AWIPS II Extended Status

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Purpose

• AWIPS II Extended Scope
• AWIPS II Extended Project Descriptions
  – NAWIPS Migration
  – Thin Client
  – CHPS
  – WES
  – Data Delivery
  – Collaboration
  – Information Generation
  – Visualization

• AWIPS II Extended Project Schedule and Status
• Questions
AWIPS Technology Infusion
Scope

- AWIPS Technology Infusion (FY2005 – FY2014)
  - A long-term project which delivers a modern, robust software infrastructure that provides the foundation for future system level enhancements for the **entire NWS enterprise**

Phase I: AWIPS II – Migration of WFO/RFC AWIPS (FY2007-FY2009)
- Implements a modern Services Oriented Architecture (SOA) infrastructure
- First output of AWIPS Evolution and provides the foundation for all subsequent improvements

Phase II: AWIPS II Extended - Creation of a seamless weather enterprise spanning NWS operations (FY2009-FY2010)
- Migration of NAWIPS into the AWIPS II SOA
- Delivery of thin client
  - Support for the Weather Service Offices, Center Weather Support Units, Incident Meteorologists, e.g., Fire Weather
- Integration of “orphan” systems (e.g., Weather Event Simulator)
- CHPS Integration into AWIPS II SOA

Phase III: AWIPS II Extended Enterprise Enhancements - (FY2009 – FY2014)
- Data delivery enhancements
  - “Smart push-smart pull” data access
- Integrated visual collaboration
- Information generation enhancements
- Visualization enhancements
## AWIPS-II Extended Project Descriptions

<table>
<thead>
<tr>
<th>Project</th>
<th>Description</th>
<th>Key Benefits</th>
<th>Stake Holders</th>
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</table>
| NAWIPS Migration      | Migrate NAWIPS capabilities to AWIPS II architecture                        | • Enable more effective collaboration and seamless products between NCs and other NWS operational units  
• Enable sharing of common capabilities, e.g., meteorological calculations toolkits                                                             | NCEP Centers, RFCs, PR, AR, Unidata               |
| Thin Client           | Develop enterprise solution for remote access to AWIPS II capabilities      | • Common solution to support Incident Meteorologist, CWSUs, WSOs, etc. AWIPS II remote access requirements  
• Allow remote users access to latest AWIPS II capabilities                                                                                     | NWS enterprise, Trusted partners                   |
| WES Integration       | Develop enterprise solution to address AWIPS II training requirements       | • Baseline solution to support NWS training requirements  
• Allow training users access to latest AWIPS II capabilities                                                                                   | NWS enterprise                                     |
| CHPS Integration      | Integrate CHPS into AWIPS architecture                                       | • CHPS integration will significantly reduce the time to transition new innovative analyses and forecast techniques (e.g., water quality models) from the drawing board to operational deployment. | RFCs, Trusted partners                             |
### AWIPS-II Extended Project Descriptions - Continued

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<thead>
<tr>
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| Data Delivery | Develop operationally robust infrastructure to support “intelligent” remote access to datasets  
“Intelligent” includes data discovery and capabilities to sub-set the database by parameter, space, time, ensemble member, etc. | • Address significant growth in data volumes from higher resolution models and ensembles and from new data sources such as NPOESS and GOES-R  
• Mitigate impacts of large datasets on SBN | NWS enterprise, Trusted external data providers |
| Collaboration | Develop infrastructure to support real-time collaboration, including graphical and chat and other technologies among NWS operational units and trusted partners | • Enable more effective collaboration among NWS operational units promoting a more coordinated and seamless set of NWS products  
• Enable more effective communication and coordination between NWS and trusted partners, e.g., Emergency Managers | NWS enterprise, Trusted partners and customers |
| Information Generation | Develop infrastructure to support a common set of information generation services and tools | • Streamline generation of products to support emerging industry standard formats, e.g., CAP, GIS, etc.  
• Reduce development and maintenance costs associated with product generation, standardize templates for all NWS text products | NWS enterprise, trusted partners and customers |
<p>| Visualization | Build a common AWIPS visualization environment that will be used by all applications | • Enable more effective incorporation of advanced visualization techniques, e.g., 3-D visualization | NWS enterprise |</p>
<table>
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<th>Phase</th>
<th>Key Program Milestone</th>
<th>Target</th>
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<td><strong>Baseline</strong></td>
<td>Delivery of ADE v1.0</td>
<td>Summer 07</td>
<td>Complete</td>
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<td>Task Order 8 (Partial D2D)</td>
<td>February 08</td>
<td>Complete</td>
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<td>Task Order 9 (GFE + Additional D2D))</td>
<td>September 08</td>
<td>In Progress</td>
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<td>Task Order 10 – Hydro applications</td>
<td>February 09</td>
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<td>Task Order 11 – Remaining Components</td>
<td>Summer 09</td>
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<tr>
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<td>Baseline Deployment</td>
<td>Spring 10</td>
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<td><strong>Extend to Entire NWS Enterprise</strong></td>
<td>NAWIPS migration</td>
<td>3Q11</td>
<td>Migration Plan – FY08</td>
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<td>Thin Client</td>
<td>3Q11</td>
<td>Definition, OSIP G2 – FY08</td>
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<td>WES Integration</td>
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<td>Prototyping and Definition – In Progress, OSIP G3 – FY09</td>
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<td>CHPS Deployment</td>
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<td>Solution Development – In Progress, OSIP G3 – FY09</td>
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<td><strong>Enterprise Enhancements</strong></td>
<td>Data Delivery IOC</td>
<td>3Q11</td>
<td>Project Plan – In Progress</td>
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<td>Collaboration Phase I (NWS)</td>
<td>3Q11</td>
<td>Project Plan – In Progress</td>
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<td>Collaboration Phase II (Trusted Partners)</td>
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<td>Data Delivery FOC</td>
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<td>Information Generation IOC</td>
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<td>Visualization IOC</td>
<td>3Q14</td>
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QUESTIONS???
Backup Slides
AWIPS Technology Infusion
NWS Enterprise Improvements

- More responsive to partner needs – reduce development time of new products by 50%
- Direct and integrated visual collaboration with all levels of NWS operations - National Centers, RFCs, WFOs, WSOs
- Streamlined generation of products in industry standard formats
  - CAP, GIS, etc.
- Expanded access to data for NWS and external partners
  - SBN enhancements, smart push-smart pull
- Improved and integrated incident support for Emergency Managers and DHS
- Better weather support for the FAA at CWSUs through enterprise level integration
AWIPS Technology Infusion
Data Delivery

• OSIP Project 05-040
• Enables “smart push - smart pull” data delivery
  - Implements a discovery service within the SOA
  - Access to data not available locally
  - Freedom from the tyranny of the SBN
  - Enables consideration of new data delivery architecture
    - What data do you broadcast over SBN?
    - What data do you make available on servers?

• Schedule
  - IOC - 2011 - software implementation for remote data access
  - FOC 2012 - enterprise configuration (servers, comms, etc.)
    that enables remote data access
AWIPS II Infrastructure
What gets us excited...

• Dynamic load balancing
  – Failover handled automatically!!!
  – Takes full advantage of all available hardware

• Significant performance improvements
  – Borrows techniques from video games - mathematically intensive calculations handed off to the graphics card

• Google Earth-like disclosure of imagery, grids and observations
  – Allows zooming in of satellite imagery with full resolution

• Integrated drawing and graphical collaboration
  – Tools built into the infrastructure, implemented in 2011

• Improved reliability
  – LESS CODE - Potential order of magnitude reduction in amount of software
  – Reduced code complexity
AWIPS Technology Infusion Collaboration

- OSIP Project 05-041
- Objective
  - Integrated graphical collaboration throughout the NWS Weather Enterprise and beyond
  - Phase 1 - Integrated collaboration between all levels of NWS operations
  - Phase 2 - Collaboration between NWS offices and other NOAA entities
  - Phase 3 - Collaboration between NWS offices and trusted external partners, e.g., Emergency Managers
- Schedule
  - Phase 1 IOC - 2011
  - Phase 2 IOC - 2012
  - Phase 2 IOC - 2013
**AWIPS Technology Infusion**
Information Generation & Visualization

- OSIP Projects 05-042 (IG) and 05-021 (Vis)
- Information Generation objective
  - Re-architect generation of all NWS products and services
  - Separation of content generation from formatting and dissemination
  - Enable faster response to emerging customer demands
- Visualization objective
  - Common user interface - standardize User Interfaces across applications
  - 3-D visualization
  - Improve user interfaces based on latest principles and research