

ICAO MET Initiatives

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

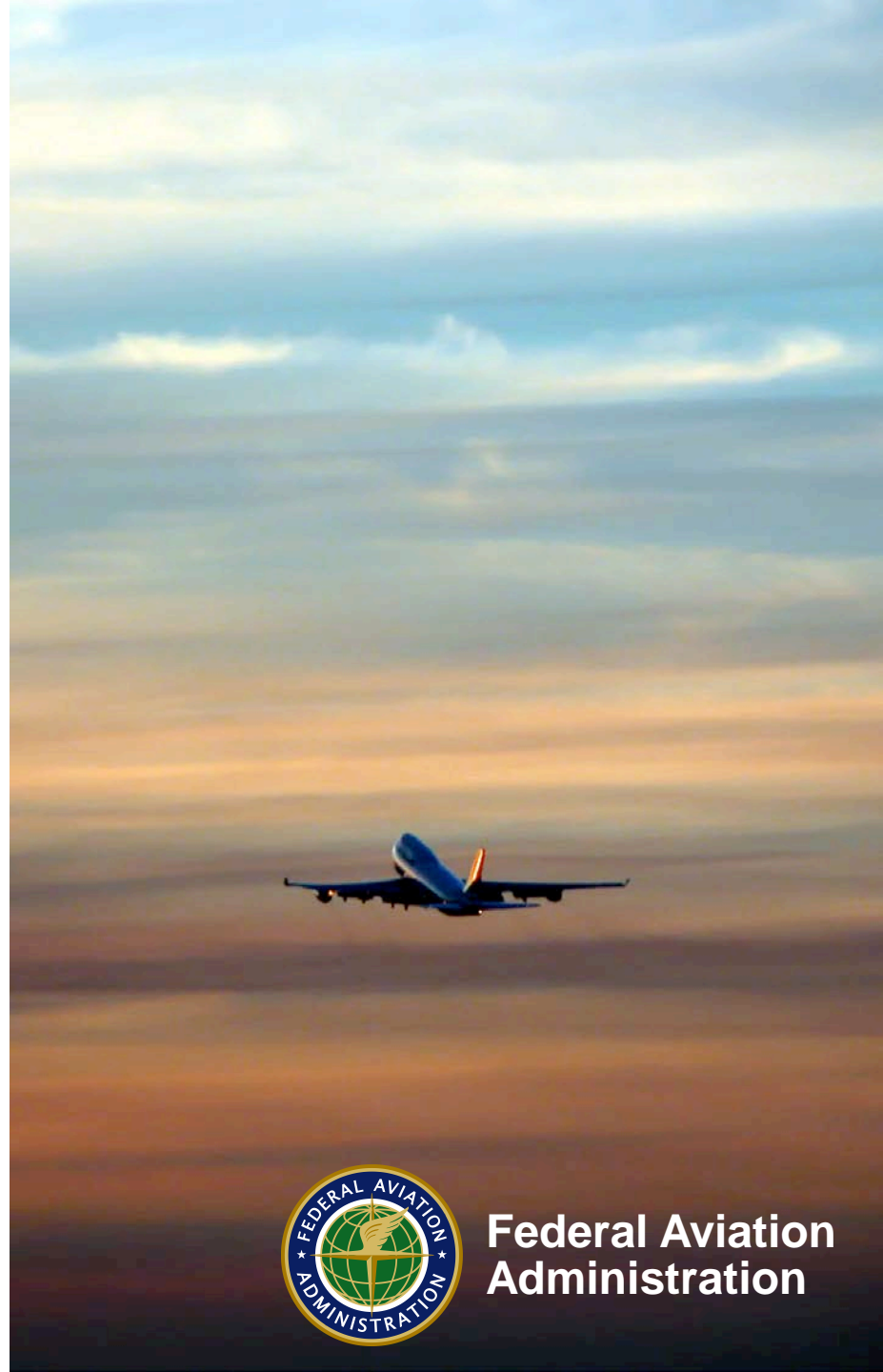
Presented to: FPAW – Fall Forum

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FAA Weather Support

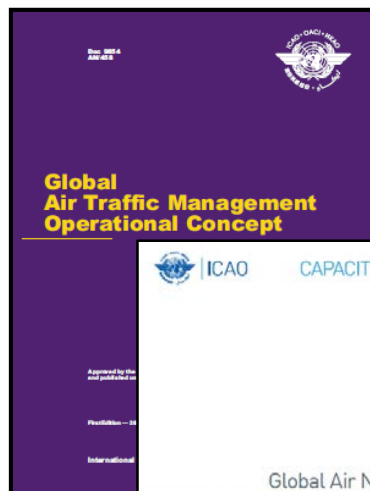
Date: October 12, 2017



**Federal Aviation
Administration**



ICAO Global ATM Operational Concept

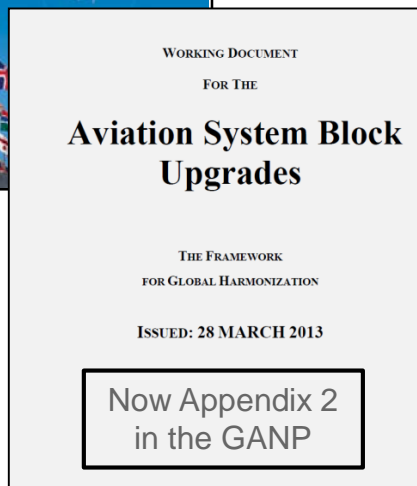


ICAO Doc 9854 established the ICAO Global ATM Operational Concept (2005)



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)

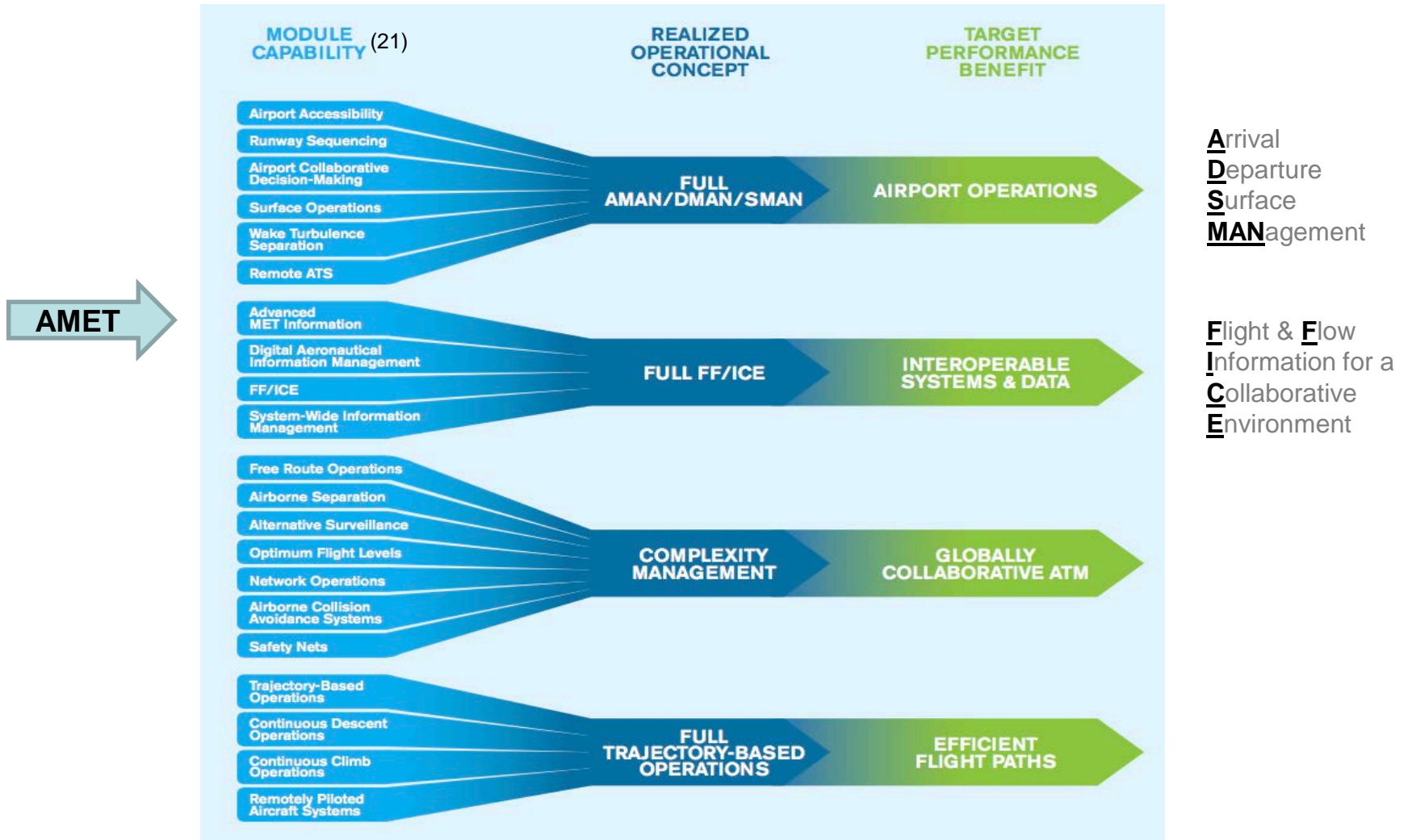
GANP / 5th Edition approved by the ICAO Council (2016)



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

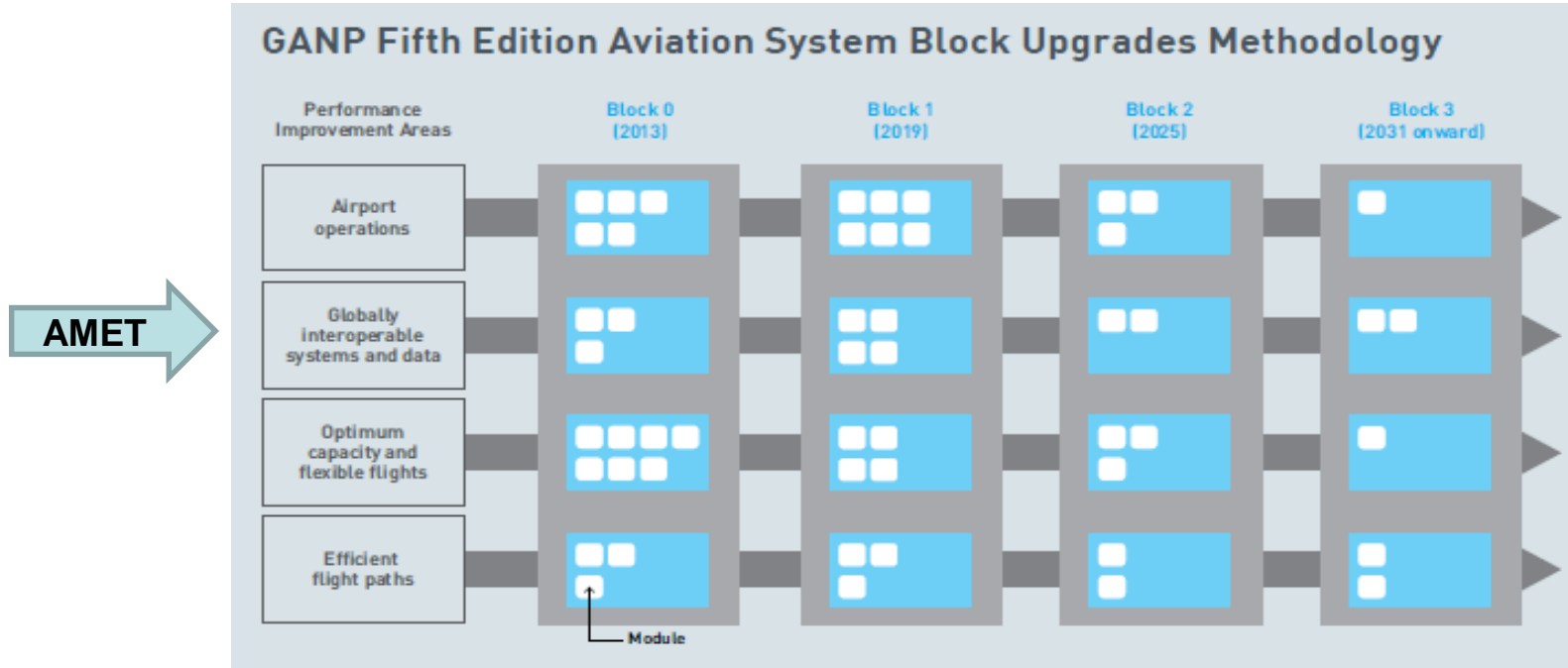
Performance Improvements Areas - Module Input



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

ASBU Block - Illustration



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)

B0-AMET Module (Block 0: 2013-2019)

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:

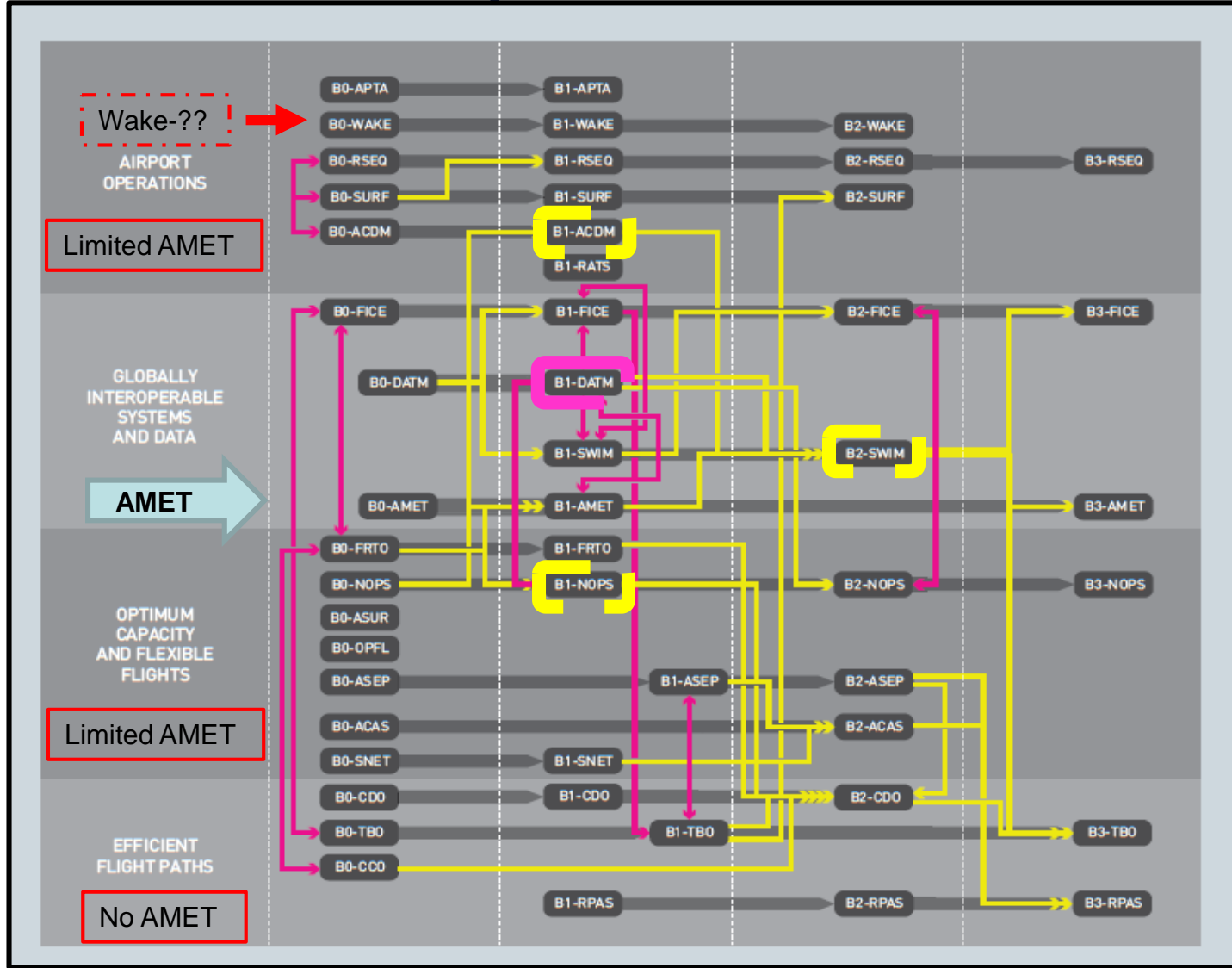
Builds on B1-AMET with addition of the RTCA concept of immediate decision making related to hazardous meteorological conditions.

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:
None

AMET:
Dependency: 1
Link: 3

Link
Dependency



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