

CIRA Research Themes/Priorities



Sher Schranz



NOAA Measurement Themes:

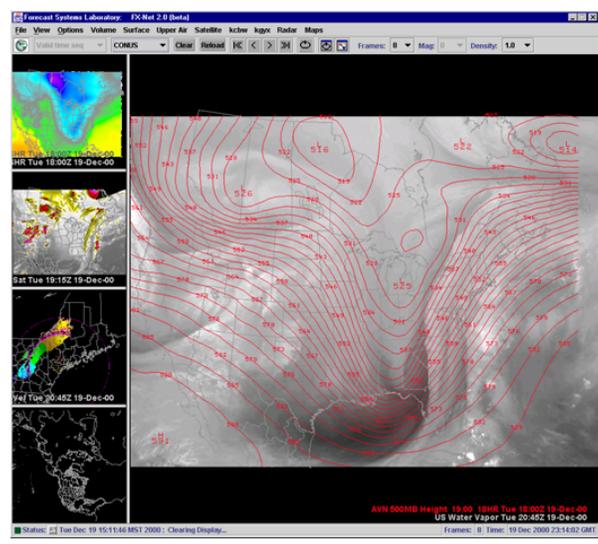
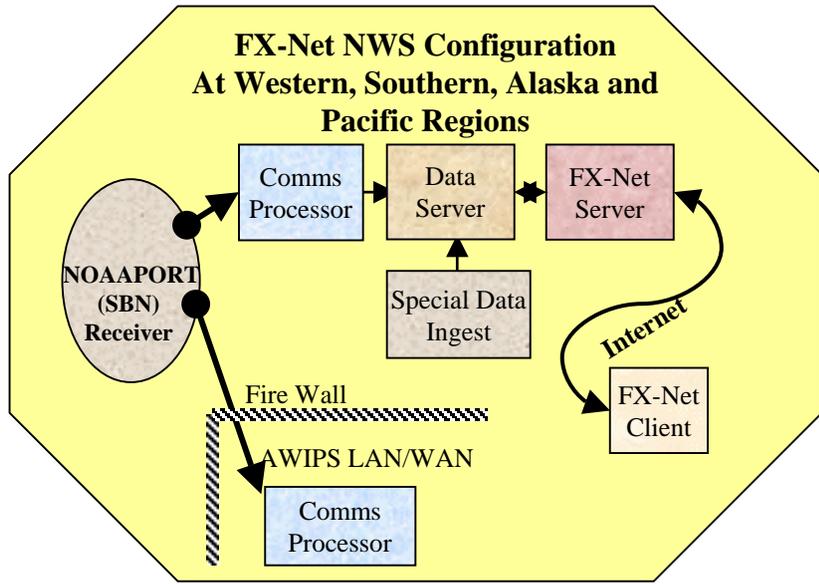


### INTRODUCTION

FX-Net is a meteorological PC workstation that provides an AWIPS-like workstation display capability via the Internet. It is a request-based, client-server system intended to be an extension of the AWIPS D2D capability. The client is able to download products for display even with modest Internet connection rates. Once products are retrieved from the server, the client then allows the user to interact with the data by providing functionality such as animation, overlay of products, and zooming. The application of appropriate compression techniques to the different types of data is crucial for timely delivery of the information. Of particular interest is the wavelet-based data compression technique that has been applied to satellite imagery.

### SYSTEM OVERVIEW

Written in C++, the FX-Net server is a modified AWIPS workstation. It uses the D2D software to produce and encode files in response to a product request by the client. The server must be collocated with an SBN (NOAAPORT) data server. The FX-Net client runs as a Java application on a PC. Products are retrieved via the Internet and are stored locally. Product delivery is greatly speeded up using the Wavelet Compression technique developed by CIRA and FSL. For optimal Performance the PC should be running WINDOWS 2000 or XP, have a 500 MHz Processor, 512 Mbytes of memory, and be Connected to a 56 kbps or faster network.



FX-Net User Interface

### FX-Net PRODUCT PROCESSING

The most critical aspect of the FX-Net scheme to deliver Meteorological products over the Internet, is the size of the product. There are four groups of FX-Net products: satellite Imagery, model imagery, model graphics and radar imagery. Of these, satellite imagery is the most difficult to handle because of its large size. Model images are large and come in a significantly higher volume. Both of these products are compressed through use of the CIRA/FSL Wavelet Compression technique. Model Graphics are represented in a standard vector graphics format And radar imagery is encoded in a standard lossless image Compression format.

### Fx-Net INSTALLTIONS AND USERS

NOAA/National Weather Service: Four Regional Headquarters offices have FX-Net systems installed for use by IMETS, and remote WSO forecasters. (See diagram at left).

AIRMAP Air Quality Program: Supporting the Air Quality research program At the University of New Hampshire, and Plymouth State College by hosting an FX-Net server at FSL and adding special AQ data sets from the universities as well as commercial AQ data and new AQ profilers.

National Interagency Fire weather Center: Fire Weather forecasters at the NIFC have used FX-Net as their primary weather workstation for the 2002 and 2003 fire seasons.