

ECHO ConOps

Overview and key elements

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The background of the slide features a series of light gray concentric circular arcs on the left side. Overlaid on these arcs are four white icons: a propeller at the top, a jet engine in the middle, a hot air balloon below that, and a commercial airplane at the bottom.

Overview

Key elements

Visualizing HAO

Key elements



Principles &
assumptions



European ATM
network specifics
Airspace
organisation, EU
legal framework
network function



Demand analysis

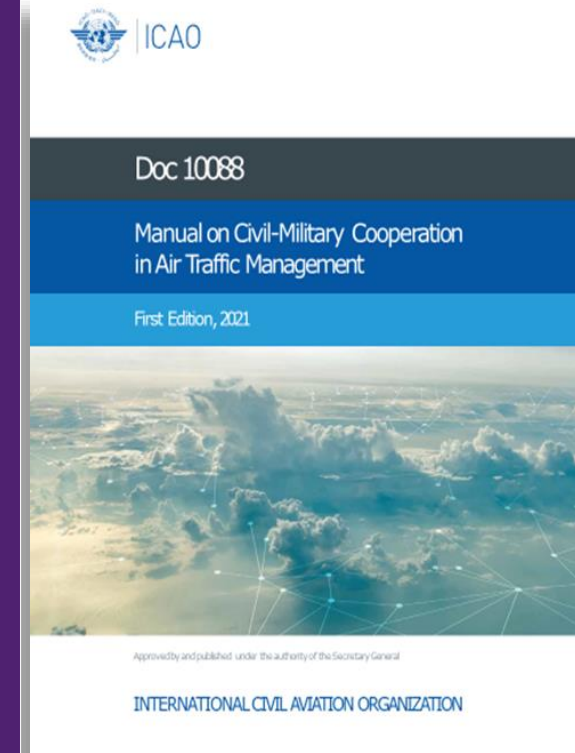
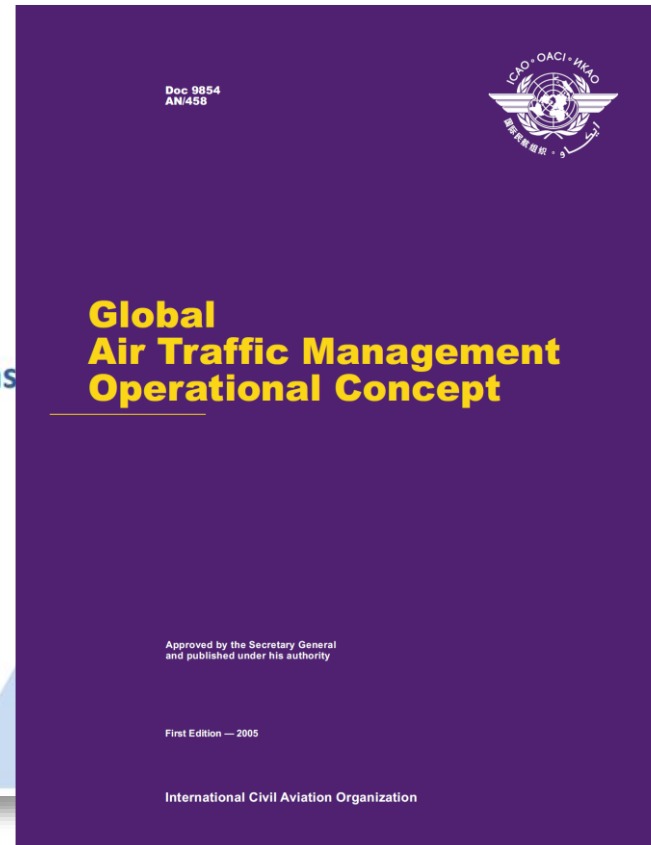
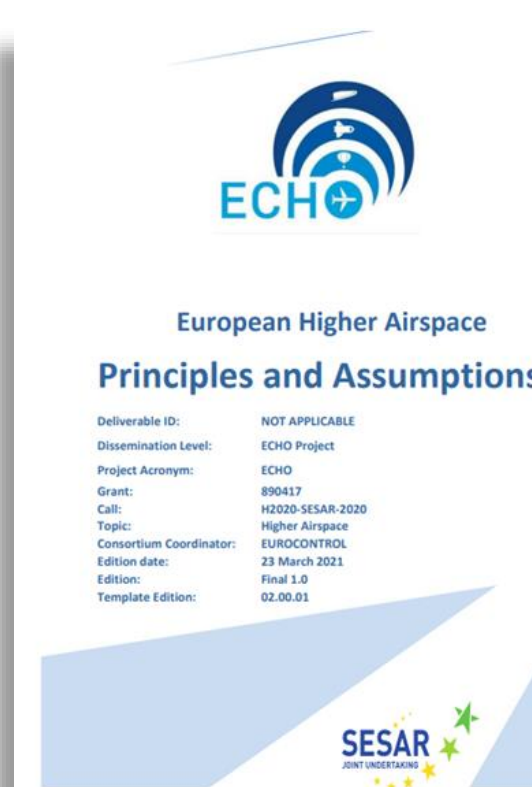


User requirements



ECHO workshops
1&2

ECHO ConOps - bringing it all together





Network
Operations Plan



European route
network design



Airspace management

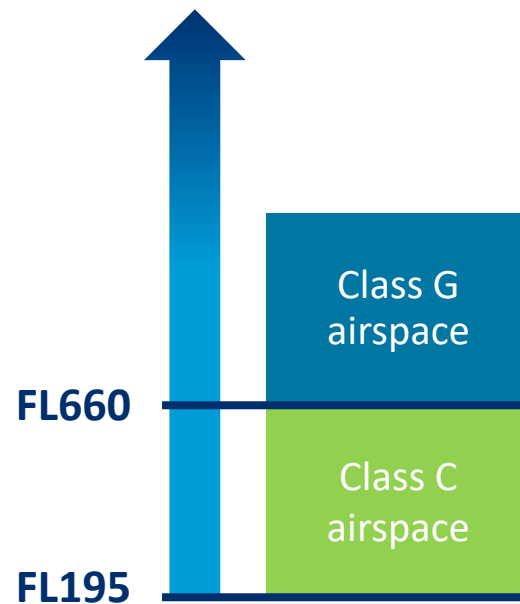
AIRSPACE CONTINUUM

NETWORK MANAGER AREA

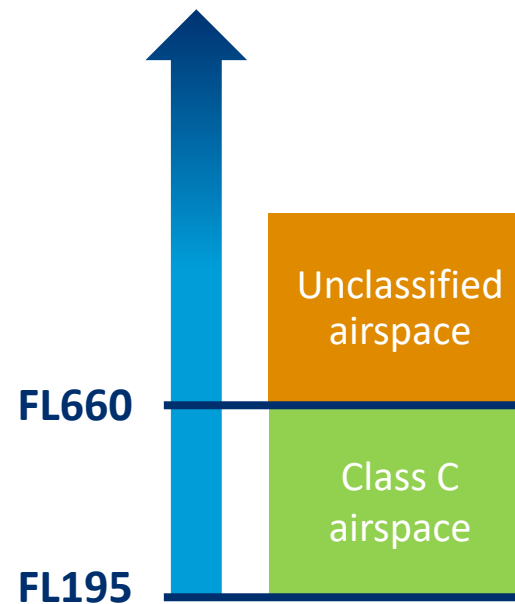
Airspace organisation – starting baseline



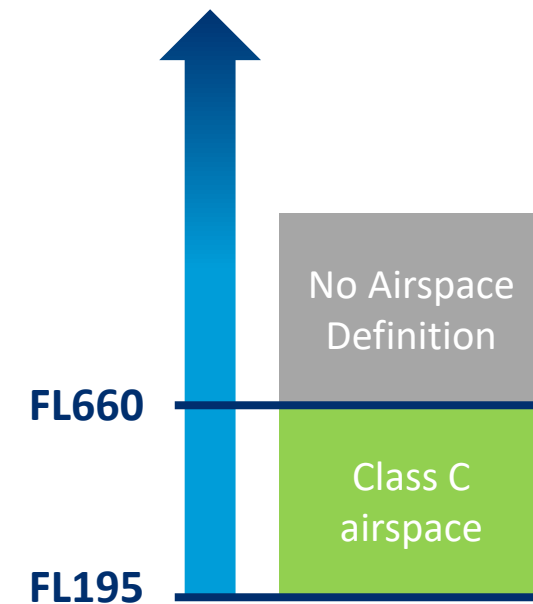
Scenario 1



Scenario 2



Scenario 3



Flexible lower
limit of HA
volume

- User requirements identified
FL500/550 as optimum for HAPS
- Account for current airspace
organisation in European States

4D Zone
(DMA Type3)

- Removes need for premature
choices on airspace organisation
- Applies to all ops scenarios
identified

4D Zones – a snapshot



**Dynamic airspace
management**



Modular in size



**Industry led
solutions for
separation inside**

ECHO – Types of services



START FROM FIRST PRINCIPLES

New capabilities
offer opportunities

EVALUATE

ICAO Annex 11 objectives
must be complied with

Existing procedures &
capabilities

Apply/adapt what
already works

INNOVATE

Create opportunities
for new solutions

TRANSIT TO HA

Distinct scenarios
(per new entrant type)

OPERATIONS

Different requirements
(e.g. passenger transportation vs. other)

TRAJECTORY BASED OPERATIONS

HAO – Service provision



HAOSP – a necessary function



Mix of traffic

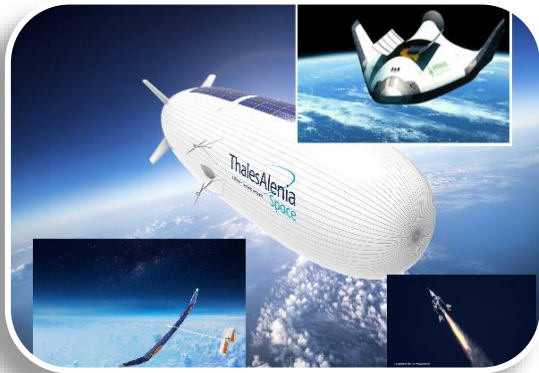
**Strategic de-
confliction
insufficient**

**Together
with new
techniques**

ATM-STM - Operational interfaces



ATM-STM – contingency management



**New scenarios for
European ATM
network**



**From contingency to
emergency**

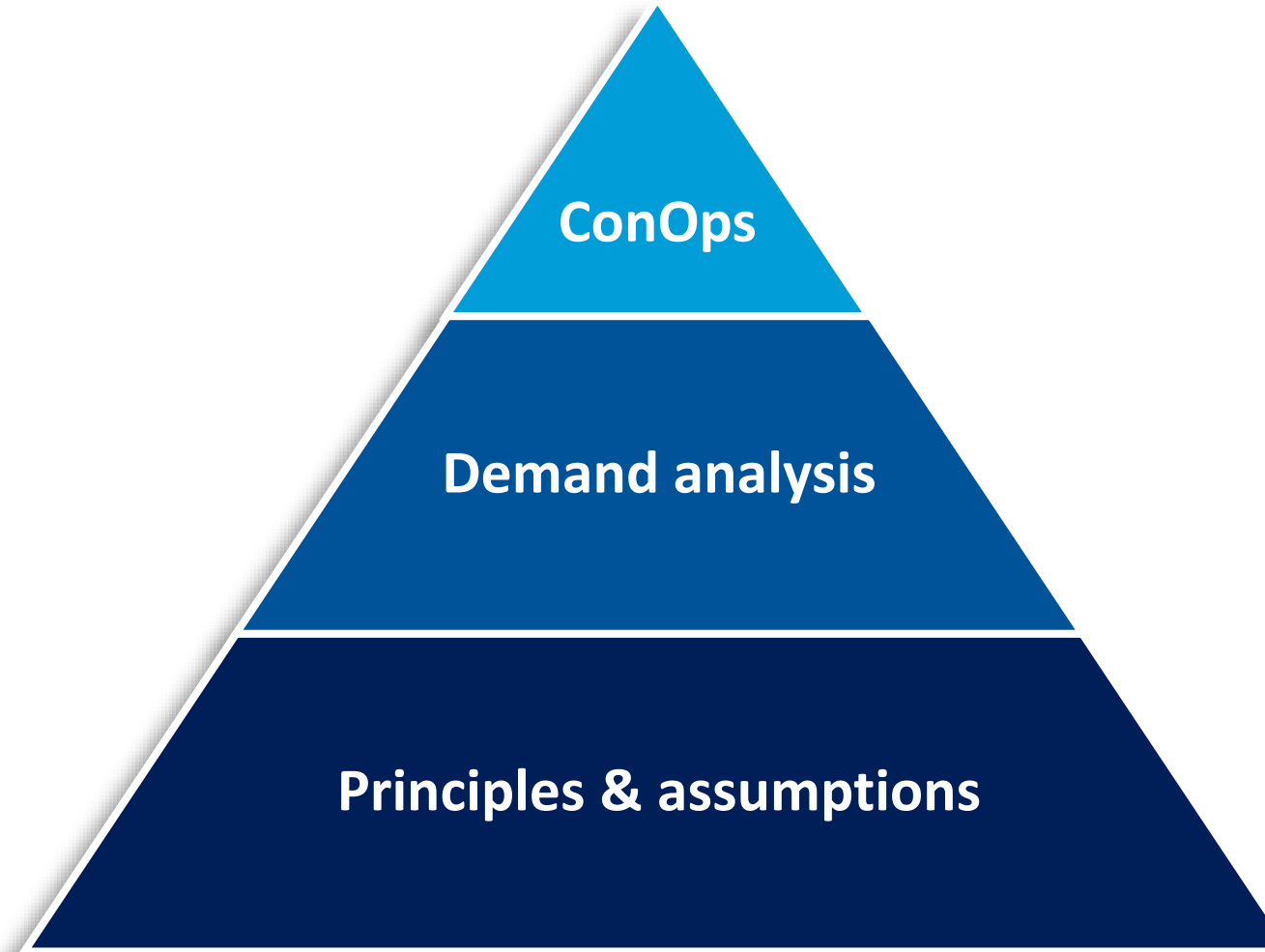


**Prepare - roles &
responsibilities,
procedures, systems**



**GLOBAL
INTERFACES**

ECHO – delivering a comprehensive solution



A vision of the future



- Insert video

THANK YOU FOR YOUR ATTENTION