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Service Delivery Management Plenary

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Welcome!

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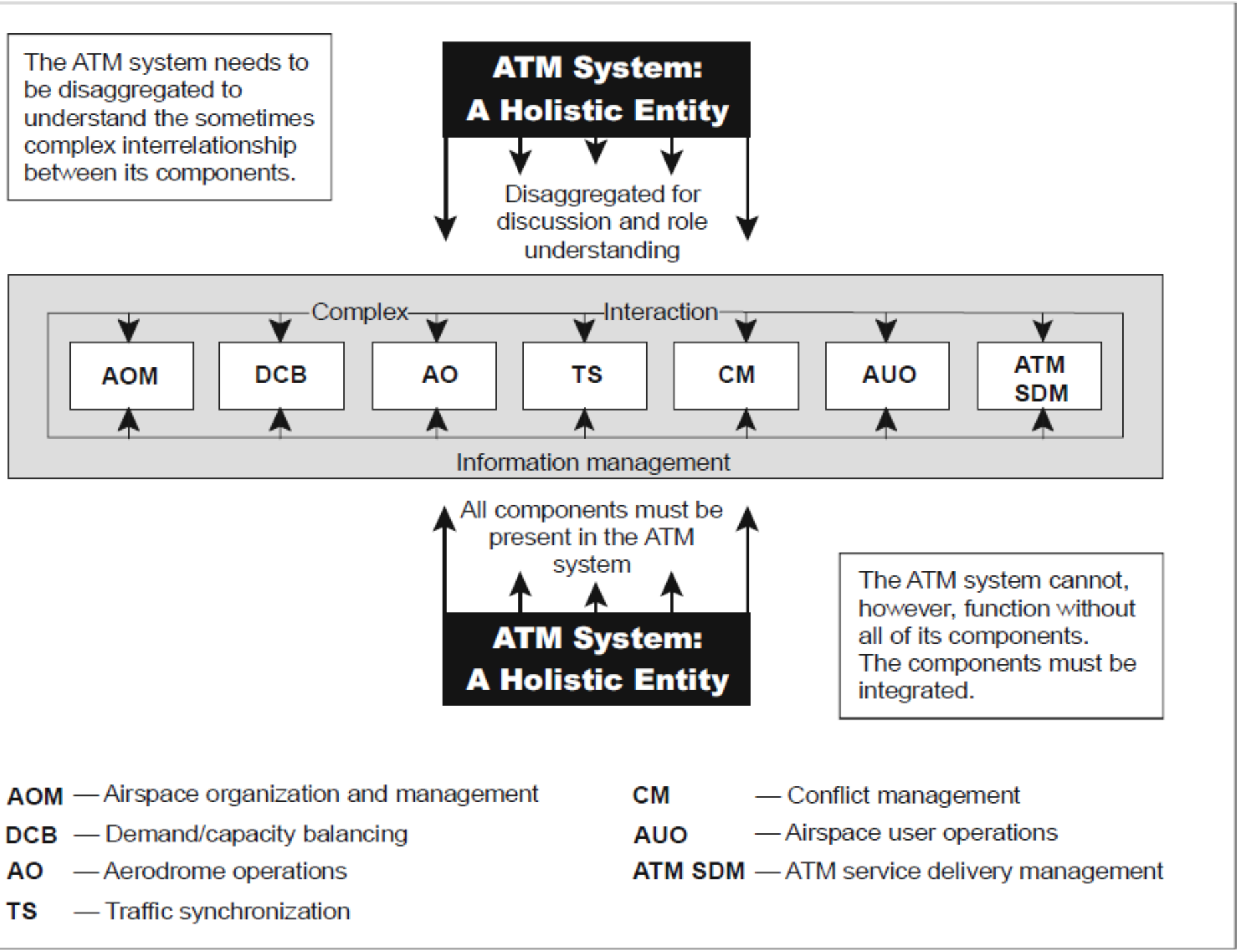
GATMOC

„Complex interaction“

… enabled by

„Information Management“



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AN/458 – Figure 2-1

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Complex interaction with limited magic

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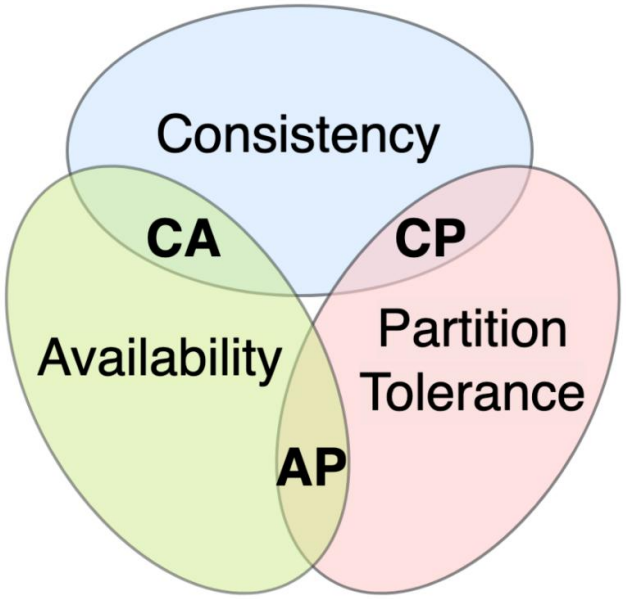
In database theory, the CAP theorem states that any distributed data store can provide at most two of the following three guarantees:



Consistency

Every read receives the most recent write or an error.

Availability

Every request received by a non-failing node in the system must result in a response.

Partition tolerance

The system continues to operate despite an arbitrary number of messages being dropped (or delayed) by the network between nodes.

https://en.wikipedia.org/wiki/CAP_theorem

Sharing airspace = sharing information

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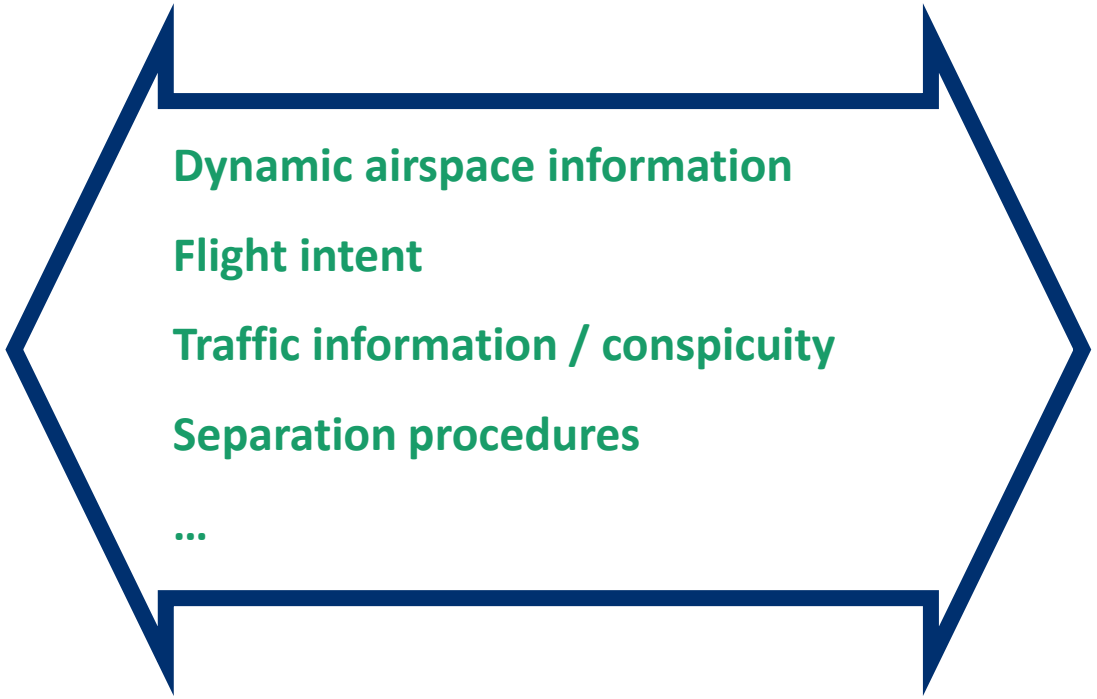
Crewed aircraft



Uncrewed aircraft

Specific information

Shared information

Specific information

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Can CDM guide long term architecture?

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- ✓Combining input from many stakeholders to make the best decision for a group.
- ✓In collaborative decision making, the goal is always to reach a consensus.
- ✓Often, the solution is selected from a set of a few proposed options.

Way forward

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- Technology Agnostic Service Definitions
  - SWIM is desirable option
  - interoperability is important, especially Service Provider to Operator interface needs standardisation (enabling seamless transition)
  - standards and service level agreements are savers for small UAS operators
- Performance levels are welcome
  - depending on use-cases and operational conditions
  - performance for ground service should be different from UAS performance
- Enabling Collaborative Decision Making could guide architecture
  - allow flexibility in architecture
  - considering responsibility, accountability, and liability aspects

Way forward

- Design respecting requirements and distributed system characteristics
  - consistency is more important than availability for the flight plan
  - partition tolerance is not a fixed starter in all cases
    - allows for more flexibility in system design
  - decouple „keeping things consistent“ from the business services
- Governance tailored to the „trade-off“ situation
- Service delivery should support public safety, eventually defense
  - Why not bring an action to the EU level about mandating the socially viable services?
- Digital instruments are the future that will gradually shape future flights

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THANK YOU
FOR YOUR ATTENTION