

AFPS Quarterly Report

FY92 Q3: April - June 1992

15 July 1992

1. Introduction

This is the first AWIPS Forecast Preparation System (AFPS) quarterly report. The development team comprises 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).

Since at present, most of the active work on the project is being carried out in Boulder by FSL, only FSL work is reported herein. Information on TDL's work is included in the TDL Quarterly Report. The use of "we" below refers to FSL staff.

The reports will comprise three sections: Accomplishments, Presentations/Travel/Visitors, and Plans.

2. Accomplishments

We are nearing the end of the planning/requirements gathering phase of our work, and beginning to look at specific techniques and approaches.

- In late April, the AFPS plan (previously known as GRAF, Gridded Representation of Analyses and Forecasts) was distributed to members of the AWIPS Requirements Task Team (ARTT) Working Group on Deferred Capabilities (AWDC), representatives of the NWS Regions, and NWS Headquarters staff. Comments from many recipients are being reviewed by FSL and OM staff.
- The central function of the AFPS is the Graphical Forecast Editor (GFE). Forecast editing is independent of the source of the first guess forecast or the structure of the forecast database. The first draft of a GFE Requirements Document is being prepared at FSL. This document describes the requirements and conceptual design for the GFE, and will be the basis for the detailed design.
- We are looking into forming an AWIPS forecast preparation advisory group, which would ensure that our work properly addresses NWS goals, review our progress and test results, and help communicate the status of the project to the operational community. This group would comprise operational as well as administrative personnel, and include representatives from the NWS regions and headquarters staff.
- In April, FSL staff who visited TDL (see next section) received a briefing and demonstration of SIRS (Systematic Interpolative Radial Search, a method of computing

grid point values from contours) from Dave Ruth. We have devoted considerable time since to learning about SIRS and FEFS (Forecast Entry and Formatting System), and also have been experimenting with SIRS-type contour generation and editing.

- We are examining the list of text forecasts to be produced at WFOs, evaluating the data elements needed to support their generation.
- We have been studying approaches to object-oriented programming. In particular, we are evaluating the application framework developed by Douglas Young which incorporates C++ with OSF/Motif(1).
- We have been evaluating several C++/object-oriented software development environments, and expect to procure ParcPlace's ObjectWorks.
- We have formulated a strategy for our development including coding conventions, directory tree structures, and code ownership.
- The FSL AFPS staff began a 7-week in-house C++ course on 23 June (along with several other FSL staff).
- We have received or ordered a number of pieces of hardware and software for our development system: Autoplan project management software, Builder Xcessory (a graphical interface builder for Motif), PEX/PHIGS 3-d graphics software, WingZ spreadsheet, and additional disks for our server.
- A paper entitled Operational Forecast Preparation in the AWIPS Era by LeFebvre, Wakefield, Mathewson, and Wier was prepared for the Fourth Workshop on Operational Meteorology, 15-18 Sep, Whistler, B.C.
- An abstract entitled Graphical Forecast Editing Tools for AWIPS by Wakefield, Mathewson, LeFebvre, Leserman, Mayer, Wier, Young, and Xu was submitted for the 9th IIPS conference in January. This will be a poster, including a demonstration of our prototype editing tools on one of our Sun workstations.

3. Presentations/Visitors/Travel

- In mid-April, Tom LeFebvre, Stu Wier, and David Leserman visited TDL to discuss product formatter, database, and basic weather element content issues.
- In late April, Bob Mayer visited TDL, OH, and NMC briefly to discuss software development before attending XWorld in New York City.
- Joe Wakefield and Mark Mathewson presented the AFPS concept at the NWS RD conference on 27 April.
- In early May, Sue Young attended CHI '92, an ACM conference on Human Factors in computing systems, held in Monterey.
- Mark Mathewson visited TDL the week of 18 May for discussions on FEFS and SIRS, the AFPS database, and graphical editor concepts.
- Mark Mathewson and Bob Mayer gave a presentation on AFPS to Western Region and WSFO SLC staff on 27 May in Salt Lake City.
- In late June, Tony Mostek et al. visited from NMC.

4. Plans for the next quarter

- Three SOOs from the Southern Region will visit FSL in early August for discussions on forecast procedures, the GFE, etc. Matt Peroutka from TDL will also attend.
- Requirements for the GFE, data (basic weather elements and product parameters), and the AFPS database will be completed.
- We will prepare a top-level design for the user interface and GFE tools.
- We will begin to develop some of the prototypes to demonstrate concepts.
- We will investigate the use of PEX/PHIGS for the GFE.
- C++ training will be completed.
- Tom LeFebvre will travel to Whistler, B.C. to present the paper noted above.
- An additional Sun workstation will be procured and installed at TDL.
- FSL staff who have been heavily involved with DARE/Norman work (Tom LeFebvre, Sue Young, Stu Wier, and Bob Mayer) will complete their work and/or train new FSL staff to take over their responsibilities, freeing them for (nearly) full-time work on AFPS.

Footnotes

(1)

This approach is described in: Young, Douglas, Object-Oriented Programming with C++ and OSF/Motif, Prentice Hall, ISBN 0-13-630252-1.