ICAO MET Initiatives

Global Air Navigation Plan (GANP)
Aviation System Block Upgrade (ASBU)

Presented to: FPAW – Fall Forum
By: Ernie Dash (AvMet)
    FAA Weather Support
Date: October 12, 2017
ICAO Global ATM Operational Concept

ICAO Doc 9854 established the ICAO Global ATM Operational Concept (2005)

The Global Air Navigation Plan (GANP) projects a 15 year plan for implementation of the ICAO Doc 9854 concepts through Aviation System Block Upgrades (ASBUs)

GANP / 5th Edition approved by the ICAO Council (2016)

The ASBUs map expected operational improvements needed to achieve four Performance Improvement Areas (PIAs) over successive six year time blocks:

- Airport Operations
- Interoperable Systems & Data
- Globally Collaborative ATM
- Efficient Flight Paths

Now Appendix 2 in the GANP
Performance Improvements Areas - Module Input

- **ARRIVAL**
- **DEPARTURE**
- **SURFACE**
- **MANAGEMENT**

Flight & Flow Information for a Collaborative Environment
Objectives: ASBU – Module Upgrades

• Develop Air Traffic Management (ATM) Solutions or Upgrades
• Take Advantage of Current Equipage
• Enable Global Interoperability
• Establish a Transition Plan
  – Provide Guidance on Need and Readiness of:
    • Existing Infrastructure
    • ICAO Standards and Guidance Material
    • Demonstrations and Validations
    • IOC of Emerging Technologies
    • Global Implementation
There are currently three Advanced Meteorological Information (AMET) Modules; all are mapped to Global Interoperable Systems and Data:

- **B0-AMET**: Global, Regional and Local Meteorological Information
- **B1-AMET**: Enhanced Operational Decisions through Integrated Meteorological Information (Planning and Near-Term Service)
- **B2-AMET**: Currently covered by B1-AMET
- **B3-AMET**: Enhanced Operational Decisions through Integrated Meteorological Information (Near-Term and Immediate Service)
Global, Regional and Local Meteorological Information

Summary:
Provides global, regional and local meteorological information to support flexible airspace management, improved situational awareness, collaborative decision making, and dynamically-optimized flight trajectory planning

• Includes following Met information:
  – ICAO WAFC Forecasts
  – Volcanic Ash and Tropical Cyclone Advisories (VAA & TCA)
  – SIGMETs
  – OPMET (METAR/SPECI & TAF)
  – Aerodrome Warnings (e.g., Wind Shear)

• Above Met information is a subset of all meteorological information currently available to support enhanced operational efficiency and safety
B1-AMET Module (Block 1: 2019 – 2031)

Enhanced Operational Decisions through Integrated MET Information
(Planning and Near-Term Service)

Summary:
Builds on B0-AMET and adds space weather information for Polar flight operations. Introduces automated integration of weather in ATM Decision Support Tools (DSTs)

- Includes new weather processing and ATM-MET integration to include weather translation, ATM impact conversion and DST integration
- Promotes establishing standards for global exchange (i.e., IWXXM)

- Builds on the RTCA concepts of Planning and Near-Term Decision support including reference to tactical in-flight avoidance of Hz Wx conditions

- Will require:
  – Air and Ground systems development
  – Revisions to Procedures to include training and qualification
  – Development of global standards

- Currently covers both ASBU Blocks 1 & 2

Note: CSS-Wx / NWP Functions
B3-AMET Module (Block 3: 2031+)

Enhanced Operational Decisions through Integrated MET Information (Near-Term Service and Immediate Service)

Summary:
Builds on B1-AMET with addition of the RTCA concept of immediate decision making related to hazardous meteorological conditions.

Key points are:
• Tactical avoidance of hazardous meteorological conditions, especially in the 0-20 minute timeframe
• Greater use of aircraft based capabilities to detect [and report] meteorological parameters (e.g., turbulence, winds, and humidity)
• Display of meteorological information (e.g. EFBs) to enhance situational awareness

Promotes further establishment of global exchange standards

Will require further:
– Air and Ground systems development
– Revisions to Procedures to include training and qualification
– Development of global standards

Note: CSS-Wx Function
Module Links / Dependencies – Needs Revision

Wake-??
AIRPORT OPERATIONS

Limited AMET

GLOBALLY INTEROPERABLE SYSTEMS AND DATA

AMET

Dependency: 1
Link: 3

AMET:

Limited AMET

OPTIMUM CAPACITY AND FLEXIBLE FLIGHTS

Efficient Flight Paths

No AMET

Wake:
None

Link

Federal Aviation Administration
NextGen Weather Systems Briefing - FPAW
October 2017
What’s Next:  ICAO GANIS/2 – SANIS Symposia

- Second Global Air Navigation Industry Symposium (GANIS/2)
- Safety and Air Navigation Implementation Symposium (SANIS)
- ICAO – Montreal, Canada
  - 11-15 December 2017
  - Three Meteorology Sessions
    - Evolution of Aeronautical Meteorological (MET) Services
    - Future Aviation MET Information Delivery
    - World Meteorological Organization (WMO) Developments