# Office of Hydrologic Development
# Hydrologic Software Engineering Branch
# Quarterly Activity Newsletter
# October 1, 2005

*Software for NWS Hydrology!*

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## 1. HIGHLIGHTS FOR AUGUST AND SEPTEMBER 2005

### 1.1 OFFICE RE-ALIGNMENT

The OHD has completed a re-alignment of functions within the office as of 1 October 2005. The direct effects on the HSEB are:

The Hydrometeorological Automated Data System (HADS) group has been added
The HADS is a real-time data acquisition, data processing, and data distribution system operated by OHD for the benefit of NWS field offices.

The Information Technology Systems Group (ITSG) has been added
The ITSG provides complete systems administration support for all of the computer systems used by OHD to provide and maintain scientific techniques and software tools for NWS field offices.

The NOAA Hydrologic Data Systems (NHDS) group has been added
The NHDS function provides access to historical data for use in calibration of hydrologic models and development of hydrometeorological techniques.

This means that the HSEB grows from 29 people to 37 people and takes on new responsibilities implied above. Nine people are added to the HSEB and one person moves from the HSEB to the HSMB. Dennis Miller is the one person moving to the Science Branch so that the Hydrology Laboratory can take better advantage of his

analytical science skills to meet the challenges ahead in the NEXRAD Program.  The nine new people to the HSEB are:

> Loubna Bousaidi (AWIPS software & NHDS)
> Randy Brown (ITSG)
> Larry Cedrone (HADS)
> Raymond Chui (HADS)
> Brian Jackson (HADS)
> Michael Logan (ITSG almost!)
> Brian McEntire (ITSG)
> Lanning Penn (HADS)
> Brian Willis (ITSG)

As you can see we now have our quota of four "Brians" if you count Bryon Lawrence!  It is unfortunate for us to not quite obtain Michael Logan's services as he has taken a new position with the Department of Defense starting on 3 October and has left OHD on 29 September.  We wish Michael well and the HSEB warmly welcomes the other eight new folks above.

A related change you will notice at the top of this news letter is that the HSEB is moving slowly away from the concept of standing groups with static group leaders and toward a more dynamic internal structure that will respond to varying needs to execute AWIPS, AHPS, and Water Resources projects without being constrained by group boundaries.  So you see the concept of Project Area Leader rather than Group Leader above.  To remain flexible we don't even attempt to name project areas.

If you want to update your scorecard, we currently have the equivalent of 33 full time people because we have two Government employee vacancies, one contractor vacancy, one half time person (Russ Erb), and one person shared half time with the OS&T/SEC Programming Branch (Joe Gofus).

## 1.2  NEWSLETTER FREQUENCY CHANGE

With well over a year of bi-monthly newsletters behind us, we have been reviewing the proper frequency of this newsletter.  We are looking for the proper balance between keeping field staff up-to-date of our current activities, versus repetition of information, and thereby losing some of the force of the key information we are trying to convey.  We have noticed that, given the overlap and frequency of our software releases (2-3 year) and the constraints on how much detail we can go into on each subject, we sometimes repeat information in two or more successive newsletters as most of our projects span multiple bi-monthly periods.  After consideration, we have decided to make this a quarterly newsletter instead of the bi-monthly newsletter it has been.  Newsletters will be issued in October, January, April, and July.

## 1.3 BRANCH TASK HIGHLIGHTS

One OB5 and two OB6 interim releases for NWSRFS were issued during August and September. Meanwhile the NWSRFS team focused on design and development of our OB7 projects, one of which is subject to the NWS OSI Process (OSIP), and the rest of which are subject to OHD's internal OSI Process (HOSIP). OB7 tasks are also now subject to the new AWIPS software development process. Some CHPS-related tasks have been awarded to the contractor; the rest are undergoing technical proposal review or are waiting to be awarded.

AWIPS installations and development march on. As reported in a page available via: [https://www.ops1.nws.noaa.gov/Secure/awips_softwre.htm](https://www.ops1.nws.noaa.gov/Secure/awips_softwre.htm), the OB5 installations are almost complete. Immediately after installing Release OB5.0, WFO offices should install Release OB5.0.1, which involves a RiverPro patch. Release OB5.1, which includes a minor upgrade to SiteSpecific, started deployment August 2. The Release OB6 software, is scheduled for field deployment October 17, although some adjustments to the OB6 schedule are still possible. An OB6.0.1 release is currently planned to address non-critical issues discovered during the OB6 alpha/beta testing. Sometime in the OB6.x timeframe, an Operational Test and Evaluation (OT&E) for hydro-VTEC is still planned.

Besides OB5 support activities and OB6 testing work, efforts are focused on OB7 development, primarily for the upgrades to the Multi-Sensor Precipitation Estimator (MPE) suite of applications to integrate the functionality of the Tulsa RFC P3 and the Western Region Daily QC applications.

As announced on August 18, 2005, a new AWIPS contractor, Raytheon Technical Services, has been selected. The current contract with the original AWIPS contractor, Northrop Grumman Information Technology, is expiring this Fall. The new contract is "for the operations and maintenance, optional product improvements, and software maintenance and support of the Advanced Weather Interactive Processing System (AWIPS)". Details of this new contract and the transition to it are expected to affect how HSEB develops and delivers software.

The NEXRAD RPG Build 9 work encountered some problems as a result of byte-swapping between Solaris and Linux. In the process of fixing the software we encountered a minor bug that had been present for a long time. Our development system was upgraded to RedHat Enterprise Linux (RHEL) version 4. Handoff of our software to the Radar Operations Center (ROC) is scheduled for January 2006. With the addition of a new contractor, the NEXRAD RPG software development team has also begun to investigate TDWR-based precipitation estimates for the Supplemental Product Generator (SPG). We also continued to support OS&T's Dual Polarization effort.

We hope you find this newsletter issue to be helpful and informative. Feedback is always appreciated.

## 2. <u>DETAILS OF TASKS</u>

### 2.1. NEXRAD SOFTWARE DEVELOPMENT

Visit our web page: http://www.nws.noaa.gov/oh/hrl/hseb/nexrad.htm.

Level III radar precipitation product specifications for the RPG are available on OHD's website: http://hsp.nws.noaa.gov/oh/hrl/wsr88d_prods/index.htm.

### 2.1.1.  RPG BUILD 9

Work for the Build 9 RPG refresh project (migration to Linux) is progressing on schedule.  A minor latent bug was uncovered during testing; the fix will be included with Build 9.  We also found that the migration was not as straightforward as we had hoped.  Numerous mathematical calculations performed within the Precipitation Processing System (PPS) do not produce the same results on Linux as they do on Solaris.  This resulted in our having to make changes to the software to address precision, rounding, and truncation.

Full regression testing is due to begin in November to make sure everything works under Linux the way it currently works under Solaris.

We held a Build 9 design review on September 7; members from OS&T and ROC participated.

Our development system has now been upgraded from RHEL 3 to RHEL 4u1 (the operating system selected for Build 9).  The development hand-off date to the ROC for Build 9 is the end of January 2006.  Build 9 is expected to deploy in the spring of 2007 after integration and system testing by the ROC.

### 2.1.2.  OTHER NEXRAD DEVELOPMENT NEWS

On August 29, Mr. Daniel Stein joined RSIS to support OHD's NEXRAD development efforts.  Dan replaces Kelley Miles, who left in June.

**Dual Polarization:**  The Dual Polarization project is tracked via the NWS Operations & Service Improvement Process (OSIP) (visit https://osip.nws.noaa.gov/osip/index.php).

The HSEB NEXRAD project team continued to support the Dual Polarization project through regular meetings led by the project manager (Greg Cate, OS&T/PPD) and the OSIP Integrated Work Team (IWT) Leader (Roger Hall, OS&T/PPD).  As a member of the IWT, HSEB is in the process of reviewing and refining the Concept of Operations (CONOPS) and Program Plan documents in preparation for OSIP Gate 2, expected some time in October.

Dual Polarization is tentatively targeted for Build 11.  There is much work to be done.  HSEB expects to implement a complete new subsystem which will incorporate NSSL's polarimetric-based precipitation algorithm (often referred to

as the QPE algorithm). OS&T SEC expects to implement a separate but related algorithm, the Hydrometeor Classification Algorithm (HCA). OOS ROC expects to implement basic software infrastructure. The difficulty at the moment is that NSSL continues to refine and enhance the QPE and HCA prototypes. However, now that we have Dan Stein on board, we can begin coordination between the groups to lay out a strategy and a plan.

**TDWR PPS:** This effort is now being tracked under OSIP as project number 05-066 "TDWR Derived Hydro-Met Products". The project is awaiting Gate 1 approval. OHD HSMB believes they can have a prototype algorithm for the Supplemental Product Generator (SPG) ready by mid-CY2006 for HSEB to implement as production code. The target SPG version is unknown at this time. Until the prototype is complete, HSEB's role is to monitor progress and become familiar with the environment in which we will be developing.

## 2.2. AWIPS RELEASE OB5.X

AWIPS software development in HSEB is currently divided into two general categories: NWS River Forecast System (RFS) software, and the "other" software, which includes the WFO Hydrologic Forecast System (WHFS), the Precipitation Processing software, and the Data Ingest Software. Web pages are available to provide support information for both these categories, each site relates to multiple AWIPS builds for the software category.

Refer to the OCWWS/HSD web pages for release notes and other relevant documentation:
-- for RFS Support: http://www.nws.noaa.gov/os/water/RFC_support/index.shtml.
-- for WHFS Support: http://www.nws.noaa.gov/om/whfs/

### 2.2.1. NWSRFS

We issued two interim releases for the OB5-R26 software during this period:

a) ESPADP

OB5-26.4 (not documented as an HSD bug): Corrects the x-axis label for the river level exceedance plot.

b) FCST

OB5-26.9 (HSD bug 27-2): Corrects a problem with the MAPX preprocessor accessing xmrg files.

### 2.2.2. WHFS/IHFS DATABASE

The following are the OB5 highlights, mostly repeated from previous newsletters:

a)  Numerous enhancements were made to the Site-Specific application and to the TimeSeries application, including requested changes from the Western Region.

b)  The Station Observation Display (aka Point Data Display) feature currently in HydroView/MPE will be implemented within the D2D application.  For the first time, this allows overlay of point data from the IHFS database onto D2D.  This task was performed by the OST/MDL development group using the data retrieval "engine" provided by OHD with a new user interface.  Unfortunately, we have received reports of some major problems with this feature in D2D.  We encourage users of this software to report problems through the proper reporting channels.

c)  HydroView/MPE is able to display dam locations from the DamCREST database, and allows user selection of a dam and direct access to invoke the DamCREST application for the given dam.

e)  Some new SHEF physical elements for snow data were added and new data processing is provided for handling areal observed and forecast data.

## 2.2.3.  PRECIPITATION PROCESSING

a)  An overhaul in the way that gage precipitation estimates are handled in the WHFS OB5 will ensure that all software has consistent algorithms for deriving precipitation accumulations and will improve the speed of the precipitation data processing.  This change has been documented in at least the last two newsletter issues, including discussion of transition activities.  Please refer to previous newsletters for more information.

With this change, the PostAnalysis application for integrating 24-hour precipitation reports with gridded hourly products was unfortunately rendered unusable.  HSEB is embarking a rapid-delivery project to update the application to allow its operational use at RFCs.  This effort involves porting some gage processing operations to the new table structure and to port all database access to PostGreSQL.  This will allow the application to be supported in an OB6 environment, with delivery planned for November, 2005.

b)  The MPE operations are being modified to allow individual grids to be turned off, as per the local office wishes.  Currently, MPE produces 8 QPE grids, some of which are independent of other grids (e.g., radar-only mosaic), others of which are dependent (e.g., local bias multi-sensor mosaic).By turning off unwanted grids, the MPE FieldGen operation will be completed more quickly.  These changes will also facilitate the addition of objective analysis grid generation techniques, such as those employed at Tulsa RFC and within DailyQC (part of Mountain Mapper).

c) The Radar Climatology (RADCLIM) software suite was incorporated into the national software baseline and delivered with AWIPS for the first time. These applications are used to generate radar climatology "maps" for use in the precipitation processing, so that the "best" radar is chosen (if coverage exists) when multiple radars cover a given area. This software requires local collection of historical radar data.

## 2.3. AWIPS RELEASE OB6

The primary purpose of this build is to port our applications to PostgreSQL and to the new RHEL 3 operating system.

### 2.3.1. NWSRFS

We issued three interim releases for the OB6-R27 software during this period:

a) ESPADP

OB6-27.1 (not documented as an HSD bug): OB6 version of interim release OB5-26.4 (see AWIPS Release OB5 above).

b) FCST

OB5-26.9 (HSD bug 27-2): Corrects a problem with the MAPX preprocessor accessing xmrg files.

c) XSETS

OB6-27.1 (HSD bug 27-1): OB6 version of interim release OB5-26.9 (see AWIPS Release OB5 above)/

### 2.3.2. WHFS/IHFS DATABASE

The bulk of the OB6 work consisted of the transition of the OHD HSEB software from using an Informix DBMS on HP-UX servers to using a PostgreSQL DBMS on Linux workstations. This change affected both the IHFS database and the DamCREST database. As part of the OB6 installation, the Informix data are automatically moved into the PostGreSQL rendition of the IHFS database. OB6 is currently undergoing beta testing. NWRFC is currently working with OHD's PostgreSQL consultant, Dave Cramer, to try and tune the configuration of PostGreSQL and the Redhat operating system to optimize performance.

Besides the PostGreSQL conversion, a few features are new to OB6 and include the ability to view MPE hourly grids in D2D; to include flow-based impacts in RiverPro; to assign proper durations to AWOS METAR precipitation data that

has unique sensor reset times; to better control duplicate data SHEFdecoder posting; and to display Contingency data in TimeSeries.

The HydroGen (Hydrograph Generator) function, which replaces the RivDat local application, is being provided as part of the national AWIPS baseline in OB6.  At WFOs, this software extracts the pertinent data and transfers it to the regional web server, where complementary software creates the time-series and other web-ready files for display via the Rivers tab in the www.weather.gov web page.

The VTEC implementation schedule specifies that "hydro-VTEC" will be "turn-keyed" for all offices in the spring 2006.  Release OB5.0 and OB6.0 have many of the changes necessary to support VTEC, but most of these features will go unused until VTEC is mandated for hydro products.  Release OB6 will include additional changes to match the latest NWS 10-1703 and NWS 10-922 directives.  In particular, the OB6 version will use a new method to determine which forecast points to include and which product category to generate, based on the VTEC events previously issued.

OB6 also includes additional RiverPro changes to ensure compatibility with the workstation test mode operations to be introduced in OB6.  With this feature, an AWIPS workstation is designated to be in Operational, Test, or Practice mode, and the formatter applications respond accordingly.

Lastly, the WHFS "oper" user cron which, prior to OB6, was implemented on the DS systems, will be re-distributed so that data ingest operations are scheduled on the DX system and data processing operations on the PX.  The OB6 Modification Note (Installation Procedure) and System Managers Manual discusses this further.

### 2.3.3.   PRECIPITATION PROCESSING

A major change in OB6 involved adding the ability to display locally generated MPE output in D2D.  To support this, the GRIB product generation code was moved in OB6.  Its directory location is controlled via updated national application token values.  RFCs should review a new script which supports transmission of the GRIB products, in order to add locally selected destinations such as the NPVU NCEP destination.

## 2.4. AWIPS RELEASE OB7

### 2.4.1.  NWSRFS

We are still in the development phase for AWIPS OB7.  Software handoff is scheduled to occur in May 2006.  Aside from general bug fixes, items targeted for OB7 include:

a)  Verification

New functionality will include computation of confidence intervals for the verification statistics, and new graphical displays. We are currently embarking on the design. The GUI designs will be coordinated with field representatives during this next phase.

b) Conversion of OHD's RAX software to RHEL/PostgreSQL

The RAX will be converted to RHEL 4 in OB7 and the database engine will be converted to PostgreSQL version 7.4.7.

OHD's SHEF decoder and Verification software, both of which run on the RAX, have been migrated to access the new PostgreSQL database and are now undergoing testing.

HSEB is also working closely with Julie Meyer at MBRFC to coordinate conversion of field-written applications which execute on the RAX and also access the database. These applications are currently undergoing testing in Silver Spring by HSEB staff. As always we thank all of our RFC partners in this project, especially Julie who has maintained her level of service despite the recent surgery.

c) Distributed Hydrologic Modeling (DHM)

New distributed hydrologic modeling techniques will be introduced into RFC operations. DHM is being tracked via OSIP as project 04-007 "Operational Implementation of Distributed Hydrologic Modeling". Visit the OSIP website for more information (https://osip.nws.noaa.gov/osip/index.php).

We recently made the difficult decision to abandon the National Operational Hydrologic Remote Sensing Center (NOHRSC) software architecture, and instead develop an in-house solution. The primary reason was because we could not secure the additional NOHRSC support needed to complete the software even though NOHRSC had done a tremendous job to help us get to this decision point. We are currently working on a new design, re-using as much previously developed code as possible to mitigate risk and limit additional cost.

d) Historical Data Browser (HDB)

The HDB will be ported to run on Linux (at the moment it only runs on HP-UX), interfacing with the new PostgreSQL database. The HDB is based on old AWIPS software called the Shared Window Server, which does not run on Linux. We are currently developing a new design and experimenting using existing operational software written by HSEB's MPE developers.

e) Rivers, Reservoirs and Snow (RRS) Pre-Processor

As an initial delivery of CHPS capability, we were hoping to deliver a revised RRS pre-processor that could obtain its observation data from the IHFS Database rather than from the fs5files in a manner consistent with the new CHPS architecture.  The AHPS prime contractor submitted a technical proposal, which has been accepted by HSEB, but which is still awaiting award.

This task was previously targeted for AWIPS OB7.  However, last month we were briefed on the new AWIPS software development process and we determined that the new process requirements would represent a change in scope for the task; therefore we had to defer this item from OB7 to a future release (to be determined) but as soon as practical.

### 2.4.2.  WHFS/IHFS DATABASE

Changes to the WHFS for OB7 include the implementation of the "Mapper" (not to be confused with "Mountain Mapper") function into WHFS, which currently operates as a local application used primarily in the Western Region.  It provides a robust method for displaying hydrometeorological data, in many ways similar to the existing WHFS TimeSeries and HydroView point data control functions.  Its benefits are in its more direct methods for displaying desired data sets (i.e., less clicking), its time-stepping features, and its speed of display.  Implementation of Mapper functionality into WHFS will allow the existing local application, which is dependent in part on the Western Region HydroMet system, to be retired.

Work is continuing on improved river monitoring tools.  This includes an automated application for monitoring differences between river forecast and observations to better identify unreliable forecasts such as when QPF forecasts are inaccurate.  This monitoring tool would fit within the existing WHFS Alert/Alarm functionality.  A complementary interactive monitoring application is being considered which would monitor not just observed-forecast differences, but observed and forecast values compared against thresholds, the receipt of observed and forecast data, the active state of any ongoing VTEC events, etc.  This application is intended to run continuously, with an automated refresh of color coded information to identify alert/alarm conditions.

### 2.4.3.  PRECIPITATION PROCESSING

During the OB6 development period, design work was completed for incorporating the ABRFC P3 application into MPE operations.  Improvements are planned for the MPE component in HydroView to improve the management of user polygon edits in gridded precipitation fields.  This activity will be delivered in OB7.

Also, design work is ongoing for incorporating the DailyQC functions used in the Western Region into MPE operations.  The goal is to provide a nationally-

supported and baselined application used by all offices to perform QPE operations.  Craig Peterson from CBRFC recently visited OHD to demonstrate and discuss the DailyQC application, which Craig has installed on OHD development systems.

HSEB is also working to coordinate the delivery of RFC-generated QPE products to the SBN for subsequent receipt and use at WFOs.  Changes are being coordinated to make these RFC QPE products displayable in D2D at WFOs, to complement the locally generated QPE products which can be displayed in D2D as of OB6.

Early planning is also underway for the eventual migration of HydroView functionality into D2D, which will occur after Release OB7.  This migration would result in the current HydroView/MPE application, which by that time will have P3 and DailyQC functionality integrated with it, being "morphed" into a comprehensive NWS QPE application dedicated to QPE support.

## 2.5. DEVELOPMENT SUPPORT ACTIVITIES

### 2.5.1.  NEW SOFTWARE ARCHITECTURE

Preparations for design and development of a Mean Areal Temperature (MAT) CHPS Architecture Shell are underway.  The purpose of this effort is to develop an architecture shell for a new NWSRFS MAT data pre-processor.  We received the contractor's proposal in September, but the task has yet to be awarded.  Meanwhile the HOSIP documents have been prepared and the project is expected to pass HOSIP Gate 1 next month.

The Ensemble Streamflow Prediction (ESP) component of the NWSRFS has been selected as a pilot project to develop the first CHPS Control Service.  This new ESP Control Service is expected to improve RFC operations by providing a framework for setting up and controlling various sub-components of the ESP.  We accepted the contractor's technical proposal and are awaiting task award.  We expect to complete preliminary HOSIP Stage 1 documents next month.

Phase 2 of the contract task to create and promote The Hydrology XML Consortium (HydroXC) was defined, proposed, accepted, and awarded during this period.  This second phase should commence around 1 October and continue for the next six to seven months.  Phase 2 will continue to refine the schema using more member data examples and RFC data examples and will look at converting the output of dynamic wave routing models from proprietary format files to HydroXC-compliant XML.

The external project to provide RFCs access to the USACE Reservoir Simulation (ResSim) model from NWSRFS continued progress this period.  Rob Hartman, HIC at CNRFC, is leading the way in engaging OHD and USACE's Hydrologic

Engineering Center (HEC) in a joint project to provide this linkage, funded entirely by the Yuba County California Water Agency (YCWA).  Rob has been working to finalize details of the agreements between all parties and work is now expected to begin in October.

### 2.5.2.  UNCHEDULED AWIPS RELEASE ACTIVITES

In this section we try to capture activities that are occurring that do not necessarily have an AWIPS release identified as yet.

a)  A task order for design and development of Streamflow Regulation Accounting (SRA) tool enhancements has been issued to the AHPS prime contractor.  This task focuses on enhancements to the RES-J operation that will enable the RFCs to model basins with complex reservoir operations and water diversions which they cannot model at this time.  The task order was awarded on September 15.  RTi is currently working on a Concept of Operations (CONOPS) and a project plan.

b)  Preparations for Interactive Calibration Program (ICP) enhancements are also now underway.  Re-implementing the ICP into a better design with better documentation and more structured code will enhance the ability of the NWS OHD to support and extend this calibration tool.  The contractor's proposal has been accepted; however as of the end of September, we are still awaiting task order award.

c)  Work is scheduled sometime later in FY06 to add a new product to the growing suite of multi-sensor products in MPE.  The new product would use satellite, radar, and rain-gage data.  The process would first mosaic the local bias corrected radar field with a local bias corrected satellite field to produce a new radar-satellite mosaic field.  This grid would then be merged with rain gage data.  The local bias corrected fields in the first step would be corrected using gage data, so in effect the gage data are used twice.  Once to adjust the radar and satellite data in the first step, and then to merge the resultant data directly with gage values in the second step.

### 2.5.3.  AWIPS BETA TESTING

The VTEC (Valid Time Event Coding) and NWSI 10-922 features of RiverPro will be tested at field sites starting in the Fall 2005 as part of the OT&E.

### 2.5.4.  AWIPS SYSTEM CHANGES

As should be known to all by now, the PostgreSQL DBMS will be used by the hydrologic applications as of Release OB6.  The PostgreSQL web site http://www.postgresql.org and an HSEB web site http://www.nws.noaa.gov/ohd/hrl/hseb/postgreSQL/index.htm provide helpful

information in managing this transition.  The HSEB has also been active in supporting the NWS Training Center course for PostGreSQL understanding. Courses were given in April and July.

All OHD database software will use PostgreSQL in AWIPS Release OB6 except the software on the RFC Archive server machine (RAX) which will continue with Informix for OB6 (more on that below).  Field offices which have local database software must be ready when AWIPS OB6 arrives.  OHD has provided downloadable scripts to convert a site's current IHFS database to OB6/PostgreSQL.  A tar file containing the OB6/PostgreSQL version of software has been available for download for sites that need to test their local applications with a real-time data feed.

The Red Hat Enterprise Linux Workstation Basic Version 3 Update 4 (RHEL3u4) is the operating system for AWIPS Release OB6 for all systems except the RAX, which stays at Red Hat 7.2.  Recently, AWIPS announced plans to upgrade to RHEL 3u4 as the second phase of the OB6 upgrade.  The first phase is the PowerVault relocation, while the third phase is the conventional installation of OB6.  The RHEL upgrade may have some impact on local scripts or methods. Please coordinate with your office or Regional focal point if you have questions on the status of the AWIPS COTS (Commercial-Off-The-Shelf) software.

AWIPS has announced that RHEL 4u1 has been selected as the operating system for AWIPS Release OB7.  We have recently installed the OB7 environment on some of our development workstations.  If RHEL 4u2 is available in time, AWIPS will consider RHEL4u2 for OB7.

## 2.6. HYDROMETEOROLOGICAL AUTOMATED DATA SYSTEM (HADS)

### 2.6.1.  HADS OS Upgrades

The HADS program has recently completed the upgrade of all of its data processing servers to Red Hat Enterprise Linux Version 3 Update 4 as well as updating to PostgreSQL 7.3.10-RH .  The Domest Satellite (DOMSAT ) processors are the final HADS systems to undergo OS upgrades and these are to be completed during the first week of October.

### 2.6.2.  HADS Data Processing

HADS Data Collection Platform (DCP) processing software now exists in an Operations and Maintenance mode.  Software modifications are developed and implemented as needed in order to successfully translate raw GOES DCP messages that have been re-structured due to the implementation of certain High Data Rate (HDR) DCPs and their associated data-logger programming schemes.

### 2.6.3   HADS, the RFCs and OB6

With the implementation of AWIPS OB6 at the RFCs, a new method and path for the delivery of the back-up data feed is required – and this is accomplished via Secure Copy.  This new method has been successfully implemented at NWRFC and has been established, but not fully activated for MARFC.  When the need arises, please contact Brian Jackson in order to set-up the new delivery path required by OB6.