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

ATS Users
- Cockpit
- Dispatcher
- DSS - Evaluator
- Safety

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

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.