NOAA
System-of-Systems
Workshop

Coordinated by

The NOAA/NextGen Project

October 6 & 7, 2009

Day 1
Tuesday, October 6, 2009

NOAA/SSMC-2
Conference Center, Room 2358
1325 East West Highway
Silver Spring Md

Day 2
Wednesday, October 7, 2009

NOAA Science Center
1301 East West Highway
Silver Spring Md

NOAA System of Systems Workshop

Workshop Background and Objectives

The Next Generation Air Transportation System (NextGen) initiative, led by the FAA, will modernize the U.S. Air Transportation System in order to increase capacity and reliability, improve safety and security, and minimize the environmental impact of aviation. NextGen will be rolled out incrementally between 2013 and 2022.

Accurate, timely weather information is necessary for management of the nation's air space. Approximately 70% of today's aviation delays are weather related, with an annual cost of some $40 billion. The NextGen weather concept calls for a consistent, common weather picture— a "network-enabled" virtual repository of weather information to be <u>available</u> to the aviation community and <u>integrated</u> into aviation decision-making. This virtual repository is referred to as the Weather Information Database (WIDB) or the Four Dimensional (4-D) Weather Cube.

NOAA is the lead agency for building and populating the WIDB. This activity will involve close collaboration with our partners from FAA and Industry. NextGen requirements call for the inclusion of many different NOAA product types in the WIDB (e.g., numerical model products, analyses and forecasts, satellite, radar, and other observations). The WIDB is not expected to be a new standalone database system but will instead be a system of NOAA systems. Achieving the NextGen weather vision will require increased compatibility among NOAA systems (e.g., through common data standards and formats), the enterprise infrastructure to link the systems to one another, and intensified cooperation among the NOAA system owners. All of this suggests a "System of Systems" engineering and development approach.

With the above considerations in mind, this System-of-Systems Workshop is being held to:
- Better acquaint NOAA stakeholders with NextGen
- Discuss and develop the NOAA "System of Systems" concept for the NextGen era
- Discuss IT enterprise considerations during the NextGen transition
- Discuss data standards and formats
- Present/discuss major participating NOAA systems
- Explore System of Systems governance and security
- Begin planning the path forward toward the NOAA/NextGen System of Systems

NOAA System of Systems Workshop

Agenda in Detail

<u>Day 1: Tuesday, October 6, 2009</u>

8:30 - 9:00 AM	Coffee/Beverages	
9:00 - 9:15 AM	Introductions/Purpose	Tim Hopkins
9:15 - 10:15 AM	NextGen 101	Steve Abelman
10:15 - 10:30 AM	Break	
10:30 - 11:15 AM	System of Systems Description	Chris Kuruppu
11:15 - 12:00 PM	System of Systems Enterprise Architecture	Gustavo Limon
		Harry Tabak
12:00 - 1:00 PM	Lunch	
1:00 - 1:30 PM	WMO Standards Status	Fred Branski
1:30 - 2:00 PM	NOAA Data Standards Discussion	Ted Habermann
2:00 - 2:15 PM	OGC Standards: NOAA Perspective	Ted Habermann
2:15 - 3:15 PM	NextGen WIDB IT Architecture Overview	Mike Asmussen

- Requirements Development
- Generalized IT Architecture
- Architecture Next Steps

3:15 - 3:30 PM	Break	
3:30 - 3:55 PM	IRIS	Darone Jones
		Craig Schmidt
		Paul Kirkwood
3:55 - 4:20 PM	RIDGE Radar Data	Brian Walawender
		Paul Kirkwood
4:20 - 4:45 PM	NEVS	Jennifer Mahoney
4:45 - 5:30PM	Open Discussion and First Day Wrap-up	All

NOAA System of Systems Workshop

Agenda in Detail *(continued)*

<u>Day 2: Wednesday, October 7, 2009</u>

Time	Topic	Speaker
8:00 - 8:30 AM	Coffee/Beverages	
8:30 - 8:55 AM	AWIPS	Ronla Henry Steve Schotz
8:55 - 9:20 AM	CAWS	John Sereno
9:20 - 9:45 AM	ADDS	Bruce Entwistle
9:45 - 10:10 AM	NDFD	Dave Ruth
10:10 - 10:35 AM	GIS	Ira Graffman Kari Sheets
10:35 - 10:50 AM	Break	
10:50 - 11:15 AM	IOOS	Jeff de La Beaujardiere
11:15 - 11:40 AM	NGDC	Ted Habermann
11:40 - 12:05 PM	Consolidated Internet Farms	Bob Bunge
12:05 - 12:30 PM	MADIS	Patty Miller Dave Helms
12:30 - 1:30 PM	Lunch	
1:30 - 1:55 PM	NCEP - CCS - NOMADS	Brent Gordon Jordan Alpert
1:55 - 2:20 PM	TOC (NWSTG/NDGD/NOAANet)	Craig Hegemann
2:20 - 2:45 PM	NSSL's NMQ and WDSS-II 3D/4D Radar Mosaic	Kurt Hondl
2:45 - 3:10 PM	NDE (NPP/NPOESS)	Geoff Goodrum Jim Yoe
3:10 - 3:35 PM	GOES-R/GAS	Reggie Lawrence
3:35 - 3:50 PM	Break	
3:50 - 4:45 PM	Overarching System of Systems Issues - Security and System Interconnection - Governance & Coordination - Configuration Management	John England-Gordon Jeremiah Dewey Paul Lee
4:45 - 5:30PM	Open Discussion, Action Item Review, and Workshop Wrap-up	All

NextGen Weather Information Database
Participating/Candidate NOAA Systems

- ADDS
- AWIPS
- CAWS
- Consolidated Internet Farms
- ESPC/ESPDS @ NSOF
- GAS (GOES-R)
- GIS system
- IOOS
- IRIS
- MADIS
- NCDC & NGDC
- NCEP CCS & NOMADS
- NDE (NPP/NPOESS)
- NDFD
- NEVS
- NSSL's NMQ and WDSS-II 3D/4D Radar Mosaic
- RIDGE
- TOC (TG/NDGD/NOAANET)

Workshop Remote Access Information

Webex

      nws.webex.com
      Meeting Name: NextGen System of Systems Workshop
      Meeting Number: 552 127 083

Teleconference Information
      Dial-in Number: 888-946-7208
      Pass Code: 29609

NOAA System of Systems Workshop

Workshop Invitees

Name	Organization	Role/System
Tim Hopkins	NOAA/NWS/OS&T	NOAA/NextGen Lead Engineer for IT & Workshop Co-chair
Jason Tuell	NOAA/NWS/OCWWS	Meteorological Services Division Chief (NOAA Lead on JPDO Weather Working Group)
Mark Miller	NOAA/NWS/OS&T	NOAA NextGen Program Manager
Curt Neidhart	NOAA/NWS/OS&T	NextGen Program Management Office
Mark Andrews	JPDO	FAA/NextGen Weather Lead
Arnold Lee	JPDO	FAA/NextGen
Tom Ryan	FAA	NextGen Program Lead
Deirdre Jones	NOAA/NWS/OS&T	Director, Systems Engineering Center
Eric Mandel	FAA	NextGen Weather Engineer
Chris MacDermaid	NOAA/OAR/ESRL	NextGen WIDB Prototyping and Development
Mark Simons	FAA/Mitretek	FAA/NextGen Engineer
David Layton	NOAA	NOAA EA
Clinton Wallace	NOAA/NWS/AWC	ADDS
John Sereno	NOAA/NWS/AWC	CAWS
Robert Sallee	NOAA/NWS/AWC	ADDS
John Vogel	NOAA/NWS/OS&T	AWIPS
Ronla Henry	NOAA/NWS/OS&T	AWIPS
Steve Schotz	NOAA/NWS/OS&T	AWIPS
Ira Graffman	NOAA/NWS/OS&T	NOAA GIS
Kari Sheets	NOAA/NWS/OS&T	NOAA GIS
Marsha Weaks	NOAA/NOS	IOOS
Jeff de La Beaujardiere	NOAA/NOS	IOOS
Kurt Hondl	NOAA/OAR/NSSL	NMQ and WDSS-II 3D/4D Radar Mosaic
Paul Kirkwood	NOAA/NWS/SR/SSD	RIDGE Radar
Patricia Miller	NOAA/OAR/ESRL	MADIS
Sean Madine	NOAA/OAR/ESRL	NEVS
Jennifer Mahoney	NOAA/OAR/ESRL	NEVS
Dave Helms	NOAA/NWS/OS&T	MADIS
Ben Kyger	NOAA/NCEP/NCO	CCS & MADIS
Allan Darling	NOAA/NCEP/NCO	CCS & MADIS
Ted Habermann	NOAA/NGDC	NGDC Archive
Jason Marshall	NOAA/NOS	NOAA OGC

Name	Organization	Role/System
Brent Gordon	NOAA/NWS/NCO	NOMADS
Jordan Alpert	NOAA/NWS/EMC	NOMADS
Michelle Mainelli	NOAA/NWS/NCO	NOMADS
Dave Ruth	NOAA/NWS/OS&T	NDFD
Matt Peroutka	NOAA/NWS/OS&T	NDFD
Craig Hagemann	NOAA/NWS/OCIO	NWSTG Systems
Barbara Tobe	NOAA/NWS/OCIO	NWSTG Systems
Walter Smith	NOAA/NWS/OCIO	NWSTG Systems
Reggie Lawrence	NOAA/NESDIS/OSD	GAS & ESPDS
Robin Pfister	NASA	GOES-R
Kathleen Fontaine	NASA	GOES-R
Jim Silva	NOAA/NESDIS/OSD	NDE
Jim Yoe	NOAA/NESDIS/OSD	NDE
Geof Goodrum	NOAA/NESDIS/OSD	NDE
Bob Bunge	NOAA/NWS/OCIO	Internet Farms
Darone Jones	NOAA/NWS/WR	IRIS
Craig Schmidt	NOAA/NWS/WR	IRIS
Harry Tabak	NOAA/NWS/OCIO	NWS Enterprise Architecture
Gustavo Limon	NOAA/NWS/OCIO	NWS CTO
Fred Branski	NOAA/NWS/OCIO	NWS Data Management and WMO
Ken McDonald	NOAA/NESDIS/OSD	NOAA Data Management Integration Team/GEO-IDE
Martin Yapur	NOAA/NESDIS/OSD	NOAA Data Management Integration Team/GEO-IDE
Olga Brown-Leigh	NOAA/NWS/OS&T	NOAA NextGen
Jeremiah Dewey	NOAA/NWS/OS&T	NOAA Security
John E-Gordon	NOAA/NWS/OS&T	NOAA Security
Paul Lee	NOAA/NWS/OS&T	NOAA NextGen Security
Brian Gockel	NOAA/NWS/OS&T	NextGen – Engineering
Mike Asmussen	NOAA/NWS/OS&T	NextGen – Engineering
Chris Kuruppu	NOAA/NWS/OS&T	NextGen – Engineering
Steve Olson	NOAA/NWS/OS&T	NextGen – Engineering/NDFD
Steve Abelman	NOAA/NWS/OS&T	NextGen – Science Planning & Engineering
Cyndie Abelman	NOAA/NWS/OCWWS	NextGen – Requirements and Science Planning
Celia Miner	NOAA/NWS/OCWWS	NextGen – Requirements and Science Planning
Darien Davis	NOAA/OAR/ESRL	NextGen – Aviation Research and Science Planning
Jamie Vavra	NOAA/NWS/OS&T	NextGen – Aviation Product Verification (NEVS)
Paul Trotter	NOAA/NWS/OS&T	NextGen – OSIP Analyst
Cammye Sims	NOAA/NWS/OCWWS	NextGen – Requirements and Science Planning

Name	Organization	Role/System
Steve Holt	NOAA/NWS/OS&T	NextGen – OSIP Analyst
Thomas Mak	NOAA/NWS/OCWWS	NextGen – Project Communications and Web Site
Lewis McCulloch	NOAA/NESDIS/OSD	NOAA Data Management Integration Team/GEO-IDE
Lynn Sherrettz	NOAA/OAR/ESRL	GSD NextGen Program Manager
Sher Schranz	NOAA/OAR/ESRL	GSD Deputy NextGen Program Manager
Ken Howard	NOAA/OAR/NSSL	NMQ and WDSS-II 3D/4D Radar Mosaic
Bill Swart	NOAA/NWS/OS&T	NextGen – Engineering
Carmel Ortiz	NOAA/NWS/OS&T	IOOS
Ken Eng	NWS/CFO	NextGen Program Management Support
MarySue Shultz	NOAA/OAR/GSD	NNEW Project Coordination
Rick Vizbulis	NOAA/NESDIS/OSD	CLASS Project Manager
Stephen Del Greco	NOAA/NESDIS/NCDC	Chief, Data Processing Branch
Asghar Noor	NOAA/NWS/OCIO	Chief, Telecommunications Software Branch
Shanna Pitter	NOAA/PPI	Weather and Water Goal Program Analyst
Kevin Schrab	NOAA/NWS/OCWWS	Chief, Observing Services Division
James Heil	NOAA/NWS/OCWWS	NWS Requirements Analyst
Mike Johnson	NOAA/NWS/OS&T	Satellite Projects Lead
Selina Nauman	NOAA/NESDIS/OSDPD	NSOF/ESPC
Bruce Entwistle	NOAA/NWS/AWC	ADDS
Steven Schofield	NOAA/NWS/OS&T	Project Management Support
Steve Newton	FAA/FlatIronsSolutions	NNEW
James Tauss	FAA/NextGen - Avmet	NextGen Weather Work Group
Mark Messervy	FAA/NextGen – BAH	JPDO Enterprise Architecture Team
Yoon Ji	FAA/NextGen – BAH	JPDO Enterprise Architecture Team
Bradlee Nunn	NOAA/NESDIS/NCDDC	Computer Scientist