

# AFPS Quarterly Report

FY97 - Q1, October - December 1996

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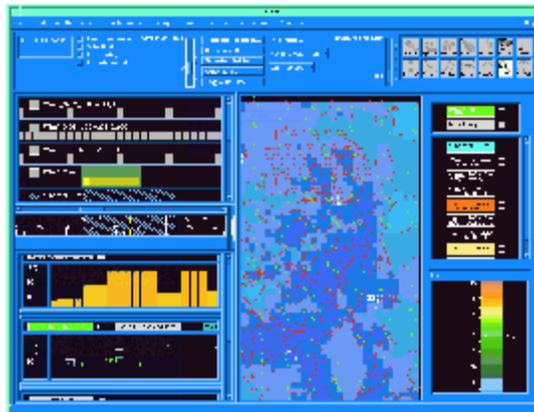
# 1. Introduction

The AWIPS Forecast Preparation System ([AFPS](#)) is being developed by the **FSL AFPS Team**, in the Enhanced Forecaster Tools ([EFT](#)) Branch of the Forecast Systems Laboratory ([FSL](#)) Modernization Division ([MD](#)) with support from the [NWS](#) Office of Systems Development's Techniques Development Laboratory ([TDL](#)).

## 2. The New GFE

The new AFPS Graphical Forecast Editor (GFE) is nearing completion. Here are several screen snapshots of the new integrated GFE.

The first figure shows the overall layout of the GFE. The diamond in the middle may be used to interactively change the size of the grid manager, spatial and temporal editors. The single-window approach ensures that data changed in one editor will be presented to the user in another editor, thereby facilitating comprehension. Feedback received on the previous GFE's multiple-window approach indicated that it was somewhat difficult to use. Therefore the AFPS team responded with this new, simpler approach. This new approach is consistent with that of the new AWIPS platform, [WFO-Advanced](#).



Click on the picture to see a full-size view of the GFE

### 2.1 Controller Area

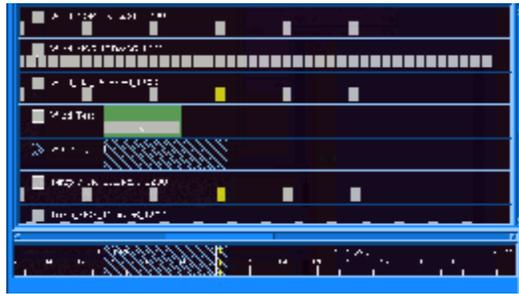
A controller area has user interface objects for commonly accessed features. The buttons are logically organized into buttons for the grid manager, temporal editor, and spatial editor.



Click on the picture to see a full-size view of the controller

## 2.2 Grid Manager

The grid manager shows the data inventory. Some fields, such as maximum temperature, have unique time requirements. These boundaries are shown by dashed outlines. Inter-parameter copies can be made with the mouse as a quick way to perform initializing the forecast database. Both the forecast database and model databases are now displayable on the grid manager. Note that inter-parameter copies and simultaneous display of forecast and models were not possible on the previous GFE version.



Click on the picture to see a full-size view of the Grid Manager.

## 2.3 Temporal Editor

The temporal editor displays time series of weather elements. The editor may be set to display the "representative value" of multiple grid points, or the actual value of a single gridpoint. This is a new feature for the GFE. Editing data on the temporal editor may be applied to the grid either in an absolute or a relative mode over the user-selected grid area. The new GFE automatically picks the active parameter to be edited based on the press location. Complete time series can be edited with simply one press and drag action on the mouse. The two figures illustrate the before and after effects of editing the complete time series. The edit operation took about three seconds. Previously the active parameter had to be set manually before editing and only a single grid could be edited at a time.

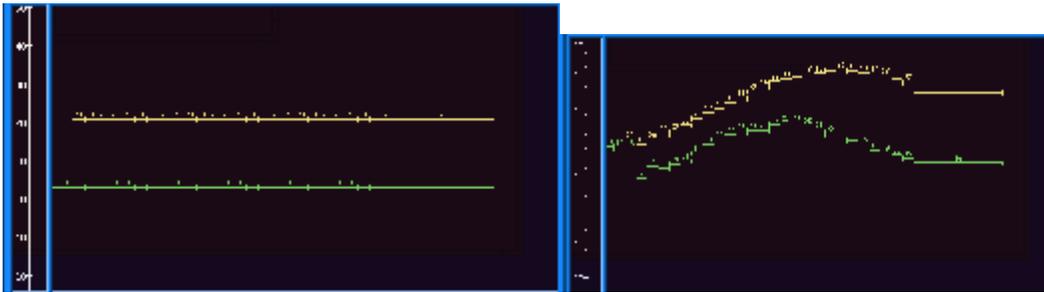


Click on the picture to see a full-size view of the Temporal Editor.

### Time-series editing example

Editing a complete time-series (and modifying the associated grids) is accomplished very easily.

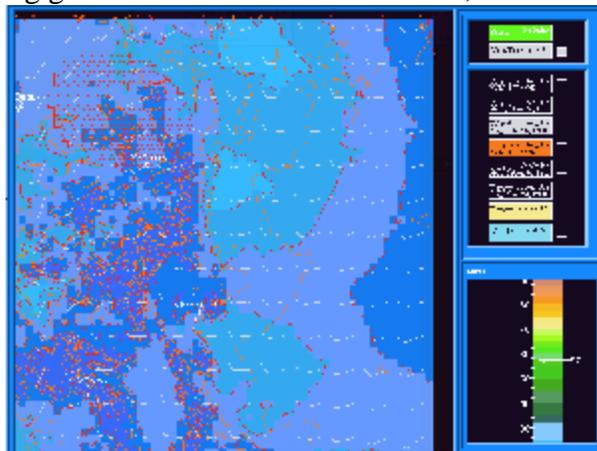
The pictures below show the before and after effects of two simple press-and-drag edits. Click on the pictures for enlargements showing more detail.



Click on the *before*, then *after* picture for more detail.

## 2.4 Spatial Editor

The spatial editor consists of the grid viewing area, a set of data selectors, and a legend. The grid viewing area is similar to the previous GFE; it shows gridded data in a variety of formats. The data selectors control which parameters are active (can be edited) and also provide a quick means of toggling between image and graphic displays for a parameter. The legend always shows the color enhancement curve applied to the displayed image. The most significant change on the spatial editor is the ability to edit multiple grids simultaneously, such as QPF, Weather, and Clouds. The old GFE was capable of only editing one grid at a time. The spatial editor is also now capable of overlapping grids from different data sources, such as RUC and Eta.



Click on the picture to see a full-size view of the Spatial Editor.

## **3. Accomplishments**

FSL's AFPS team concentrated its efforts on the following activities this quarter:

- Implementing and testing portions of the new Graphical Forecast Editor (GFE).
- Writing the AFPS User's Guide.
- Updating the initialization algorithms and code.

### **3.1 Implementing and Testing the GFE**

The main thrust for the team was the implementation and testing of the GFE. Implementation of the GFE continued from the previous quarter and ended in early December (Romberg, LeFebvre, Longstaff, Wier, Mayer, Mathewson).

An updated TKG NATS bug-tracking system was installed in December (Howard).

Testing of the GFE began in earnest in December. The grid manager (previously known as the worksheet) was the first focus of debugging. The spatial and temporal editor debugging began before the end of the quarter. (Romberg, LeFebvre, Mayer, Longstaff, Mathewson).

It is expected that a stable version of the GFE, is ready for field review, will be available mid-January.

### **3.2 Writing the AFPS User's Guide**

The majority of the AFPS User's Guide was written this quarter. Chapters finished included the spatial editing, temporal editing, and managing grids. The format of the guide was restructured based on early review comments to ensure concepts were presented in a consistent manner.

By the end of the quarter, only the introduction chapter needed to be written, and some 150 screen captures needed to be made. It is expected that a draft of the AFPS User's Guide to be ready for dissemination by mid-January. (George, Howard)

### **3.3 Updating the Initialization Algorithms**

The "operational" version of AFPS initialization is taking shape. The design was finished last quarter and implementation began this quarter. By the end of the quarter, the Eta and NGM model output were successfully being converted to AFPS surface weather elements.

The "operational" version is built upon an object-oriented framework, with the primary advantage that all of the common data processing required from each model source can be coded just once; only specific differences between model processing need to be specially coded. The result is a substantial savings in code volume and complexity. The previous "experimental" version was used to learn how initialization should behave and had a large amount of duplicated code. (Wier)

### **3.4 Other Activities**

Vicky Mathwig was hired in November as a Programmer. She initially is working on a topography database.

Preparations were made for the field test at Denver. A draft field test plan was written and coordinated with Larry Mooney of NWSFO Denver. This field test plan greatly expands upon the Interactive Forecast Preparation Implementation (IFPI) Risk Reduction Plan and provides specifics for customer support, schedules, and forecaster expectations. (Howard)

The FSL AFPS team has begun working closely with the Denver NWS office to define specifications for the grid-based formatters. The team currently is concentrating on the zone forecast product. It has been learned that the formatters must be tailored by zone, since different thresholds apply in certain zones. (Mathewson)

Comprehensive specifications and designs are underway for "unloading" the grids into representative values. The grid unloaders examine the detailed gridded data over time and searches for local effect areas. The output from the grid unloaders are used in the grid-based formatters. (Longstaff, Howard)

## **4. Presentations/Visitors/Travel**

Visitors:

- Mark Cheng, Adolphus Shen, Fred Cheng from Central Weather Bureau, Taiwan (Oct 15).
- Wayman Baker, NCEP (Nov 13).

Travel and presentations:

- Mark Mathewson, Tom LeFebvre, and Dave Howard visited the Denver NWSFO to discuss the AFPS Field Test Plan (Nov 12).
- Dave Howard attended a Software Assurance and Testing class in Denver (Nov 13-14).
- Vicky Mathwig, C++ object-oriented training (Dec 26-31).

## **5. Plans for the Next Quarter**

This will be the last AFPS Quarterly Report.

NWS management has decided that AFPS development activities will be terminated. A new IFP system, called the Interactive Forecast Preparation System (IFPS) will be based on a combination of TDL's Interactive Computer Worded Forecast (ICWF) system and FSL's AFPS.

This new project is to be directed by TDL. It is expected that the FSL AFPS team will participate in the development.

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