

2002-2003 Project Plan For Robert Rozumalski - SOO Science and Training Resource Coordinator

AWIPS/WES TRAINING AND SUPPORT

NWS WEATHER EVENT SIMULATOR SUPPORT

The SOO Science and Training Resource Coordinator will continue to provide hardware and software support for the NWS Weather Event Simulator (WES) and additional adjunct software. Software support for the WES will consist of testing new releases patches, providing assistance with installation, and troubleshooting run-time problems at forecast offices. Hardware support will include providing guidance for WES workstation purchases and some assistance with failed systems. WES-related information and resources will continue to be posted on the SOO/STRC web and ftp sites as necessary.

PROFESSIONAL DEVELOPMENT

The SOO STRC will gain a greater knowledge of AWIPS-related software management and functionality through formal training and hands-on experience. The STRC will be attending classes at the NWS Training center in AWIPS Local Applications development with additional training on operations support if necessary. Further experience will be gained by visiting NWS forecast offices during WES training sessions to witness the techniques and methods used by NWS SOOs during training exercises.

COMET/NWS TRAINING DIVISION CASE STUDY SUPPORT

The SOO STRC will assist Liz Page in the release of AWIPS case studies and providing support to the field on case study installation. Development has begun on the COMET/NWS Training Division AWIPS case library where SOOs can submit locally archived AWIPS cases for use by other offices. DVDs will be distributed to those offices requesting a case.

In support of the AWIPS case study effort, the 7-day running archive of all operational AWIPS data will also be continued through the end of 2003. These data are accessible in real-time through the SOO/STRC ftp server. Due to the large volume of collected, these data are not saved to DVD for permanent storage.

D2D/D3D/WES INTEGRATED GRAPHICAL USER INTERFACE (GUI)

Preliminary plans for the development of an all-inclusive graphical user interface that will allow NWS forecasters and SOOs to start WES, D2D, D3D,

IFPS, or the AWIPS Case installer from a single window with the click of a button. This value-added functionality will allow users to easily select between displaced real-time (DRT) training and reviewing archived data with D2D and/or D3D for case study preparation.

SOO/SCIENCE AND TRAINING RESOURCE CENTER WEB AND FTP SITES

The Science Operations Officer / Science and Training Resource Center (SOO/STRC) web and ftp sites will continue to be maintained and updated throughout 2003. Current plans for development include the release of an on-line SOO survey (Summer 2003), a SOO Modeling Resource Center (SOO/MRC), and further development of the SOO/WES site. Additions and updates to the SOO/STRC web site will be made as necessary.

The SOO/MRC is scheduled for mid-2003 and will combine the SOO/STRC WS Eta resources with the new community Weather Research and Forecasting Model (WRF) support planned for 2003. The SOO/MRC will include information and guidance on local area and operational models, along with links to current research projects utilizing weather forecast models.

SOO/STRC DATA ARCHIVE

The 10-day running archive of all operational Eta model runs on a variety of non-operational grids (212, 221, and 104) along with the Eta BUFR sounding files will be maintained through 2003. The purpose of this archive is to support the local case study and local area modeling efforts at the WFOs as well as the semi-operational use of the modsnd program. These data will continue to be written to DVD for permanent storage. Should the storage capacity of DVD increase, the archive may be expanded to include a wider variety of model data sets.

The 7-day running archive of all operational AWIPS data initiated during early 2002 will continue through 2003. These data are accessible in real-time through the SOO/STRC ftp server. The purpose of the archive was to support WFO and COMET WES case study efforts. Due to the large volume of collected, these data are not saved to DVD for permanent storage.

LOCAL AREA MODELING SUPPORT

The Goals of the SOO Science and Training Resource Coordinator (SOO STRC) in supporting local area modeling at the WFOs are:

- To improve the knowledge and use of mesoscale models and issues at the local level.

- To advance the forecasting process through an improved understanding of mesoscale processes and the use of *non-traditional diagnostic tools*.
- To increase participation within the WFOs in developing and executing NWP studies to examine *local forecast problems*.

The Role of the SOO STRC in supporting local area modeling at the WFOs is to provide:

- NWP model package development and support
- Guidance and support for configuring and running models
- Advice for purchasing workstations and compilers
- Scientific support for research utilizing NWP systems, ingestion of data, and dissemination of output
- A dialogue between forecast offices regarding local modeling studies

SOO/STRC WS ETA

Support for the SOO/STRC modeling package, which includes providing assistance with installation, configuration, and running the WS Eta for both real-time and local case studies will continue through the end of 2003. In addition, the package will be upgraded as big fixes and improvements are made available by NCEP. Binary distributions for HPUX and LINUX operating systems will continue to be created for those offices without compiler resources.

The much-anticipated release of SOO/STRC WS Eta version 3.0 should occur during the fall of 2002. The 3.0 release is likely to be the final incarnation of the SOO/STRC package before support for the WRF model is initiated prior to its operational deployment during the 2003-5 period. Version 3.0 will have many improvements over previous releases, including:

- An updated surface scheme
- An updated Kain-Fritsch cumulus scheme
- Non-Hydrostatic Hybrid pressure-sigma coordinate system
- Improved 30s Land-Sea mask
- More robust run-time scripts
- NCEP Reanalysis grid support
- Improved guidance for viewing in AWIPS
- Support for 12-km AWIPS 218 tiles
- Full resolution BUFR files
- Additional output fields

WEATHER RESEARCH AND FORECASTING MODEL

In mid-2003, the SOO STRC will begin support for the new community Weather Research and Forecast (WRF) model. The WRF model is scheduled to be the successor to the operational and workstation versions of the Eta Model, and its introduction should dovetail well with the growing local modeling efforts at NWS Woos. Development of the SOO/STRC WRF modeling package will be similar to that of the WS Eta with user-friendly documentation and install procedures. In addition, binary distributions will be provided for those offices without compilers.

The SOO STRC will continue to participate in the WRF training working-group

SOO/STRC Modeling Service

In 2003 NWS SOOS will continue to be able to request high resolution model runs from either the WS Eta or the WRF model for their local training and research needs. These model runs will be configured with help from the SOO STRC Coordinator and run at COMET. This service is intended for those offices that do not have the local knowledge or computer power to run a mesoscale model but still would like the data for local studies.

NAWIPS/GEMPAK SUPPORT

NAWIPS consists of a suite of software programs, including GEMPAK, GARP, NSHARP, NSAT, NMAP, NMAP2, and NTRANS, which continues to be the most frequently used software for the manipulation and display of meteorological data in the non-operational environment. Most SOOs are familiar with the package and continue to use it on a semi-regular basis. This use is due, in part, to functionality that is not available in AWIPS and familiarity with the software gained before coming to the NWS. Consequently, NAWIPS will continue to be supported and updated through 2003. Some programs, such as GARP, NSAT, and NTRANS have been deprecated and support will be limited. Additional support will be provided to those offices interested in using NMAP and NMAP2. Support includes help with installation and using, as well as compiling new binary distributions for LINUX and HP-UX as new versions are released by NCEP.

ADDITIONAL SOFTWARE SUPPORT

LINUX D3D

Support for installing and running Display 3-Dimensions (D3D) for LINUX workstations will begin during the Fall 2002. D3D was developed at the

University of Wisconsin and Forecast Systems Labs (FSL) to be the 3-D compliment to D2D. D3D will allow offices to view NetCDF grid and point data on multi dimensional surfaces using a non-operational LINUX workstation. The SOO STRC coordinator will be distributing the software via the SOO/STRC ftp site and additional resources are to be posted on the SOO/STRC. Offices will be able to view the same NWS/COMET case study data released with the WES, and D3D may be integrated into WES training.

MODSND 2002

The Modsnd 2002 package is a collection of shell scripts that call GEMPAK routines to convert BUFR sounding files into a format for use by BUFKIT, NSHARP, and other display packages. These data sets are exceptionally popular with NWS field forecasters because they originate from the native model grids and have a temporal resolution greater than that currently available from any operational data source. Changes to the operational AVN model BUFR files and release of the WS Eta version 3.0 will necessitate updates to modsnd.

GRIBMASTER

Gribmaster 3.0 is a collection of scripts that allow the user to select, download, and process operational and non-operational model datasets on the OOS and NCEP ftp servers. Gribmaster can also be configured to access data from any regional FTP server. The data may then be converted into GEMPAK format for viewing in NAWIPS, shipped off to AWIPS, or processed for some other use such as PC grids. Changes to data sets available on the NCEP ftp servers during 2003 will require updates to the Gribmaster package.

WDSS II

The Warning Decision Support System II (WDSS-II) is the successor to the popular WATADS software package developed at NSSL and previously supported by the SOO/SAC Coordinator. WDSS-II consists of several enhanced or new WSR-88D severe weather detection and prediction algorithms as well as innovative display capabilities that provide information to warning meteorologists to support decision-making during times of severe/hazardous weather. Numerous WFOs have requested software access and support for WDSS-II in hopes of replacing antiquated WATADS systems.

LINUX AND HPUX SUPPORT

The SOO STRC coordinator will continue hardware, software, and administration support for HP and LINUX workstations. In addition to assistance received via email and phone, SOOs and ESAs can take advantage of the web support materials that will continue to be updated as part of the

SOO/STRC. The HP/UX software support contract with HP for the SAC should be maintained through 2003.

COMAP SUPPORT

The SOO STRC Coordinator hopes to play a more prominent role in the NWS/COMET COMAP class scheduled for 2003.

SCIENTIFIC SUPPORT

The SOO STRC Coordinator will continue to provide scientific support to the NWS SOOs as requested.

ADDITIONAL PROFESSIONAL DEVELOPMENT GOALS

Attending AWIPS training course(s) at the NWS Training Center
Shadow Forecasters at NWS Field offices in order to gain a better
understanding of the operational environment and forecast process.
Attend WRF workshops held 2x/year