SAFE SKIES.
SUSTAINABLE FUTURE.

ICAO APAC/MID ATFM-FF-ICE Seminar 2025
Dubai, UAE, 23 – 26 February 2025

Vision and Evolution of ICAO Policy

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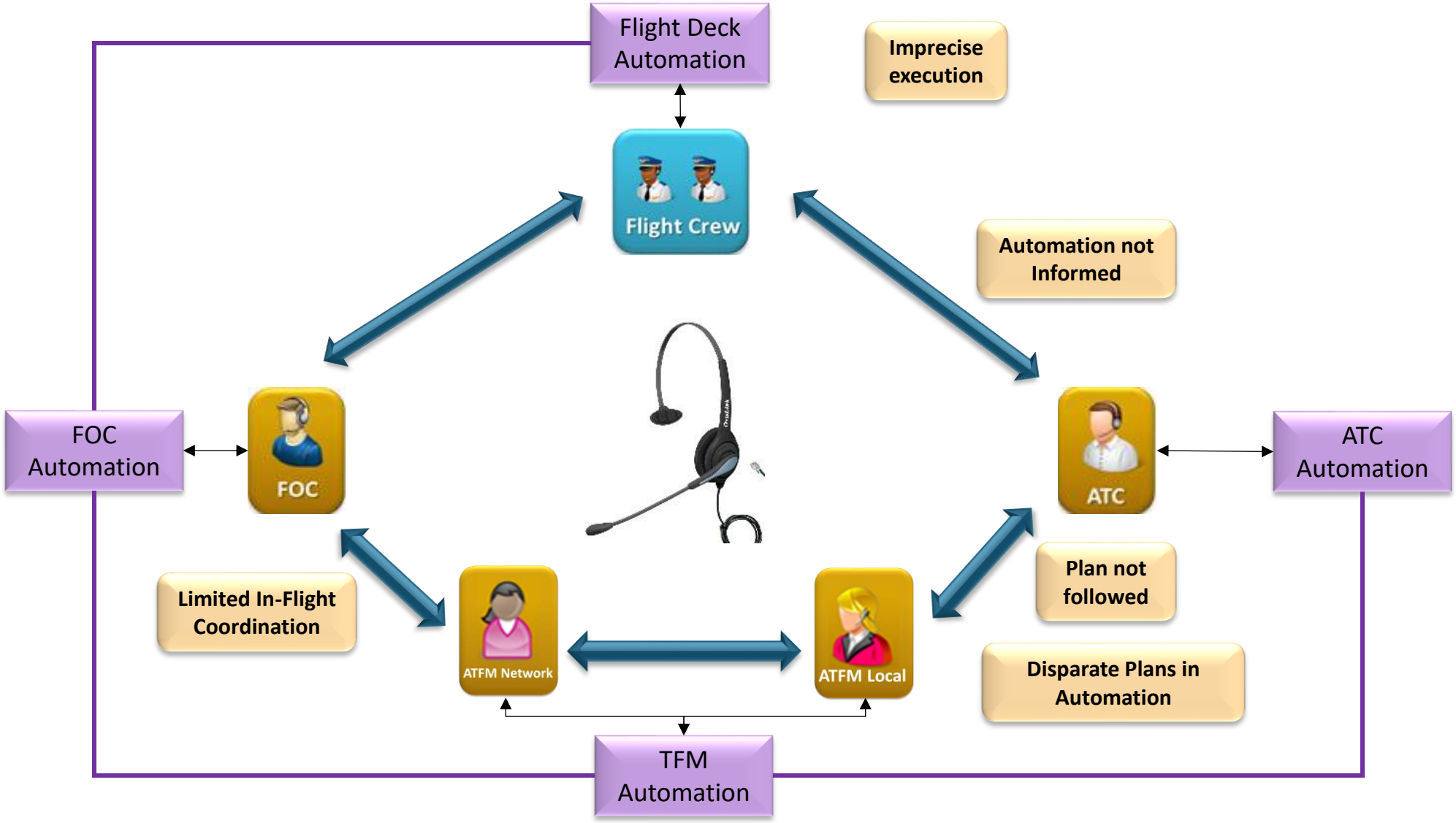
ICAO

Trajectory initiative due to Weather conditions changes

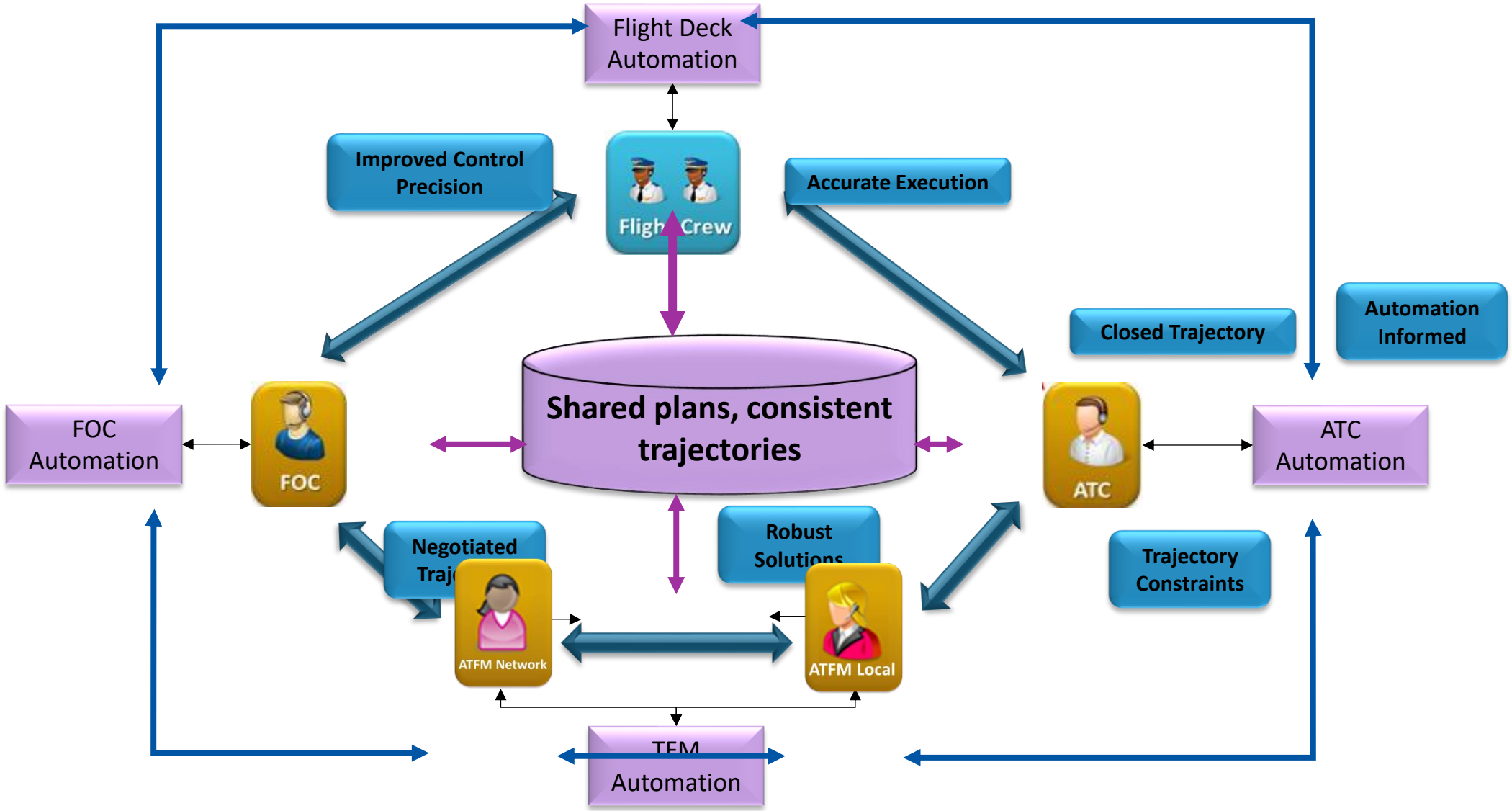
Flight efficiency through Flight Planning

1. Original agreed Trajectory: **Blue.**
2. New Optimized Trajectory calculated by AU: **Black**
3. Revised deviation proposed by NM: **Green**

Collaboration – Today

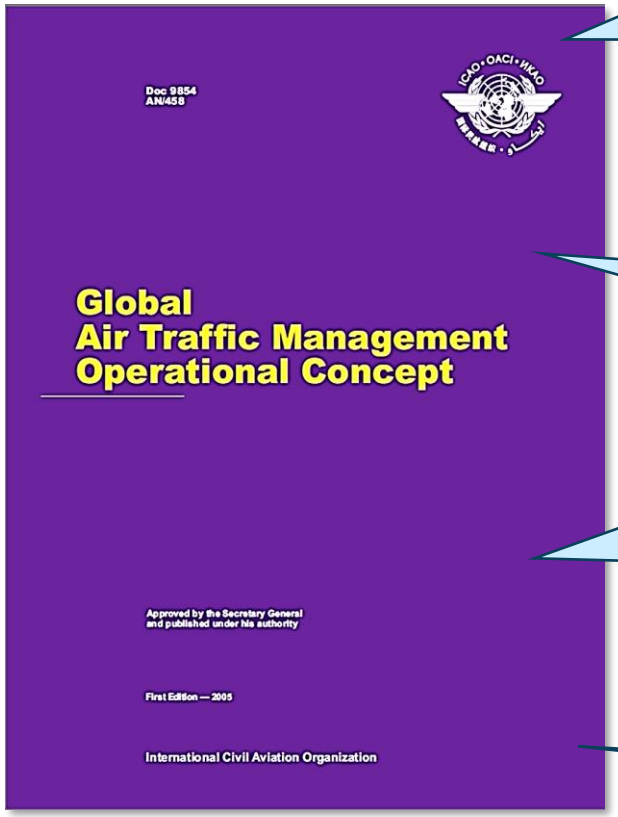


Collaboration – Full TBO Environment



The Foundation for TBO

Global Air Traffic Management Operational Concept (Doc 9854)



considers the trajectory of a manned or unmanned vehicle during all phases of flight …

manages the interaction of that trajectory with other trajectories or hazards to achieve the optimum system outcome, with minimal deviation from the user-requested flight trajectory, whenever possible.

individual aircraft performance, flight conditions, and available ATM resources **will allow dynamically optimized 4-D trajectory planning.**

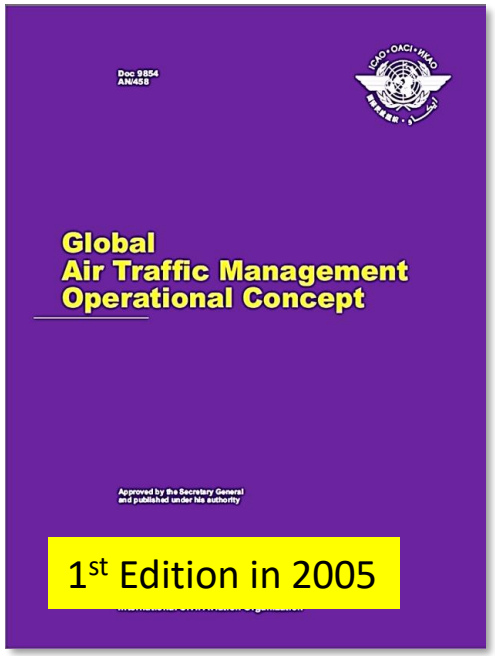
Management by trajectory does not mean that every aspect of a flight, including arrival profile, runway, taxi path and gate needs to be predetermined and captured in detail in the agreement at the time of departure. **The agreement and the management of that agreement will have the details required by the traffic management phases** that the flight is subject to at the time the initial agreement and subsequent updates are made.

And many more….

The Foundation

The Global ATM Operational Concept (Doc 9854)

01



02

Detailed concepts & performance framework

- CDM/ATFM (Doc 9971)
- FF-ICE (Doc 9965)
- SWIM (Doc 10039)
- **TBO (Doc 10130)**
- Connected Aircraft (TBD)

- ATM System Requirements (Doc 9882)
- Global Air Navigation System Performance (Doc 9883)

03

04

SARPs, PANS, and Guidance materials

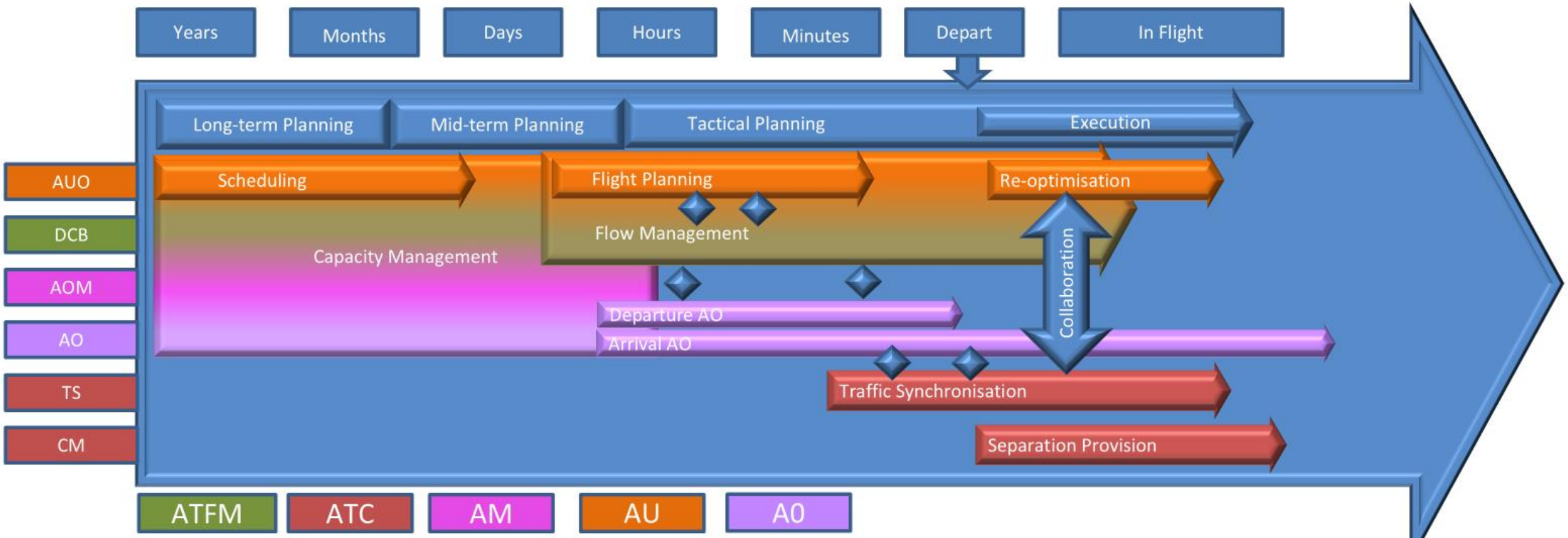
ICAO

Global TBO Concept

- Broad support from the 13th Air Navigation Conference (Montréal, 9-19 October 2018)

- Integrated in the Global Air Navigation Plan and Aviation System Block Upgrade Framework

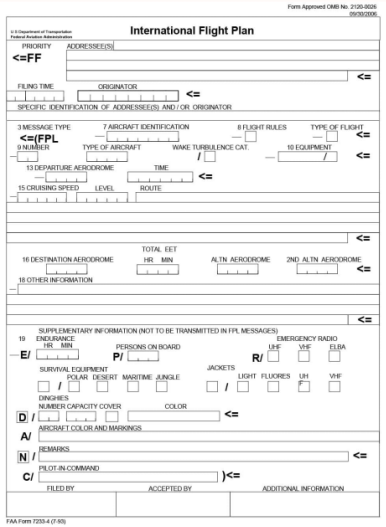
TBO-Bring it together



AM	Airspace Management
ATFM	Air Traffic Flow Management
AU	Airspace User
ATC	Air Traffic Control
AO	Aerodrome Operator

Flight and Flow Information for a *Collaborative* Environment (FF-ICE)

Address limitations and constraints of the current flight planning mechanism

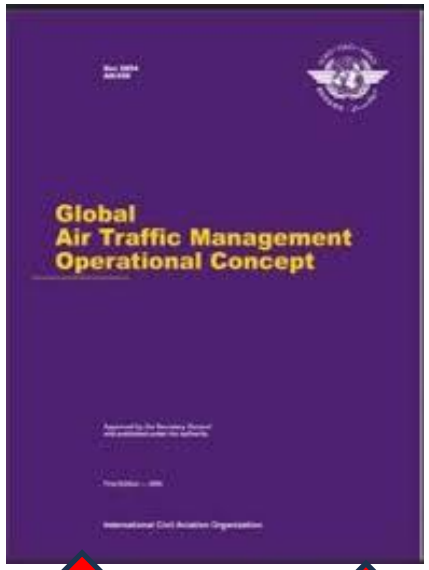


International Flight Plan

Enable transitioning to a fully collaborative environment where a flight trajectory is shared and optimized during all phases of a flight

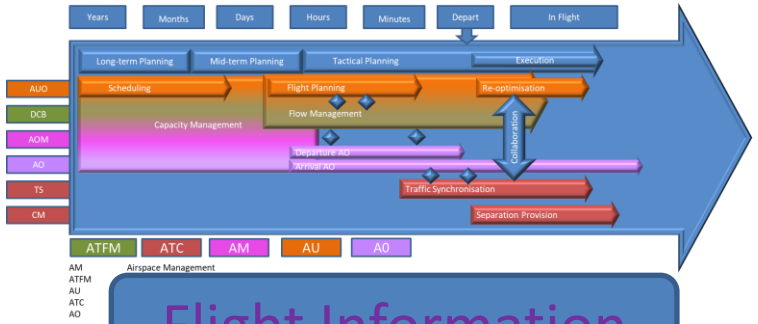
Needs of Airspace Users

New developments



HAO

AAM



Flight Information

TBO Concept

TBO Guidance

R1

Pre-departure

2034

Address limitations and constraints of the current flight planning mechanism

Long Term

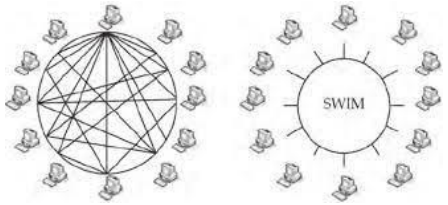
Short Term

Enable transitioning to a fully collaborative environment where a flight trajectory is shared and optimized during all phases of a flight

FF-ICE Concept

Post-departure

R2



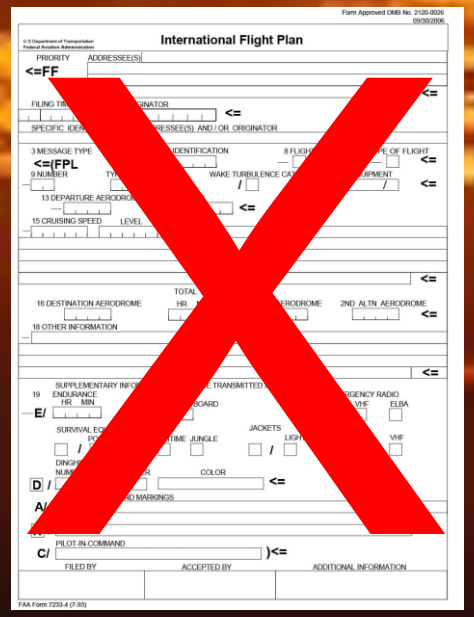
SWIM Concept

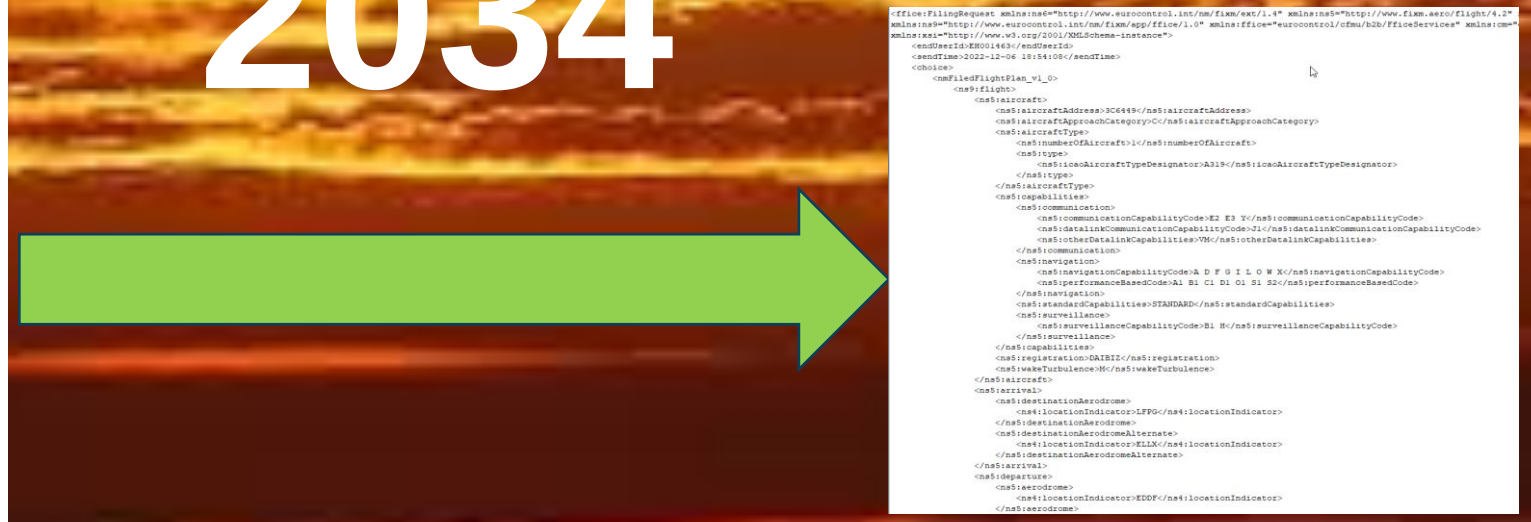
Connected a/c Concept

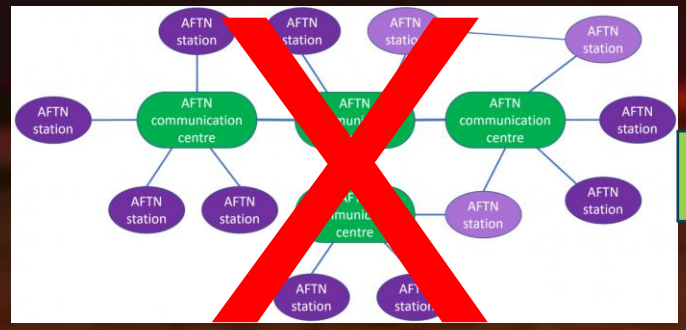
FPL2012

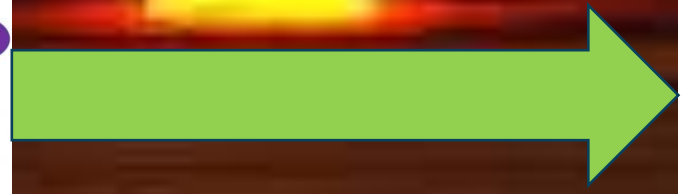
2034

eFPL









Trajectory Based Operations, FF-ICE: the Paradigm Change

Transformation