ICAO Meteorology Panel

Future Meteorological Information Service

From products to seamless information services

Presented by Ashwin Naidu

Topics

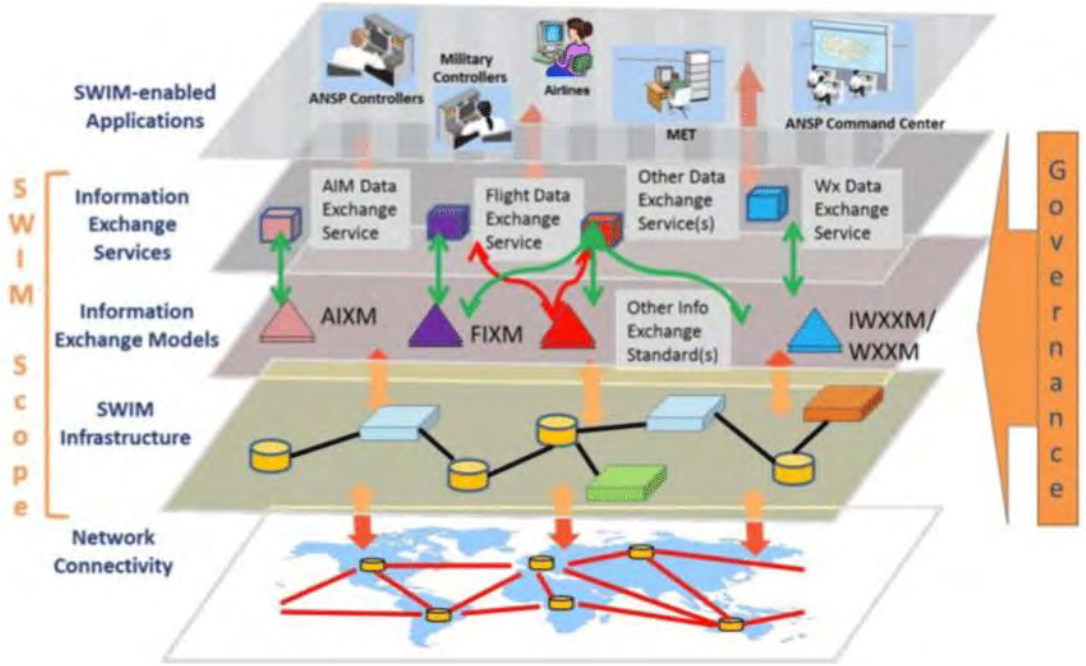
- Evolution of MET Services
- ICAO GANP Requirements
- Future Met Information Service (AMOIS, AMFIS, HWIS)
- Stakeholder Impacts
- Key Takeaways

SWIM – The digital backbone of Future MET Services Provision

System Wide Information Management (SWIM) is the foundation of a global, interoperable, and data-centric aviation ecosystem.

Key requirements for MET:

- Met data in IWXXM format
- Delivery via web services
- Supports automation and decision aiding systems
- Ensures global and cross-domain interoperability



SWIM Global Interoperability Framework
ICAO Manual on SWIM (Doc 10039)

Evolution of MET services

From static products to dynamic services

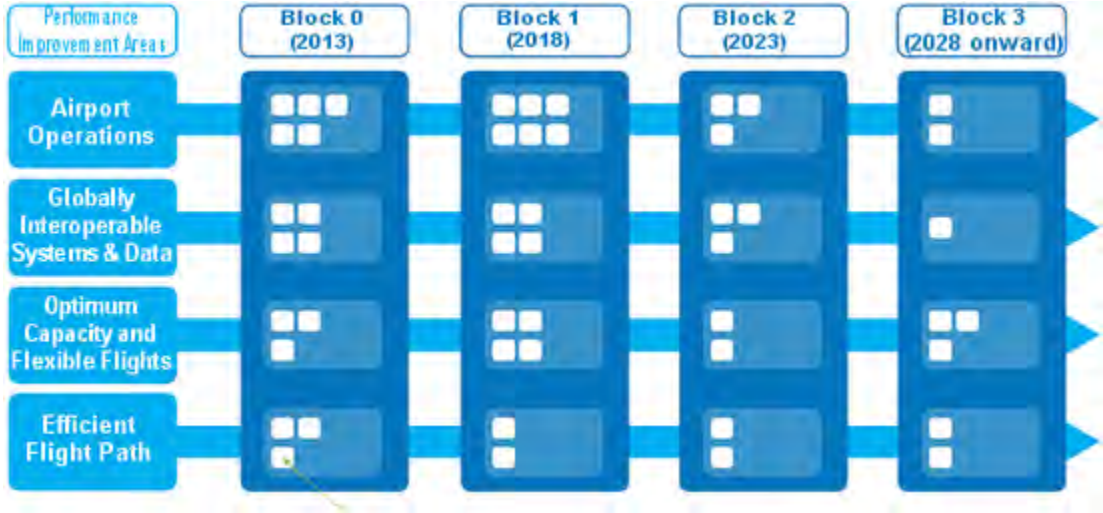
Traditional approach	Future approach
Static, text-based products (e.g., METAR, TAF)	Dynamic, machine-readable data (e.g., IWXXM format
Limited integration with automated systems	Seamless integration with ATM and airline systems and decision aids

Services tailored to user needs, decision timeframes and automated.

ICAO GANP – guiding requirements

ICAO GANP under AMET-B2 Module (2025-2030) outlines:

- Integrated **MET observations and forecasts**
- Support for enhanced ATM, airport decision making and optimised flight trajectory
- High spatial/temporal resolution
- Automated, user-defined services in IWXXM



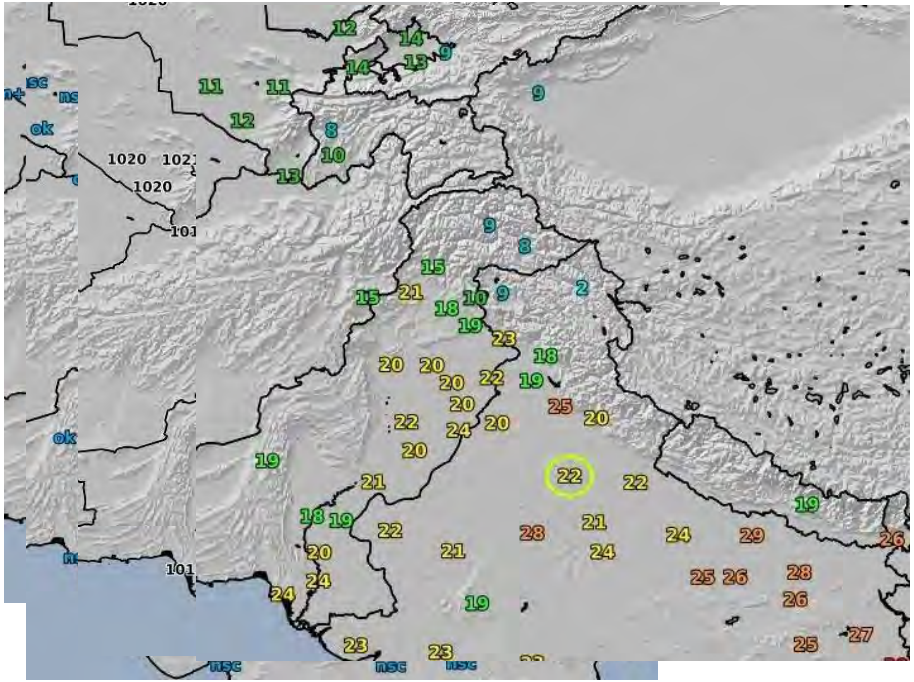
Future Meteorological Information Services

ICAO MET Panel is developing new meteorological services:

- Aerodrome Meteorological Observation Information Service (**AMOIS**)
- Aerodrome Meteorological Forecast Information Service (**AMFIS**)
- Hazardous Weather Information Service (**HWIS**)

AMOIS

STATION-ID	OBSERVATION TIME	METAR
VIDP	23.04.25, 01:30	SAIN32 VIDP 230130 METAR VIDP 230130Z VRB02KT 3000 HZ NSC 24/03 Q1008 NOSIG=



AMFIS

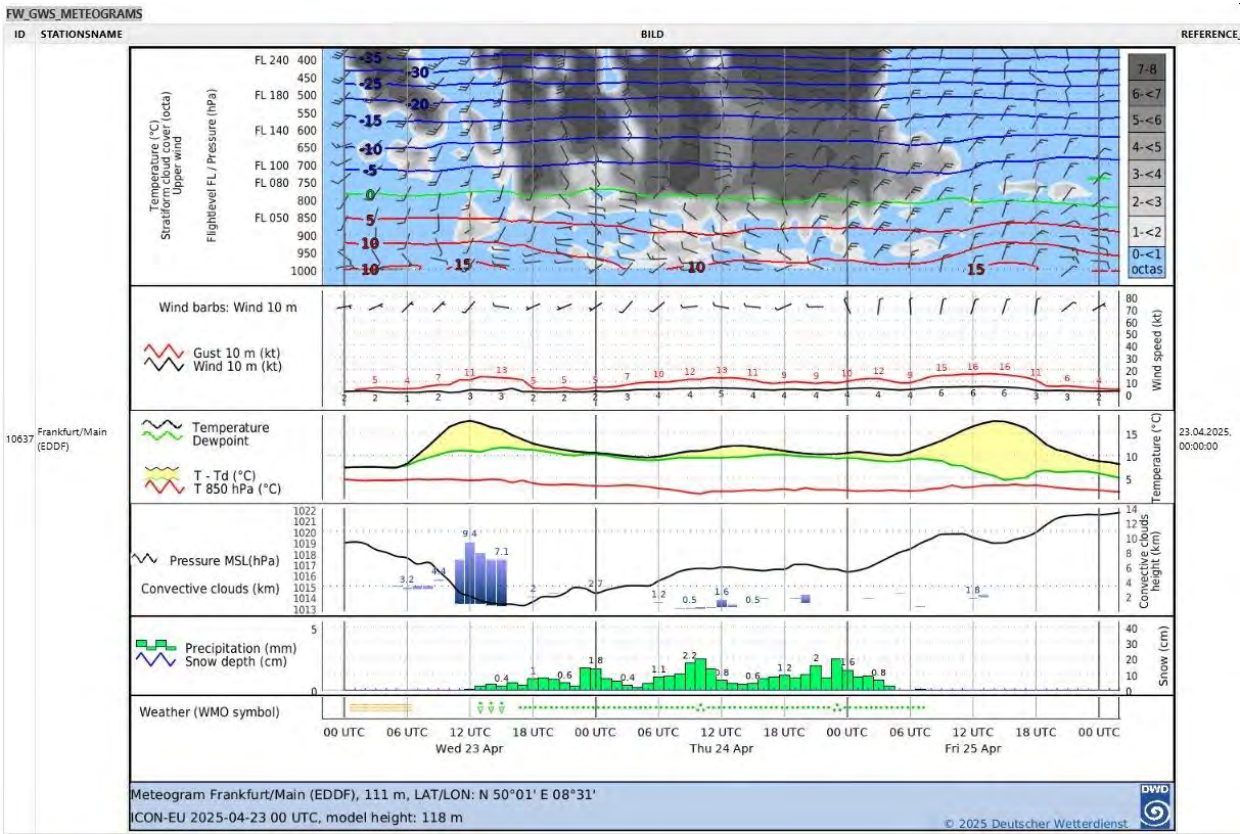
TAF EDDF 230500Z 2306/2412 05004KT CAVOK

BECMG 2309/2312 25005KT

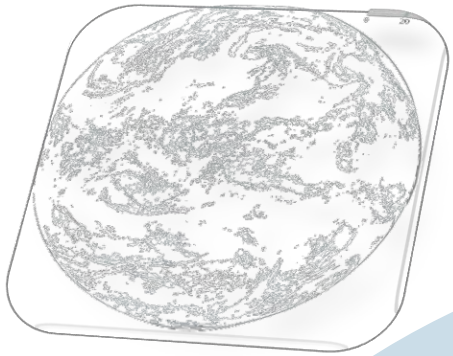
TEMPO 2311/2318 SHRA BKN030CB PROB30 TEMPO 2313/2317 3000 TSRA

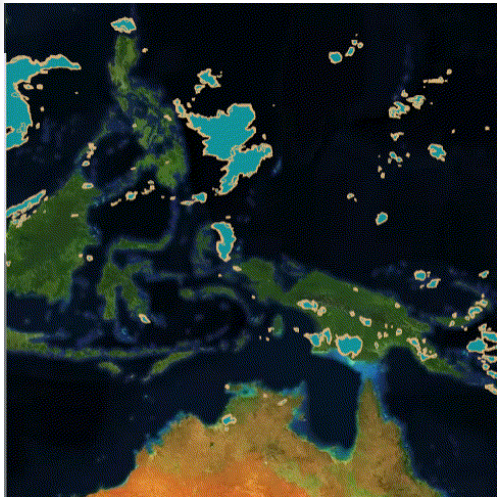
BECMG 2318/2320 FEW012 BKN030

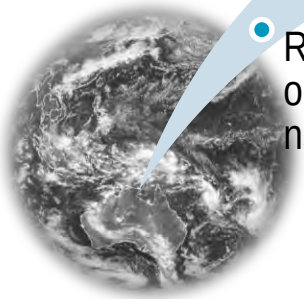
PROB40 TEMPO 2318/2408 RA PROB30 TEMPO 2405/2410 BKN012=



HWIS







- Realtime observations
- AI based cloud detection and forecasting
- Ensemble modelling to provide probabilistic information

Stakeholder Impact - what this means to you

ATC – real-time updates → better rerouting

Pilots – real-time hazard awareness in cockpit systems

Dispatchers - more accurate flight planning

Airlines - proactive ops management

ANSPs – automated data for ATM systems

Aerodrome Ops – planning for aerodrome conditions

- ICAO has endorsed the shift to data-centric MET services
- Transition from METAR, TAF, SIGMETs to digital, automated services
- AMOIS, AMFIS, HWIS define the next generation aviation weather data
- Final requirements and timelines are still under review by the ICAO MET Panel

- Stay informed as implementation plans progress
- Participate in national and global planning efforts
- Align with ICAO's SWIM & IWXXM requirements
- Start thinking and preparing for future MET information services

METEOROLOGY PANEL

Thank you

Ashwin Naidu