

AFPS Quarterly Report (94Q1)

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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).

This report in general covers only FSL work. TDL's work is covered in TDL Quarterly Reports. The use of "we" below refers to FSL staff.

2. Accomplishments

Early in the quarter, we hosted the second meeting of the AFPS Forecaster Working Group (AFWG). As noted in our last report, we demonstrated our Level 1a milestone prototype, which includes a set of graphical editing tools for spatial contour depictions, a time-series viewer (no editing) for user-selected points, and a shared and active database.

This proved to be an excellent meeting. Major discussion topics were the mechanics of graphical editing and user acceptance and training. As a result of the former, and hands-on experience with the AFPS prototype, we spent most of October overhauling our viewing/editing concepts. A document outlining the new plans was prepared (Mathewson) and sent to the AFWG for comment, and we commenced design for Level 1b in November (Young, Mathewson). After several weeks' work, and a number of design reviews, we began writing code to implement the Level 1b system at the end of December (Young, Mathewson, Longstaff).

In the last report, I noted that we would be converting to Hewlett-Packard workstations for our development, and that we would be using Starbase on the HPs. Several events in this last quarter have combined to change these plans somewhat. While we will still be doing the HP transition, delivery of the workstations did not occur until mid-December. Also, we became aware that Starbase is destined to be retired by HP in the relatively near future. Since we had always wished to develop our system using industry-standard software, we decided to look at using PEXlib for our graphics (Mayer).

Delays in procuring PEXlib licenses have led us to decide to port our Level 1b code to Xlib on the Sun, then transfer it to the HP environment. Tests have shown that X performance on the HP 755 is over ten times that of the Sun SPARCstation 2/GX-plus; this is comparable to the performance of XGL on the Suns. We will delay a PEXlib port until Level 1b is complete. Benefits of this decision are a smooth transition, allowing our development staff to continue

productive work throughout, and more time to design graphics code that can take full advantage of PEXlib's capabilities.

Other activities:

- Database software was enhanced to accommodate vector and discrete data (LeFebvre).
- We continued to investigate algorithms to move (time interpolate) a weather feature, given its beginning and ending positions (Xu, Wier); three-dimensional depiction and editing of data (Niu); and how to present and edit wind (Wier).
- Work has begun to create map backgrounds for our system (Bacco). We are using data purchased at nominal cost from the U.S. Geological Survey.
- With TDL, we have been developing plans for the work required to merge TDL's extensive ICWF initialization scheme into AFPS.

3. Presentations/Visitors/Travel

Our only formal visitors this quarter were the members of the AFWG.

Mark Mathewson attended The Best of Software Development '93 (focus on C++ development topics) in November.

4. Plans for the next quarter

At the IIPS conference in Nashville, we will present our current work, including demonstration of the Level 1a prototype and some of our investigatory work. A copy of the preprint volume paper was included with last quarter's report.

Level 1b work will continue. By the end of the quarter, we expect to have completed a coherent set of functions to be exercised by the AFWG at its next meeting, tentatively scheduled for April. This will include depiction and editing (plan-view and time series) of all weather elements except wind and multi-valued (weather, clouds) discrete elements. We also will be doing more work with TDL, preparing modules to support initialization and text generation.

We will make the transition from Sun to HP. Investigation of PEXlib will continue, and we will make plans for a conversion to PEXlib, which would take place at the completion of the Level 1b milestone.