



International Civil Aviation Organization

SIP/2012/ASBU/Dakar-WP/18

# Integrated Meteorological Information

## H. Sudarshan

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

# Outline

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

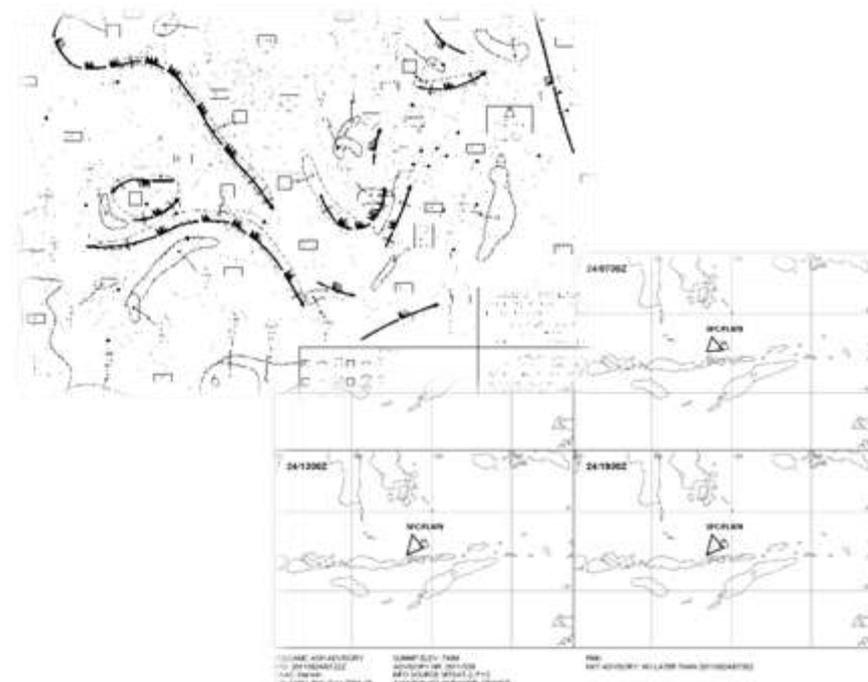
# Does MET matter to ATM efficiency?



...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 EKF 240600Z 2406/2415 20015KT  
9999 SCT015 TEMPO 2406/2415  
4000 BR BKN008=

# MET provision today

- 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

## ASBU B0-105

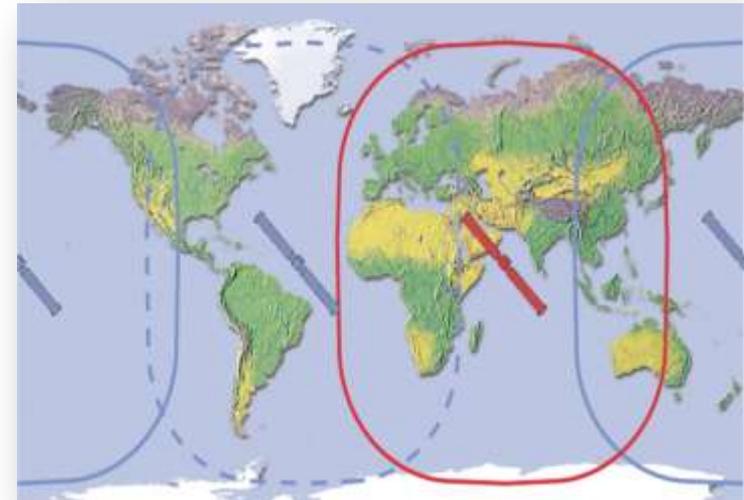
### Annex 3



**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



Transition of MET *products* into MET *information* supporting collaborative, knowledge-based, decision making through free-flowing information exchange trajectory/performance based operations

# 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)

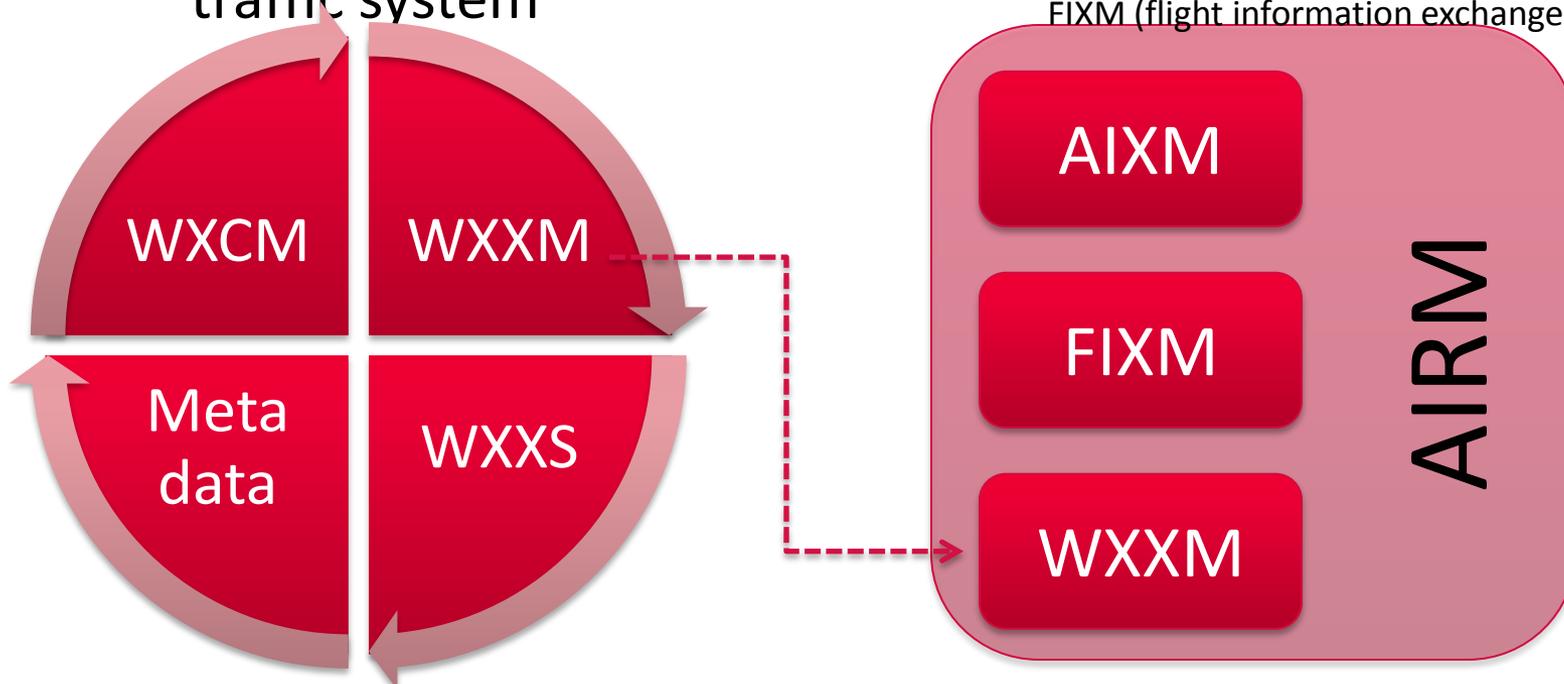
WXXS (Weather information exchange scheme)

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

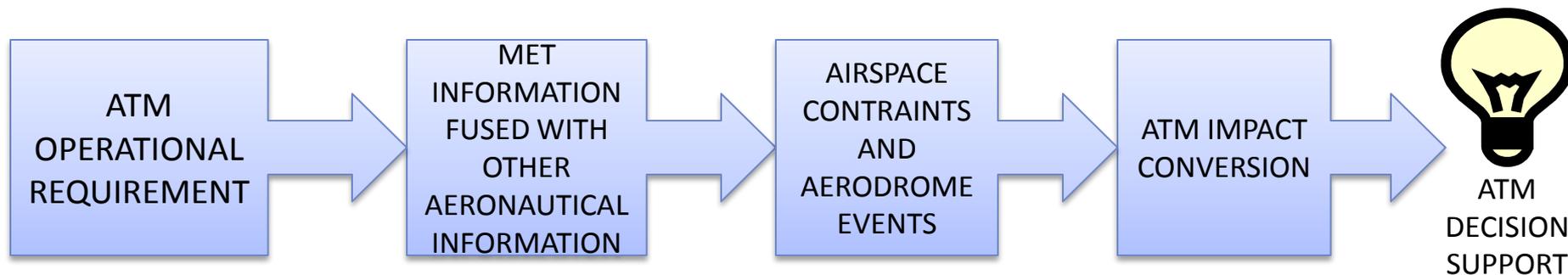
**Amendment 78 to Annex 3**

## 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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