JPDO
Weather IPT
Dissemination Team
Friends and Partners of Aviation Weather Vision Meeting
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Consumers of Weather Info
Search
Pull
Receive
Translate
Use

Weather Info Producer
Metadata Tagging
Real Time
Push
Data Base Maintenance

Weather Sources
Observations
Diagnoses
Forecasts
Archived info

Services built on ubiquitous network
• Ground
• Air-Ground
• Air-Air

ATS Users
Cockpit
Dispatcher
DSS - Evaluator
Safety

Developer
Data Format
Applications
Info-sharing Standards
Implementing an NCO Model

NCO Model is:

- NGATS-wide information distribution and access mechanism for current and new applications
- Built on top of IP network (e.g. FTI/GIG) connectivity and security
- Implemented thru COTS software, custom software & hardware providing services such as security, messaging, registry, discovery, mediation
- Non-proprietary, flexible, extensible, scalable solution to cost effectively meet current and future information requirements

NCO Model is Not:

- A big system in a new facility
- A giant database
- A substitute for NAS modernization programs
- An FTI replacement

_NCO Model implements a modern, NGATS-wide approach to information management necessary to support agile operations and improved productivity_
Current Capability

- Rigid legacy point-to-point interfaces
- Dedicated or broadcast communications
- Predominately push operation, info owner oriented
- Internal information sharing built into individual NAS modernization programs isn’t NAS wide or cross agency
- Limited private sector supply to government users
- Multiple information sources with conflicting content
- Low degree of dissemination automation
- Human intensive, especially with meteorologists
- Some early glimmers of network compatibility
  - Aviation Digital Data Service (ADDS)
  - National Digital Forecast Database (NDFD)
  - Much weather data is already in well-defined formats (e.g., GRIB) which are compatible with net centric operations
Gaps and Challenges

- **Technical**
  - Interoperability: complexity and rigidity of system interfaces
  - Information assurance
  - Compatibility of existing systems – FTI/GIG

- **Operational**
  - Transition of existing DSSs to utilize NGATS dissemination

- **Organizational**
  - Development of information sharing culture
  - Acceptance of common information network across and within agencies
  - Allocation of dissemination costs for shared capability across agencies
  - Economics of aircraft equipage for dissemination
Opportunities

- On-going or Programmed Efforts
  - SWIM
  - DOD Global Information Grid (GIG) including its Enterprise Services and weather Community of Interest (COI) services
  - Mobile Communications Network Architecture (MCNA)
  - ADS-B/FIS
  - FISDL

- Cooperative Opportunities
  - Committee for Environmental Information Services and Communications (CEISC)
  - Joint METOC Interoperability Board (JMIB)
  - Commercial Weather Services Association (CWSA)
Program Approach

• Focus on aviation weather Net Enabled Operations (NEO) capabilities
  – Identify Government Wide Organizations (and individuals) participating in NEO activities, especially pertaining to aviation and weather.
  – Catalog existing NEO Policies and Standards, and identify ongoing revision activities among the JPDO agencies.
  – Describe current government funded NEO activities among the JPDO agencies, involving aviation and weather.
  – Direct collaboration among JPDO agency efforts along a common roadmap to create an operational 4D Weather Information System.
  – Adopt a set of compatible NEO Policies and Standards among the JPDO agencies pertaining to aviation weather.
  – Facilitate networking among the observations, forecasting, and user integration communities.
Key Tasks

• Requirements set.
• Identify communities of interest within the system.
• Integrate NDFD with ADDS as a network access point for aviation weather – an early victory opportunity.
• Develop weather information NCO architecture.
• Develop a weather data dictionary, registry, and metadata tagging standards.
• Leverage DOD’s GIG.
• Leverage SWIM as an FAA approach to NCO.
  – Conduct weather information prototype demonstrations.
• Leverage NASA’s Mobile Communication Network Architecture to facilitate aircraft as nodes on SWIM.
  – Full use of datalink for up and down networked weather flow.
• Integrate weather sources across JPDO agencies into a virtual national database.
• Integrate network centric weather dissemination across JPDO agencies.