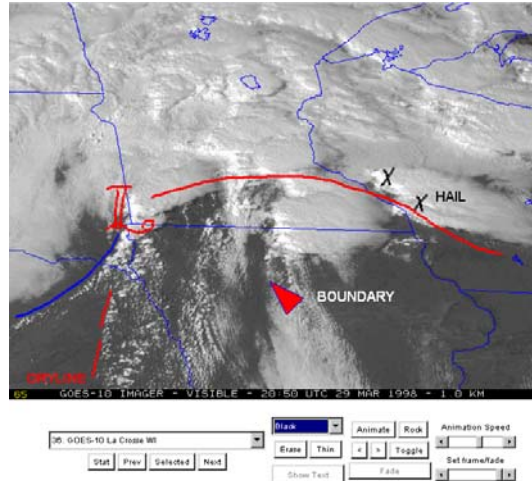


Figure 1 - VISITview panel from a VISIT teletraining session showing the instructor's annotations displayed on top of a standard 640x480 pixel visible satellite image.

Another new VISITview feature is the ability to include recorded audio and annotations with the session file. This asynchronous option allows the lessons to be played back in virtual real time with the voice and annotations of the instructor. For examples of sessions with instructor audio and annotations, chose the "training sessions" link on the VISIT homepage and select a session with the microphone icon next to the course title.

Ten to thirty teletraining sessions are administered each month (see example of calendar in Figure 2). The sessions cover a wide range of titles including, "Detecting Low-level Thunderstorm Outflow Boundaries At Night Using GOES Detecting Boundaries with AWIPS," "The Enhanced-V: A Satellite Severe Storm Signature," "Diagnosing Elevated Mesoscale Ascent -The Midland, TX Heavy Snow Event," "GOES Sounder Data and Products," "Mesoscale Analysis of Convective Weather Using GOES RSO Imagery," "Lightning Meteorology-I," "Lightning Meteorology-II," "Using GOES Rapid Scan Operations (RSO) in AWIPS," "What can you expect from the Eta-12?," "Tropical Satellite Imagery and Products Subtropical Cyclone Analysis with Satellite Data." More information on VISIT and all of the teletraining sessions (Mostek et al. 2001) is available on the VISIT homepage (<http://www.cira.colostate.edu/ramm/visit/visithome.asp>).

3. Teletraining Sessions - Results



Figure 2. Cumulative number of IST/VISIT training certificates issued from April 1999 through August 2002.

From April 1999 through September 2002, the training provided by the IST PDS and VISIT program has resulted in the following:

- **541 sessions conducted**
- **Over 2600 participating offices**
- **Over 9000 certificates issued**

The 2600 participating offices include the many offices that have participated in multiple sessions (Figure 2). All 121 NWS forecast offices have participated! The NWS offices include the 115 locations in the CONUS, plus San Juan, Puerto Rico, three offices in Alaska region and two in Pacific region. Most of the NWS National Centers for Environmental Prediction, River Forecast Centers and Central Weather Service Unit offices have participated along with other organizations (Navy, NESDIS, Emergency Managers, and the Meteorological Service of Canada).

Beginning in late 2000, the VISIT teletraining program experienced a rapid rise in the number of sessions offered and the number of certificates issued. Evaluations for the teletraining sessions are sent via e-mail to all offices upon completion of the session and are also available on the Web. The large number of evaluations received is the result of an incentive. Upon receipt of the evaluation, training certificates are sent to all students that participated in the session. The linkage of the evaluation to the certificates helps to explain the large number of evaluations

received and the large number of certificates issued.

The evaluations provide many useful insights into the teletraining program:

- High quality graphics are a big plus
- Interactions between instructors and students are very important
- Animations are very useful
- VISITview-based sessions are easy to install and use
- Make sure the training materials are at appropriate level of difficulty
- Scheduling is a challenge with 24x7 forecast operations that span several time zones, but it can be done
- Using phone conference call for audio works well but the audio quality and volume need to be monitored
- Linking the training to specific forecaster problems and cases is very positive
- Overall, most agree that VISITview is an effective tool and teletraining works

Student feedback also is provided via the open-ended questions. This feedback has helped to improve the teletraining approach, the scheduling, the content and the delivery of the sessions.

Some specific quotes received from the students include; "Excellent medium that provided expert instruction with appropriate case studies. Very informative and provided forecasters here with additional knowledge that can be applied to their forecasting skills." A second, "I must say that this has been the BEST VISIT training session thus far.... The instructors did a fabulous job of conveying the information... the length was appropriate...kept the group involved. Nice to have an operational forecaster giving one of these sessions...he kept it operationally focused...SUPER JOB!!" A third, "Overall, you guys do an excellent job with all the teletraining that's being provided; given tight schedules at local WFOs, please continue to offer sessions as often as possible so the maximum number of staff members can attend; thanks!" "I want to thank both instructors for an excellent presentation. There were several points that I will take away from this presentation that I can apply operationally. The interaction was very good and enhanced the learning process. It was very apparent that both of these instructors knew the material very well, in the way it was presented and in their responses to questions." And, a special message was sent from one office to note how they incorporated what they learned during VISIT

sessions into their operations: "We have had two days (Monday and Tuesday) where storms with positive lightning dominated cores produced significant hail and extremely heavy rainfall...I suspect we might see a similar type storm tonight and again tomorrow. These cases definitely reinforce the concepts of the Lightning Meteorology II VISIT teletraining and will make nice data sets for inclusion in future training. I suspect we might be able to tie in the enhanced V satellite signature as well once we examine the data more carefully..."

Integration Training (VISIT). Preprints 15th International Conference on Interactive Information and Processing Systems for Meteorology, Oceanography, and Hydrology, Dallas, Texas, AMS.

4. SUMMARY

The National Weather Service training program has moved from the traditional classroom setting to an integrated distance learning approach to provide cost-effective training. Some of the training materials require an active component to allow the student to interact directly with an instructor. To meet this need, the IST PDS and VISIT programs developed VISITview, a new teletraining software tool that is flexible, platform independent, and extensible. VISITview allows for the continuing expansion of teletraining functionality needed in today's environment of rapidly evolving technology and tight training budgets. Information on the VISIT program is at: www.cira.colostate.edu/ramm/visit/visithome.asp.

5. ACKNOWLEDGEMENTS

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6. REFERENCES

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