Feb 27th, 3:30 PM

AFUAS (Advanced Flexible Use of Airspace Service) Concept

Frank Morlang
DLR

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AFUAS(Advanced Flexible Use of Airspace Service) Concept
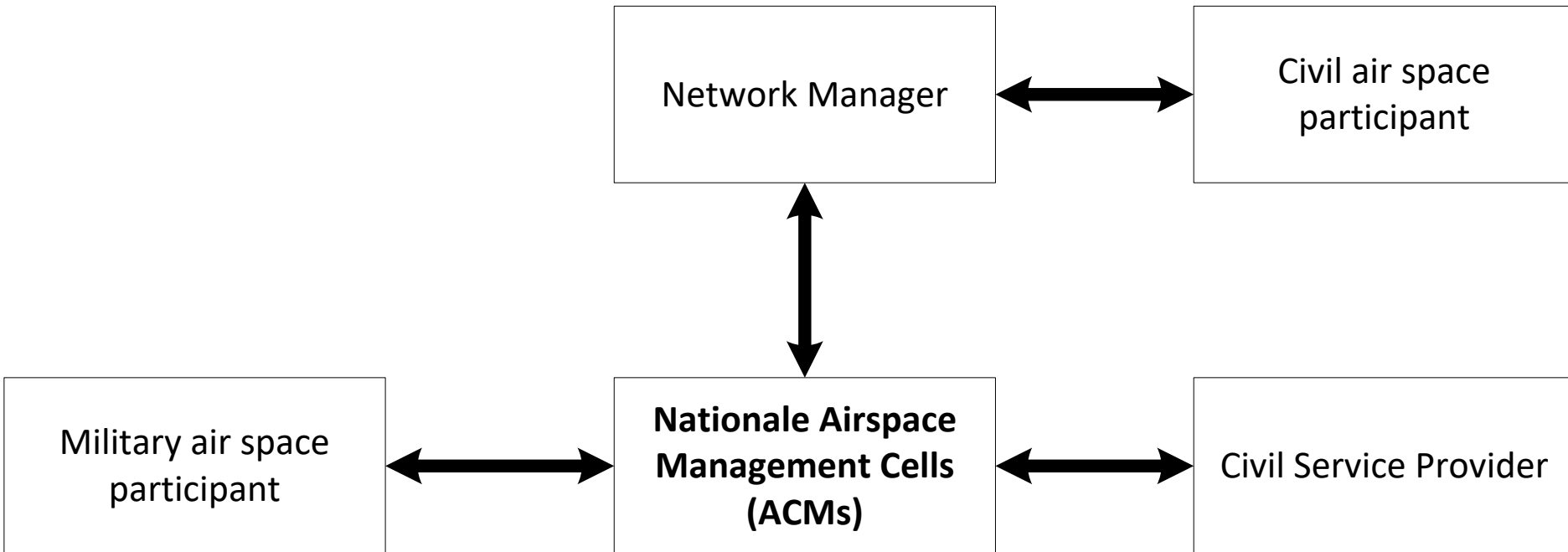
Frank Morlang

Wissen für Morgen

FUA→AFUA

- Flexible Use of Airspace (FUA) Conzept

  - Air space = continuum

  - Civil / Military → integration instead of segregation

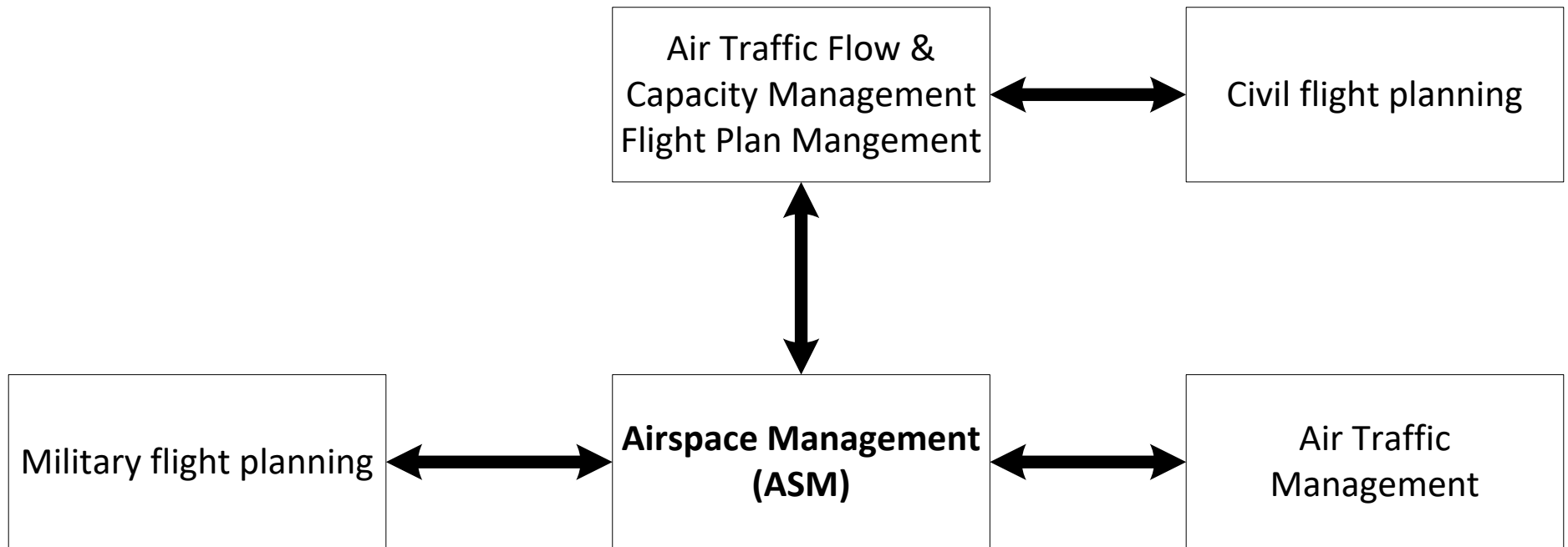 - Flexible air space structures and procedures→ time slotted allocation und usage

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FUA→AFUA

- Flexible Use of Airspace (FUA) Concept

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                    ┌──────────────────┐              ┌──────────────────┐
                    │                  │              │   Civil air space│
                    │ Network Manager  │◄────────────►│    participant   │
                    │                  │              │                  │
                    └────────┬─────────┘              └──────────────────┘
                             ▲
                             │
                             ▼
┌──────────────────┐  ┌──────────────────┐            ┌──────────────────┐
│ Military air space│◄►│ Nationale Airspace│◄─────────►│ Civil Service    │
│   participant    │  │ Management Cells  │            │    Provider      │
│                  │  │     (ACMs)        │            │                  │
└──────────────────┘  └──────────────────┘            └──────────────────┘
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FUA→AFUA

- Flexible Use of Airspace (FUA) Concept

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                          ┌─────────────────────┐
                          │ Air Traffic Flow &  │         ┌──────────────────┐
                          │ Capacity Management │ ◄─────► │ Civil flight      │
                          │ Flight Plan         │         │ planning          │
                          │ Mangement           │         └──────────────────┘
                          └─────────┬───────────┘
                                    ▲
                                    │
                                    ▼
┌──────────────────────┐   ┌─────────────────────┐         ┌──────────────────┐
│ Military flight      │◄─►│ Airspace Management │ ◄─────► │ Air Traffic      │
│ planning             │   │ (ASM)               │         │ Management       │
└──────────────────────┘   └─────────────────────┘         └──────────────────┘
```

FUA→AFUA

- AFUA = FUA +

  - Free route airspace

  - Real-time information sharing

  - Common situational awareness

CS4

- Centralised Service 4 (CS4) =

?

CS4

- Centralised Services

- Centralised Service =

  - **ANS support service** or
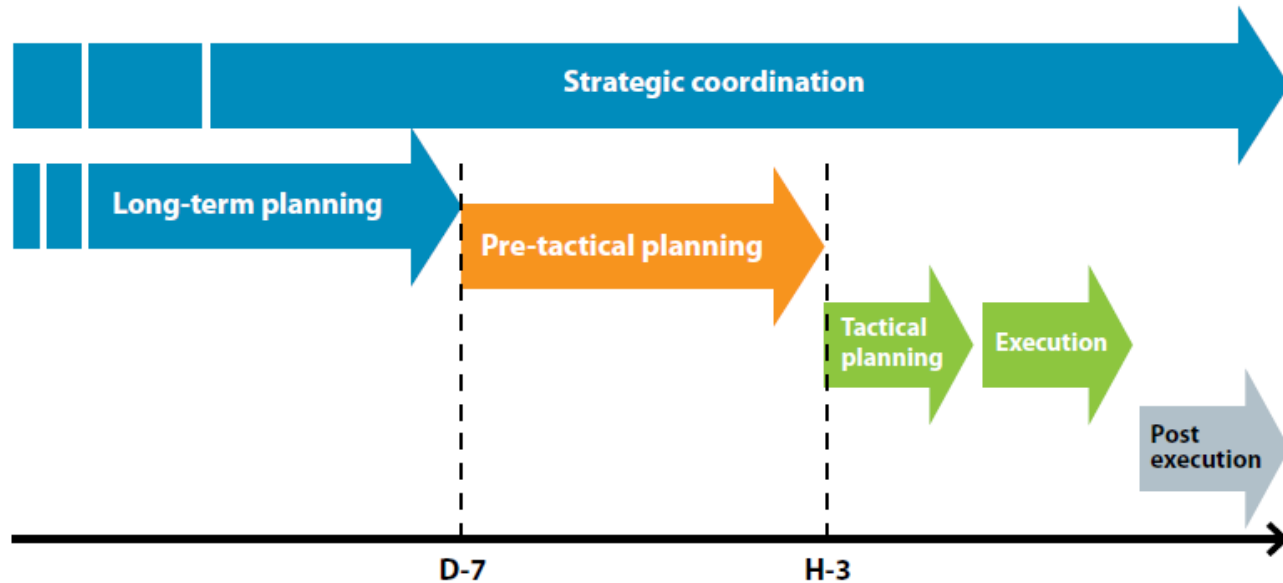 - **ATM function** running on **central european network level**

- 18 services

CS4

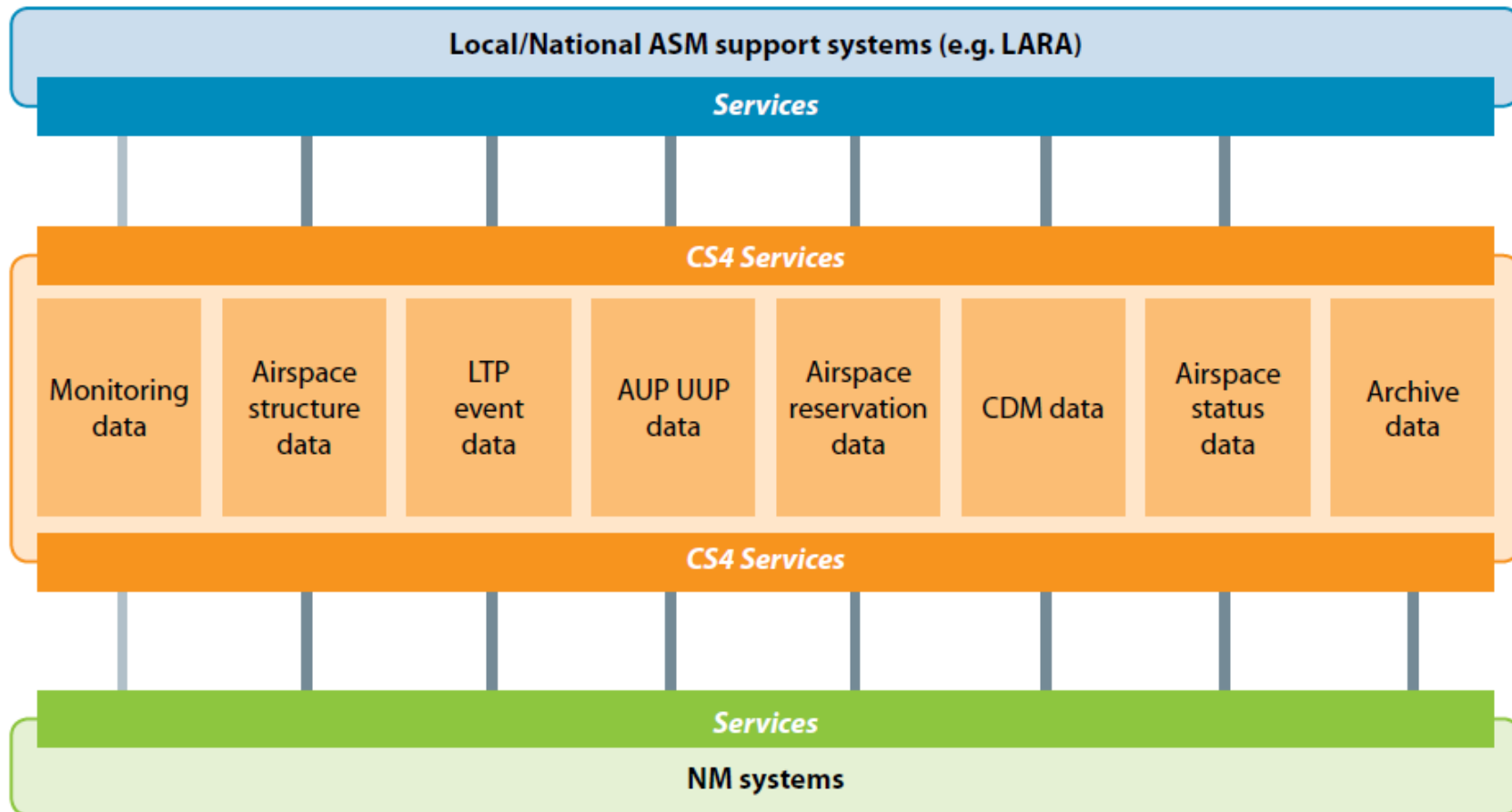- CS4 = Centralised Advanced Flexible Use of Airspace Support Service

CS4

- Long-term planning
- Pre-tactical planning
- Tactical planning
- Execution
- Post execution

http://www.eurocontrol.int/sites/default/files/publication/files/cs4-brochure-2017.pdf

CS4

Local/National ASM support systems (e.g. LARA) — Services — CS4 Services — Monitoring data | Airspace structure data | LTP event data | AUP UUP data | Airspace reservation data | CDM data | Airspace status data | Archive data — CS4 Services — Services — NM systems

http://www.eurocontrol.int/sites/default/files/publication/files/cs4-brochure-2017.pdf

CS4

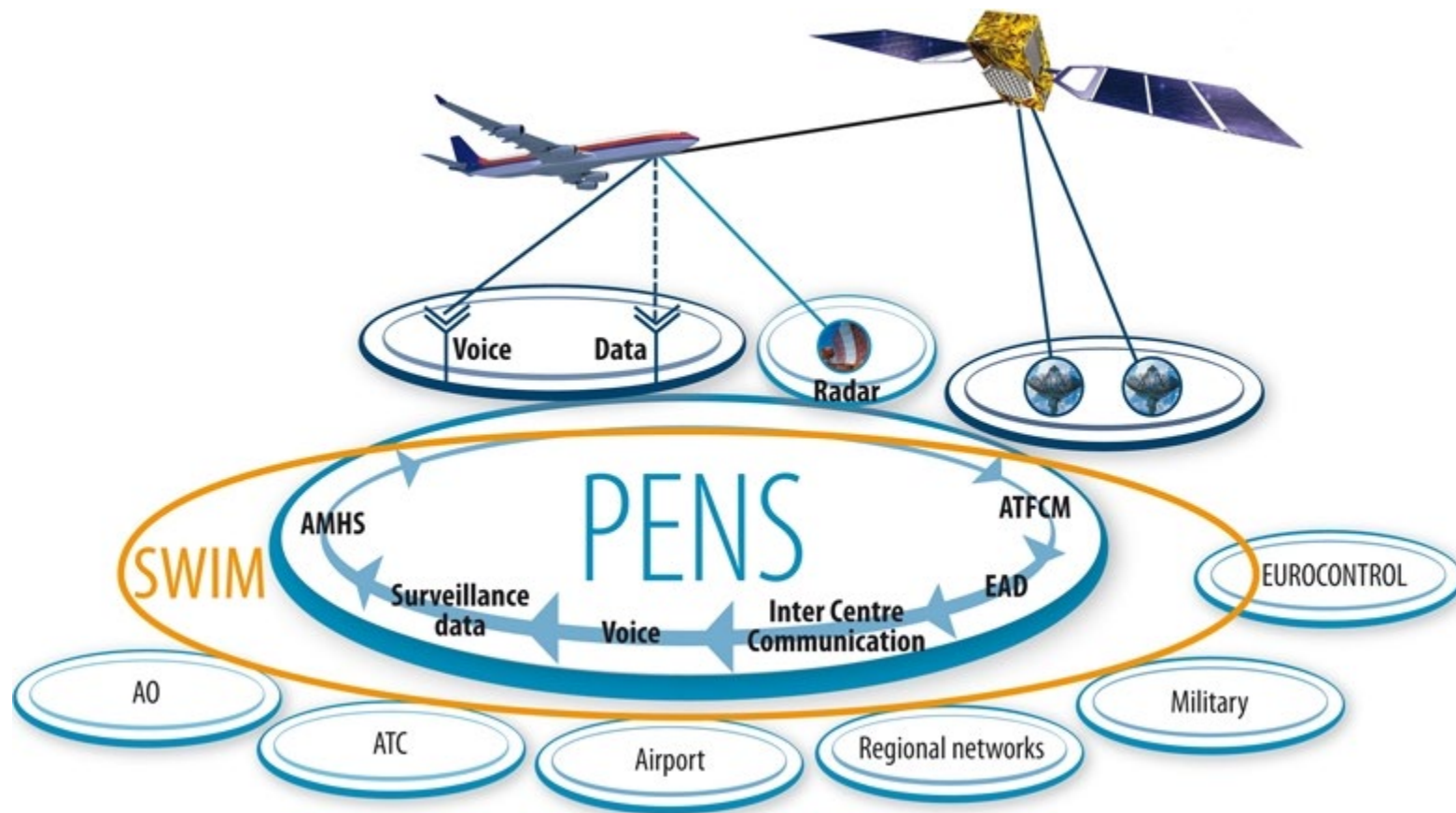http://www.eurocontrol.int/sites/default/files/centralised-services/20140908-cs4-afuas-conops-v21.pdf

CS4

- CS8 New Pan-European Network Service = SWIM infrastructure= fundament for the yellow arrows

SWIM

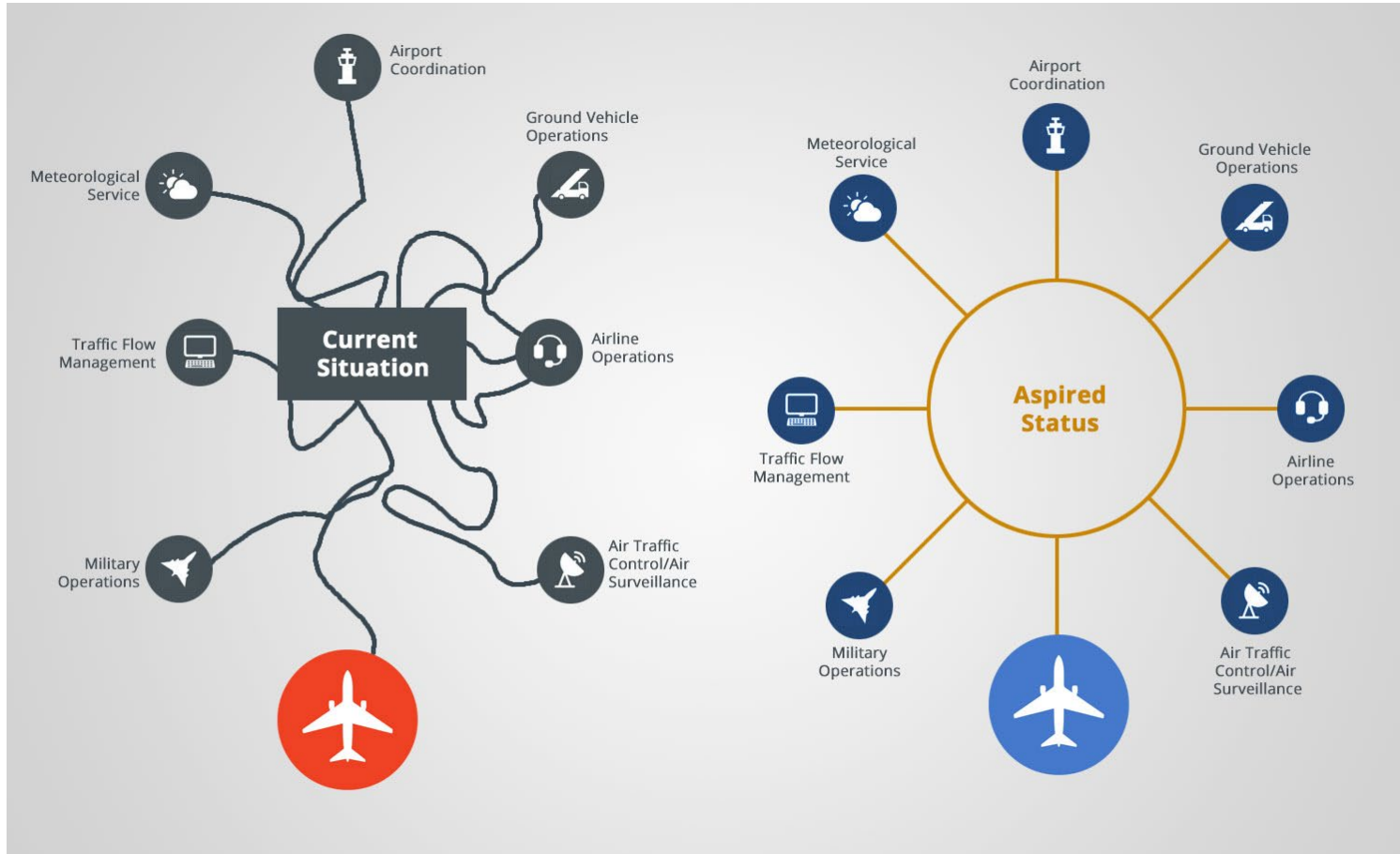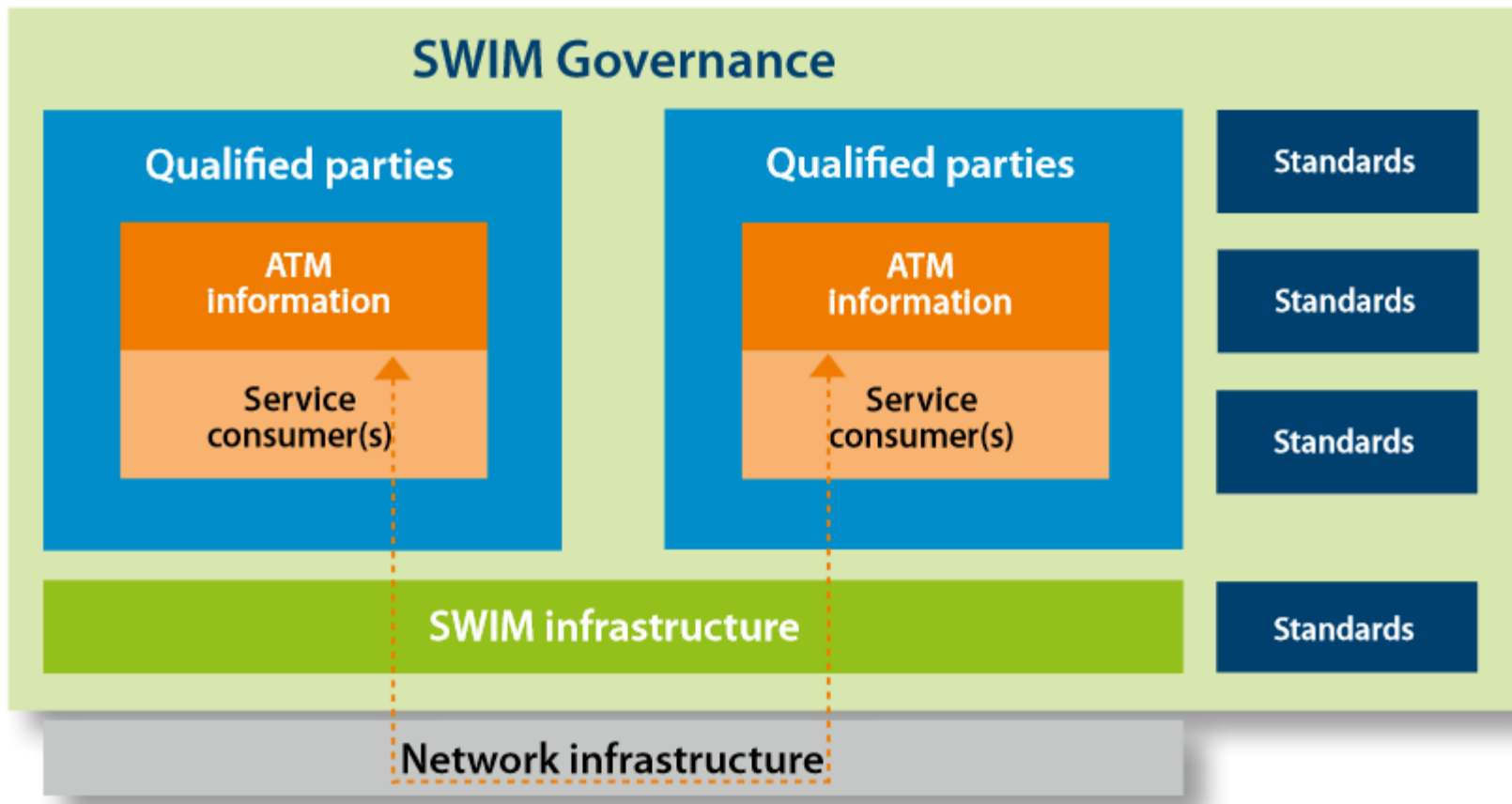http://www.eurocontrol.int/articles/pan-european-network-services-pens

SWIM

https://www.einfochips.com/blog/k2-categories/aerospace/iot-in-aviation-with-system-wide-information-management.html

SWIM

http://www.sesarju.eu/sites/default/files/documents/wac/SWIM_Becoming_a_reality_Brochure.pdf