# Minutes of the ITWS Web Site Users Group Meeting of 1 November 2000

**Diana Klingle-Wilson, Kathy Carusone, Steven Maloney, Derek Eberle**
**MIT Lincoln Laboratory**
**Leonard Kurzweil - Volpe**
**Miro Lehky - Metron, Inc. (Formerly of Air Transport Association)**

A meeting of the ITWS Web Site Users was held on 1 November 2000 at the Volpe Transportation Center from 11:00 AM to 5:00 PM. The purpose of the meeting was to obtain feedback on high-level web site product access concepts.

Len Kurzweil of Volpe welcomed, introduced the participants, and gave an overview of the ITWS Data Feed and Web Site Project. A list of attendees is provided in Attachment 1.

Diana Klingle-Wilson of MIT Lincoln Laboratory provided an overview of the ITWS products available to users. This presentation focused on how the ITWS products are generated and the strengths and weaknesses of each product. Kathy Carusone of MIT Lincoln Laboratory demonstrated various concepts for the web site, including top-level graphical and tabular pages and graphical product windows that provided users with varying amounts of information and different techniques for interacting with the data. The users were asked to interact with various proposed web pages and provide comments on a questionnaire. These comments are provided in Attachment 2.

In addition to the questionnaires, notes were made of user comments heard at the meeting. These individual comments are provided in Attachment 3.

## General Comments

**1) What aspects of the weather as provided by ITWS are important to your operations?**
Nine users responded. It is very important to all respondents to know that an airport is experiencing alerts. In addition, all respondents indicate that it is very important to know the type of alert (microburst, wind shear, tornado, lightning and gust front). It was agreed during discussions that users did not care about the AP alert.

Over half (five) of the respondents indicate that knowing the highest precipitation level in the TRACON image is very important. Of the remaining, one selects “somewhat important” and three select “neutral.”

The majority of the users (five) are neutral on displaying the number of storm cells being tracked in the TRACON; three choose “somewhat important” and one indicates “very important”.

**2) We have been using the TRACON as the default range. Is this the range you prefer?**
The majority (six of nine) choose the TRACON range as the preferred default; one chooses 30 nm, one chooses 50 nm, and one chooses 100 nm.

**3) Do you feel it is necessary to have two ways to access the web site (i.e. Graphical and Text Tables)? If not, which do you prefer?**
Five of the nine respondents say that a graphical interface would be sufficient. Four of nine say that both would be needed; one of these indicates that the graphical interface is preferred, but it is important to have the option.

**4) What time should be displayed in the Graphical Product Windows? Should it be the time of the precipitation data in the image, the time of the newest or oldest product in the image, the time the image got to the web site, or something else?**

Six of nine respondents want the time of the precipitation image to be displayed in the graphical product window. Two want the time of the image; one of these specifies the time the image was accessed so that users know roughly what time the image was available for viewing. One user wants the time of the oldest product in the image and what that product is.

**5) How important is it to keep the web user interface similar to the ITWS situation display?**

Four of ten respondents say that it was important to keep the interfaces similar because it makes the transition to the web site easier for users who are familiar with the prototype SD and it maintains the shared situational awareness with the ATC users.

Two users indicate that keeping the interfaces similar is somewhat important for shared situational awareness with ATC users.

Four users respond that keeping the interfaces similar is not important.

**6) Do you prefer the use of color in the displays and backgrounds or do you prefer shades of gray?**

Eight of nine respondents want color; one indicates that shades of gray are acceptable.

## Top-Level Graphical Interface

The users were shown four examples of a top-level graphical interface to the web site. All four examples start with a map of the United States. Icons on the map show the locations of TRACONS with ITWS systems. In example #1-1, the icon shape and color indicate whether or not an ITWS is operational, if alerts are active or inactive, and the maximum precipitation level in the TRACON image as shown in Table 1. Clicking on a map icon displays a Site Information Window that provides icons and range selection options for each airport associated with the ITWS. Selecting a range option from the Site Information Window displays the appropriate graphical product window.

In Example #1-2, the shape of the icon on the US map is the same for all sites; color is used to indicate whether or not an ITWS was operational, if alerts are active, and if storm cells are being tracked, as shown in Table 2. Selecting an icon from the US map displays a Site Information Window containing the range options and an indication of alerts. Selecting a range option from the Site Information Window displays the appropriate graphical product window.

In Example #1-3, the shape of the icon on the US map is used to show whether or not an ITWS is operational (✖ for Not Operational and ● for Operational). The simple symbol usage allows for the use of other symbols to represent other types of data (e.g., WSP and MIAWS).

Example #1-4 uses the same symbol table (Table 2) and map icons as Example #1-2, but the Site Information Window pops open when the mouse is moved over a map icon. Clicking on the map icon displays a graphical product window. If the TRACON contains more than one airport, the graphical product window for a default airport is displayed.

The users were asked to evaluate and comment on each of the examples.

**1) Do you like the United States map? If not, what would you prefer for a graphical interface to the web site?**

All 10 respondents answer “Yes” to this question.

**Table 1: Icons for Top-Level Graphical Interface Example #1-1.**

| Symbol | Shape | | | Color |
|---|---|---|---|---|
| | Not Operational | Operational: No Alerts | Operational: Active Alerts | Highest Precipitation Level in TRACON Image |
| ✖ | ✔ | | | No data available |
| ● | | ✔ | | No Precipitation in TRACON |
| ● | | ✔ | | Level 1 |
| ● | | ✔ | | Level 2 |
| ● | | ✔ | | Level 3 |
| ● | | ✔ | | Level 4 |
| ● | | ✔ | | Level 5 |
| ● | | ✔ | | Level 6 |
| ▼ | | | ✔ | No Precipitation in TRACON |
| ▼ | | | ✔ | Level 1 |
| ▼ | | | ✔ | Level 2 |
| ▼ | | | ✔ | Level 3 |
| ▼ | | | ✔ | Level 4 |
| ▼ | | | ✔ | Level 5 |
| ▼ | | | ✔ | Level 6 |

**Table 2: Icons for Top-Level Graphical Interface Example #1-1.**

| Symbol | Color | | | |
|---|---|---|---|---|
| | Not Operational | Operational | Active Alerts | Storm Cells Tracked |
| ◆ | ✔ | | | No data available |
| ◆ | | ✔ | | No Precipitation in TRACON |
| ◆ | | ✔ | | Level 1 |
| ◆ | | ✔ | | Level 2 |

**2) Do you like seeing the highest Precipitation level for each site on the map or is this information not useful to you?**

Four of the 10 respondents say that they like having the highest precipitation level displayed on the US map because it provides an overview. Five say "No" because it complicates the image and is not very useful. One of these five users prefers a simple map of operational/not operational that downloads quickly. One has no opinion.

**3) Do you like seeing the Alert status for each site on the map or is this information not useful to you?**
The majority of the users (eight of nine) want to see the alert status on the map. One user says alert status information is not important at the top level.

**4) In some of the examples, after selecting a site, a site information table is displayed allowing you to select the airport and range of the Graphical Product window that you would like to have displayed. Is this extra step something you like or would you prefer that once you select a site that a Graphical Product window is displayed for a default airport and range? (Note that the airport and range can be changed in the Graphical Product window.)**
Six of nine respondents want the graphical product window to appear when they click on a map icon, even if that window contains a default airport. Three users indicate that going through the Site Information Window is acceptable.

**5) Do the Site Information tables have enough information in them and is it clear that the links in the table are used to display a Graphical Product Window?**
Six of nine respondents answer "Yes" to this question. One respondent prefers example #1-3. One respondent prefers the format of the Site Information Window in example #1-2. Another user states that color coding the alerts panels by precipitation intensity is not as important as a yes/no indication of the presence of alerts.

**6) Which example do you prefer and why?**
Five of 10 users prefer example #1-1 because it presents the greatest amount of data. Two users prefer example #1-2 because it provides enough information without overloading the user. One respondent prefers example #1-4 because the mouse-over pop-up windows are easy to use. One user has no preference.

## Top-Level Text Interface

Text interfaces provide a lower bandwidth, non-graphical interface to the ITWS images. The users were presented with three table styles to evaluate. Each use color and ordering differently and present different pieces of information. Access to a graphical product window is accomplished by clicking on an airport link. The graphical product window allows switching of ranges, airports, and sites.

Example #2-1 provides a table of airports that allows the user to sort ITWS sites (equal to ITWS TRACONs) by alerts and/or to filter non-operational sites. If neither sorting nor filtering are enabled, the sites appear in alphabetical order. If sorting is enabled, sites that contain airports that are experiencing alert conditions are alphabetized and placed at the top of the table. Sites for which there is precipitation present on the TRACON image but no alerts in effect are alphabetized and placed below the alerted airports, all other airports are alphabetized at the bottom of the list. The table contains columns for site, airport, operational mode, type of alert, number of storms being tracked, maximum precipitation on the TRACON image, and unavailable products. The site and airport cells are color coded to indicate the maximum precipitation level in the TRACON image.

Example #2-2 is the same as example #2-1 except that only the airport identifier is color coded to indicate the highest precipitation level found in the TRACON image. In addition, section breaks are included between alerted and non-alerted sections. Table entries may be sorted as in example #2-1.

Example #2-3 is the same as #2-1 and #2-2 except there is no color used to indicate precipitation level or alert condition. Table entries may be sorted as in example #2-1.

The users were asked to evaluate and comment on each of the examples.

**1) Is this the information that you would like to see in this type of interface?**
Six of eight users answer "Yes" to this question. One of these five believes this interface will not be used as much as the graphical interface and another thinks that the information on the number of storms being tracked is not necessary. One of the six users states that the sites, airports, operational modes, alerts, and maximum precipitation columns are useful, but the number of storms tracked, the list of unavailable products, and color coding of sites and/or airports are

too much information. One of the eight respondents does not care for this interface. One of eight respondents states that there is no real need for this interface.

**2) Would further customization options be valuable to you (i.e. a user defined list)?**
Four of seven respondents answer "Yes" to this question; one specifies a desire for user-defined airport listings. Two of the seven users do not want further customization and one user does not care for this interface.

**3) Which example do you prefer and why?**
Six of nine users prefer example #2-1, although one of these likes example #2-1 and example #2-2 equally. User comments include the desire to access the greatest amount data with the fewest mouse clicks and the capability to select the order in which the sites/airports are listed in the table. One of these six users notes that the information on the number of tracked storms is probably not necessary.

One user expresses a preference for example #2-2, one for example #2-3, and one does not care for this interface.

## Graphical Product Window

The ITWS products are displayed in a graphical product window, in addition to the alerts and window configuration. Five examples of graphical product windows were presented to the users for evaluation. In examples #3-1 through #3-4, alert information is provided in a status bar at the top of the image. In example #3-1, site, airport, and range selection and window control buttons (zooming, panning, etc.) are located on the right side of the window. Window control buttons contain text describing the function (e.g., Zoom, Unzoom, etc.). Date and time are in the window title bar. Clicking on the product status button displays a table of product availability.

Example #3-2 presents the date and time, site, airport, range selection, and window controls on the left side of the window. Window control buttons contain icons indicating the button functions. Product status information is on the right, with the color indicating availability as on the ITWS Situation Display. A pop-up window provides complete product availability information. The buttons associated with Terminal Winds, Ribbon Display Alerts, and Terminal Text display those products in a separate window.

In Example #3-3, the time and date and window controls (with icons) are shown on the right and product status information is on the left. An Options button at the lower right side displays a window options dialog box containing the site, airport, and range selection functions.

Example #3-4 shows the window control buttons (with icons) and an Options button (as in example #3-3) on the right. In addition to site and airport selection buttons, the window options dialog box allows users to create windows and change ranges in much the same way as the SD. The time and date are contained in the title bar. Unavailable products are listed at the bottom of the window (reminiscent of the red stripe on the SD). An "Unavail" button can be used to access full product availability information.

In Example #3-5, the date and time, site, airport, range, and window control buttons (with icons) are located at the left. At the top are alerts and product availability information.

Users were asked to evaluate and comment on the various graphical product window concepts.

**1) What ranges do you want to be able to select? The ITWS SD allows you to select 5nm, 10nm, 15nm, 30nm, 50nm, TRACON, 100nm, 200nm.**
Eight of nine respondents want the 5 nm range, five want 10 nm, five want 15 nm, five want 30 nm, four want 50 nm, six want TRACON, five want 100 nm, and five want 200 nm.

**2) Do you like having all selectable options on the Graphical Product window or do you like to have some things like airport and range selection in a separate pop-up window?**
Eight of nine respondents want all of the controls on the graphical product window.

One of the nine respondents likes the separate pop-up window. This respondent did not like examples #3-2 and #3-3 because of the large vertical list.

**3) Do you have a preference for where the time is located on the window? If so, where?**
Seven of nine respondents have no preference. One wants the time in the center of the screen. One user simply specifies "precipitation time."

**4) Which example do you prefer and why?**
Five of eight respondents prefer example #3-2, but two of those state that they prefer the method for accessing product status information presented in example #3-4. One respondent prefers example #3-1, one chooses #3-4, and one chooses #3-5.

## Java Graphical Product Window

The users were shown a sample java applet (web based application) which had the ability to pan, zoom, and roam around a high resolution ITWS product image. The purpose of this demo was to show the utility of a java applet and to solicit feedback on any limitations on the use of java in the attendees organizations.

**1) Any problems with using Java Applications in your organization/company?**
Seven of nine respondents indicate that they had no problem with Java. One of these wants to insure that the Java applications not be application specific. Two respondents are unable to use Java.

**2) Any questions or comments on this demo?**
One respondent indicated that the demo was impressive.

## Image Sizes

Users were shown a variety of sizes graphical product windows and asked to comment.

**1) Do you have an image size that you prefer?**
Two of seven respondents want 640 x 480. One respondent chooses 640 x 480 or 800 x 600. Two respondents pick 800 x 600. One respondent wants full screen images and one states that images should be at least 600 x 500.

**2) What is your monitor resolution and/or size?**
Monitor sizes range from 15 inches to 20 inches, with no size having a majority. This will have to be investigated further.

**3) Any questions or comments on this demo?**
There were no comments.

## Hazard Text Options

**1) Do you prefer the pop-up windows that display whenever you pass the mouse over a storm cell or would you rather select (click on) the storm you want to see information about?**
Four of eight respondents prefer the pop-up window; one of these wants the pop-up window to open so as not to obscure the graphical product window. Two of the eight respondents prefer to click on a storm to see the storm cell information. Two respondents want to click and hold the mouse button to display the window and release the mouse button to close the window.

## Text Products

**1) Do you want the web Text Product windows to look the same as the ITWS SD's Text Product windows or is there some other format that you would like?**
Six of seven respondents state that the text product windows should be the same at the Situation Display. One user has no preference.

## Concluding Questions

**1) Is there anything important to you that is missing from the interfaces we have presented?**
Three respondents want more overlays. One wants a legend for the top-level interface and customization capability.

**2) Can you provide any examples of web sites which you feel are well implemented, or have functionality which you would like to see included in the ITWS web site?**
One user notes that the way Yahoo handles stock quotes could provide ideas for the top-level text interface. Another user likes the FSL ACARS site (acweb.fsl.noaa.gov/java)

**3) What are your recommendations for further user group interactions?**
There was considerable variation in the suggestions for future group interactions. They included having more of the same, having conference calls while viewing a web product, using e-mail and attachments, waiting until an operational prototype is available, and making the web site operational and getting feedback via the web page.

## Oral Comments

Comments from users that were noted during the meeting fell into two categories: those that could be supported given the current ITWS configuration and those that would require changes to the ITWS products or data streams. These are summarized in Attachment 3. These comments included the desire for 1) more overlays and the ability for the user to choose which overlays are displayed, 2) audible alerts when certain criteria are met, 3) the display of both the five- and 20-nm lightning alert, 4) user-customization and preferences, and 5) enlargements of top-level maps or regional maps especially if other systems (e.g., WSP and MIAWS) are added and the map becomes crowded.

User feedback will be taken into consideration in the design of the web site.

# Attachment 1
# List of Attendees

| | Name | Organization | Position | Telephone | Email |
|---|---|---|---|---|---|
| 1 | Miro Lehky | Metron, Inc (formerly of ATA) | | 703-456-0123 x0737 | Lehky@metsci.com |
| 2 | Jeff Frost | AAL | SOC Sector Manager | 817-967-8340 | jeff_frost@amrcorp.com |
| 3 | Mark Wiley | AAL | Meteorologist | | markandyiyawiley@aol.com |
| 4 | Steve Gregory | UAL | Staff Specialist | 847-700-3091 | steve.l.gregory@ual.com |
| 5 | Chris Pear | UAL | Mgr, Flight Dipatch Ops | 877-601-9224 | Chris.D.Pear@ual.com |
| 6 | Rick Curtis | SWA | AOC/Dispatch Rep/Met | 214-792-5317 | rick.curtis@wnco.com |
| 7 | Lorraine Sandusky | COA | Chief Dispatcher | 713-324-7276 | LSandu@coair.com |
| 8 | Bill Failor | ATCSCC | | 703-771-3480 x3449 | William.Failor@faa.dot.gov |
| 9 | Greg Dietz | NWS-Boston | CWSU | 603-879-6698 | Gregory.Deitz@NOAA.gov |
| 10 | Mike Lee | OEM/NYC | Emergency Mgmt Planner | 212-788-1516 | mlee@oem.cn.ci.nyc.ny.us |
| 11 | Shawn Nolan | OEM/NYC | | | |
| 12 | Tim Reid | NWA | Dispatch Rep | 612-727-0294 | timothy.reid@nwa.com |
| 13 | Jeff Zimmerman | NWA | Test Tech Meteorologist | 612-726-0319 | jefzimme@soc.nwa.com |
| 14 | William Thull | DAL Met | Meteorologist | 404-715-0174 | William.Thull@delta.com |
| 15 | Jason Blakeslee | DAL Met | Meteorologist | 404-715-0174 | Jason.Blakeslee@delta.com |
| | | | | | |

| | Name | Organization | Position | Telephone | Email |
|---|---|---|---|---|---|
| 16 | Maureen Cedro | AUA-460 | Sys Eng/Comms | 617-493-0228 | Maureen.Cedro@faa.gov |
| 17 | Tom Duncan | AUA/TRW | Support Sys Eng/Comms | 202-314-1139 | Thomas.P-CTR.Duncan@faa.gov |
| 18 | Donna Drake | ARW-300 | ITWS AT Requirements | 202-366-4608 | Donna.Drake@faa.gov |
| 19 | Bart Khativala | FAA WJHTC | Test Lead | 609-485-7243 | Bharat.Khatiwala@FAA.gov |
| | | | | | |
| 20 | Len Kurzweil | Volpe | Volpe ITWS Feed PM | 617-494-2238 | kurzweil@volpe.dot.gov |
| 21 | Dave Reiser | Volpe | System Developer | 617-494-2346 | reiser@volpe.dot.gov |
| 22 | Mike Rossetti | Volpe | Statistician/Economist | 617-494-2020 | rossetti@volpe.dot.gov |
| 23 | Rick Oiesen | Volpe | Project Eng. ATMS | 617-494-2309 | oiesen@volpe.dot.gov |
| 24 | Kathy Carusone | MIT/LL | LL ITWS Website PM | 781-981-5039 | carusone@ll.mit.edu |
| 25 | Diana Klingle-Wilson | MIT/LL | ITWS Support | 812-342-0121 | dianak@iquest.net |
| 26 | Steve Maloney | MIT/LL | ITWS Website Developer | 781-981-4789 | maloney@ll.mit.edu |
| 27 | Nancy DeLosa | MIT/LL | Software Developer | 781-981-3686 | nancyd@ll.mit.edu |
| 28 | Derek Eberle | MIT/LL | ITWS Website Developer | 781-981-4789 | dereke@ll.mit.edu |
| 29 | Lauran Owirka | MIT/LL | ITWS Prototype Support | 781-981-2321 | laurano@ll.mit.edu |
| 30 | Dale Rhoda | MIT/LL | Airline Liaison, Researcher | 781-981-0848 | daler@ll.mit.edu |

# Attachment 2
# Feedback from the ITWS Web Users Meeting, 1 November 2000

## General Questions

**1) What aspects of the weather as provided by ITWS are important to your operations? Please rate the importance of the following summary information. Insert and rate other data on the blank line if desired.**

| | Very Important | Somewhat Important | Neutral | Not Important | No Opinion |
|---|---|---|---|---|---|
| **Highest Precipitation Level In TRACON image** | 5 | 1 | 3 | | |
| **Number of Storm Cells being Tracked in TRACON image** | 1 | 3 | 5 | | |
| **Presence of Airport Alerts** | 9 | | | | |
| **Type of Airport Alerts** | 9 | | | | |
| **?** | | | | | |

a.) On one of the examples, you had blue, yellow, and red status colors. May want to consider green, yellow, and red if you are not showing precipitation intensity.

**2) We have been using the TRACON as the default range. Is this the range you prefer? Please CIRCLE your preferred default range.**

b.) There should be at least one, preferably two more available - 15 or 30 nm; 100 or 200 nm

| 5nm | 10nm | 15nm | 30nm | 50nm | TRACON | 100nm | 200nm |
|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 1 (i) | 1 (h) | 6 (b, c, e, f, g) | 1 (d) | 0 |

**3) Do you feel it is necessary to have two ways to access the web site (i.e. Graphical and Text Tables)? If not, which do you prefer?**

a.) (Circled Graphical) For the type of operations we run at the Command Center, I like the national map.
b.) Prefer Graphical
c.) Not really. Graphical would be best.
d.) We need both so as to provide our hundreds of dispatchers a choice. It allows for some individual preference.
e.) Yes.
f.) Yes to provide an option, however graphical is much more useful to us.
g.) No. I prefer graphical example #1.
h.) As a meteorologist, I don't think the text table is very useful. I would just use the graphical tables.
i.) Graphical. Text would be nice.

**4) What time should be displayed in the Graphical Product Windows? Should it be the time of the precipitation data in the image, the time of the newest or oldest product in the image, the time the image got to the web site, or something else?**

a.) Time of the image.
b.) Time of the precipitation data
c.) Time of the precipitation data in the image.
d.) Probably time of precipitation data.
e.) Time of precipitation data.
f.) Assuming that there are latency thresholds, I would say the time the image was accessed. That would provide users with an indication of the time those data types were available.
g.) The time of the oldest product and what it is.
h.) I prefer the time of the precipitation data in the image.
i.) Precipitation image, but way to access all depicted image "field" times in a table

**5) How important is it to keep the web user interface similar to the ITWS situation display?**

a.) Very important. Should be kept as close as possible to keep the "common situational awareness" between all users.
b.) Very similar to; reduce the chances of misuse.
c.) Not too important.
d.) Not very.
e.) It the SD is indeed going to disappear, then there is no need to keep them similar.
f.) Somewhat; keep common with ATC users.
g.) Not very - we have no ties to the current user interface. Let's do what makes sense.
h.) Important because a lot of the users are familiar now with the SD.
i.) Pretty important because it would make the transition easier.
j.) Somewhat important.

**6) Do you prefer the use of color in the displays and backgrounds or do you prefer shades of gray?**

a.) Colors.
b.) Prefer colors.
c.) Shades of gray are fine.
d.) Colors.
e.) Colors for data. Grey for background.
f.) Colors that mean something.
g.) Color.
h.) Color.
i.) Color.

## Top-Level Graphical Interface Demo

**1) Do you like the United States map? If not, what would you prefer for a graphical interface to the web site?**

a.) Yes, I think it's a good idea to have some kind of high level overview map available.
b.) Yes
c.) US map is OK.
d.) US map OK
e.) Yes, probably the best graphical interface available.
f.) Yes, provides a summary of all data.
g.) Yes, however I think a Lambert Conformal Projection would look better than Mercator.
h.) Yes.
i.) Yes.
j.) Yes.

**2) Do you like seeing the highest Precipitation level for each site on the map or is this information not useful to you?**

a.) Not sure if it's really useful.
b.) ? I don't have a strong need for this, if we have an alert I would move down to look at the data.
c.) Not important for Dispatch or ATC coordination. I would prefer simple available or not available and get to image as fast as possible.
d.) Like seeing highest precipitation level.
e.) No, not necessarily useful.
f.) Lower priority. May be too subtle for users.
g.) Yes, provides a good general overview on a single screen.
h.) Yes.
i.) Yes.
j.) Neutral value.

**3) Do you like seeing the Alert status for each site on the map or is this information not useful to you?**

a.) Yes.
b.) Not important at this level.
c.) Like seeing alert status.
d.) Alert status is useful.
e.) Yes, provides an "at glance" summary.
f.) Yes, if we don't have it we have to drill down.
g.) Yes.
h.) Yes.
i.) Yes.

**4) In some of the examples, after selecting a site, a site information table is displayed allowing you to select the airport and range of the Graphical Product window that you would like to have displayed. Is this extra step something you like or would you prefer that once you select a site that a Graphical Product window is displayed for a default airport and range? (Note that the airport and range can be changed in the Graphical Product window.)**

a.) No. I want to select the airport to display.
b.) This is an extra step. I would prefer default (TRACON) with ability to change at graphical product window.
c.) Default window.
d.) We like the site info table.
e.) Prefer default to TRACON range. On multi-site systems, use pop-up menu.
f.) Would prefer to have the airports plotted individually. Take MCO and TPA, for example - two totally different climate regions. Many times only one airport is affected at any one time.
g.) The extra step is OK. AA has flights at both DAL and DFW; JFK, EWR, and LGA.
h.) The extra step is fine, especially when I'm equally concerned about more than one airport.
i.) Click is the best approach - but should be able to "bookmark" it!

**5) Do the Site Information tables have enough information in them and is it clear that the links in the table are used to display a Graphical Product Window?**

a.) Yes.
b.) Example #1-3.
c.) Yes.
d.) We prefer the site info table on page #4.
e.) Color code on intensity is less important. Yes/no for alerts is important.
f.) Yes.
g.) Yes.
h.) Yes.
i.) Yes.

**6) Which example do you prefer and why?**

a.) I think #2 is the better one. It gives you enough info to know what's going on and where, without overloading you with too much data.
b.) Site, range and alerts
c.) Base information, not too complicated. Makes dispatcher go to site.
d.) #1 - I like to see the most data with the least clicks.
e.) #4...active alerts tell us something we can't get elsewhere - popup windows are easy to use.
f.) Prefer #1, but should have the ability to select a list of stations, e.g., like stock quote web sites (Yahoo!)
g.) #1 - most complete, however I'd prefer all airports plotted using smaller symbols.
h.) Graphical Ex. #1. The map of the US with color coded symbols is a good dispatch manager's tool and ATC tool.
i.) #1 - Most amount of available data in an easy to understand format.
j.) No preference.

## Top-Level Text Interface Demos:

**1) Is this the information that you would like to see in this type of interface?**

a.) I think sites and airports listed with mode, alerts, and maximum precipitation might be useful, but storms, unavailable products, and colors might be too much information.
b.) No real need.
c.) Yes
d.) Yes, but the number of storms isn't necessary.
e.) Yes, probably wouldn't be used as much as the graphic product.
f.) Didn't care for this.
g.) Yes.
h.) Yes.

**2) Would further customization options be valuable to you (i.e. a user defined list)?**

a.) Yes.
b.) Not really.
c.) No.
d.) User defined airport listings.
e.) Didn't care for this.
f.) Very.
g.) The more, the better.

**3) Which example do you prefer and why?**

a.) #2-1.
b.) #2-3.
c.) #1 - want to see the most data with the least number of clicks.
d.) #2 - we don't like the alphabetical one.
e.) Prefer #1, but should have the ability to select a list of stations, e.g., like stock quote web sites (Yahoo!)
f.) #1 - prefer the color on both the site and airport column. Probably don't need number of storms.
g.) Didn't care for this.
h.) Actually equally prefer 1 and 2. Like to have the information available in those interfaces.
i.) #1 was good.

## Graphical Product Window Demos

**1) What ranges do you want to be able to select? The ITWS SD allows you to select 5nm, 10nm, 15nm, 30nm, 50nm, TRACON, 100nm, 200nm.**

a.) For smaller satellite airports, at least one other range between 5 and TRACON should be available - maybe 15 or 30 (or both?).
b.) 5, TRACON, 100 and 200.
c.) 10, 50 100, 200
d.) 5, 30, TRACON, 100, and 200 is enough since we can zoom.
e.) 5 nm, TRACON, 100 nm, 200 nm
f.) Please leave them all. We do not need additional ranges.
g.) 5 through 50. We have other weather products that give us good weather data at greater ranges.
h.) 5 nm - 50 nm. At AA we have plenty of products > 50 nm.
i.) TRACON, 5, 10, 15

**2) Do you like having all selectable options on the Graphical Product window or do you like to have some things like airport and range selection in a separate pop-up window?**

a.) Yes.
b.) All on graphical product window.
c.) We like the separate pop-up window. We don't like examples 2 and 3 with all the possible alerts in a huge vertical list.
d.) All options on window.
e.) All on product window, however not critical either way.
f.) Yes. Keep them on the graphical product window.
g.) Like having all selectable options.
h.) All on one.

**3) Do you have a preference for where the time is located on the window? If so, where?**

a.) Precipitation time.
b.) No.
c.) No.
d.) No preference.
e.) Center of screen
f.) No.
g.) No.
h.) No.
i.) Location not important.

**4) Which example do you prefer and why?**

a.) #3-4.
b.) #3-2 with a product status as in #3-4.
c.) Example 1. Ease of use.
d.) #5 - less clutter.
e.) #2 for control button placement and alerts. #4 for product available states.
f.) #2, but no problem with any.
g.) Example 3-2. 1) Shows product status and alerts, 2) similar to what SD is now, and 3) don't have to use a pop-up window.
h.) Example 2. Most information available through just one click.

## Java Graphical Product Window Demo

**1) Any problems with using Java Applications in your organization/company?**

a.) No
b.) No
c.) No
d.) No problem.
e.) Ensure that it doesn't require a specific browser, e.g., Netscape or IE.
f.) No as long as not Microsoft specific. We use SGI workstations with Netscape.
g.) Yes. AA is on Mac platforms. Java Apps are firewalled.
h.) See Jeff Frost's comments.
i.) No problem.

**2) Any questions or comments on this demo?**

a.) This one is impressive.
b.) No.
c.) No.

## Image Sizes Demo:

**1) Do you have an image size that you prefer?**

a.) 640 x 480
b.) 640 x 480 or 800 x 600
c.) At least 600 x 500.
d.) 640 x 480 seems to be a fair compromise of resolution and accessibility speed.
e.) 640 x 480
f.) 800 x 600 as a standard
g.) Full screen.

**2) What is your monitor resolution and/or size?**

a.) 15" to 23"
b.) 1024 x 1024
c.) Not sure.
d.) Unsure - about 19".
e.) Variable, most 1024 x 1024 x 2 monitors.
f.) 20"
g.) 20", hi-res

**3) Any questions or comments on this demo?**

## Hazard Text Options Demo:

**1) Do you prefer the pop-up windows that display whenever you pass the mouse over a storm cell or would you rather select (click on) the storm you want to see information about?**

a.) Would rather click.
b.) I would like the click option. Hold down the click and the window is opened; let up the button and the window closes.
c.) Click on!
d.) Pop-up/
e.) We prefer pop-up window, but it would be nice if popped up away from the action in a corner or something.
f.) Mouse down brings up box; mouse up dismisses box.

g.) Yes, provides information faster to the user.
h.) "Pass over" approach is best.

## Text Products Demo:

**1) Do you want the web Text Product windows to look the same as the ITWS SD's Text Product windows or is there some other format that you would like?**

a.) Should be same as much as possible.
b.) Look the same
c.) Same
d.) SD format is good, I think.
e.) Yes,??? them. Formats are fine.
f.) No real opinion.
g.) Same.

## Concluding Questions:

**1) Is there anything important to you that is missing from the interfaces we have presented?**

a.) No
b.) Storm extrapolation as is shown on SD.
c.) No.
d.) Main is individual airports on graphical display. Main screen may need a legend. Somehow possibly allow airport customization on display. Need NAV data overlays? How about ARTCC boundaries?
e.) More overlay options.
f.) More overlays.

**2) Can you provide any examples of web sites which you feel are well implemented, or have functionality which you would like to see included in the ITWS web site?**

a.) No
b.) Can't think of any.
c.) For the text summary display, look at the way Yahoo! calls up stock quotes.
d.) Aviation Weather Center, Intellicast - nothing specific.
e.) No.
f.) No.
g.) FSL ACARS site is awesome: acweb.fsl.noaa.gov/java

**3) What are your recommendations for further user group interactions?**

a.) Meeting in person works better than telecons.
b.) An operational prototype.
c.) Telecon viewing web product
d.) Continue same. Very important for the users to participate in development. Also, the option to put the data on the internet would allow for participation from many more potential users.
e.) Some things can be handled via e-mail and attachment.
f.) Another meeting like this when you have a prototype ready.
g.) Really tough to do GUI design in this type of a setting. You did a great job. In the future, I think we should have a meeting to review progress - say in the Spring and on before final release. Perhaps we could do this in conjunction with the ATA-Met committee meeting.
h.) Put a prototype on the web and have a telecon with the users to discuss it.
i.) Have real data sent down to the potential users so we can determine the functionability of the system in real-time conditions.
j.) Set up the site for real, get feedback direct from users via web page feedback form. "Visits" are just not best approach at this point.

**4) General comments and/or questions.**

a.) How exactly will non-airline/ATCSCC users be able to access a Volpe web site? I'm thinking of the AFSS, Airways Facilities, MCCs and SMOs, smaller satellite airports such as Orlando's Executive or New Orleans' Lakefront. Do they currently have a way to interface to Volpe sites now? If not, what do we need to do now to ensure they will be able to access the sites? New equipment or something else? And what about NWS WFOs and airport authorities? Do we need to do anything extra or different to make sure they will be able to display this data?

Both 5 and 20 nm lightning data should be available too.

b.) Have this displayed on the HP at TMUs.

c.) Good work, lots of functionality.

d.) Good meeting. Sad to lose SD.

e.) Excellent progress. Looks like a good product. Highly useful.

f.) Key point - data archive? How do we recreate what was accessed? Log files? Time we archive images, etc.?

Tremendous effort has been made. Please keep it simple. Dispatchers can get easily confused on the technical details concerning the data types (ASR, TDWR, NEXRAD, etc.) and update times of the image. Thanks for asking our input. Let me know if there is anything I do to help.

g.) American would like to be able to have county and road overlays

Good, productive meeting.

# Attachment 3
# User Comments

## Require No Change to ITWS Products or Data Streams

Top-level graphical interface: For multi-airport ITWS, if a user clicks on the symbol associated with a multi-airport TRACON and one of the airports is alerted, the interface should go to alerted airport (or the one with most weather) instead of going to a default airport.

If WSP and MIAWS are added to the web site, regional maps would most likely be needed because the display would get crowded. In addition, it would not be necessary to distinguish between systems on the top-level map. Knowing which system is providing weather information is not important; weather is weather.

Dispatchers have no need for the national graphical display; they already have a national weather view. The dispatchers will go directly to the graphical images.

Audible alerts that sound when a downburst or windshear is detected (or other phenomenon/criteria pre-identified by the user) would be useful.

Display real-estate is at a premium. Users would most likely never have more than one graphical window up at one time. However, being able to iconify the graphical windows may alleviate the problem.

Many participants indicated that both the five- and 20-nm lightning detection alert thresholds should be supported.

It was reported that a lot of time is required to download Java applets. The users of the ADDS site reported that it is necessary to switch back and forth from several different Java applets, which must be loaded and re-loaded each time they are used. (It is possible for the client to store the Java code on the client's local machine, so it only needs to be downloaded once.)

Participants want the ability to change overlays. Some suggestions for overlay options included arrival and departure fixes, state boundaries, TRACON boundaries, surrounding airports, roads, transportation facilities (bridges and tunnels). It was suggested that the overlays be in different colors.

Many airlines do not have access to the active runway information, but would find this information very valuable.

It was suggested that in example 3-2 of the top-level interface, that the unavailable list should be placed at the bottom (as in example 3-4) instead of using unavailable lights on the right hand side.

It may be important to keep the Terminal Winds product in the same format as in the ITWS SD so that users can compare the wind information and discuss it. Differing formats would make this confusing.

The digital data feed should be retained, even though the users may not be using it in the near term. Their airlines are planning on using this at some point in the future.

The Raytheon ICD errors discovered by Nancy DeLosa of MIT/LL need to be distributed.

Enlargements of top level maps would be nice, but not necessary. Mouse-over pop-up windows on top level map would be irritating; this could possibly be a configurable option. Meteorologists want more information but other users may need less information on the top-level

Some users want to be able to select a graphic window from a mouse-over pop-up window.

Users would like to set up preferences like a default airport and range for quick access to the graphic windows.

Users would like custom saved window configurations.

It was suggested that the Terminal Winds data be presented as a graphical display of winds speeds and directions, possibly in the form of an overlay.

## Require Changes to ITWS Products or Data Streams.

When a Site is down, it would be useful to have an estimated time for return to service. (This information does not exist in the ITWS data.)

A graphical display of winds at various altitude levels (e.g., ground, 200 feet, 400 feet, 600 feet, 800 feet, etc.) would assist in estimating wind effects on high-rise buildings or skyscrapers. (The only wind data available from ITWS are the altitudes and locations contained in the Terminal Winds table and those values are selected by Air Traffic.)

Graphics that correspond with the issuance of a NWS Watch or Warning. Examples include the display of the boundaries associated with a severe thunderstorm watch, or perhaps a set of color indicators that light up when a specific watch or warning is in effect for an area. These data could be displayed in the form of an overlay. (These data are not used by ITWS.)

Lightning detection capability for use on the display that would identify locations (latitude/longitude) of lightning strikes associated with storm systems. (These data are not exported in the ITWS data streams.)

In the convective forecast product display, levels four, five, and six weather should be represented independently (each level a different color, rather than yellow for the whole group). We could also utilize a better description of what the criteria is for being classified at a specific level. (The yellow in the TCWF forecast product does not represent specific weather levels. It is the moderate (stippled yellow) or high (solid yellow) probability of level three or greater weather. Forecasts are not made for specific levels.)

Rainfall rate estimation for active storm cells, and another display that would show estimated rainfall that has fallen in an area. (This is not an ITWS product.)

Since most airports are used by the NWS to obtain surface observations, perhaps a window could be developed that allows you to review real-time observations from the facility providing you with the ITWS display. A current example for NYC OEM would be the availability to see real time observations (current temperature, humidity, dew point, barometric pressure, wind speed, wind direction, precipitation totals, conditions, etc.) from Newark International Airport. (These data are not exported in the ITWS data streams.)