Using VISITview for Remote Collaborations and Training

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by

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Who am I?

- Degrees in Meteorology
  - Minor in computer science
- 40 years experience in software development
- Piano player
- Worked for the U.S. Weather Bureau and the University of Wisconsin-Madison
- Father, and 2 x grandfather
- 4 cats.....
The VISIT Program History (how VISITview was born)

- **Virtual Institute for Satellite Integration Training**
- Began in 1998 to facilitate “teletraining”
  - Residence (classroom) training too expensive!
- Cooperative venture:
  - University of Wisconsin
  - Colorado State University
  - COMET
  - U.S National Weather Service Training Branch and WDTB
- Requirements:
  - Needed inexpensive, platform-independent tools to enable remote training
  - Must be able to animate images in a controlled way
  - Must be able to annotate on top of animations
Residence training vs. teletraining

- Residence (classroom)
  - More time
  - Travel
  - Away from work
  - Away from family

- Teletraining
  - None of the above
  - Impersonal?
  - Connect to experts
  - Small groups - feedback
VISITview project goals

- Instructor-driven development & requirements
- Platform independent
- Easy to use
- Open source – no cost!
- Useful for both training and collaborations
- Several “modes” of operation
  - Instructor – full control
  - Student – limited control
  - Listener – no control
- Record and playback sessions
- Continue to evolve as needs change
- More than 25,000 people trained...and counting
The parts of VISITview

- The VISITview Lesson Builder
  - Used by instructors
  - Collect material to create lesson
  - Create installation file for lesson

- The VISITview Server
  - Uses TCP/IP registered port 1631
  - Keeps track of sessions and groups
  - Sends messages among group members

- The VISITview Client
  - Provides the user interface for a session
  - Runs through a browser -or- as a stand-alone application
Communications model
Collaboration or training?

- Both require you to make a “lesson”
- Collaborations may be done from your desktop without an external VISITview server (as long as firewalls permit)
  - Useful for quick, “look at this” connections with others
- Collaborations may also be done from a central server that hosts a VISITview and an HTTP server
  - Useful for real-time data discussions
- Training usually involves longer preparation of a “lesson”
VISITview terminology

- A **lesson** is a collection of **pages** and related material.
- A **page** consists of one or more **frames**.
- A **frame** is an image file (GIF, JPG, PNG).
- A **portal** is a small sub-frame that may contain:
  - Geolocated, related images that may be moved around.
  - Non geolocated “fixed” images.
  - May contain animations.
- An **overlay** is a frame that is shown on top of a background frame (mostly transparent!)
- A **group** is a collection of users doing one session.
Some client functions

- Change pages
- Change graphic colors, erase some/all
- Animate, step, set speed, fade
- Drawing lines, arrows, boxes, circles
- Big Red Pointer
- Put text or phrases on screen
Mouse and Keyboard

- Click to move Big Red Pointer
- Drag to draw – (freehand, lines, arrows, boxes, circles)
- Paste text (pre-defined or ad hoc)
- Zoom/unzoom, roam
- Chat window
- Get help
- Change direction of Big Red Pointer
- Open optional windows:
  - Help
  - Phrase list
  - Page list
- Move Control Panel to foreground
The VISITview Lesson Builder

- The VISITview Lesson Builder
  - Is not PowerPoint or Corel Draw or OpenOffice!!
  - More of a “slide organizer” than a creator
- Written in Java – run anywhere!
- Import presentations (from exported images of slides)
- Point to remote servers for real-time data
- Attach a local or remote HTML file
- Working with “portals” and “overlays”
- Creating phrases to use during training
Steps in making a Lesson

- Organize your images, animations, portals and overlays
- Add links to text files
- Save the lesson (creates a ZIP file or .exe for Windows)
  - Define essential metadata – including “group”, phrases, etc.
- Test your lesson
- Repeat . . . . . . . . .
The process

Lesson Builder → Organize Slides → Save to Disk → Test !! and Make Changes (VISITlocal)

Package for Distribution → Give Your Lesson → Record it
Everything you wanted to know....
Save: change any values, then click OK
Distributing a Lesson

- Lessons may be used through a web browser or downloaded to the student's machine
  - Web browser mode
    - Mode is not appropriate if long animations are used (> 4 frames)
    - Requires you to post the lesson on the same machine that has the VISITview Server running!
  - Downloaded (application) mode
    - may use servers anywhere
    - Usual distribution of the lessons via “ftp” is common
- Make sure everyone has the same version!
- “Beta-test” a few times
Running a “live” training session

- Audio – use telephone or Skype or Yahoo! Voice Messenger
- VISITview requires a server somewhere
  - “open” server at SSEC (visit.ssec.wisc.edu)
- Usually one “Master” and several “Students”
  - During collaborations, however, everyone is a “Master”
  - Can also use “Listener” mode
- Use the “Status” window to keep track of who is connected and how they're doing
- Encourage the use of “Chat” capability for questions
Screen shot of session

Current TPC/NHC Products Used to Convey Uncertainty

Strike Probability Graphic

Indicates likelihood of a “close approach” of the center.
Quick Help (ALT+?)

VISITview - Help Information

VISITview Mouse Actions & Keyboard Commands

To move Big Red Pointer -- click left button

To draw freehand -- drag pointer (hold button while moving
  (Use right button to append an arrow head)
To draw straight line -- hold CTRL down and drag mouse pointer
  (Use right button to append an arrow head)
To draw box -- hold CTRL & SHIFT down and drag mouse pointer
  (Use right button to draw a circle)

For all drawing:
  ESC = cancel, Release button = send

ALT+Z -- zoom
ALT+R -- un-zoom / restore
ALT+C -- open chat window
ALT+T -- make text on screen
  (ESC = cancel, Right-click or Enter = send)
  (Change font size using [xx] at start of text string)
ALT+O -- open phrase window (if phrases were defined)
ALT+L -- optional page list
ALT+S -- status window
ALT+K -- toggle portal cursor
ALT+E -- erase last graphic drawn
ALT+M -- show hidden control frame (or click right button)

ALT+K(1-8) -- set angle of Big Red Pointer
ALT+G [zero] -- toggle BRP persistence

a “close approach” of
Control Panel
The Instructor Experience

- Is anybody out there listening???
- Just what **does** constitute “Good Teletraining”?
  - Do **NOT** just read the words on the pages!!
  - Use lots of annotations
    - Move the Big Red Pointer
    - Draw lines, boxes, circles
    - Paste “phrases” on the screen
  - Create many pictures – not just words!
  - Use animations, overlays, portals – visual stimulation
  - Ask questions – use the “quiz feature”
  - Keep the “status window” open
- Ask for suggestions, comments, criticisms
- Improve the lesson each time you give it!
The Student Experience

- More coffee, please I am falling to sleep....yawn!
  - Keep it moving, no long pauses, be entertaining!
- What is he talking about?
  - Make sure the students are with you – ask questions!
- Will there be a quiz?
  - A single “quiz question” every few pages is good
- Do I really need to know this stuff?
  - Make sure the material is relevant
What can go wrong?

Wrong lesson file

Firewalls

Instructor stuck at home

Telephone not working

Internet connection drop-out

One site running really slowly.....

Router failure
Training done in the U.S. since 1999
On-line lessons available

- CRAS Forecast Imagery in AWIPS
- MODIS Products in AWIPS
- Introduction to Gridded MOS
- The GOES 3.9 mm Channel
- Pulse Thunderstorms, Overview and Warning Strategies
- GOES High Density Winds
- CPC Monitoring Products
- CPC Long Range Forecasting
- CPC Extended Range Forecasting
- Monitoring Gulf Moisture Return with GOES Imagery
- Local Climate Products: Downscaling Basics
- AvnFPS 3.0
- Predicting Supercell Motion in Operations
- Utilizing GOES Imagery within AWIPS to Forecast Winter Storms
- DGEX: Its uses and limitations
- Modern Severe Weather Parameters
- Forecasting Convective Downburst Potential Using GOES Sounder Derived Products
- QuickSCAT winds
- Interactive Cloud Height Algorithm and GOES Sounder Point Retrievals in AWIPS
- Applying the Ten Principles of Climate Monitoring in NWS Field Operations
- Mesoscale Convective Vortices
- NOAA Seasonal Atlantic Hurricane Outlooks
- Water Vapor Channel Satellite Imagery
- Use of GOES/RSO imagery with other Remote Sensor Data for Diagnosing Severe Weather across the CONUS (RSO 3)
- Navigating the Climate Prediction Center's Website
- Introducing GOES-12
- Wildland Fire Detection using Satellite Imagery
- The Satellite Rainfall Hydro-Estimator
- TROWAL Identification
- Lake-Effect Snow I
- Anticipating Mesoscale Band Formation in Winter Storms
- Subtropical Cyclone Analysis with Satellite Data
- POES Tropical Rainfall Potential
- Cyclogenesis: Analysis utilizing Geostationary Satellite Imagery
- Tornado Warning Guidance 2002
- Meteorological uses of ACARS Data
- Fog Detection and Analysis with Satellite Data
- What can you expect from the Eta-12?
- Ensemble Prediction Systems
- Lightning Meteorology II
- Introduction to POES Data and Products
- Forecasting Mesoscale Convective Systems
- Mesoscale Analysis of Convective Weather Using GOES RSO Imagery
- GOES High-Density Winds
- GOES Sounder Data and Products
- Top Ten Misconceptions about NWP Models
- Using Near-Storm Environment Data in the Warning Decision Making Process
- An Application of Pattern Recognition to Medium Range Forecasting
- HPC Medium Range Forecasting
- Precipitation Type Forecasting
- Lightning Meteorology I
- An Ingredients-Based Approach to Forecasting Winter Season Precipitation
- Using AWIPS to Evaluate Model Initializations
- Lake-Effect Snow II
- QuickSCAT
- Diagnosing the Potential for Surface Boundaries to Initiate Convection
- Applying Mesoscale Tools and Techniques to Predict and Detect Severe Thunderstorm Development
- Diagnosing Elevated Mesoscale Ascent - The Midland TX Heavy Snow Event
- Natural Disaster Information Cards
- Detecting Boundaries
- Using GOES Rapid Scan Operations (RSO) in AWIPS
- The Enhanced-V: A Satellite Severe Storm Signature
- CONUS CG Lightning Activity
- Tropical Satellite Imagery and Products
- Detecting Low-level Thunderstorm Outflow Boundaries At Night Using GOES
Use outside the U.S. -- the WMO's Virtual Laboratory
Spin-Off: AnimationS applet (AniS)

- AniS reused many of the classes from VISITview
- A simple applet for animating images, making overlays, etc.
- Used all over the world
  - Radar
  - Satellite
  - Model output
  - Slide shows
  - Simulated 3D views of geography
- Translated into 5 languages (and counting)
- Open source and free for use by anyone
- Homepage: www.ssec.wisc.edu/anis
More resources

VISITview Home page:

http://www.ssec.wisc.edu/visitview

Tutorial:

http://www.ssec.wisc.edu/visitview/tutorial