



NAWIPS Migration to AWIPS II Status Update

Unidata Policy Committee Meeting



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22 October 2010



Topics



- National Program Schedule Update
- Activities since March
- Hardware/Software Status
- Merging/Integration
- Training
- Unidata Involvement and Benefits
- Status of GEMPAK Support / AWIPS II Licensing
- Summary





AWIPS II Schedule Update



- National AWIPS Field OTE moved from Feb 2011 => Summer 2011
- National AWIPS Deployment moved from Jun 2011 => Sep 2011
- NCEP Central Operations Test Bed installed and ready for FITs by late November/early December
- Complete NAWIPS migrated code to RTS by early Dec for baseline integration in Jan 2011
- FY11Q2-4 NCEP AWIPS II “System and Field” OTE
- AWIPS II software distributed to Unidata community Winter 2011/2012



AWIPS II Schedule Update



NWS AWIPS II	Previous Schedule	Updated Schedule
System OTE	Now – February 2011	OTE Jan – Summer 2011
Field OTE	February 2011	OTE Jan – Summer 2011
National Deployment	June 2011	September 2011

- NCEP Central Operations Test Bed installed and ready for FITs by late November/early December
- Complete NAWIPS migrated code to RTS by early Dec for baseline integration in Jan 2011
- FY11Q2-4 NCEP AWIPS II “System and Field” OTE
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AWIPS II Schedule



How does change in National Schedule affect Unidata?

- Advantages
 - *NAWIPS migrated code is now officially in the AWIPS II National Deployment*
 - *Decreases software bug risks due to longer integration and testing period*
 - *Allow SIB to focus on FITs and OTE with Centers, forecasters, Unidata*
 - *By FY11Q4, NCO can potentially be able to apply resources to new functional requirements for the first follow-on release*
- Disadvantages
 - *Increase the “moratorium” period @ NCEP*
 - *Increase transition period from NAWIPS to AWIPS II*



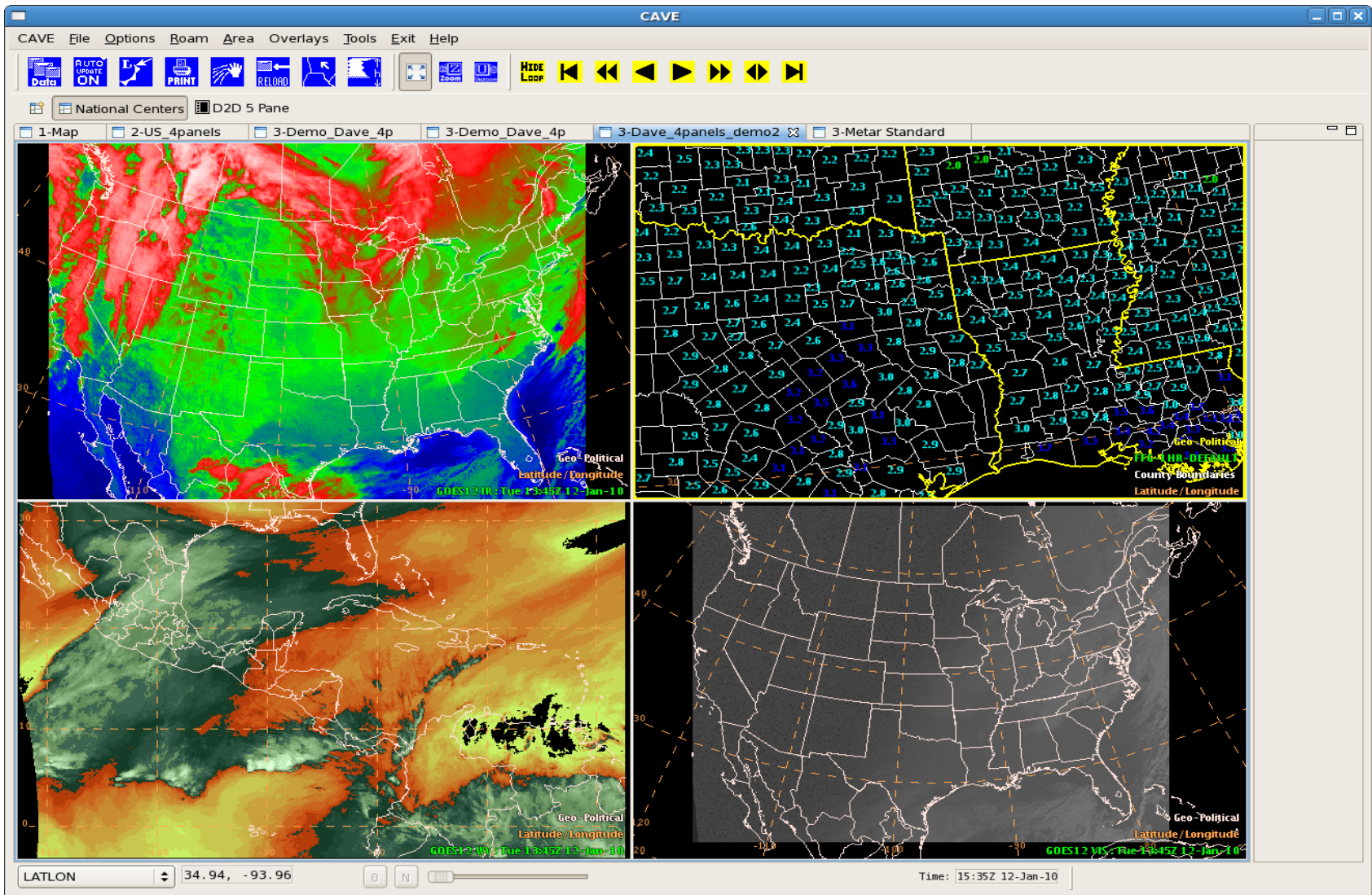
NAWIPS/AWIPS II Activities Since March



- Over 90% Software Migration Complete
 - *All capabilities in NAWIPS will be retained*
 - *Designed software for backward capability*
- GEMPAK Releases - 6.0 April - 6.1 June - 6.1.1 July - 6.2 Sept
 - *<http://www.nco.ncep.noaa.gov/sib/nawips/>*
- Conducted AWIPS II Workshop – August 17-19, 2010
- Finalized our hardware configuration
- Conducted demonstrations
 - *NWS/OST Director and individuals from AWIPS Program & RTS*
- Briefed NCEP Corporate Board - AWIPS II first priority in FY11

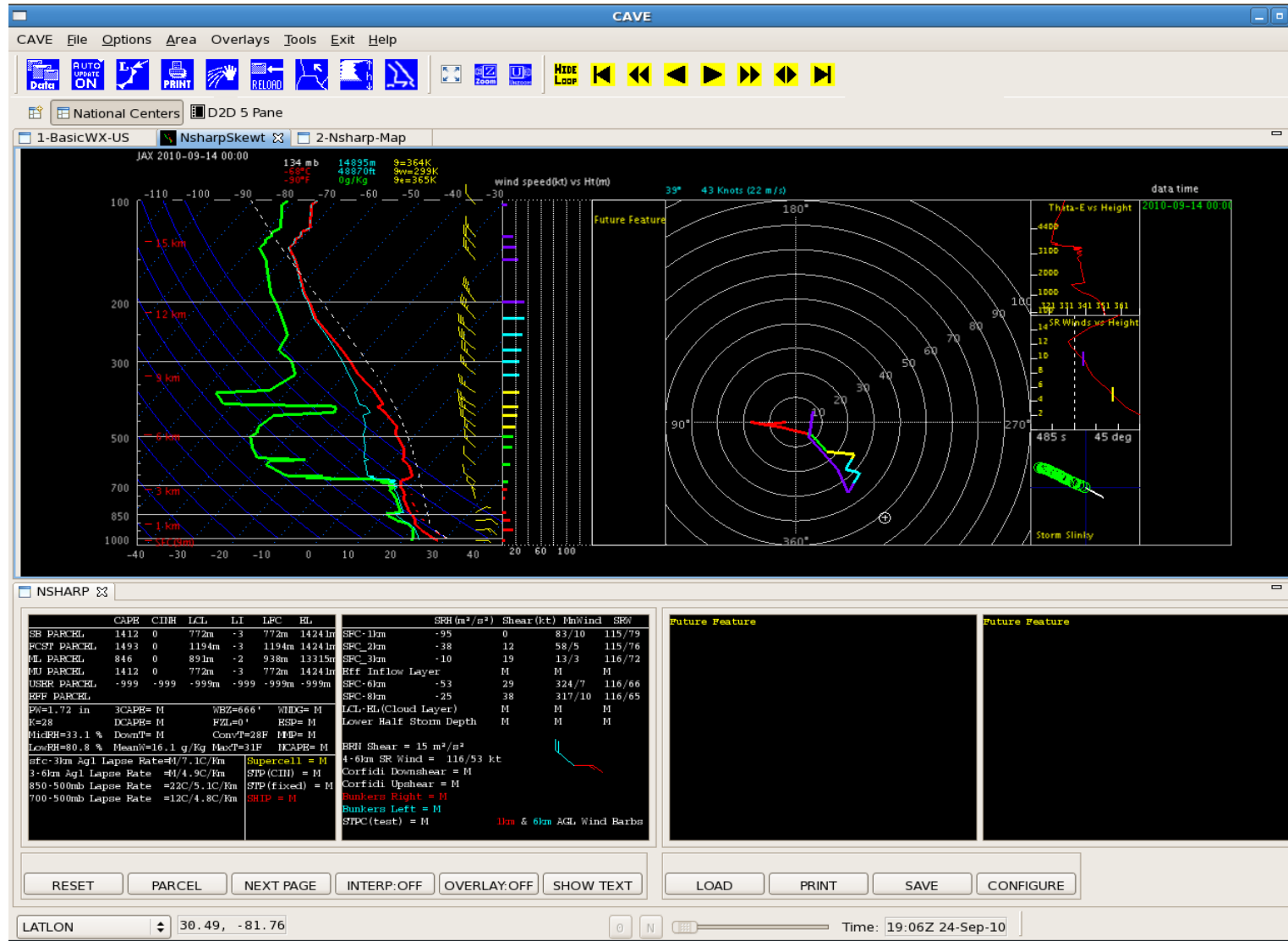


Examples of Migrated NAWIPS GUIs/Utilities





Examples of Migrated NAWIPS GUIs/Utilities





Examples of Migrated NAWIPS GUIs/Utilities



The screenshot shows the CAVE application window with the following components:

- Menu Bar:** CAVE, File, Options, Roam, Area, Overlays, Tools, Exit, Help
- Toolbar:** Data, AUTO UPDATE ON, PRINT, RECORD, and navigation buttons.
- Map:** A map of the United States with a green grid overlay. A legend in the bottom right corner of the map area indicates "NCTEXT Resource" and "Geo/Political".
- NCTEXT Panel:**
 - Select Data Type Group:** Recon CARCAH, Flash Flood, Marine, Aviation Forecasts, **MOS**, HPC Products
 - Select Data Type Product:** NGM MOS, ETA MOS, GFS MOS, **GFSX MOS**, NGM GUID, ETA GUID
 - Hour Covered:** 1, 3, 6, 12, 24, 48
 - Select By:** station, state
 - Text Report:**

```
----Text 1:: Reporting Station: CLARKSVILLE ----
KCKV GFSX MOS GUIDANCE 3/01/2010 1200 UTC

FHR 24 36| 48 60| 72 84| 96 108|120 132|144 156|168 180|192
      TUE 02| WED 03| THU 04| FRI 05| SAT 06| SUN 07| MON 08|TUE CLIMO
N/X 31 45| 30 45| 26 45| 26 50| 28 59| 38 61| 43 61| 42 33 57
TMP 33 40| 31 39| 27 38| 28 42| 30 52| 40 55| 46 55| 44
DPT 28 25| 25 22| 22 20| 22 21| 25 30| 33 36| 38 38| 38
WND  9 15| 10 10|  7 10|  7  9|  5  9|  5 13|  8 12| 10
P12 33 25|  4  3|  6  2|  0  0|  2  8| 12 11| 13 26| 29999999
P24 35|  9|  9|  0|  8| 20| 26|  999
Q12 0 0| 0 0| 0 0| 0 0| 0 0| 0 0|  |
```
 - Text Mode:** Replace, Append, Previous, Next, Print



Examples of Migrated NAWIPS GUIs/Utilities



CAVE: -- Day/Cycle: 12/20Z Routine

File Options Area Overlays Tools Help

Auto Update

D2D 3 Pane National Centers D2D 5 Pane

PGEN 3 Pane 1-BasicWX-US 3 Pane

Launch

Controls:

OPEN SAVE

SAVE AS... EXIT

Re-Fresh

START LAYER SAVE ALL

Actions:

Mod

CONN

Mov

Copy

FILED

DEL OF PART

DEL OF PT

Undo

Redo

INTERP FILTER

FROM CLS

ADD OF PT

Classes:

Front

Symbol

International SIGMET Edit

Area Line ESOL Isolated Width: 10.0 Color: [cyan]

MWO: KKCI ID: ALFA Sequence: 1

New(Prepend dir) Old(Postpend dir) VOR

N3608W12342 N3433W12664 N3132W12689 N2907W12527 N2604W12968 N2513W12738
N2526W12047 N3141W11791 N3608W12342

New/Update Amend Cancel

Valid from: 121934 To: 122334 Start plus: 4hrs 6hrs

Phenom: FRQ_TS

FRQ_TS Attributes:

Movement: STNRY MVG Speed: 5 Direction toward: N

Trend: -none-

Level Info: -none- TO -none-

Remarks: -none-

Free Text:

Save Apply Cancel

LATLON 23.75, -141.62 6 of 6 TUE 101012/1145 0 N Time: 19:50Z 12-Oct-10

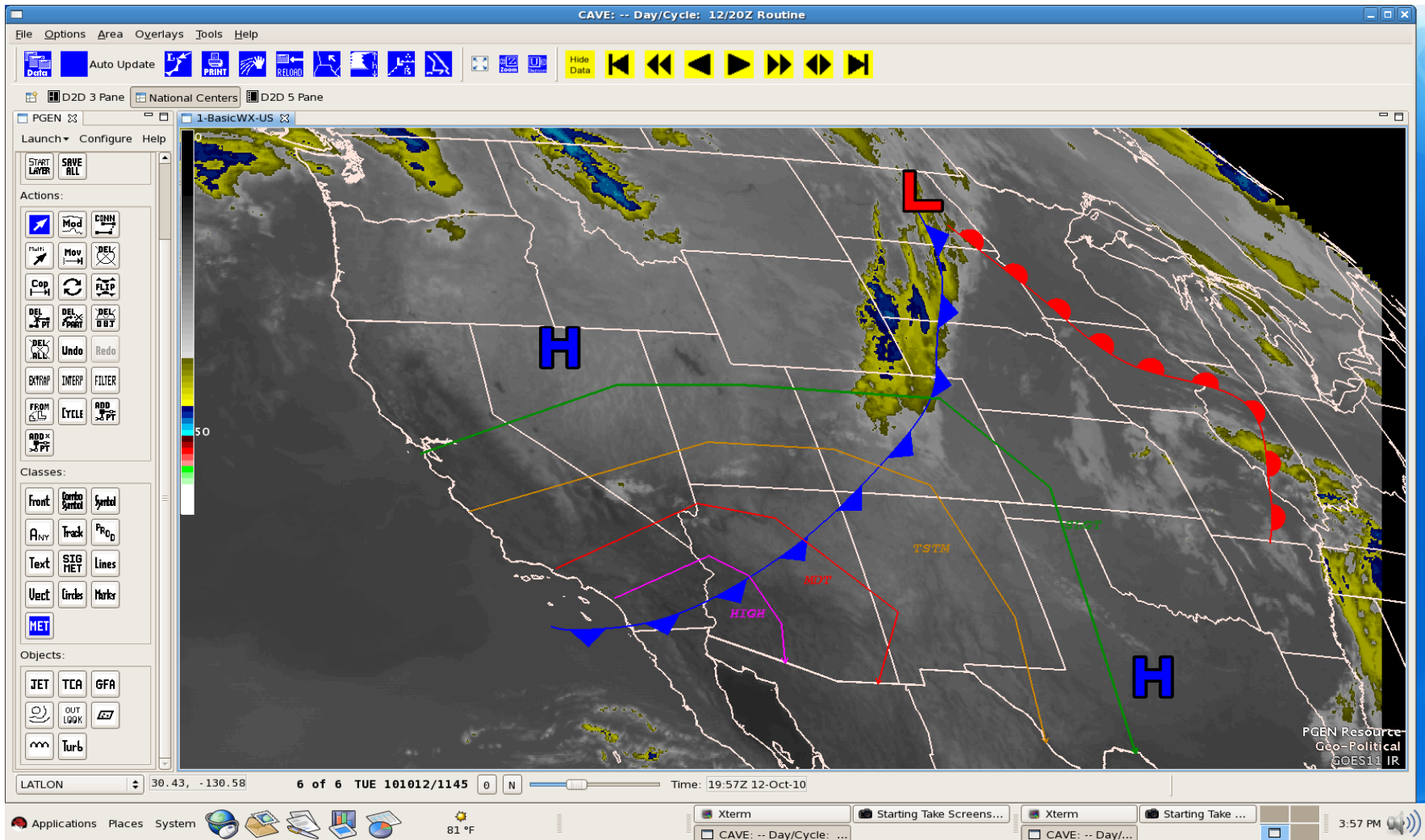
PGEN Resource
Geo-Political
GOES11 IR

Applications Places System 81 °F Xterm Starting Take Screens... Xterm Starting Take ... CAVE: -- Day/Cycle: ... CAVE: -- Day/...

3:50 PM



Examples of Migrated NAWIPS GUIs/Utilities





Hardware Schedule



- In late September AWIPS Program was able to access enough funds to purchase AWIPS II Hardware for all Centers
- NCO AWIPS II Test Bed
 - *Fully functional late November*
 - *8 Workstations*
- HW delivery at each center by end December
- Phased installation at each Center from January through early April
 - *Around 2 weeks for install*
- RTS will assist with new HW installation





Software Migration Goals



- National Centers Perspective - general
 - *Combines functionality of 4 legacy GUI applications*
 - NMAP2 – data display and product generation
 - NTRANS – multi-panel
 - NSHARP – vertical profile display, diagnostics and editing
 - NWX – FOS text product select and display
 - *Gray box conversion*
 - Some variances unavoidable or negotiated
 - Significant improvements gained from AWIPS II
 - *Migrating to new architecture*
 - Leveraged Raytheon implementations where possible
 - Take advantage of improved functionality
 - Flexibility is key



Merging/Integration



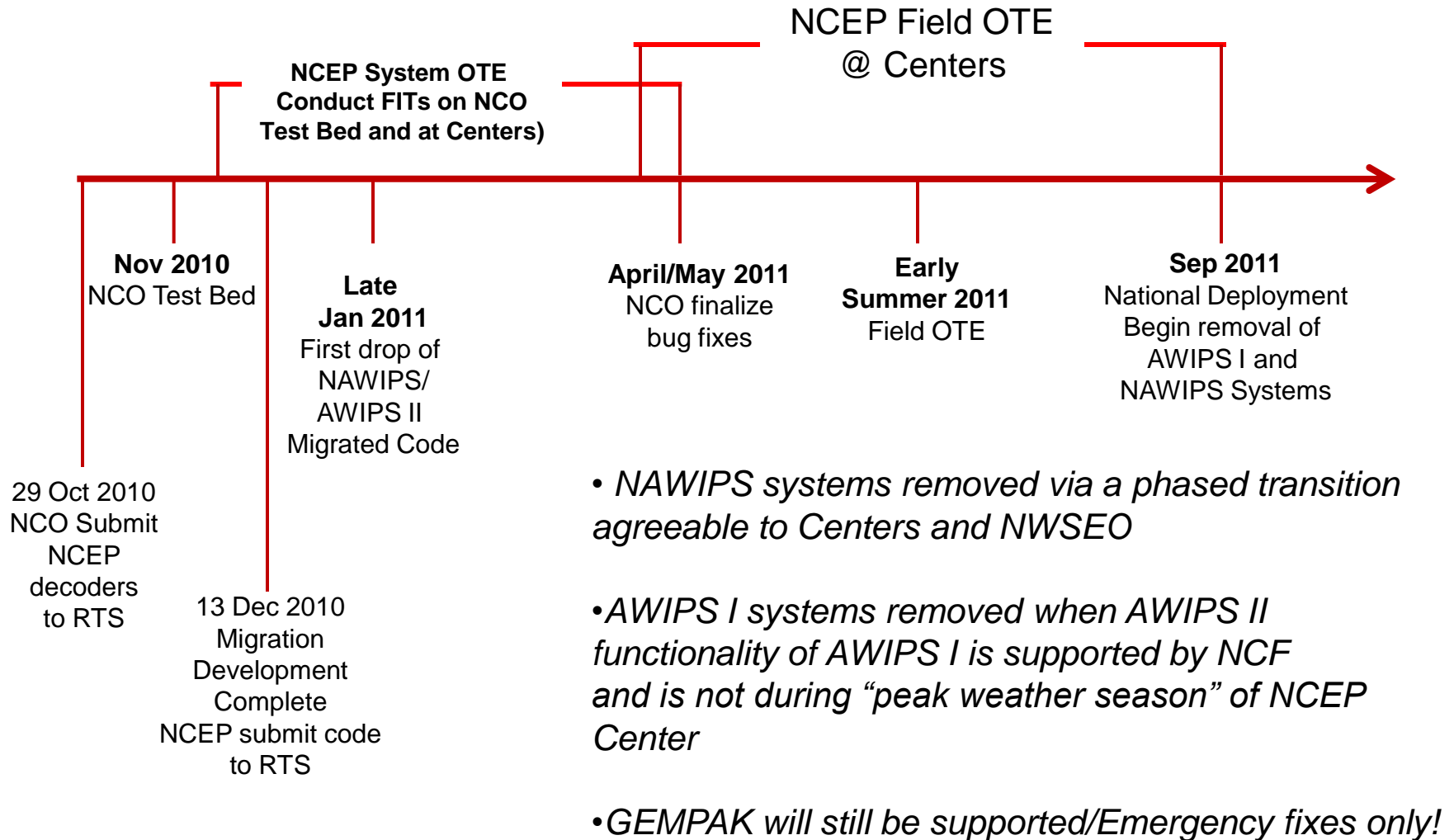
- Software to be base-lined via Raytheon task
 - *Drops will be more frequent - available for Center/Unidata downloads via web site*

Software Drops to RTS	Submission Date to RTS	RTS Implementation Date
NCEP Baseline Modified Modules	29 Aug 2010	Early Nov 2010
NCEP data plug-ins (decoders)	29 Oct 2010	Early Dec 2010
NCEP Perspective	13 Dec 2010	Late Jan 2010

- Bug fixes delivered to RTS during extended testing phase
- New requirements will be addressed *as resources permit*
- Different hardware configurations between WFOs, RFCs, NCs
 - *Increased NetApp Storage @ NCs – 26Tb*
 - *Double the # of EDEX Servers @NCs*

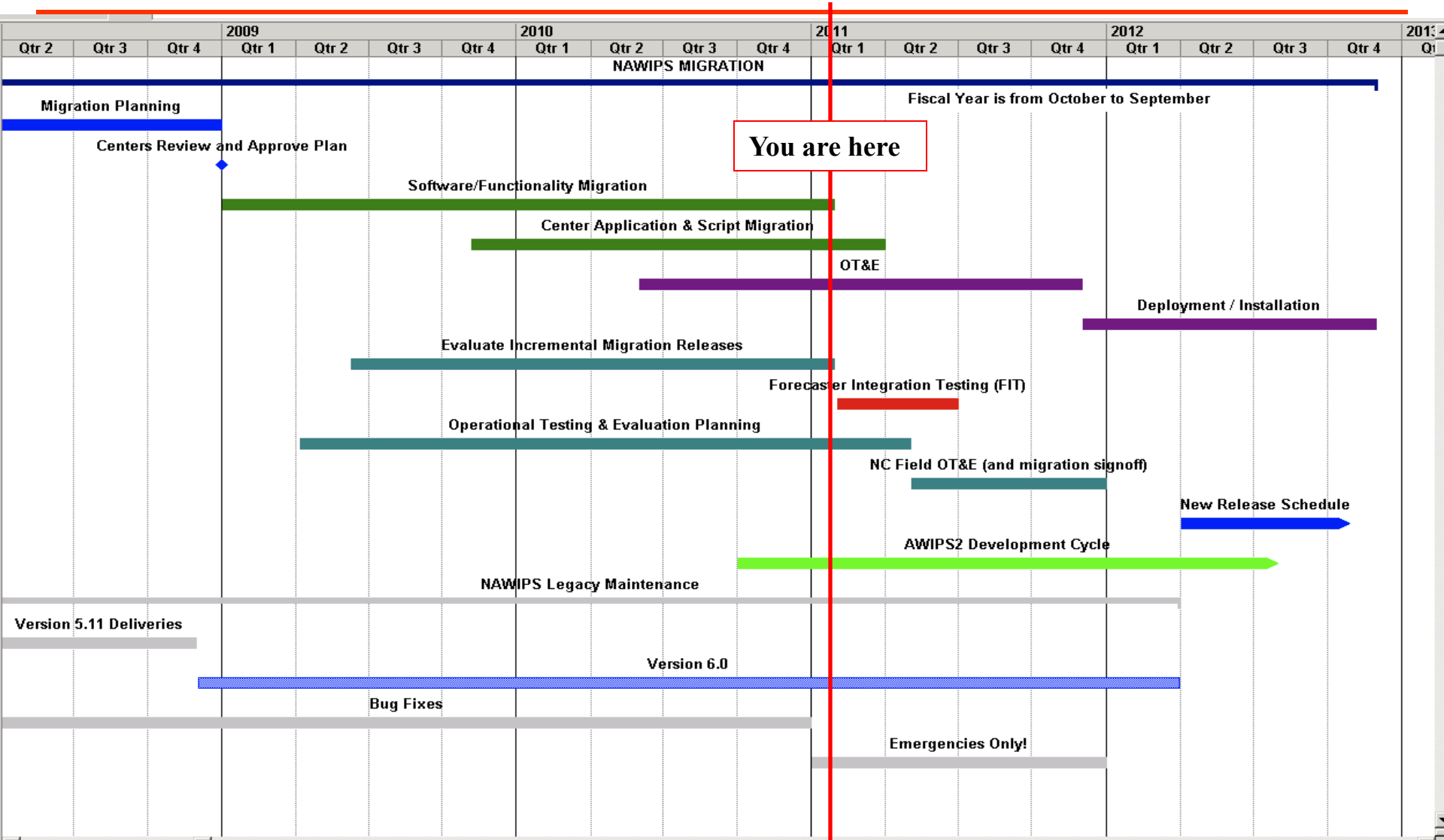


Software and Testing Schedule





Overall Schedule





Phased Plan to AWIPS II



- **Preparation Phase** - present – January 2011
 - *System OTE Period*
 - *Testing versions on Unidata servers as new drops are available*
 - *Begin FITs on NCO Test Bed by forecasters and software developers*
- **Transition Phase** - January 2011 – Late Spring 2011
 - *“NAWIPS OTE”*
 - *FITs on NCO Test Bed to include Unidata*
 - *Hardware is installed at Centers and software is baseline configured*
 - *Emphasis on Training*
 - *Testing of operational component functionality*
 - Data flow and ingest
 - Display techniques
 - Post-processing
 - Product creation



Phased Plan to AWIPS II

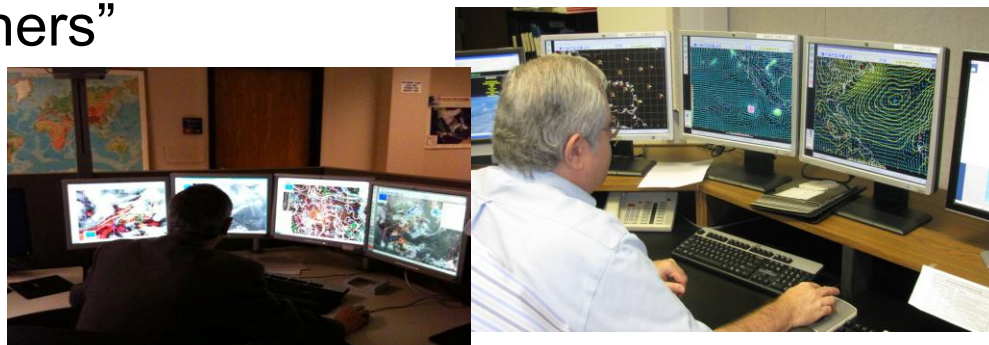


- **Consolidation Phase** – Summer 2011 into FY12
 - *National Field OTE & National Deployment*
 - *NCEP Center involvement with Field OTE*
 - *Final testing phase of all product generation*
 - *AWIPS II system becomes primary system for disseminating products currently produced by AWIPS I and NAWIPS systems.*
 - *Removal of AWIPS I hardware @ NCEP Centers*
 - *Removal of NAWIPS workstations that create operational products*
 - *Migration of local applications by each Center*
 - *Unidata obtains first version of migrated NAWIPS/AWIPS software*
 - *Unidata support of GEMPAK for 18 months after initial full deployment from NWS AWIPS Program*



Training Plan

- NWSTC will provide sys admin training for AWIPS II ~ FY11Q2
- AWIPS II Documentation will be provided by RTS
- NCO will enhance documentation to include National Center Perspective in CAVE – needs coordination with AWIPS Program
- NCO Test Bed will be used initially to test software functionality and to train forecasters/IT Specialists
- Open the NCO Test Bed for Unidata Community for training purposes – “train the trainers”





Unidata Involvement



- AWIPS II migration efforts first priority of NWS in FY11
- Weekly Migration Telecons with Centers and Unidata
- SIB is committed to assisting in software configuration and training forecasters and key personnel at Unidata in FY11 and into FY12
- As the migration gets closer to full deployment – Unidata will have more involvement with NWS/OST AWIPS Program
- Liaison with the University community
- **NCEP continues to view Unidata as a critical partner for NCEP's total mission**





Benefits for Unidata Users



- Facilitate Research to Operations
- Classroom tool/training
 - *Weather Event Simulator ~ Development 2012 / Delivery 2013*
- One NWS Operational System
 - *National Field OTE & National Deployment*
- Less data processing required
- Run your own EDEX to create database
- Modern development environment/platform
 - *Flexible & expandable architecture*
 - *Object oriented languages such as Java and Python*





GEMPAK Support and AWIPS II Licensing



- GEMPAK will be supported until a full replacement is ready
 - *GUIs deprecated eventually*
- Unidata support of GEMPAK for 18 months after 1st release
 - ~ *Summer 2013*
- AWIPS Program will deliver code to Unidata in the future
 - *First release expected December 2011/January 2012*
- Licensing of software
 - *GEMPAK developed by the Federal Government – open software*
 - *Once NWS implemented, AWIPS II will have open software policies*
 - *Some decoders (such as lightning decoder) and tools to disseminate products will be removed in non-government version*
 - *NCO will discuss with NOAA Legal Affairs on particulars to develop a clear understanding for all users*



Response to 2010 Unidata Users Survey



- GEMPAK is not going away any time soon
 - GEMPAK ensemble functionality in AWIPS II improved
 - Decoding of data will occur in the EDEX.
 - NCEP will provide monthly AWIPS II updates/status to Unidata
 - NCEP will assist Unidata/Michael in any GEMPAK and AWIPS II questions/issues as needed
 - Comments outside of AWIPS II
 - Obtain NWS graphical model output via MAG
<http://mag.ncep.noaa.gov>
 - New GIS Project @ NCEP
- Create one stop shop to access GIS-format data





Final thoughts...



- AWIPS National Program 3-6 month delay provided opportunity for NAWIPS migrated code to be included in initial deployment
- NCEP transition remains highly dependent on RTS closure of discrepancy reports (DRs) – SIB will be assisting RTS by early 2011.
- NCO Test Bed will be critical in testing software tools and processing load
- Strong partnership will remain between NCEP and Unidata through transition and in the years to follow



Questions ?



*“From the Sun to the Sea...
Where America’s Climate, Weather, Ocean and Space
Weather Services Begin”*