



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 1: 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



Project	Description	Key Benefits	Stake Holders
NAWIPS Migration	Migrate NAWIPS capabilities to AWIPS II architecture	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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



Project	Description	Key Benefits	Stake Holders
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.	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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
Visualization	Build a common AWIPS visualization environment that will be used by all applications	<ul style="list-style-type: none"> • Enable more effective incorporation of advanced visualization techniques, e.g., 3-D visualization 	NWS enterprise



AWIPS-II Project Milestones and Status



Phase	Key Program Milestone	Target	Status
Baseline	Delivery of ADE v1.0	Summer 07	Complete
	Task Order 8 (Partial D2D)	February 08	Complete
	Task Order 9 (GFE + Additional D2D))	September 08	In Progress
	Task Order 10 – Hydro applications	February 09	
	Task Order 11 – Remaining Components	Summer 09	
	Baseline Deployment	Spring 10	
Extend to Entire NWS Enterprise	NAWIPS migration	3Q11	Migration Plan – FY08
	Thin Client	3Q11	Definition, OSIP G2 – FY08
	WES Integration	3Q11	Prototyping and Definition – In Progress, OSIP G3 – FY09
	CHPS Deployment	3Q11	Solution Development – In Progress, OSIP G3 – FY09
Enterprise Enhancements	Data Delivery IOC	3Q11	Project Plan – In Progress
	Collaboration Phase I (NWS)	3Q11	Project Plan – In Progress
	Collaboration Phase II (Trusted Partners)	3Q12	
	Data Delivery FOC	3Q12	
	Information Generation IOC	3Q13	
	Information Generation FOC	3Q14	
	Visualization IOC	3Q14	



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 to 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