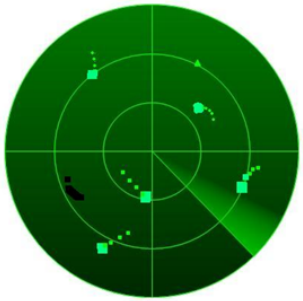

GMA RIYADH
2016 – Aug – 29
Session # 3
Civil - Military
Coordination
Co-operation
in Germany

Agenda

- 50 Years of Development in ATM
- (from separation to integration)
  - Strategic civil military ATM-Dialog
  - Flexible Use of Airspace
  - Civil-Military Performance
  - Challenges of the future
  - Conclusions
- German Airspace Security

50 Years of civ-mil Coordination in ATM



Cross Border Coordination, Planning and Services OAT@MUAC

FAB Europe Central

DFS corporatization

Agreement MOT / MOD on Integration

First Flexible Use of Airspace trial

Mil. ATC to civil centers

1st Civ-mil coordination cell

1st Civ-mil agreement

2017

2012

1993

1991

1983

1973

1963

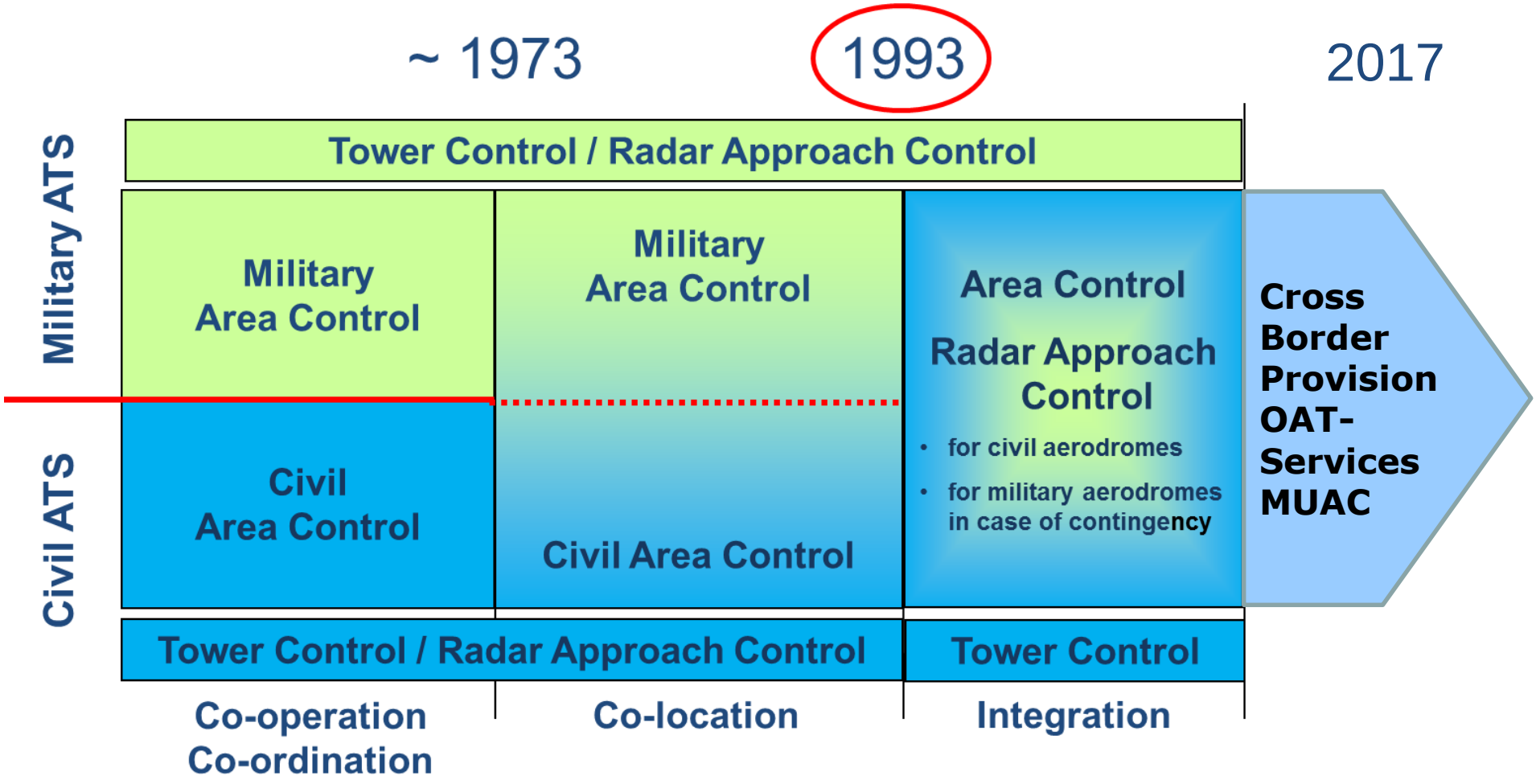
1959

INTEGRATED

CO-LOCATED

SEPARATED

50 Years of civ-mil Coordination



Strategic Civil-Military ATM Dialog (2016)

Civil-military steering bodies mandated and represented by MoD and MoT or relevant management level

- Ministerial Civil-Military ATM Comittee (A-ZMZ)
  - Steering Group Airspace coordination (SG LuKo)

    Military Training Areas, FABEC, Cross Border Ops
  - Steering Group CNS & ATM Systems

    surveillance projects, navigation infrastructure, radio and data link communication
  - Steering Group AIM & MET

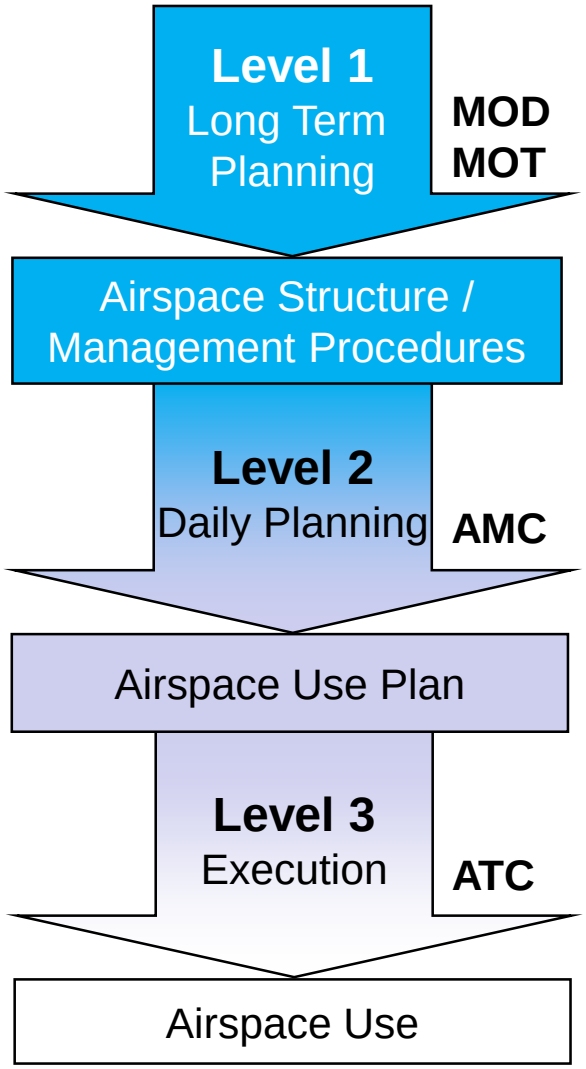
    AIM and MET data, EC regulation on Areonautical Data Quality

Strategic Civil-Military ATM Dialog (2016)

What is the aim?

- Strategic civil-military decisions, coordinated positions and proposals for representation at national and international levels (EU, EUROCONTROL, EDA, NATO, ICAO)
- Harmonization / synchronisation of implementation of SES legislation
- Common use of infrastructure / procurement
- Cost reduction by pooling and sharing
- Optimization of procedures and processes

Flexible Use of Airspace - FUA



Close civil-military co-ordination at regulatory level

Consensus at political level

Airspace Management Cell
Jointly manned by civil and military planners

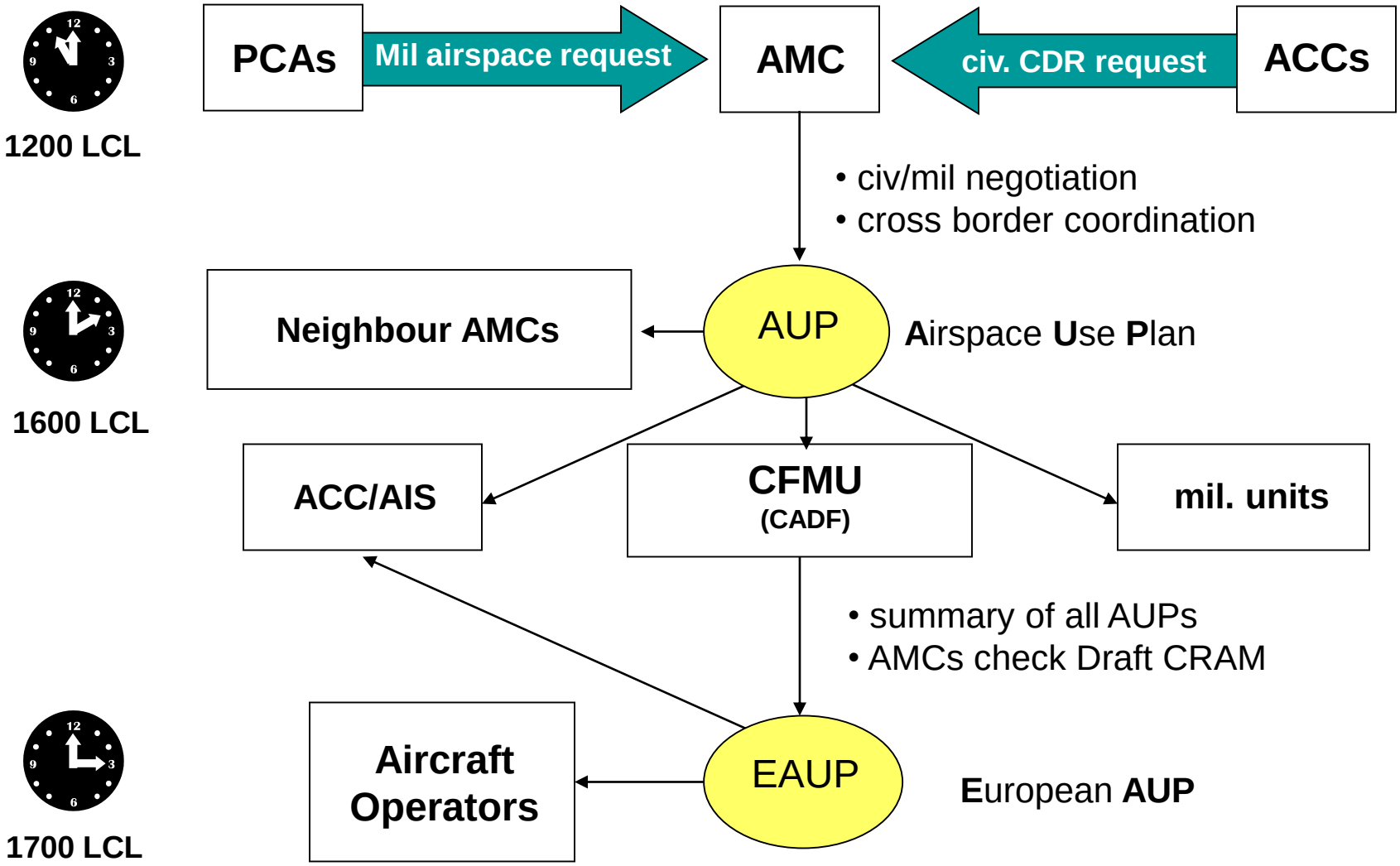
On principle responsible for Airspace Management up to D-1*

(*) according FUA II concept up to x-3h

Execution on the day of the event

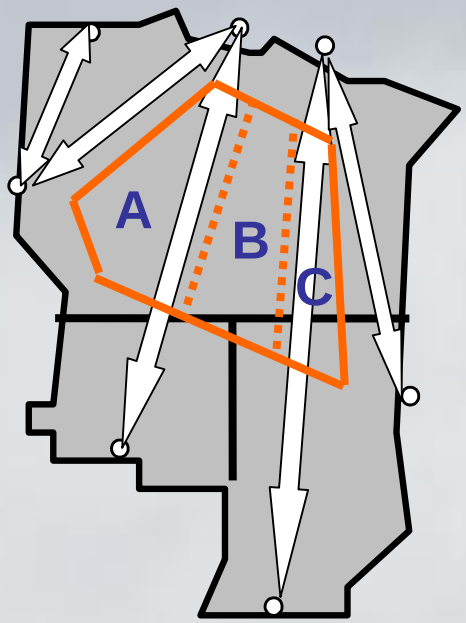
Military ATC staff is integrated (seconded) into the civil ANSP and provides ATC Service to both OAT and GAT

Airspace Management Process D - 1



Airspace Management Evolution

TSA-Sectorization



1995

Segmentation of TSA
Availability of CDRs

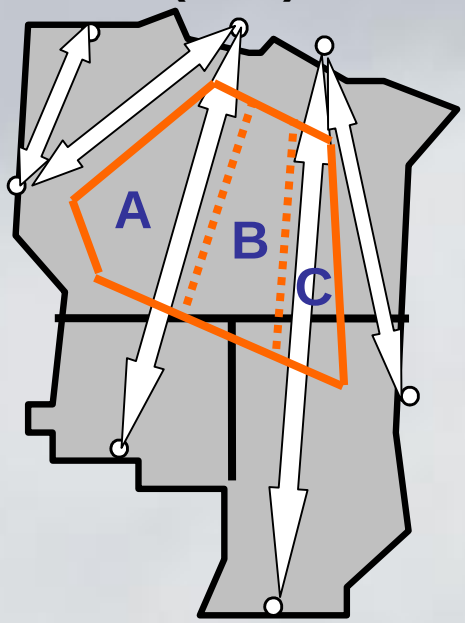
Status: Established

European FUA concept

- Publication of AUP 1600 lcl on day-1
- “Conditional routes” (CDR) may be used at times when no military activity is planned - or on individual basis after co-ordination
- Segmentation of TSA / TRA allows planned use of CDR, if military exercise does not require the full airspace

Airspace Management Evolution

TSA-Sectorization (TRA)



1995

Segmentation of TSA

Availability of CDRs

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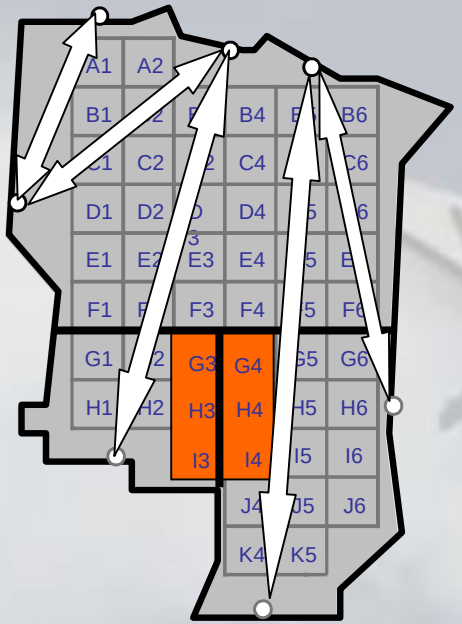
Variable Profile Area (VPA)

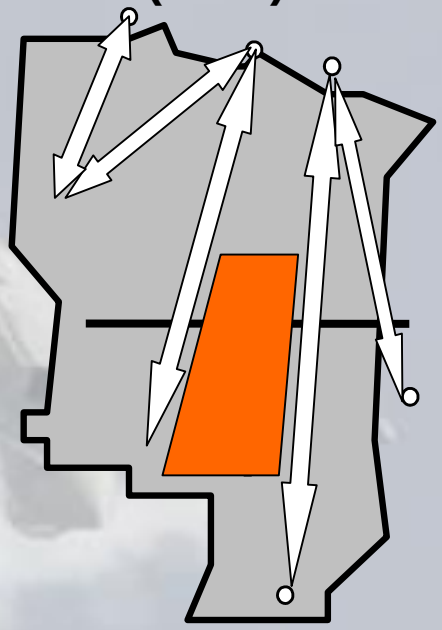


2003

TSA composed of small boxes, tailored to mission profile

Status: Established

Dynamic Mobile Area (DMA)



202x

Very advanced system

Status: ”DMA - Trial”

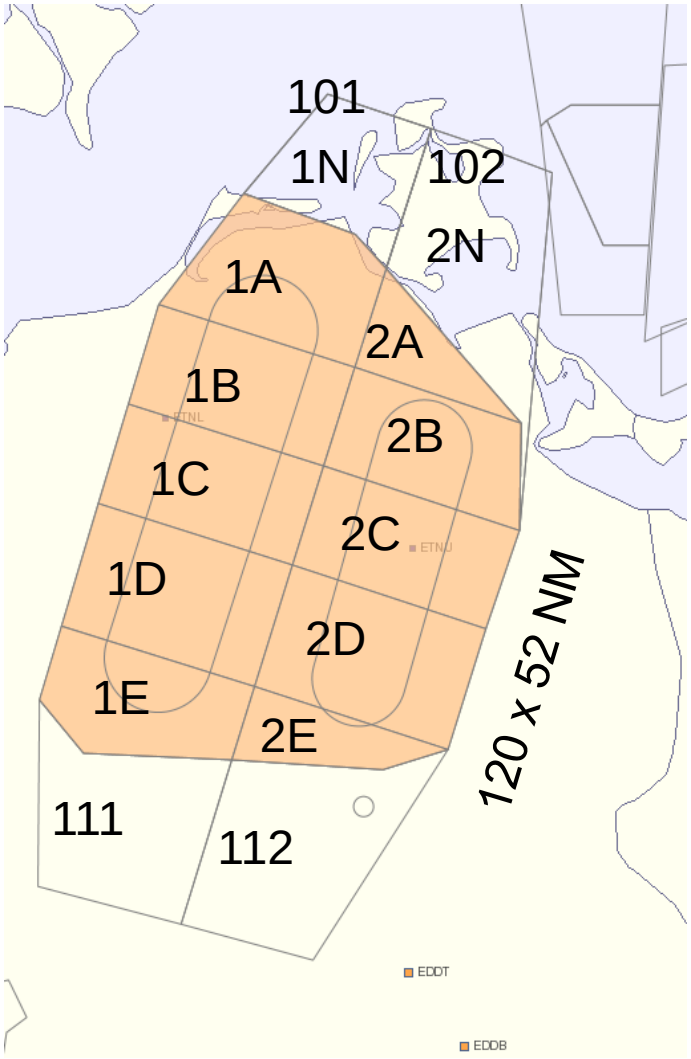
Flexible Use of Airspace - Variable Profile Area

Why VPA

- Training Airspace tailored to mission requirements
- Block as little airspace as possible/necessary
- Offer more individual training areas in parallel
- The smaller the grids the better suitable the airspace can be designed
- Civil traffic (GAT) will be re-routed tactically (like circumnavigation of a local TS area)

Why Grid System

- Easy reference system
- Electronic co-ordination
- Today's ATM systems unable to process randomly designed airspace



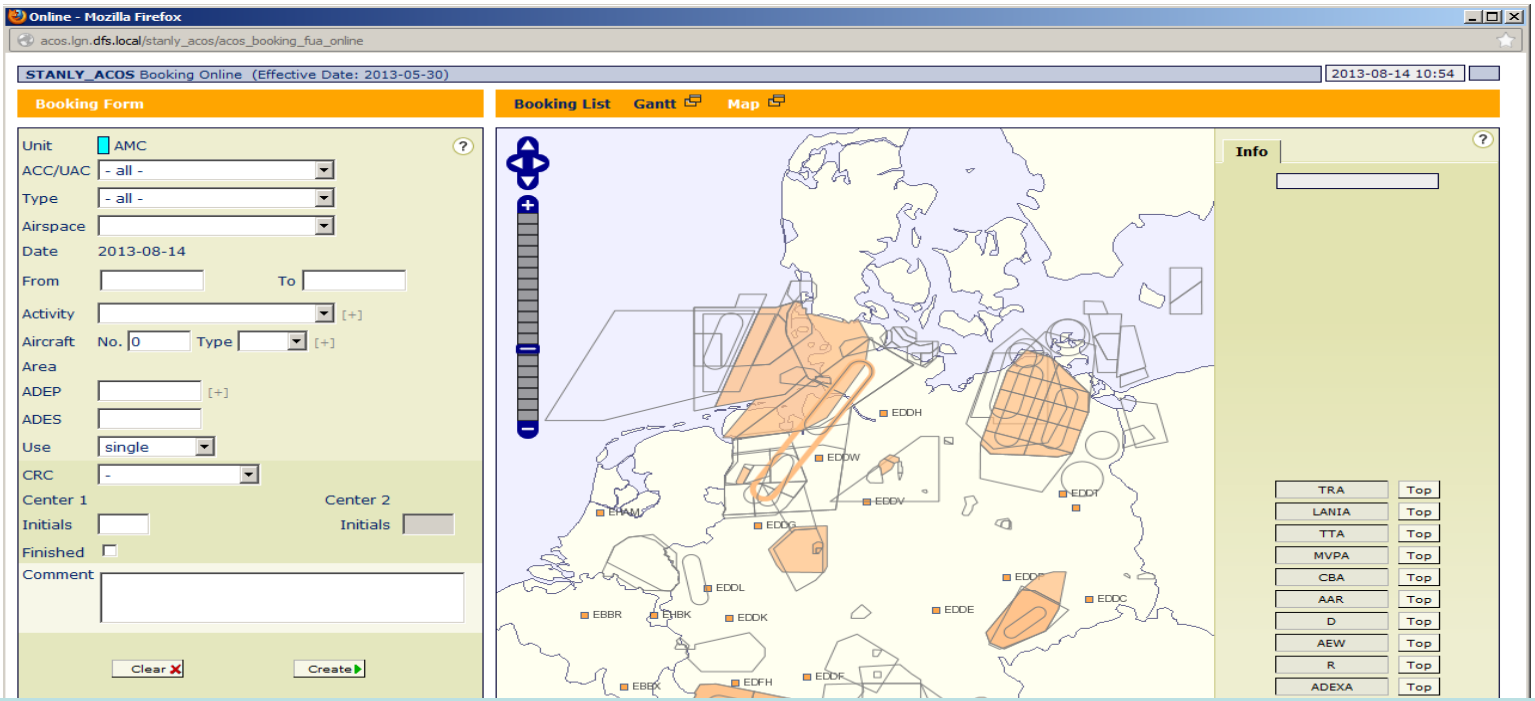
Procedural Examples VPA

Applying the TAXI CALL procedure Bremen ACC and Karlsruhe UAC may continue to use the allocated airspace by other traffic as described below…
Laage TWR shall report the beginning of taxi …"TAXI STASH MVPA BASIC 1A".
After TAXI CALL Bremen ACC and Karlsruhe UAC shall start to vacate the allocated airspace of civil and military air traffic and shall ensure that the allocated airspace will be made available to the military user 10 minutes after the TAXI CALL.

Large Scale Event (Full area with all extensions)
REQ 3 months prior and D-28 – D-1 Long – term booking phase

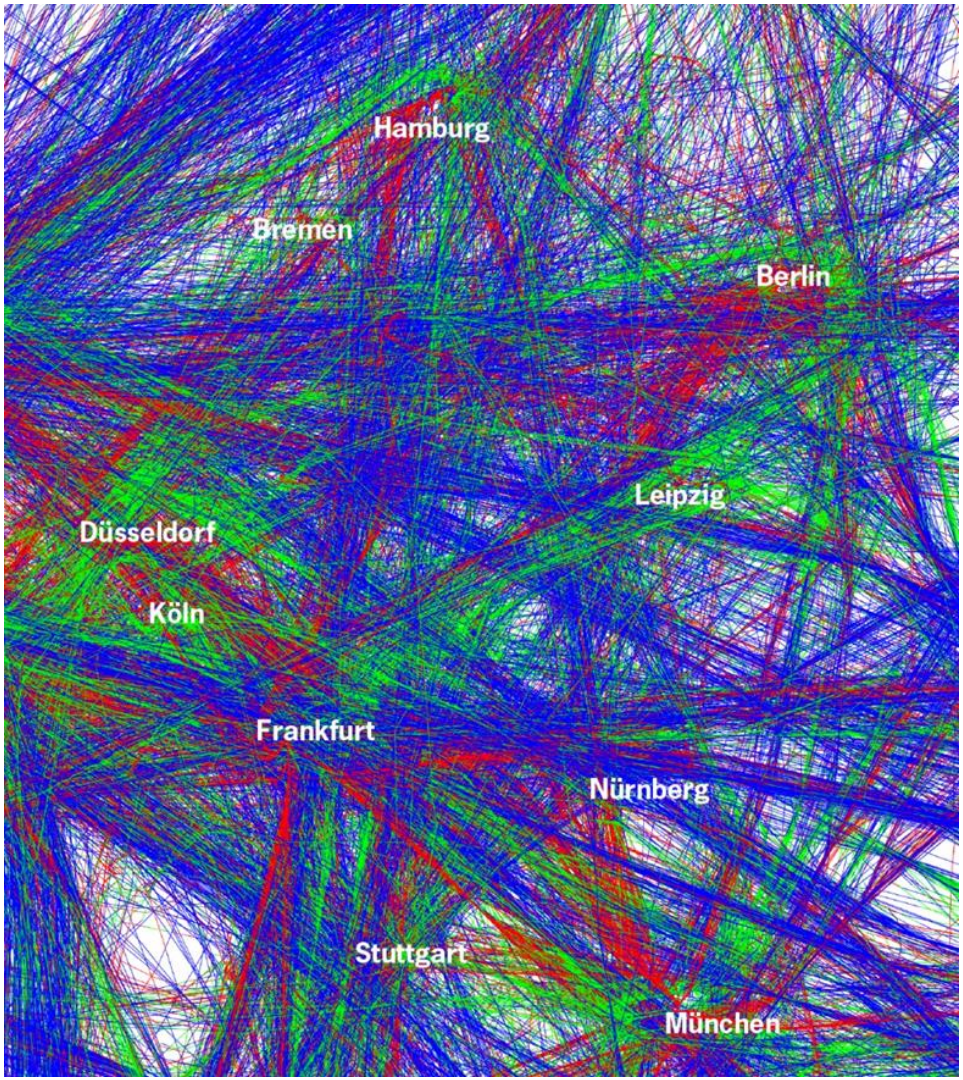
Normal Event timeline
D-1 until AUP release
Online modification phase until 65 min before flight for existing bookings

Booking online with Airspace Management Support System (ASMSS) - STANLY_ACOS



- IT-automated activating / deactivating of airspace for military training
- Planning, booking, changes, coordination, cancellation and confirmation of booking requests, common situation awareness and reporting
- Graphical and tabular supervision of booking actions
- “One integrated System” - Coordination and communication between civil and military divisions

Civil-Military Performance



Peak day 2015 = 18.09.2015
10065 IFR flights/day

Average ATFM delay Germany
0,32 min/flight
0,12 min caused by ATC
98% of the flights on-time

Horizontal Flight Efficiency
Direct route extension: 1,17%

Germany:
357.375km²
Saudi Arabia:
2.149690km²

arrival

departure

overflight

Civil-Military Performance

ATM-Performance of ANSP is defined on

- Commission Implementing Regulation (EU) No 390/2013
- for 2015 – 2019
- KPAs Safety, Environment, Capacity, Cost-Efficiency

Military Performance ist not defined by EU-Regulation

Germany defined military mission effectivness MME based on 3 KPIs

- Sufficient dimension of military training area MTA
- Sufficient time of allocation of MTA
- Distance from mil airbase to MTA

DFS Executive Board is commited to annual target values

Challenges

Security & Defence policy changes

- Reorganisation of the armed forces, new commands, HQs and responsibilities
- Security & Defence matters remain in national sovereignity

New technologies and plattforms

- Mission tailored airspace volumes
- Access to and usage of appropiate airspace volume
- Integration of RPAS

In Europe: Single European Sky (SES) legislation

- SES legislation not binding for „…military operations and training…“
- Civil performance scheme <-> mil mission effectivness

Supervision

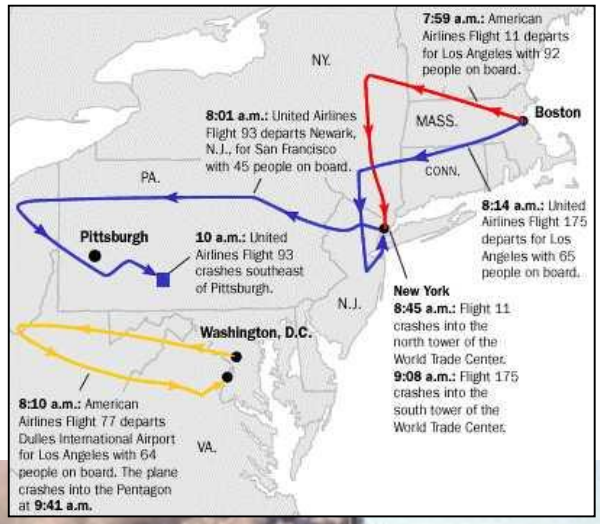
- Civ ANSP by National Supervisory Authority (NSA)
- Mil ATS-units by GE Military Aviation Authority (MAA)

Conclusions

The Civil-Military Coordination offers synergies for both partners:

- ⇨ MoT and MoD work together jointly and effectively in all aspects of ATC, airspace design and airspace usage
- ⇨ The “German model” of civil-military integration is a “flagship model” and is internationally well-recognised
- ⇨ It stands for evolutionary, future-oriented development of ATS services
  - ✓ **High degree of Safety** due to common execution of tasks
  - ✓ **Flexible and efficient / economical airspace usage**
  - ✓ **Increase of capacity** due to an integrated operating concept
  - ✓ **High quality of service**
  - ✓ **Increased productivity** due to efficient personnel management
  - ✓ **Cost advantage** due to common operations support and **process optimization**
  - ✓ **Cost advantage** due to **common usage of infrastructure** and **common procurement**

German Airspace Security



German Airspace Security

Air Traffic Services assure a safe, orderly and expeditious flow of all air-traffic by cooperative means

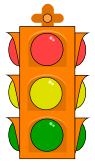
DFS Deutsche Flugsicherung

member of FABEC

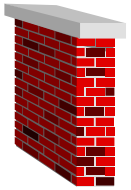
German Airspace Security

How to maintain aviation security?

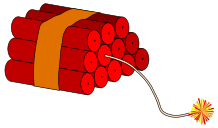
Safety and Security Rules and Regulations



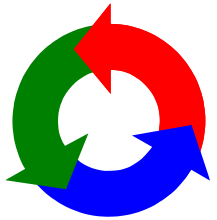
Preserving the souvereignety of national airspace



Prevention of criminal or terroristic attacks

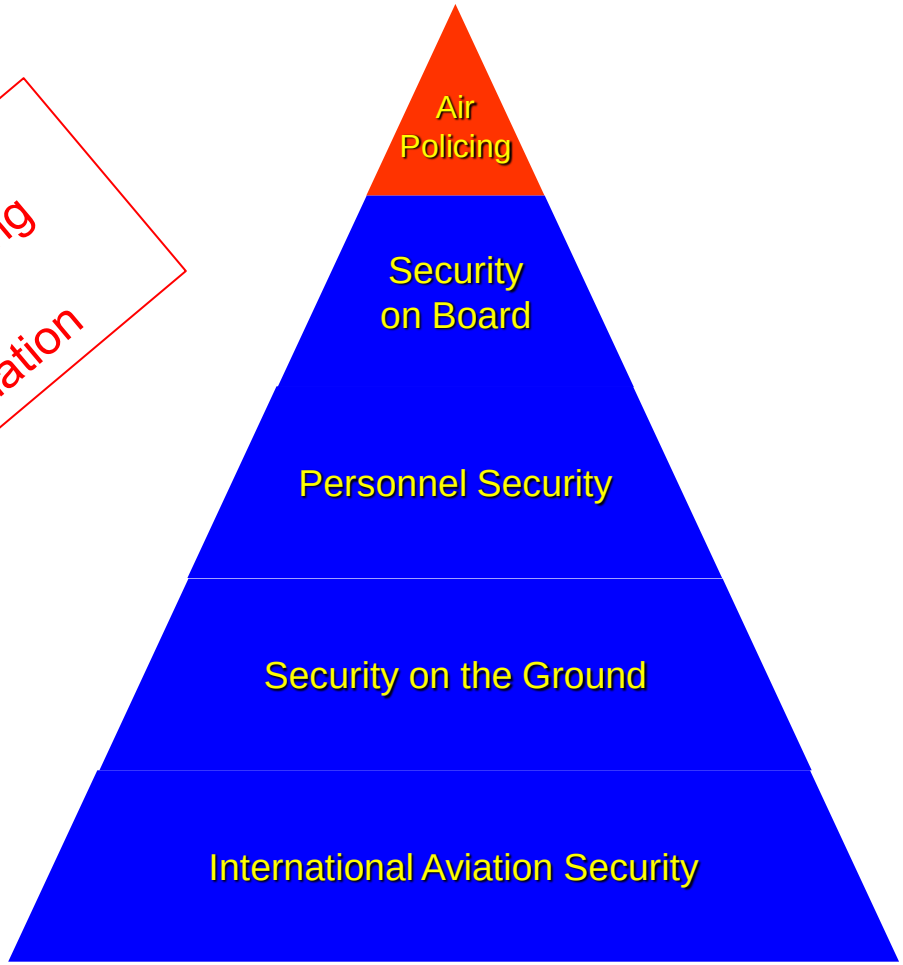


Handle all aspects seperatly/commonly?



German Aviation Security Act (2006)

multi layered all-encompassing security of civil aviation



Police Helicopter
Fighter Aircraft

Cockpit Protection
"Sky Marshall"

Admission Control at
„Check-in“

Inspection Custody
airport security

Procedures
Aeronautical
Information Service

Flying Schools –
Aviation Supervision Office

German Airspace Security

NASC

MoD	MoI	MoT
		
Air Defense DEU AOC	Federal Police	Air Traffic Services

50 Years of Civil-Military Coordination

Separated by „performance“

Sharing and management of common used airspace

We managed the challenges of the past 50 Years
We cope with future challenges!