



# Enabling a Trajectory-Based future: CNS technologies powering tomorrow's airspace

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# Speakers

“Enabling a Trajectory-Based future: CNS technologies powering tomorrow’s airspace”



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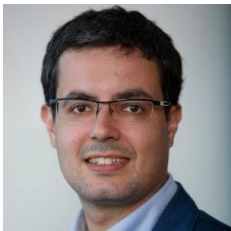
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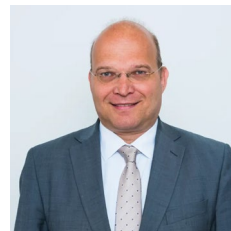
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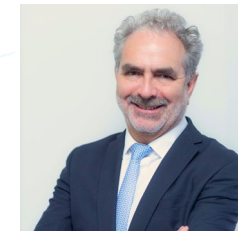
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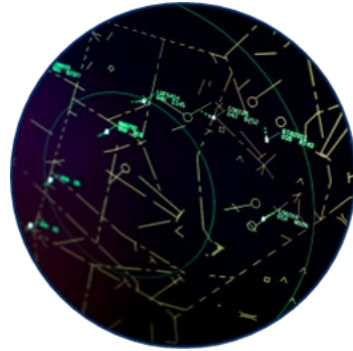


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# WE ARE ALL TBO



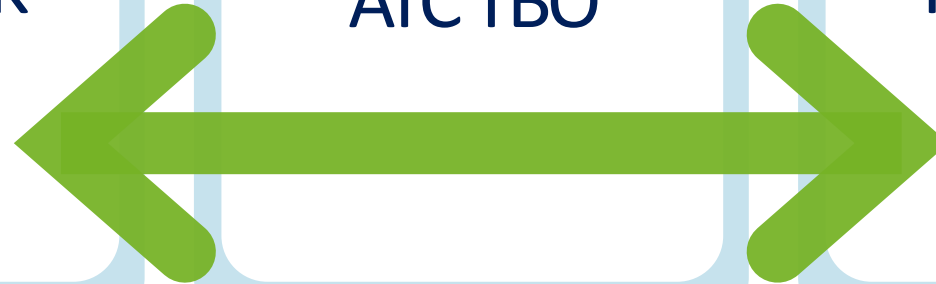
NETWORK  
TBO



ATC TBO



REGIONAL  
TBO



# Transitioning towards Trajectory Based Operations



The use of trajectory data and its automated processing are set to unleash the potential of **Trajectory Based Operations** to enable the **safe, sustainable and efficient management of growing traffic volumes**.

Supported by CP1 elements, **TBO** establishes a collaborative environment where the **precise trajectory data (latitude, longitude, altitude and time)** is used during all phases of flights

## TODAY – Radar Based Operations



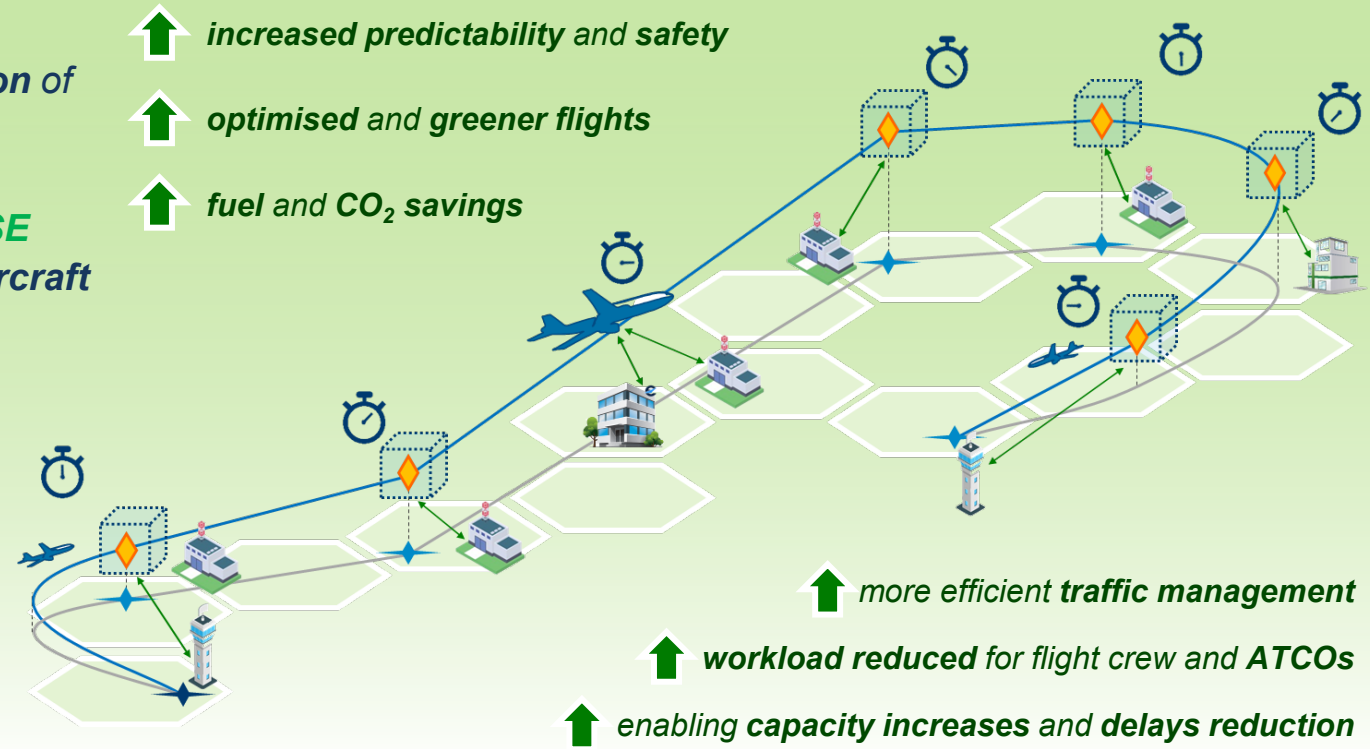
**KNOW** the current position of the aircraft

**ESTIMATE** the planned aircraft position

## TOMORROW – Trajectory Based Operations

**KNOW** the current position of the aircraft

**KNOW and USE** the planned aircraft position



↑ increased predictability and safety

↑ optimised and greener flights

↑ fuel and CO<sub>2</sub> savings

↑ more efficient traffic management

↑ workload reduced for flight crew and ATCOs

↑ enabling capacity increases and delays reduction



## R&D



## Industrialisation, regulation, & standardisation



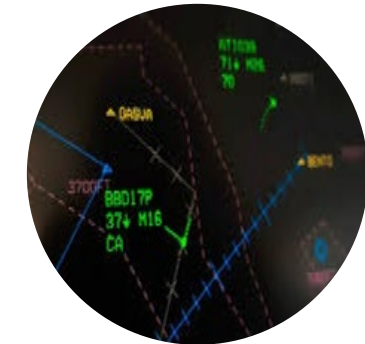
## Deployment



# Future CNS deployment

Successful CNS deployment starts with a **validated CONOPS** built through operational demonstrations and **close collaboration** across the aviation community.

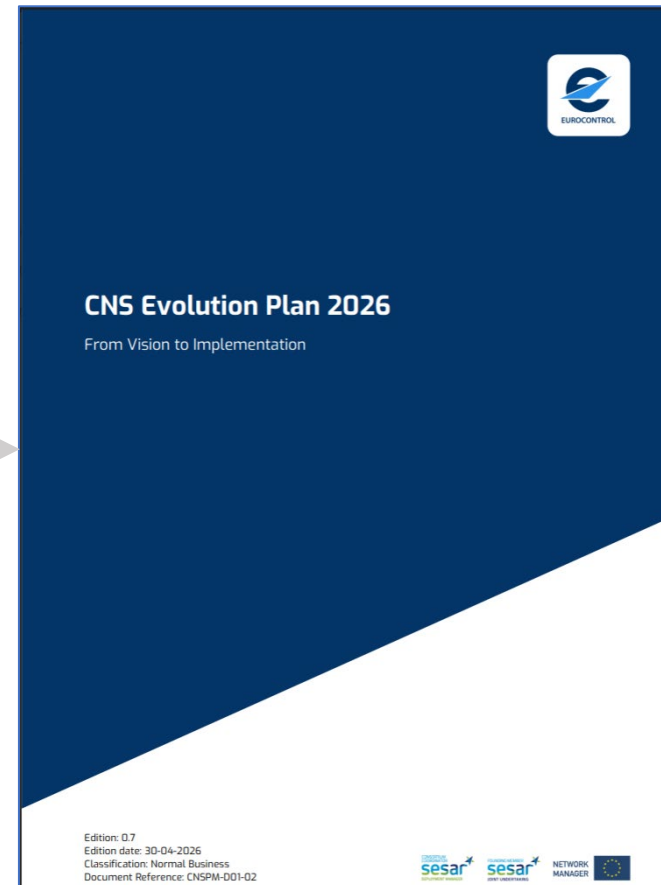
EASA stands ready to continue enabling future CNS capabilities through **effective regulation and standardisation**.



# CNS, an essential Enabler to TBO

- TBO Operations require **efficient, reliable, secure** and **cost-efficient CNS infrastructure** based on:
  - **Air-Ground Data** Communications: ADS-C, CPDLCs, Context Management,
  - **Ground-Ground Data** Communications: ANSP, Network Manager, Military, Airport, Meteo,
  - **Voice** Communications - as a primary means for air-ground,
  - **Navigation** capable of 4D Trajectory for en-route, TMA, approach,
  - Other CNS capabilities as required.

CNS infrastructure



\* Draft currently under SDM – CNS PM consultation