



# Greener En-Route ATM :

# Civil-Military ATM Cooperation & Coordination

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JOINT UNDERTAKING



# Outline

- Advanced Flexible Use of Airspace (A-FUA)
- Dynamic Airspace Configuration (DAC)
- Dynamic Mobile Areas (DMA)
- A-FUA/DAC contribution to greener En-route ATM operations

# Civil-Military ATM Cooperation & Coordination (CMCC)

A shared airspace, different objectives but common ATM system performance concerns

## MILITARY AVIATION

Protect national /  
international security and  
defence capabilities

ATM System  
SAFETY  
EFFICIENCY  
SECURITY  
ENVIRONMENT

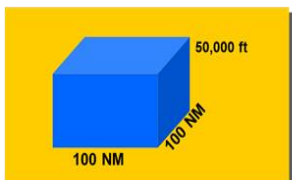
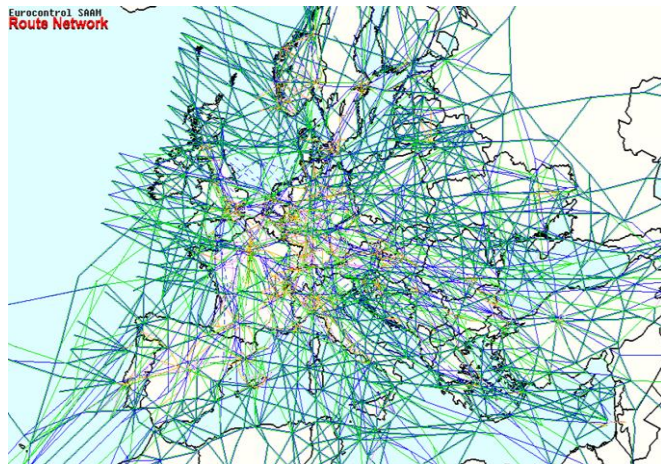
## CIVIL AVIATION

Support business and  
customer economic  
interests

## Management of Airspace based on Flexible Use of Airspace Concept (FUA)

- Airspace as common resource should not be divided in civil or military ownership
- Balance of economic needs and security & defence requirements thru CDM

# FUA evolution in European ATM



**VOLUME**



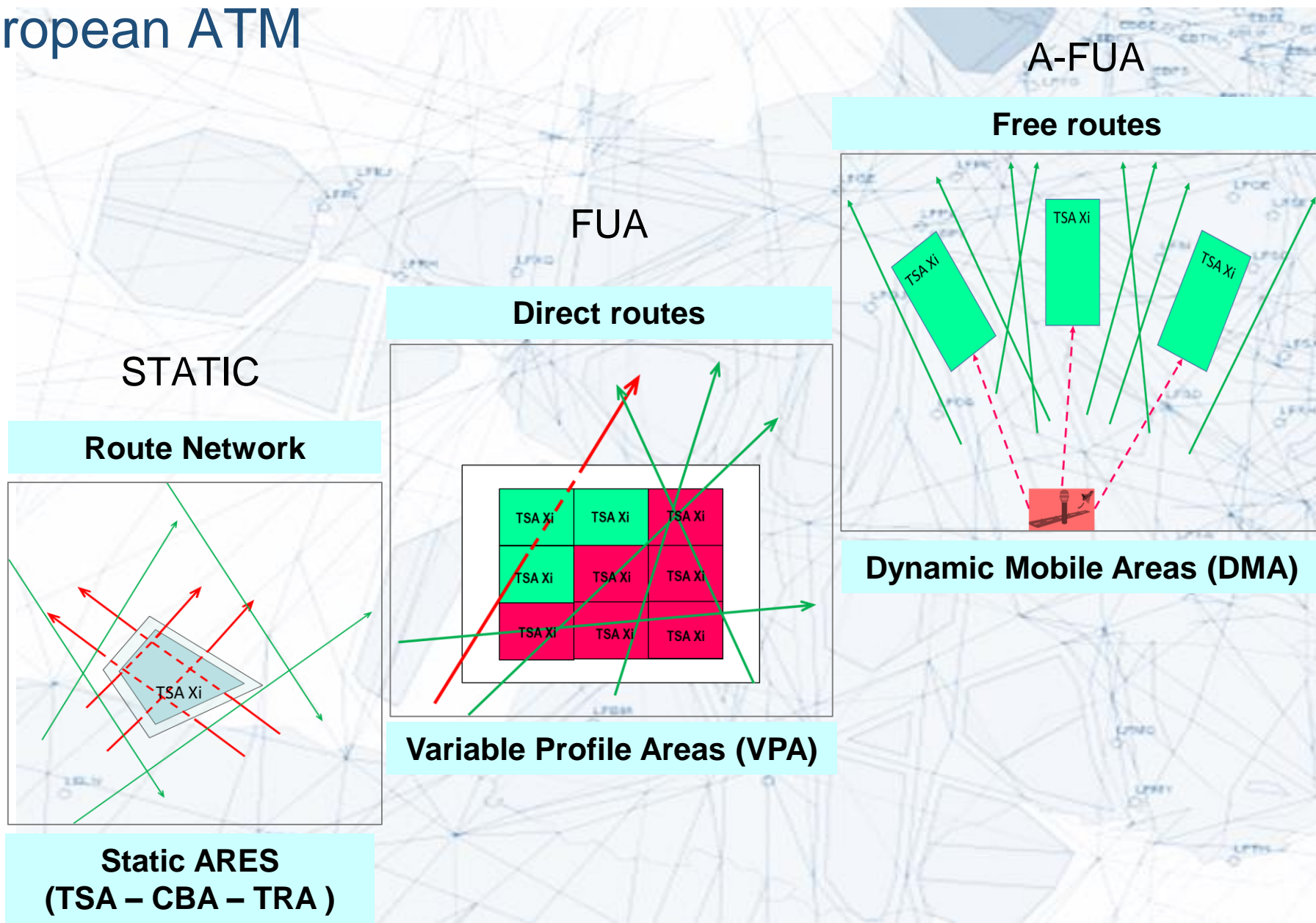
**PROXIMITY**

|             |                   |                       |                                |             |      |      |      |      |
|-------------|-------------------|-----------------------|--------------------------------|-------------|------|------|------|------|
| 0000        | 0300              | 0600                  | 0900                           | 1200        | 1500 | 1800 | 2100 | 0000 |
| KC-135      | DACT<br>F-16/F-15 | CSAR<br>A-10/<br>F-16 | Air Land/<br>Air Drop<br>C-130 | KC-135      |      |      |      |      |
| BFM<br>F-15 | AID<br>MC-130     | ACT<br>F-16           | SEAD<br>F-16                   | BFM<br>A-10 |      |      |      |      |

**TIME**



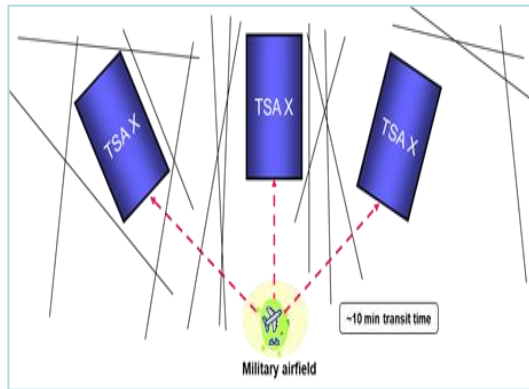
**QUALITY**



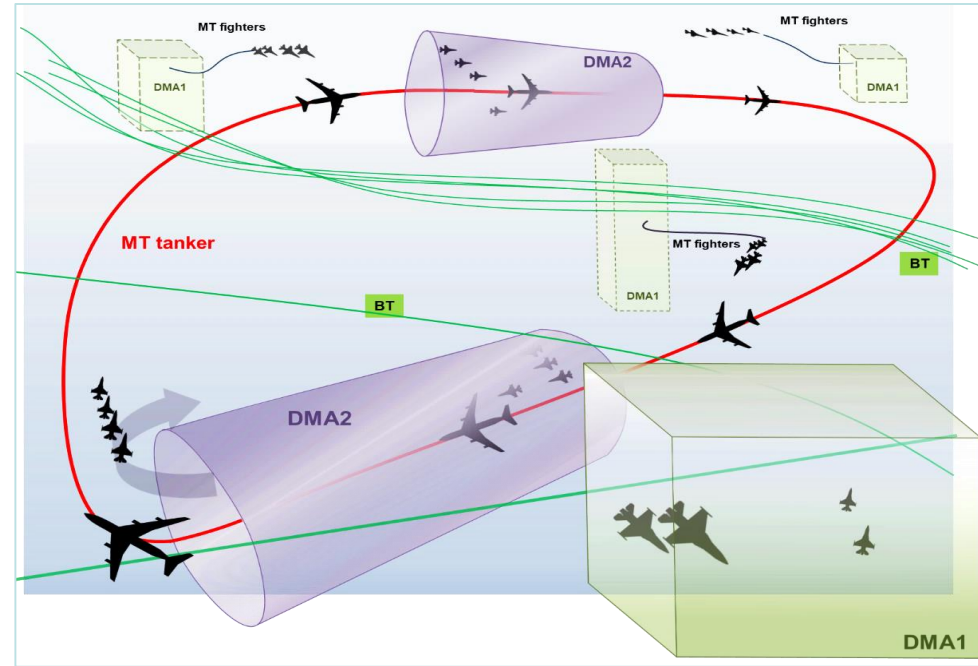
# Dynamic Mobile Area (DMA) operational concept

Reflects AU' actual needs and allows for a flexible and dynamic planning and utilization of ARES

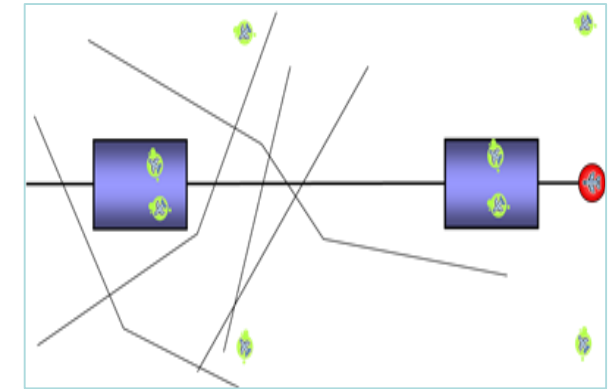
DMA type 1



At variable geographical location respecting users' mission constraints



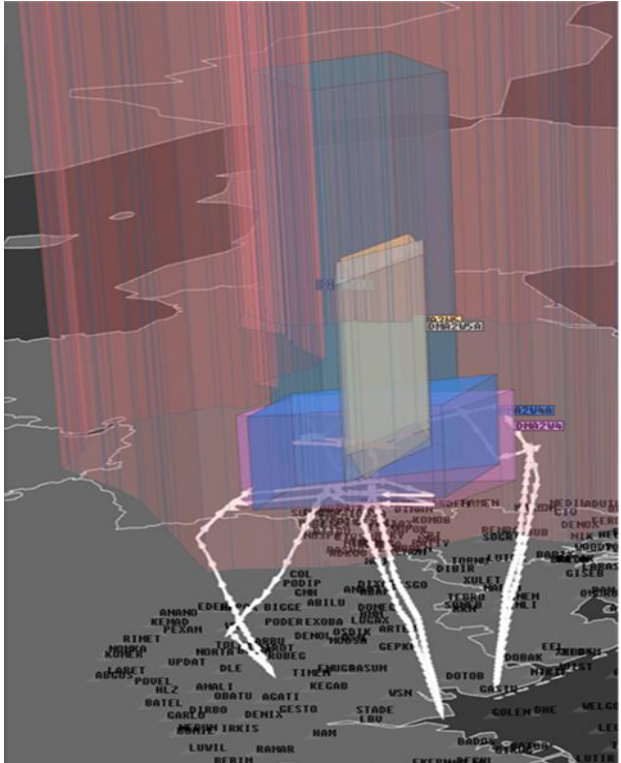
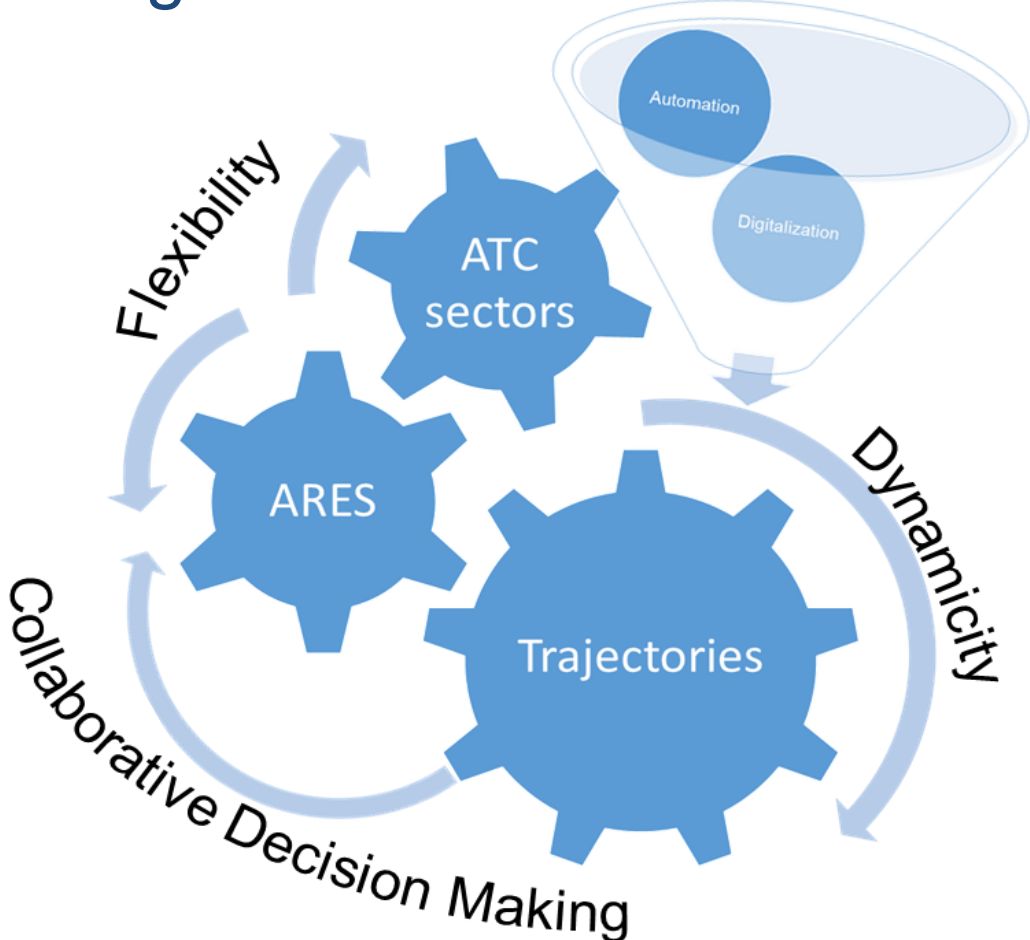
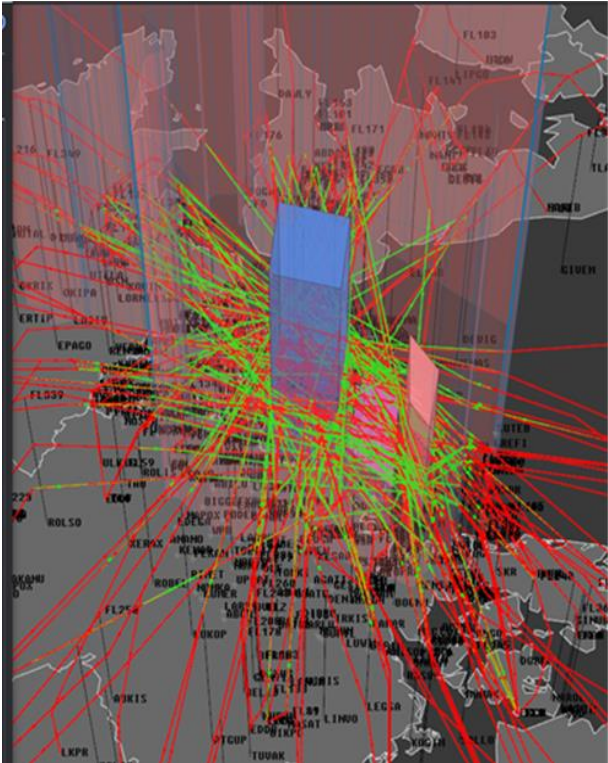
DMA type 2



At variable geographical location along the trajectory, activated & deactivated during specific timeframes

Represents a combined, local and network, ASM-ATFM-DCB-ATS solution, based on civil-military CDM with the least impact of ARES on the performance of airspace configuration and traffic flows

# Dynamic Airspace Configuration



Managed to respond to local and network ATM performance targets & to accommodate AU' preferences and requirements

# DMA

‘Dynamicity’

‘Flexibility’

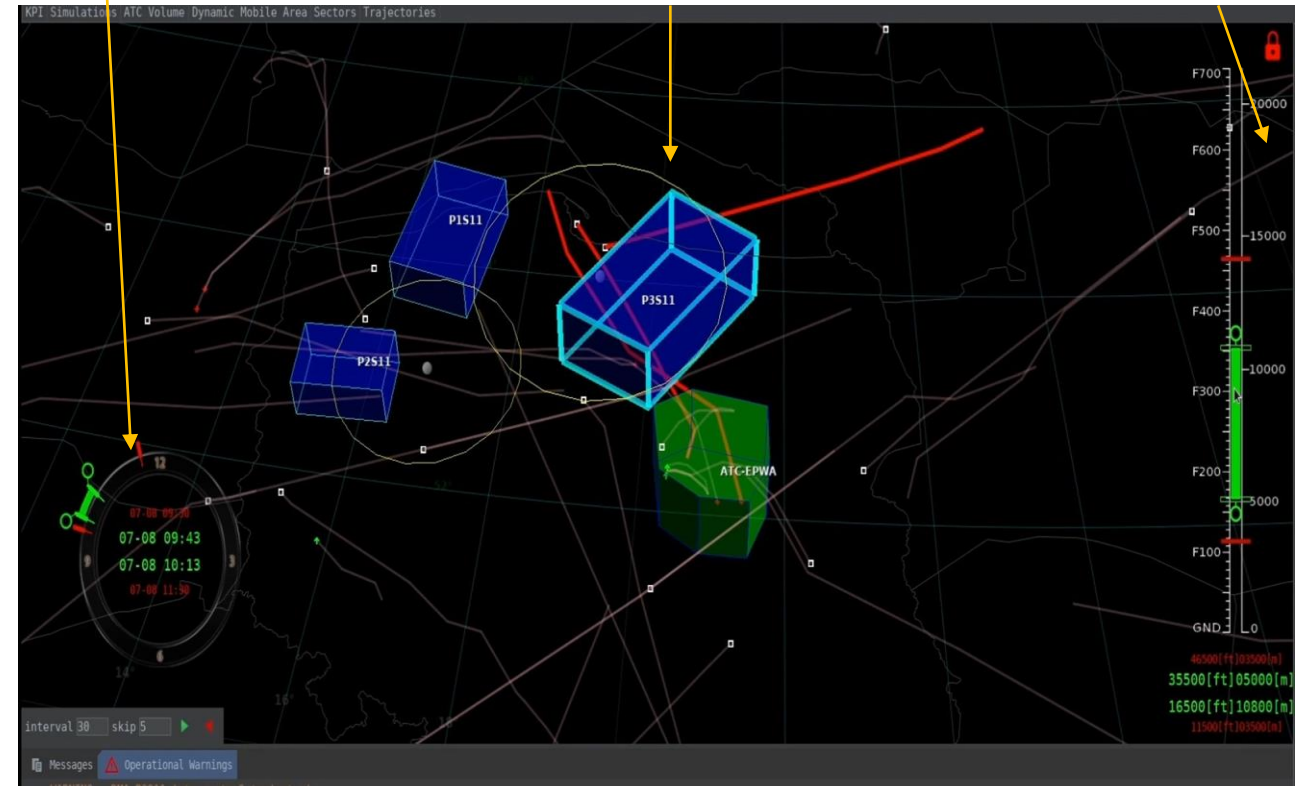
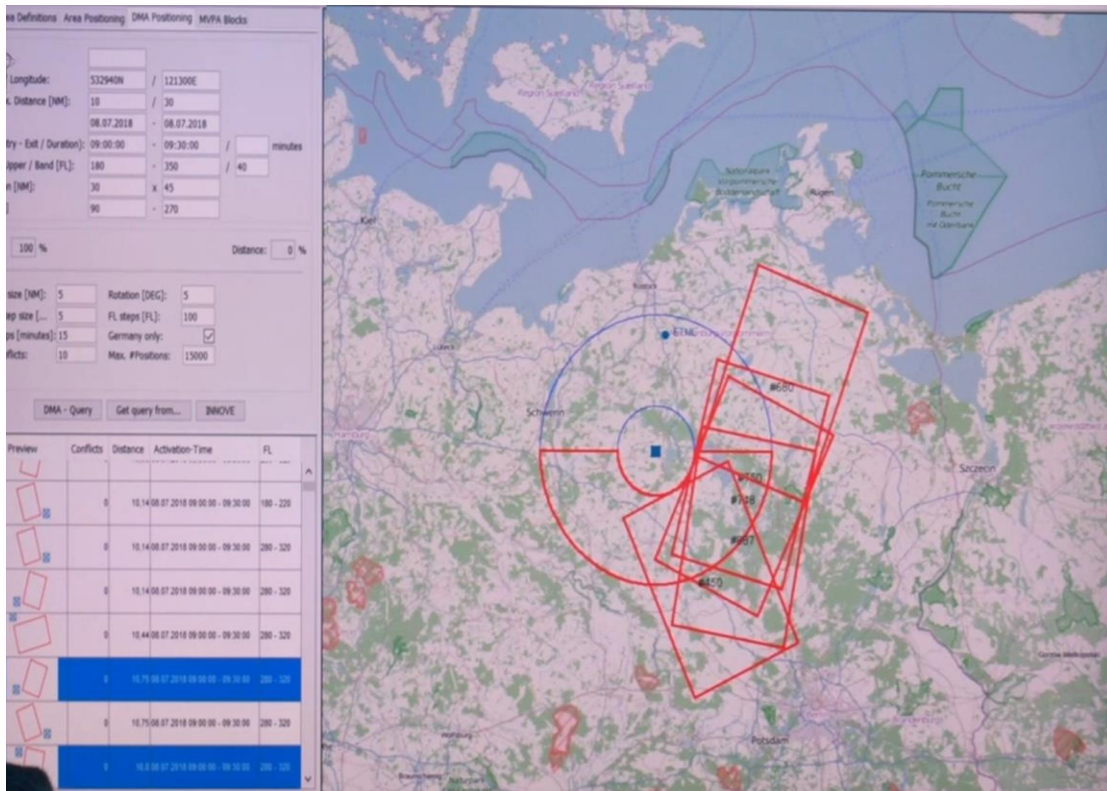
Allows changes/adaptation to evolving ATM demand based on **CDM**

Pre-defined and owned by the airspace user

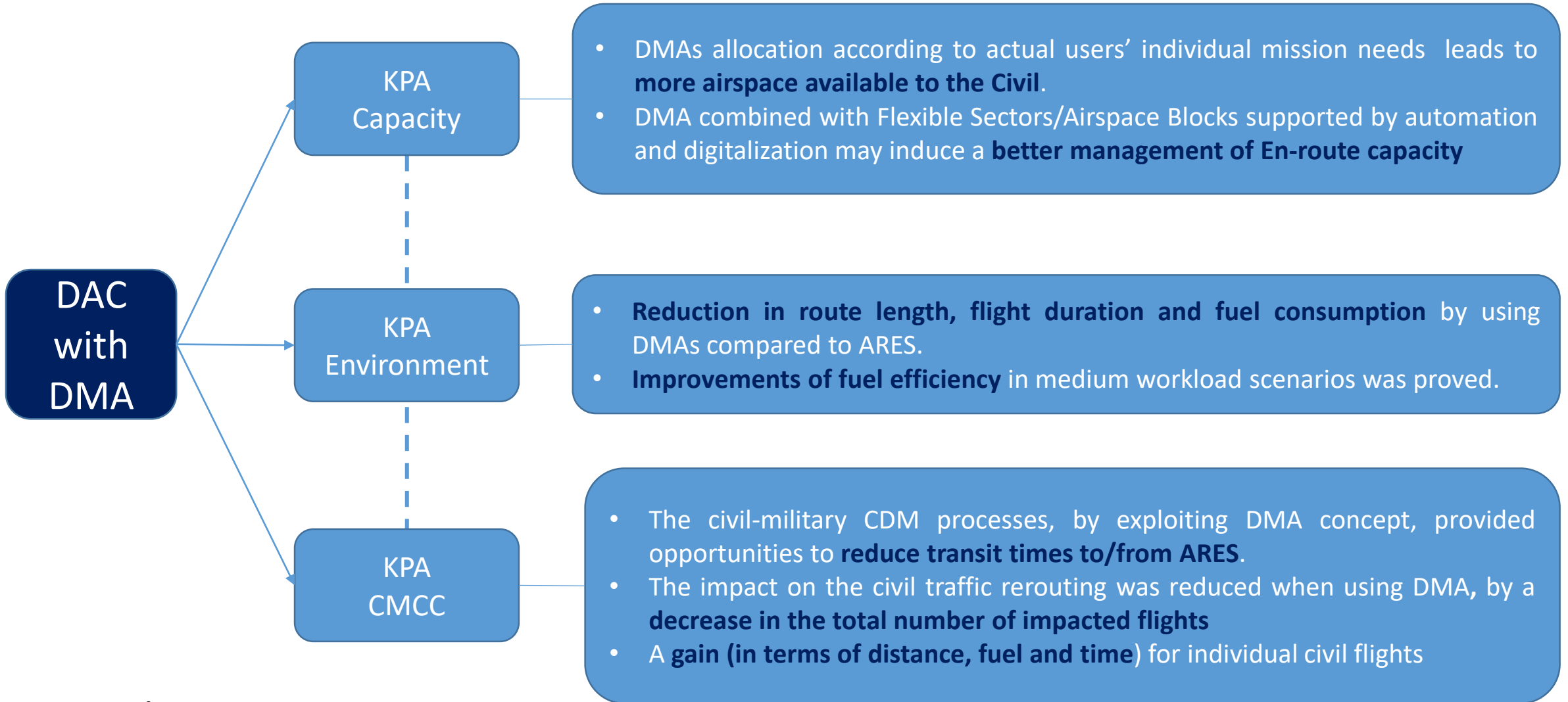
Temporal

Horizontal

Vertical



# Solution 08.01 - Wave 1 (V2) Validations Results



KPA – Key ATM performance Area



# Food for thoughts

Which of the following principles should be **the civil-military ATM cooperation priority** to 'greener' En-Route operations?

