CO2 & Non-co2 trajectory optimisation

ATM Environmental considerations

Presented by

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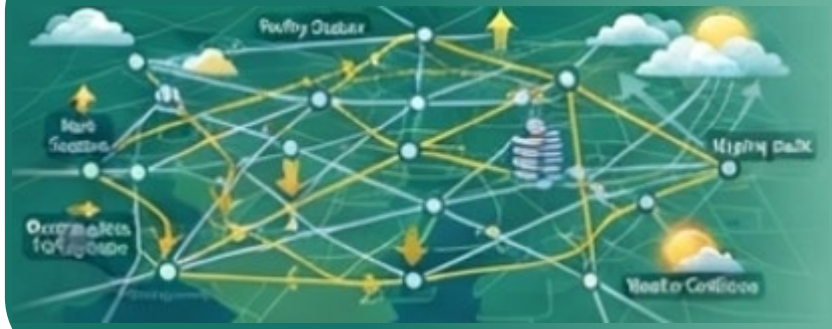
AIR TRAFFIC DEMAND

The number of aircraft requesting to use the airspace

- Flight Schedules
- Seasonality
- Economic Activity

AIRSPACE COMPLEXITY



Inherent difficulty of traffic patterns & sector design.

- Route structure
- Merging points
- Traffic density
- Sector size & geometry
- Weather conditions
- Airspace procedures
- Traffic flows
- Restricted airspace

INCREASE

CONTROLLER WORKLOAD

Cognitive & physical effort required by controllers to manage traffic.

- Communication on frequency
- Monitoring tasks
- Conflict detection
- Decision making
- Conflict resolution
- Coordination of flights with other sectors or states

PROTECTS **LIMITS**

CAPACITY

Maximum sustainable throughput of aircraft the system can safely handle.

SAFETY

The fundamental requirement:
Maintaining safe separation and operational integrity

RISK FACTORS

- Errors
- System Saturation
- Reduced Efficiency

SAFETY NETS

- Standard Procedures
- Controller Training
- Predictability
- Flow Management
- Technology Tools

IFATCA

What is Trajectory Optimisati

- Trajectory Optimisation: Improving a flight's trajectory based on specific goals, such as fuel savings/ emissions targets, noise abatement, contrail avoidance or airspace efficiency.

Operational free route airspace

Assessing the performance benefits of free route airspace implementation

Report by the Performance Review Commission & Performance Review Body

Observed Benefits:

- Free Route Airspace (FRA) resulted in reduced planned fuel and a reduction of actual fuel burn.

Operational Reality ATM:

- 44% of ANSPs reported an increase in ATCO workload
- 69% of ANSPs found a significant impact on conflict creation and resolution with almost half of those stating conflicts were more difficult to identify
- 20% of ANSPs reported they experienced an increased frequency of sector overloads.
- 36% reported increased sector capacity
- Only 1 ANSP reported a capacity decrease due to FRA