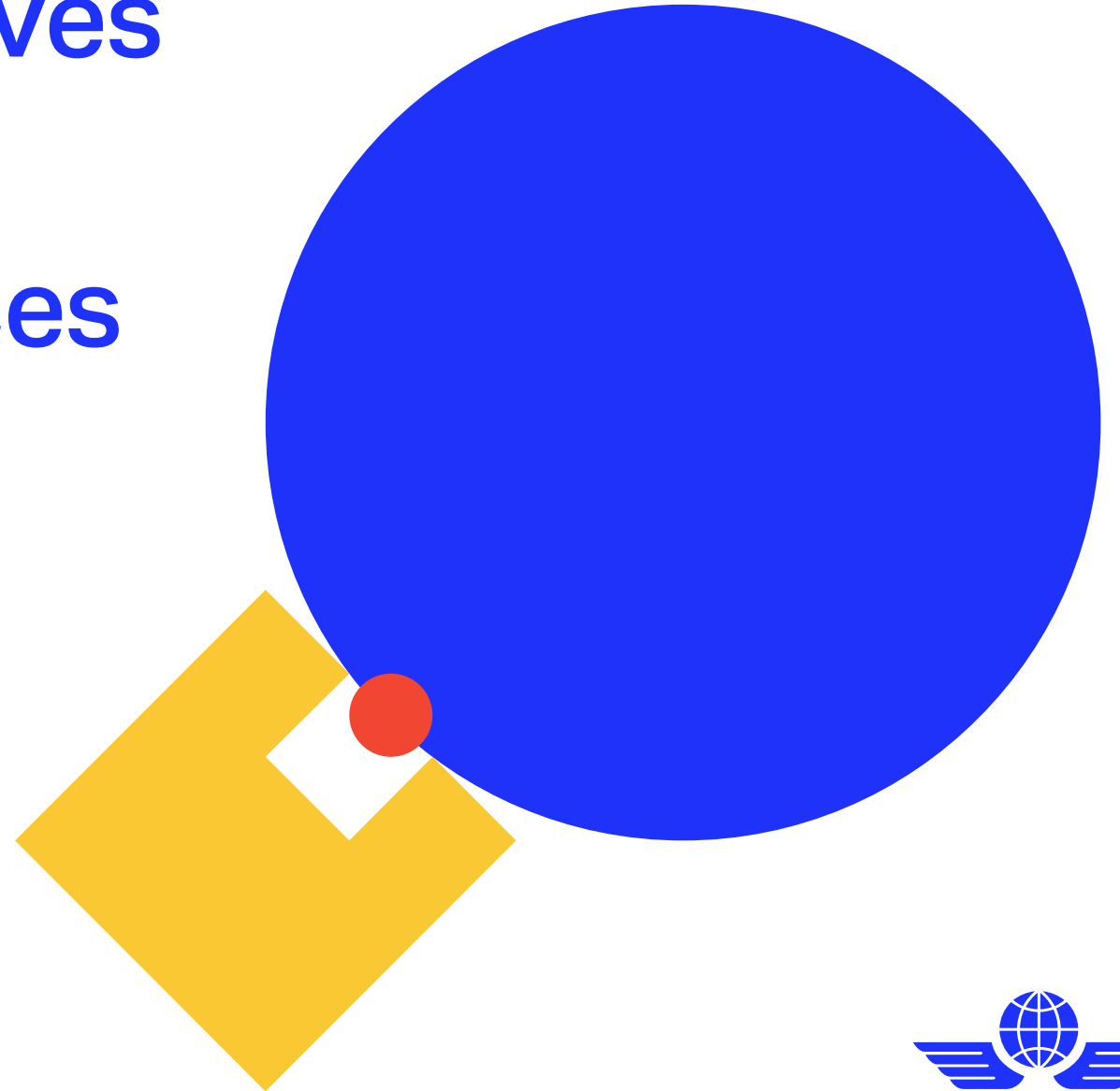


Airline User Perspectives on Aeronautical Meteorological Services

Expectations • Value to safety & Efficiency •

Priorities for improvement



Jiska Manicus | IATA

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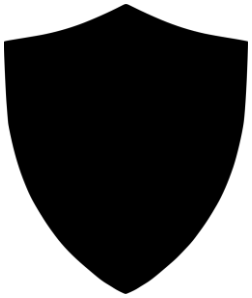
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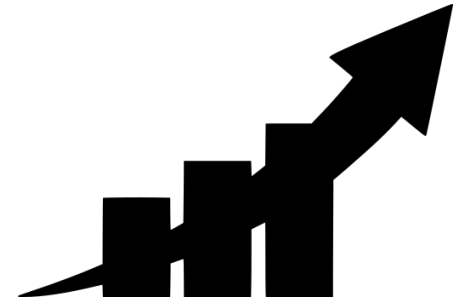
Why MET Matters to Airlines

Safety



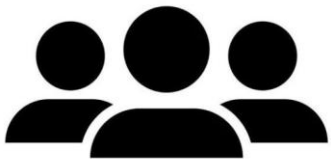
1. Foundation of safe operations (ICAO Annex 3)
2. Prevents windshear, turbulence, icing, TS, volcanic ash encounters
3. Go/no-go & diversion decisions

Efficiency



1. Accurate upper winds/temps enable optimal routing & flight levels.
2. Fuel savings (several % per flight).
3. Reduced holding/delays.

Economics & Network



1. Fewer diversions/cancellations
2. OTP
3. Crew utilization
4. Lower costs (Fuel, compensation, goodwill)

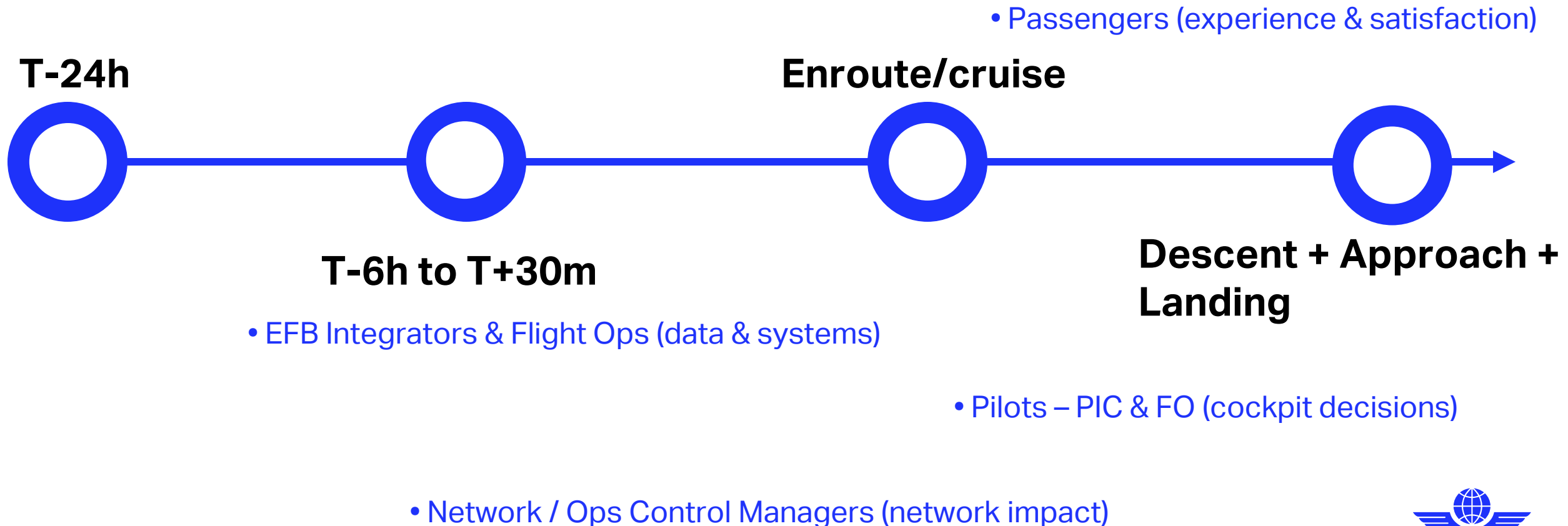
Passenger experience



1. Smoother flights
2. Fewer disruptions
3. Higher satisfaction and brand loyalty

The Journey: Fiction Flight SL 456 JNB-NBO

- Flight Planners & Dispatchers (T-24h strategic planning)



T-24h to T-6h | Strategic Planning & Pre-Flight

Flight Planner/Dispatcher

MET used: TAFs, GRIB upper winds/temps, SIGWX, volcanic ash/space weather, ensembles.

Value: Fuel planning, route/alternate optimization, payload.

Pain: Forecast accuracy/busts at longer ranges; limited probabilistic guidance.

Ask: Higher-resolution/frequent model updates + better probabilistic products for high-impact weather.

EFB Integrator/Flight Ops

Requirements: Timely push updates, IWXXM/structured data, consistent symbology, reliable delivery (low-bandwidth), historical access.

Pain: Mixed formats (text vs digital), manual processes, lagging updates during rapid change.

Priority: Accelerate IWXXM + stable aviation weather APIs/web services.



Departure to Initial Climb | T-1h to T+30min

Pilot (PIC) Perspective

MET used: Latest METAR/SPECI/TAF trend, SIGMET/AIRMET, LLWAS/windshear alerts, CB/TS, surface wind/visibility for performance, ATIS

Value: Safe takeoff performance, windshear/microburst avoidance, early CB deviation

Pain in ESAF: Limited LLWAS coverage at many airports; rapid TS development needs strong nowcasting.

Ops/Network Control Perspective

Pain: Single unforecast event ripples across the network (delays, crew duty, connections).

Ask: Better MET alert integration into ATM/airline systems for proactive (not just reactive) decisions

Enroute & Cruise Phase

Upper Winds & Flight Levels – GRIB optimization for fuel & comfort.

Small forecast improvements = big fleet savings.

Turbulence & Icing – CAT, mountain wave, convective still challenging.

PIREPs limited.

Need better EDR products + automated ingestion.

Convective & Volcanic/Dust Hazards – SIGMETs critical.

ESAF challenges: rapid TS + Harmattan dust.

Need clear “operational impact” statements.

ASK: More granular turbulence (EDR), better convective nowcasting along routes, faster SIGMETs with operational language. Airlines ready to contribute more AIREPs/PIREPs if feedback loop improves.



Descent, Appr. & Landing – Terminal Area

Pilot on Final - Most time-critical phase

MET used: Updated METAR/RVR, windshear alerts, QNH accuracy, runway state

Value: continue/go-around/divert decisions

High Impact: LLWS/microbursts, sudden visibility changes, gusty crosswinds, runway contamination

Passenger & Ops Impact

Pain: Go-around/diversion here is extremely costly (fuel, crew, connections, rebooking, complaints)

Value: Accurate terminal MET protects both safety and economics.

ASK: Enhanced 0-2h nowcasting for convective/windshear/visibility at major airports; wider LLWAS/automated systems; MET integration into ATM arrival tools; clear GRF runway condition reporting.

Cross-Cutting – Technology, Data & Integration

Digital data exchange (IWXXM essential for automation & AI)

Reliable, low-latency delivery (multiple channels, including low-bandwidth)

Seamless system integration (EFBs, flight planning, ATM, network ops) – no more website scraping

Regional capacity & data sharing in ESAF (varying infrastructure levels)



Priority Areas for Improvement

- 1) **Enhanced Nowcasting & Short-Term Forecasting** (convective, windshear, visibility – terminal + enroute).
- 2) **Accelerated Digital Transformation (IWXXM + APIs)** – stable machine-readable services.
- 3) **Strengthened Regional Observation Network** – more METARs, better radar/satellite, data sharing.
- 4) **Improved Turbulence, Icing & Hazard Products** – clearer operational impact statements.
- 5) **User-Centric Design & Training** – involve airlines in requirements; joint workshops & NMHS training on operational use.

Recommendations & Call to Action

- Continue & expand regional dialogue/workshops (this format works).
- Involve airline users (IATA/national associations) in MET requirements definition.
- Pilot new services (probabilistic, graphical, APIs) with volunteer airlines.
- Targeted capacity building for States with limited resources.
- Joint KPIs for MET service quality from the **user perspective** (timeliness, accuracy, usability, ease of integration) and track progress together.

Thank You / Q&A

"Thank you. Together we can make ESAF skies safer, more efficient, and more resilient."

"Questions & Discussion – We welcome your feedback and ideas."

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