

AFPS Quarterly Report FY93 Q4: July - September 1993

1. Introduction

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

As in previous reports, 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.

A new member of our AFPS development team is Corby Bacco, who comes to us from a Research Assistant position at the University of Utah. Corby has a B.S. in Computer Science from Utah.

2. Accomplishments

Our team has been busy this quarter designing and coding the Level 1 prototype of AFPS (principal design work by Young and Mathewson). At the end of the quarter, we have reached what we call the Level 1a milestone, having completed a system that can be exercised by members of the AFPS Forecaster Working Group (AFWG), when they meet with us in early October. Level 1a includes a complete set of graphical editing tools for spatial contour depictions (Mayer and Wier), and a time-series viewer (no editing) for user-selected points (Mathewson, Longstaff, and Young). Another significant addition is an active database, which means that changes made in one view of the data are reflected in any other current views (spatial or temporal). The database is also shared, and includes a distributed locking mechanism, which means that changes made by one user are reflected in the (view-only) windows of other users (LeFebvre and Mathewson).

The other visible milestone reached this quarter was the publishing and distribution of the AFPS concept document (the "Yellow Book"). Over 300 copies have been distributed to NWS Headquarters, Regional Offices, WSFOs, WSOs, RFCs, and CWSUs. We hope in this way to reach the forecasters who will use the AFPS tools in future WFOs.

Also:

- Other new Level 1a features include contour labeling, zooming, a reorganized user interface (Young), configuration controls which include graphics colors and contour levels (Longstaff), and converting the system to use AWIPS coordinates, necessary to allow proper location of data on a map (LeFebvre and Wier).

- After considering several graphics systems for AFPS, we decided to use HP Starbase. Even though it is non-portable, its use will make us compatible with AWIPS and FX-ALPHA (FSL X-based AWIPS-Like Prototype for Hydrometeorological Applications).
- We have been asked to install an early version of AFPS in WSFO Denver in the spring of 1995. It will be hosted on FX-ALPHA, which will replace the Denver DARE-II workstations in early 1995. We have had preliminary discussions with TDL re what is required to support this, and what capabilities AFPS might be able to provide. Among the issues is that AFPS is being designed to support TAFs, not FTs, since the latter will be replaced by the former before AFPS is fielded in AWIPS. Also, Denver may have to adopt some new product formats, e.g., for fire weather forecasts.
- Our investigatory work this quarter included time interpolation (Xu), three-dimensional depiction and editing of data (Niu), and how to present and edit wind (Wier).
- We completed a paper for the 10th IIPS conference (An Integrated Approach to Graphical Forecast Editing by Wakefield and Mathewson). A copy is attached.
- In keeping with our effort to prepare and maintain up-to-date documentation of our work, we have written some new productivity tools, including a documentation extractor and a code counter (Mathewson).
- Staff attended two short seminars on C++ 'gotchas' and advanced C++ topics.
- We have received and summarized comments on our Graphical Forecast Editor plans from members of the AFWG. In August, we sent them another questionnaire covering our Data Requirements and Definitions document. Responses to this questionnaire will help us design the forecaster worksheet and ensure that we are properly addressing all requirements for forecasts and weather elements.
- Members of our staff have participated in discussions re the AWIPS User Interface and have contributed to ongoing C++ discussions in the NWS and AWIPS Program Office (APO).

3. Presentations/Visitors/Travel

Visitors included Ed Howard from the SPO on 6 July; 2 forecasters and an intern from WSFO ABQ on 2 August; Mark McCloy, head of the APO, on 3 August; the head of the New Zealand weather service and an official of the Australia weather service on 12 August; and James Partain, Pacific Regional Scientist and a new member of the AFWG, on 27 September.

We gave a presentation on AFPS as part of the FSL Lab Review on 8 July, and gave an update of AFPS activities at an OSD/ADDL(1) review on 27 July.

Jennifer Longstaff attended SIGGraph in early August.

4. Plans for the next quarter

Our work on the AFPS prototype will continue. By the end of the quarter, we plan to reach our Level 1b milestone. This will include time series editing, bounded area depiction and editing, and wind depiction and editing. Also, we will add reference maps to the display. We also hope to have a preliminary worksheet display available, since we want to use it at the IIPS conference in January.

We should take delivery in October of the balance of the HP workstations needed to allow us to convert our development environment from Sun to HP. The port will not be painless, since we will be changing from XGL to Starbase graphics, but Level 1a code has been written in anticipation of the change. Also, we will be converting from ObjectWorks to SoftBench for a development environment; that may be more traumatic for our programming staff.