



EASA
European Aviation Safety Agency

EGNOS-based Operation

vis-à-vis

Air Traffic Services

Ivan Ferencz
Senior ATM/ANS Team Leader

Your safety is our mission.

An agency of the European Union 



Facilitation of EGNOS-based aircraft operations

Involvement of ATM/ANS service providers

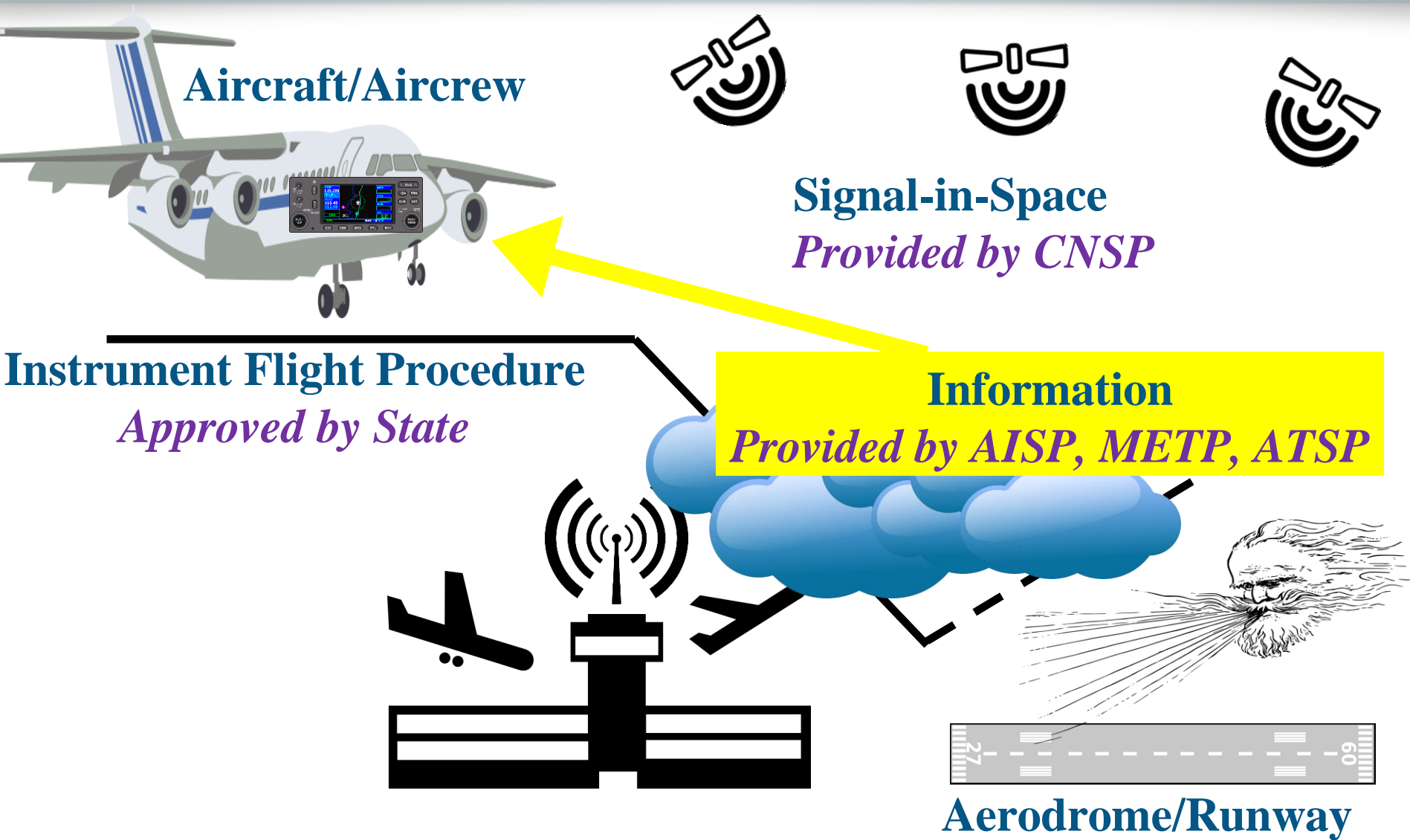
Role of Air Traffic Services

Requirements on aircraft operation

Conclusions



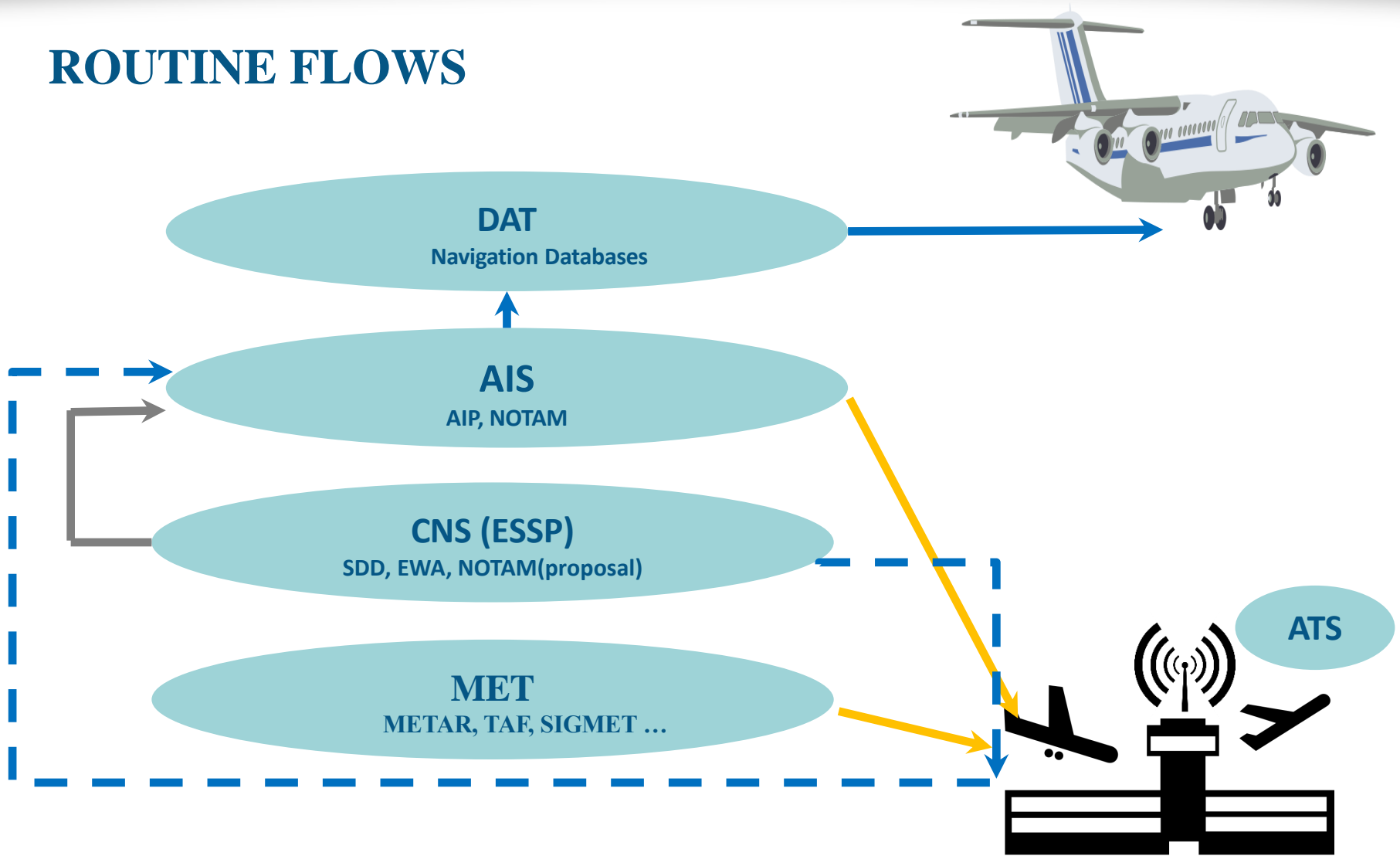
Facilitation of EGNOS-based operation





Involvement of ATM/ANS

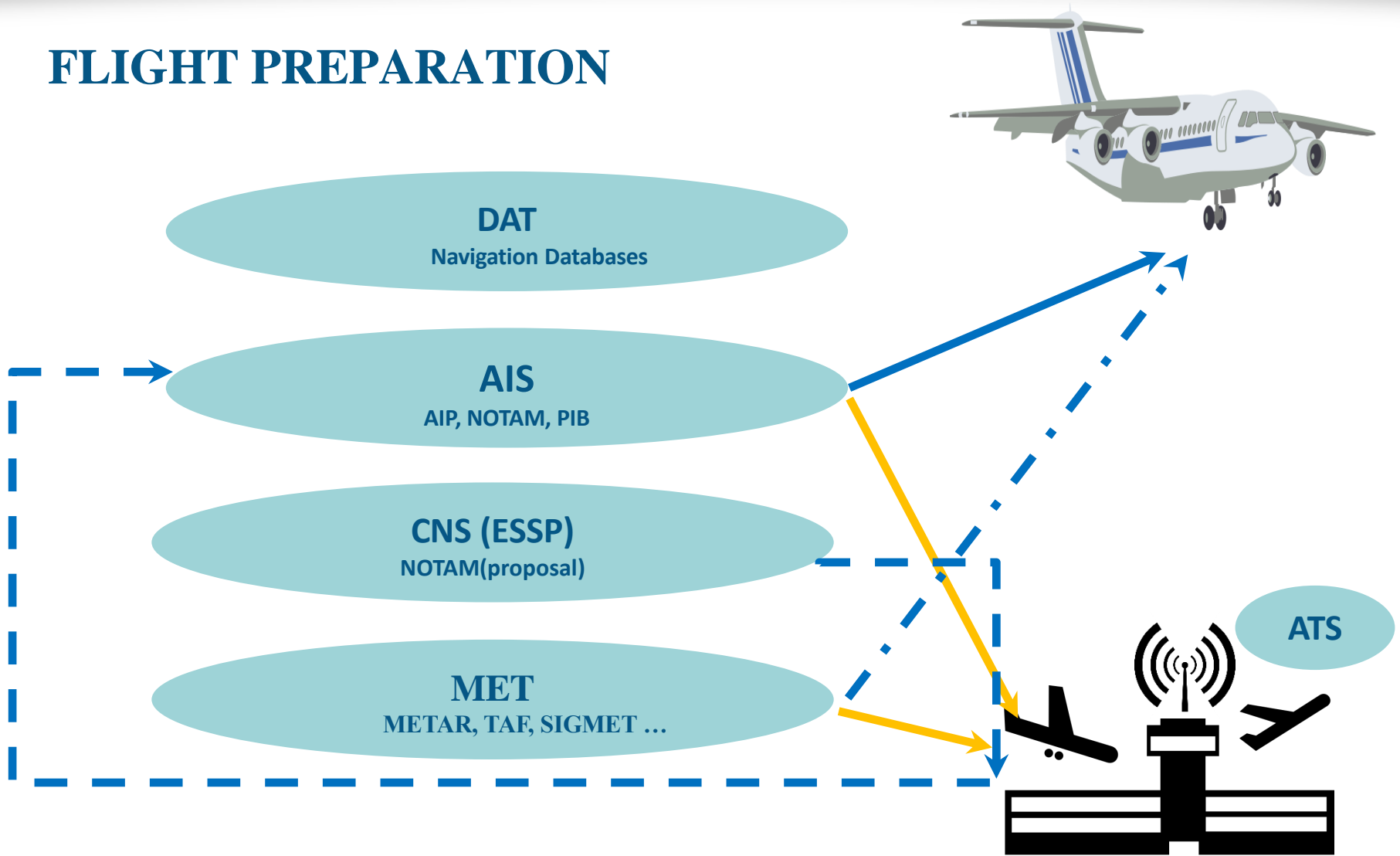
ROUTINE FLOWS





Involvement of ATM/ANS

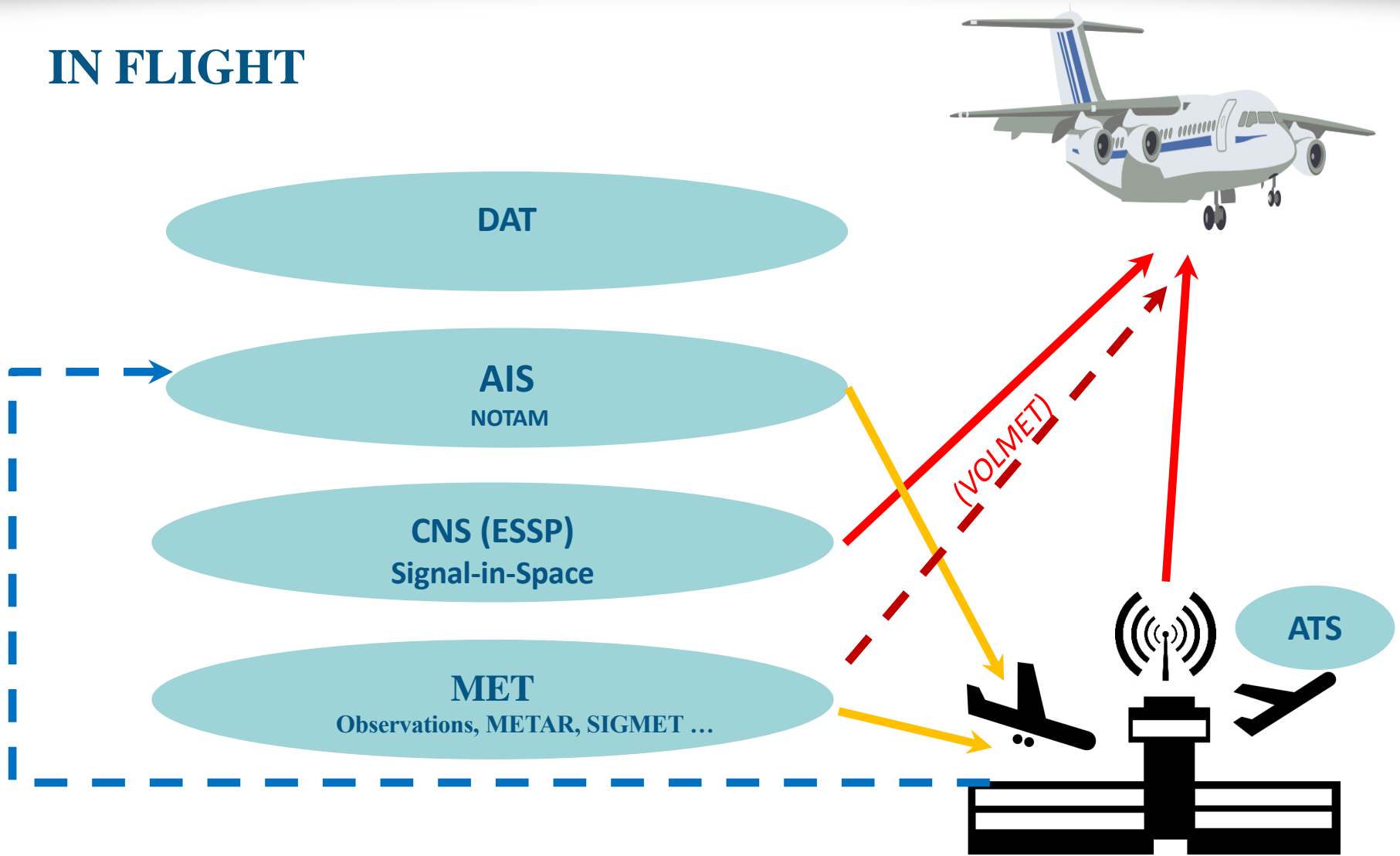
FLIGHT PREPARATION





Involvement of ATM/ANS

IN FLIGHT

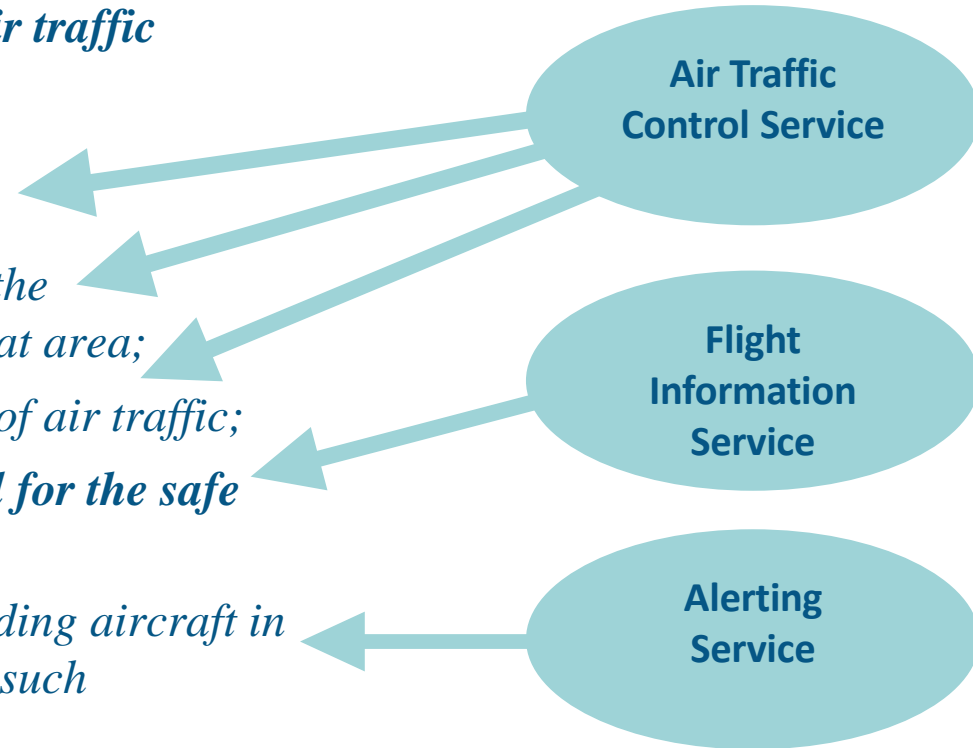




Role of Air Traffic Services

ICAO Annex 11, 2.2, Objectives of the air traffic services

- a) prevent collisions between aircraft;*
- b) prevent collisions between aircraft on the manoeuvring area and obstructions on that area;*
- c) expedite and maintain an orderly flow of air traffic;*
- d) provide advice and information useful for the safe and efficient conduct of flights;*
- e) notify appropriate organizations regarding aircraft in need of search and rescue aid, and assist such organizations as required.*



In the context of execution of instrument flight procedures the role of air traffic services is to provide advice and information to aircraft, which is an objective of the

Flight Information Service



Role of Air Traffic Services

SERA.9005 Scope of flight information service

	<i>ATC</i>	<i>AFIS</i>	<i>FIC</i>
SIGMET and AIRMET	++	++	++
information on changes in the availability of radio navigation services	N/A for GNSS	N/A for GNSS	N/A for GNSS
information on changes in condition of aerodromes and associated facilities, including information on the state of the aerodrome movement areas when they are affected by snow, ice or significant depth of water	++	+	NO
information likely to affect safety	++	+	+
weather conditions reported or forecast at departure, destination and alternate aerodromes	++	+	+
collision hazards to aircraft	++	+	+

Flight information service can be provided by

- air traffic control unit (ATC)
- aerodrome flight information service unit (AFIS) or
- flight information centre (FIC)

Flight Information Service should be available in all airspace

If neither ATC nor AFIS is established, flight information service should be provided by responsible Flight Information Centre (FIC). There are variations in the scope of the service.



Role of Air Traffic Services

Information provided by ATS:

For arriving aircraft:

Type of approach and runway-in-use

Meteorological information

Current runway surface conditions

Changes in operational status of required visual and non-visual aids

! NOTE: This is provided for ground-based navigation aids, e.g. ILS but not for EGNOS !

At the commencement and during final approach:

Changes in the surface wind direction and speed

Wind shear and/or turbulence

Current visibility/RVR

Sudden occurrence of hazards

Changes in runway surface conditions



Role of Air Traffic Services

Read-back as a barrier to misinterpretation of clearances, instructions and informations

The flight crew shall read back:

ATC route clearances

Clearances and instructions to enter, land on, take off from, hold short of, cross, taxi and backtrack on any runway

Runway-in-use, **altimeter settings**, SSR codes, level instructions, heading and speed instructions, transition levels.

Air Traffic Services mitigate some risks related to execution of instrument flight procedures

<i>Safety Risk</i>	Efficiency of ATS in risk mitigation			
	<i>ATC</i>	<i>AFIS</i>	<i>FIC</i>	<i>no ATS</i>
Mid-Air collision	High	Medium	Low	None
CFIT	Medium	Medium	Medium	None
Accident on RWY	High	Medium	None	None
RWY excursion	Medium	Medium	Low	None



Alternative mitigation measures

How to reduce the safety risk in the Class G airspace with a limited Flight Information Service

<i>Safety Risk</i>	<i>Alternative mitigation measures</i>		
	<i>Ground-based</i>	<i>Airborne-based</i>	<i>Note</i>
Mid-Air collision	Traffic information, MET information (via COM), Traffic limitations (e.g. number of aircraft in area)	Traffic awareness (voice communication, ADS-B-IN), TCAS	Radio Mandatory Zones or Transponder Mandatory Zones can be established
CFIT	MET information (via COM, ATIS, VOLMET)	Situation awareness (NAV, GPWS, E-GPWS) higher minima (DA/H)	Also to consider: Design and maintenance of Instrument Flight Procedures, Availability of obstacle and terrain data, Obstacle Limitation Surfaces
Accident on RWY	Local MET, RWY-related information (via COM), Traffic limitations	-	
RWY excursion	Local MET and RWY-conditions information (via COM, ATIS)	-	



Requirements on Aircraft Operation

CAT.OP.MPA.107 Adequate aerodrome

The operator shall consider an aerodrome as adequate if, at the expected time of use, the aerodrome is available and equipped with **necessary** ancillary services such as

air traffic services →

sufficient lighting

communications

weather reporting

navigation aids

emergency services

State should establish an appropriate airspace class and ATS level



Aircraft Operators shall assess, whether provided services are sufficient to execute the instrument approach



Requirements on Aircraft Operation

In airspace Class G, IFR flights receive flight information service when requested

CAT.OP.MPA.100 Use of air traffic services

The operator shall ensure that ATS appropriate to the airspace and the applicable rules of the air **are used** for all flights whenever available

Operators shall request provision of the flight information service for their flights in Class G airspace.

Note: No equivalent provision exists for non-commercial operations

CAT.OP.MPA.180 Selection of aerodromes — aeroplanes

c) The operator shall select two destination alternate aerodromes when:

(2) no meteorological information is available

If the aerodrome does not have MET service provision, aircraft shall take more fuel.

Note: currently there are MET services implemented at all AD with GNSS based IAP.

Various means of distribution of MET information exists.



Conclusions

States should take into account that air traffic services mitigate some risks related to instrument approach operations when determining the need for the provision of air traffic services at an aerodrome.

A unit responsible for provision of the Flight Information Service should be established for any airspace which has assigned any ICAO airspace classification.

Flight Information Service can be provided by ATC, AFIS or (with certain limitation) by FIC.

Aircraft operators might consider an aerodrome as inadequate to be planned as their destination due to lack of air traffic services. However, such aerodrome could be still suitable for non-commercial air operations.



...work in progress

NPA 2016-09

includes measures related to the aerodrome flight information service
processing of comments is ongoing
Opinion expected in Q4 2017 / Q1 2018

NPA 2016-13

addressing airspace design and flight procedure design
processing of comments is ongoing
Opinion expected in Q4 2017



EASA
European Aviation Safety Agency

End slide

Your safety is our mission.

An agency of the European Union 