

# AFPS Quarterly Report

## FY92 Q4: July - September 1992

### 1. Introduction

The AWIPS Forecast Preparation System (AFPS) is being developed by the Enhanced Forecaster Tools (EFT) Branch of the Forecast Systems Laboratory (FSL) Modernization Division and some of the staff of the Techniques Development Laboratory (TDL).

As in our previous quarterly report (dated 15 Jul 92), only FSL work is reported herein. Information on TDL's work is included in the TDL Quarterly Report. Except as noted, the use of "we" below refers to FSL staff.

### 2. Accomplishments

The highlights of the quarter's work were the formulation of a software architecture and the commencement of high-level design for our first graphical editor demonstration. Additionally,

- Project staff completed a 28-class-hour in-house C++ course in early August.
- Considerable work was done to further test the TDL-designed SIRS (Systematic Interpolative Radial Search) contour editing method. Our test code now includes contour editing (using SIRS), area editing, and addition of new contours. It uses near-real-time analysis grids from FSL's LAPS (Local Analysis and Prediction System).
- We and TDL worked with OM to formulate a formal response to the AFPS Development Plan comments. OM's response was issued on 3 August.
- Preliminary requirements for the Graphical Forecast Editor (GFE) have been formulated. These form the basis for the high-level system design.
- Our staff is becoming familiar with ObjectWorks, a C++ development environment produced by ParcPlace.
- We have been investigating how C++ may interact with X/Motif, PHIGS (Programmer's Hierarchical Interactive Graphics Standard), PEX (PHIGS Extensions to X), GL (another industry-standard graphics system), and Douglas Young's C++/X/Motif methods.
- Some new hardware and software was procured for our Sun system. Additional disks and new modems were purchased for the server. Purify, a product that checks C++ code for internal consistency and memory management, arrived in August.
- We continued our examination of the list of text forecasts to be produced at WFOs, evaluating the data (basic and specialized weather elements) needed to support their generation.
- Our paper for the 9th IIPS conference (Graphical Forecast Editing Tools for AWIPS by Wakefield, Mathewson, LeFebvre, Leserman, Mayer, Wier, Young, and Xu) was completed and submitted for the conference preprint volume. A copy is attached.
- Work was begun on a data requirements document for AFPS. This will incorporate findings from the weather elements analysis noted above.

- We laid out a development plan for the first quarter of FY93 (a Level 0 Prototype), and for a sequence of three integrated prototypes to follow through FY93 and FY94. These steps will result in a fully-functional prototype that can support operational tests.

### **3. Presentations/Visitors/Travel**

- Mark McCloy and Nolan Miller of the AWIPS Program Office (APO) visited on 16 July to discuss issues concerning the scheduled hardware and software deliveries of AWIPS and how that affects integration of AFPS into AWIPS and risk reduction.
- Three SOOs from the NWS Southern Region visited 4 - 5 August. A valuable exchange of information was had with Don Baker (NWSO MLB), John Livingston (NWSO HOU), and Larry Ruthi (WSFO OUN). Matt Peroutka of TDL also attended; he presented some information about ICWF and LAMP, and provided the TDL perspective on AFPS.
- Eric Mandell of the APO and Roxie Jones of Department of Commerce Legal visited on 11 August to discuss our development plans and schedules, and how our work might be coordinated with that of the AWIPS contractor.
- Hank Schmidt of OSD/ADDL visited 17 - 18 September. We discussed issues related to FSL's role in the AWIPS Development Phase, AFPS development schedules, FSL's use of the GDP (Government Development Platform AWIPS hardware), and future NWS operations.
- Mary desJardins and Tony Mostek visited from NMC on 22 September. We showed them our graphical editor work, and discussed graphics and our near-term development plans.
- Tom LeFebvre traveled to Whistler, B.C. to present our paper entitled Operational Forecast Preparation in the AWIPS Era (by LeFebvre, Wakefield, Mathewson, and Wier) at the Fourth Workshop on Operational Meteorology on 17 September. (Copies of this paper are available on request.)

### **4. Plans for the next quarter**

- We will present AFPS to NWS management at an OSD Program Review on 6 October.
- Requirements for the GFE, data (weather elements), and the AFPS database will be completed. (GFE requirements are finished as of this writing. Copies are available upon request.)
- Working with TDL, we will prepare for OM a "white paper" on the data requirements.
- Bob Mayer will give EFT staff some training on X and Motif concepts.
- We will begin work with OI, an object-oriented user interface library.
- An additional Sun workstation will be installed at TDL. It is currently in the procurement process, and should be delivered to FSL in the latter half of October.
- We will complete the top-level design for the user interface and GFE tools.
- We (FSL and TDL) will prepare a final version of the AFPS Development Plan (the "Yellow Book").
- We will complete the majority of the work for the Level 0 Prototype. The main goals of the work on this prototype are:
  - evaluate the system architecture and class hierarchy;
  - develop a platform for refining, evaluating, and enhancing functionality;
  - increase working knowledge of C++ development tools and UNIX;
  - learn PHIGS, GL, OI, and Doug Young's Motif/C++ approaches, and;
  - create a working prototype demonstrating contour and area editing, to show at the AMS conference in January and the NWS Managers' meeting in February.

