International Civil Aviation Organization

ASBU/SIP/Lima/2012-WP/20

Integrated Meteorological Information

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Workshop on preparations for ANConf/12 – ASBU methodology
(Lima, 16-20 April 2012)

Outline

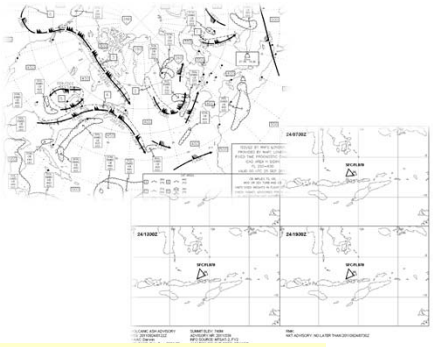
- Does MET matter to ATM efficiency?
- MET provision today
- MET to support tomorrow's ATM
- MET provision tomorrow

Does MET matter to ATM efficiency?

…absolutely YES

MET provision today

- Highly 'product-centric'
  - Text and graphical
  - Alphanumeric and digital code forms
- Primarily AFTN and AFS delivery to users
- Annex 3 SARPS and associated guidance
  - ATS/Pilot oriented
  - Limited ATM orientation
  - Aerodrome, terminal area en-route focus
  - Geared towards **safe**, **regular** and **efficient** operations



WSUK31 EGRR 231759
EGTT SIGMET 02 VALID 231830/232230 EGRR-
EGTT LONDON FIR SEV MTW FCST N OF N5330
FL050/150 STNR NC=

TAF EKGF 240600Z 2406/2415 20015KT
9999 SCT015 TEMPO 2406/2415
4000 BR BKN008=

MET provision today

ASBU B0-105

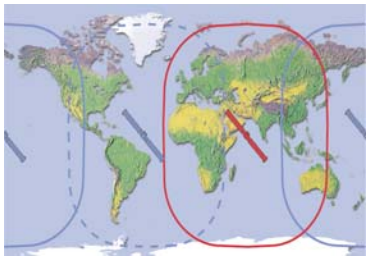
- Traditional MET products, services and systems, including:
  - World Area Forecast System/World Area Forecast Centres
    - Global gridded upper-air forecasts and significant weather (SIGWX) forecasts
  - International Airways Volcano Watch/Volcanic Ash Advisory Centres
    - Volcanic ash advisories and volcanic ash advisories in graphical format
  - State Volcano Observatories
    - Volcano observatory notification to aviation
  - Tropical Cyclone Watch/Tropical Cyclone Advisory Centres
    - Tropical cyclone advisories and tropical cyclone advisories in graphical format
  - Aeronautical meteorological stations and reports
  - Automatic observing systems
  - Aerodrome Meteorological Offices
    - Local routine and special meteorological reports, METAR/SPECI, TAF, trend, take-off and landing forecasts, aerodrome warnings, wind shear warnings and alerts, etc
  - Meteorological Watch Offices
    - SIGMET, AIRMET/GAMET
  - Aircraft observations and reports
  - ATIS, D-ATIS, VOLMET, D-VOLMET
  - Aeronautical climatological information
  - Quality management of meteorological information etc

Annex 3

Better use of today's MET information can result in improved safe and efficient operations

MET provision today

- *Traditional* means of dissemination:
  - **AFTN**
  - **AFS** or **public Internet** communication (including SADIS and ISCS/WIFS)
  - Aeronautical **data-link** service
  - Aeronautical **broadcasting** service
- Supplied to *traditional* users:
  - Operators and flight crew members
  - Air traffic service providers
  - Meteorological service providers
- For use in *traditional* forms:
  - Briefing, consultation and display
  - Flight documentation
  - Automated pre-flight information systems for briefing, consultation, flight planning and flight documentation



Insert: SADIS (red) and ISCS (blue) satellite footprints

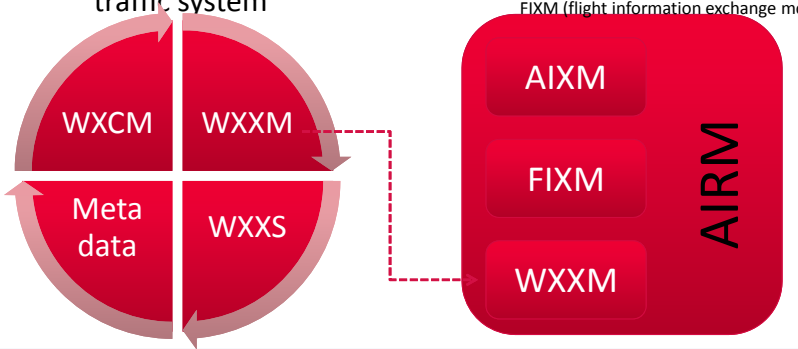
MET to support tomorrow's ATM

- Doc 9854 (*Global ATM Operational Concept*)
  - Service delivery and benefits for airspace users by 2025
  - Network-based (net-centric) environment that is globally interoperable
  - Fusing MET information with aeronautical information and flight information

MET to support tomorrow's ATM

- Availability of shared, timely, high-quality MET information
  - Foundation for effective management of the (future) air traffic system

List of Models:
WXCM (Weather information exchange conceptual model)
WXXM (Weather information exchange model)
WXXS (Weather information exchange scheme)
Metadata (An essential component towards the data-oriented environment)
AIRM (ATM Information Reference Model
AIXM (aeronautical information exchange model)
FIXM (flight information exchange model



MET to support tomorrow's ATM

2013

Develop and publish:

- first iteration WXXM
- first iteration for METAR/SPECI, TAF and SIGMET exchange in digital form
- first iteration metadata profile for METAR/SPECI, TAF and SIGMET exchange

Amendment 76 to Annex 3

2016

Publish a major release of:

- WXXM
- specification for METAR/SPECI, TAF and SIGMET exchange in digital form

Develop and publish first iteration specification for MET information exchange (excluding METAR/SPECI, TAF and SIGMET) in digital form

Publish a major release of metadata profile for METAR/SPECI, TAF and SIGMET exchange

Develop and publish first iteration metadata profile for MET information exchange (excluding METAR/SPECI, TAF and SIGMET)

Amendment 77 to Annex 3

2019

Publish major release of WXXM

Publish a major release specification for MET information exchange in digital form

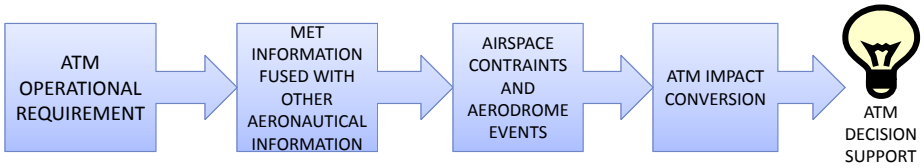
Publish a major release metadata profile for MET information exchange

Amendment 78 to Annex 3

Evolutionary steps …the MET Roadmap

MET to support tomorrow's ATM

- **Enhanced decision-making capability through improved accuracy, capability, availability and use of meteorological information**
  - The reliable identification of applicable ATM solutions when meteorological conditions are impacting or are forecast to impact aerodromes or airspace
- **Full ATM-MET integration is necessary**
  - Meteorological information included in the logic of a decision process or aid
- **ASBU Module No. B1-105**



MET provision tomorrow

- WXCM, WXXM and WXXS are designed to enable:
  - platform independent
  - harmonized
  - Interoperable MET information exchange covering all the needs of the air transport industry
- **Through shared, timely, high-quality MET information**
- Major benefits include:
  - Single representation/ common view
  - Alignment with ISO standards and OGC best practices for geospatial information
  - Modularity to support future requirements
- **MET information at the right time and the right place**

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