



CAA NORWAY

CAA Norway

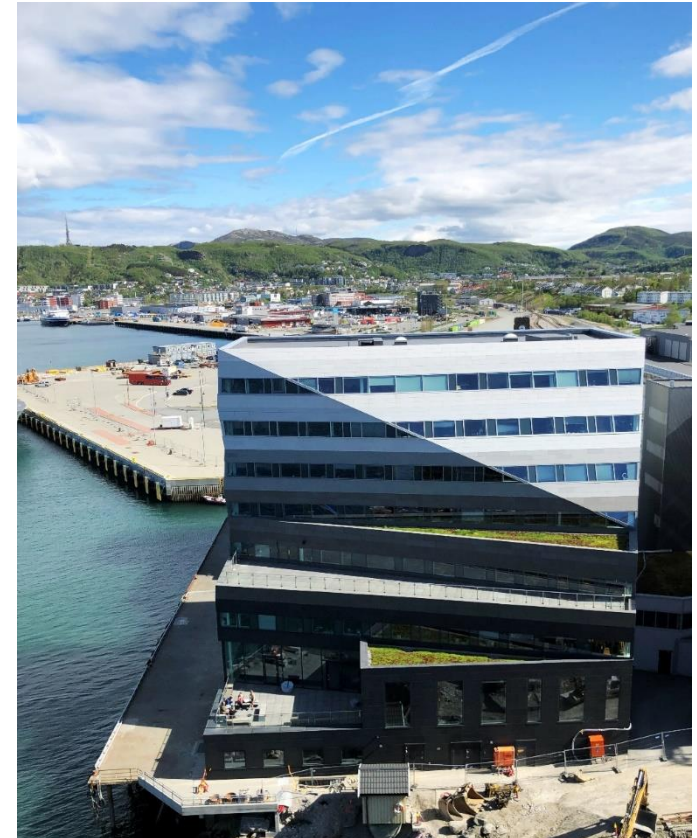
Perspective on cybersecurity in aviation

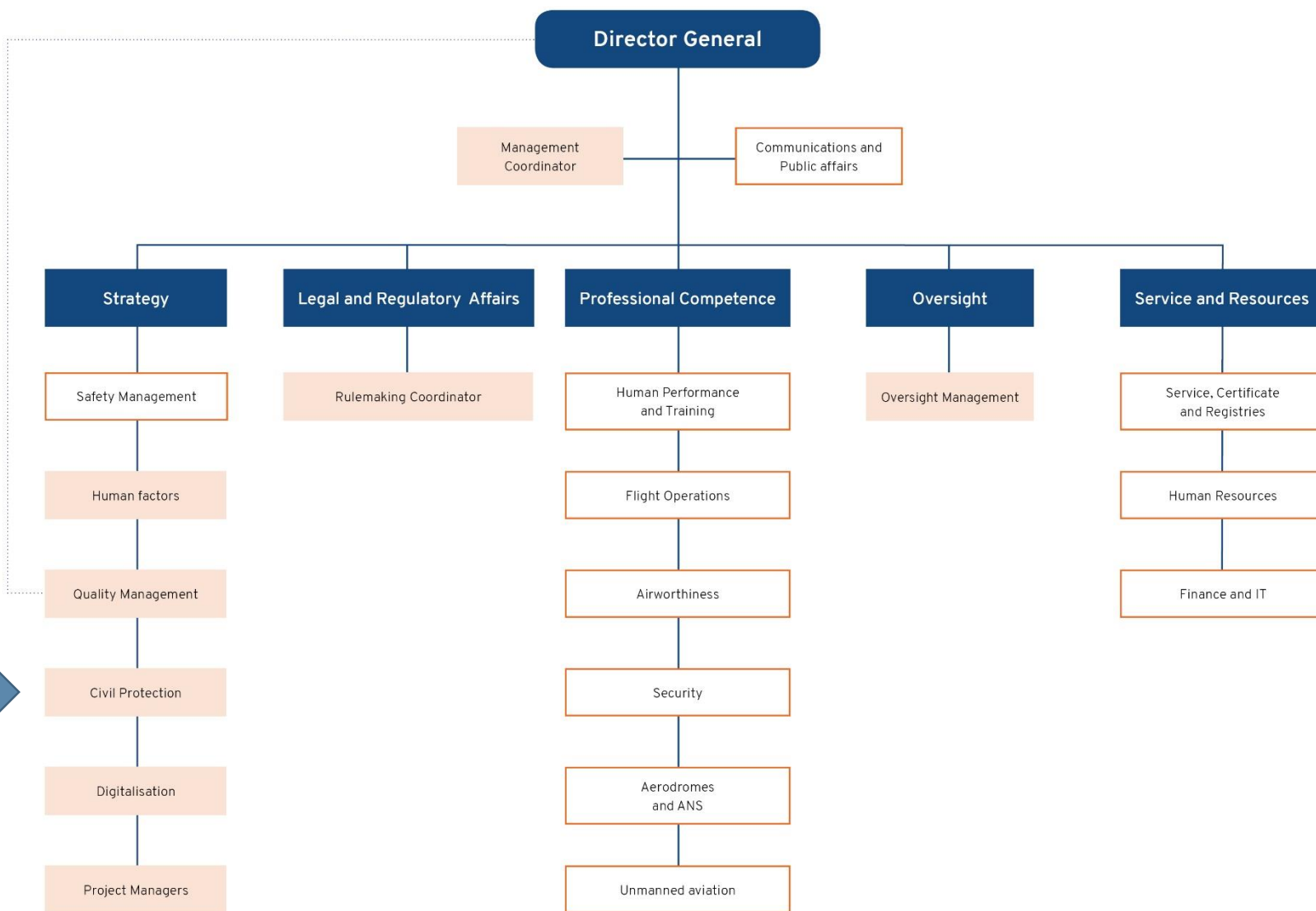
Bjørnar Davidsen - Manager of Civil Protection

Sjur Hartveit - Senior consultant Cybersecurity

CAA Norway – core tasks

- Oversight
- Approval
- Legal and regulatory
- Safety promotion
- Civil protection and preparedness

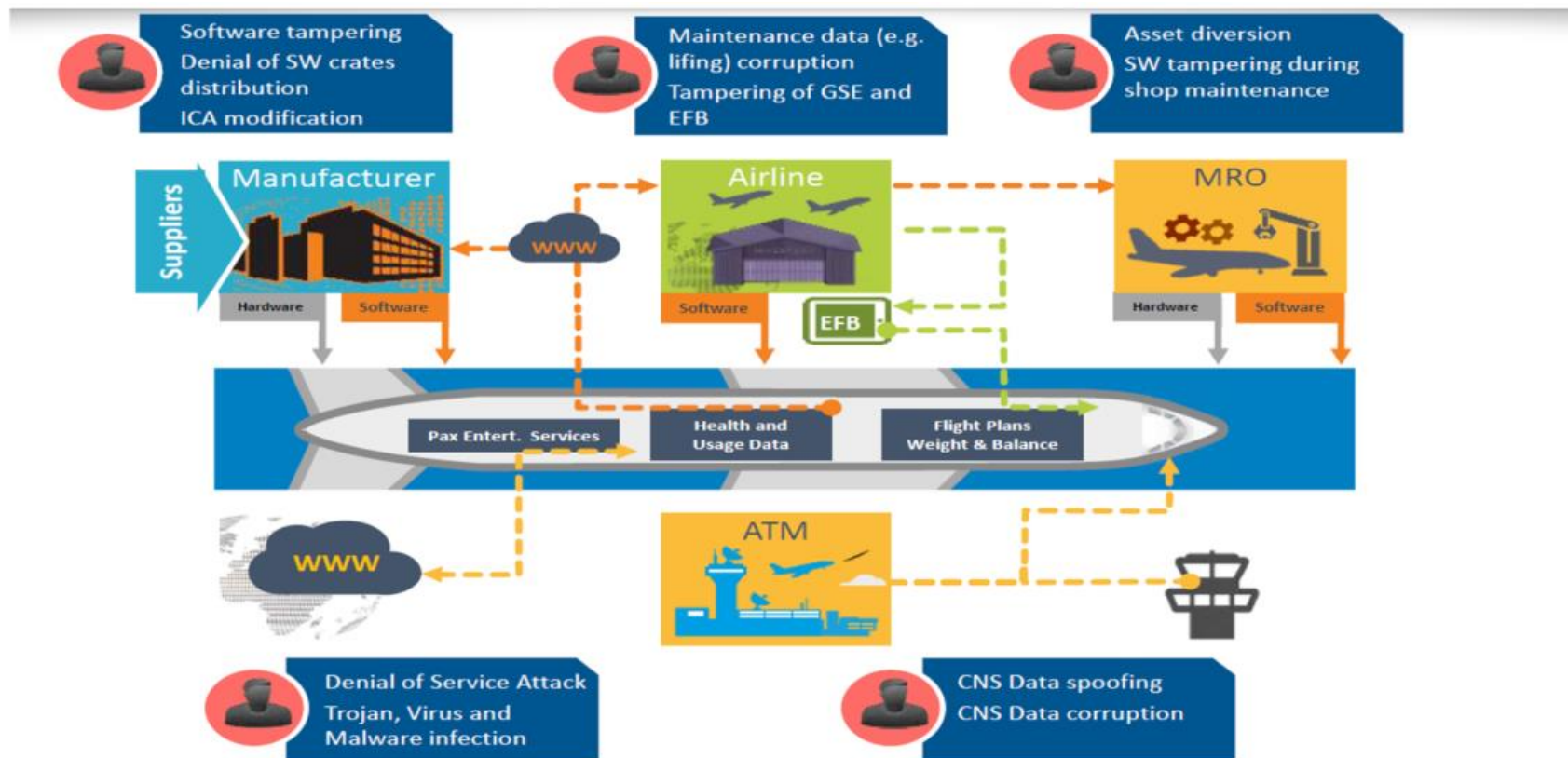




Mr. Davidsen &
Mr Hartveit



Cyber threats in aviation – a holistic view



Not only aircraft...



Airports (Aerodromes)

Airport Security

Training organisations

Aero-Medical Centres

Goods transportation

Supplies



Denial of Service
Data tampering
Personal Data Theft

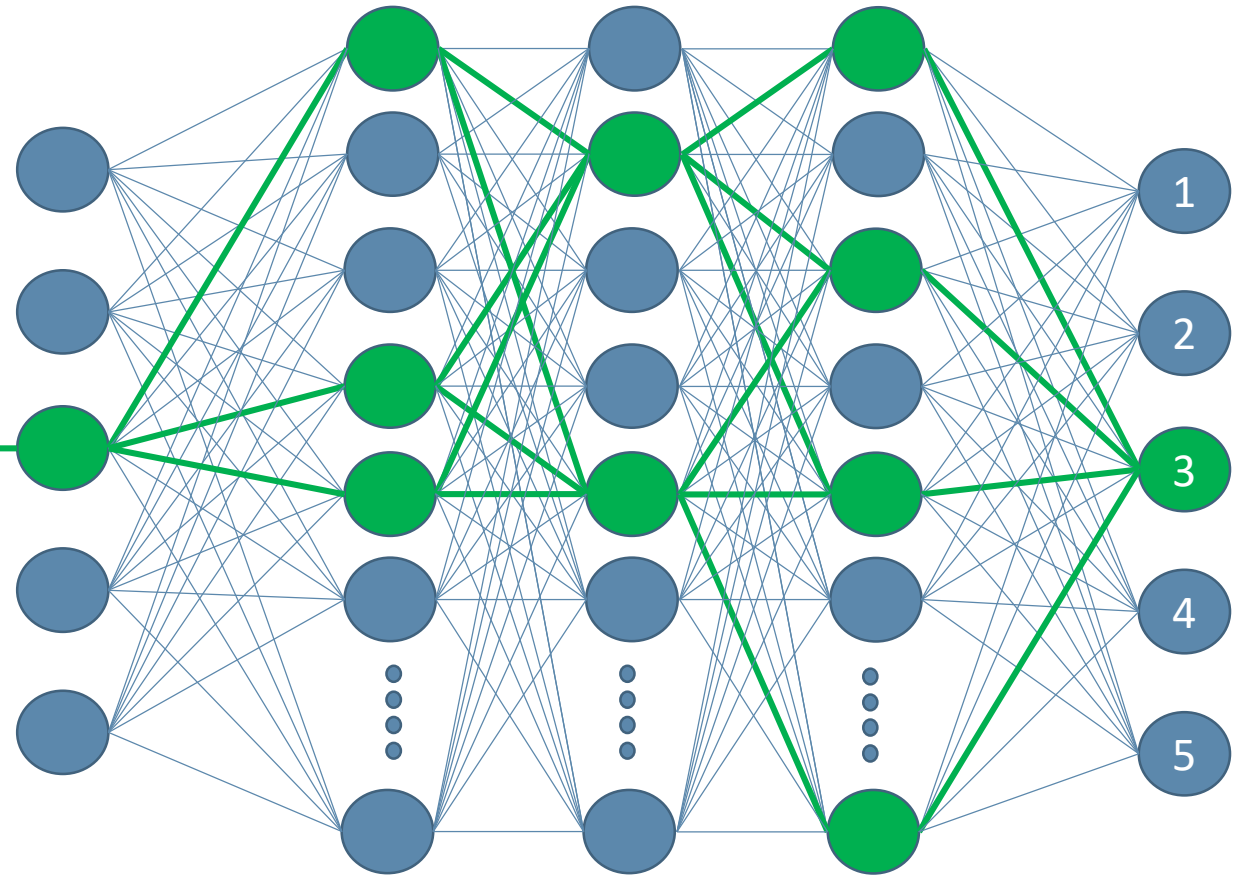
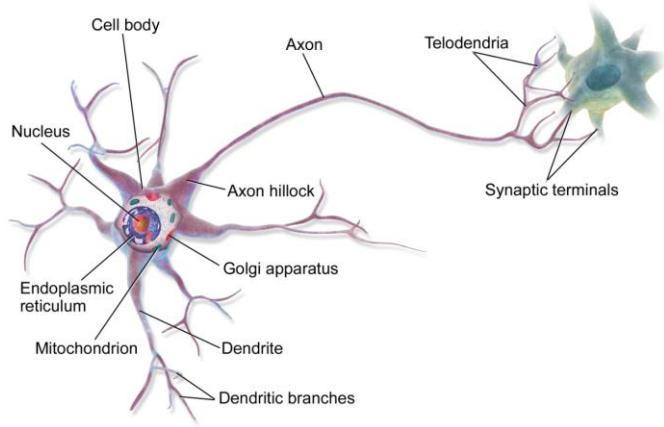
And drones (airborne IoT)...



Hijacking
GNSS Spoofing



And (soon) AI...

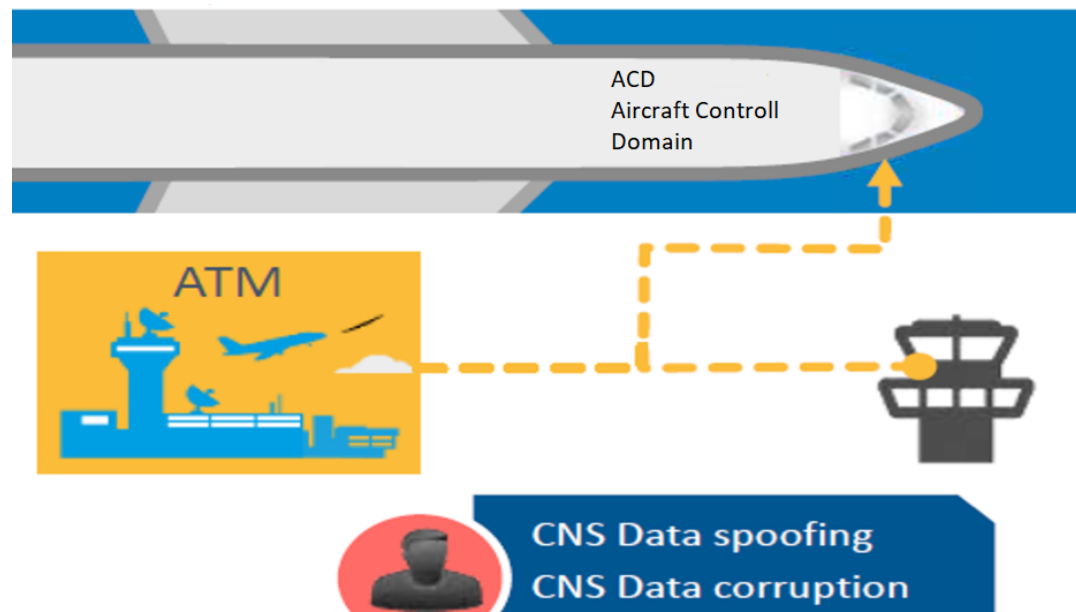


Human + Cyber factors



Source: DARPA

Example: GPS Data Spoofing

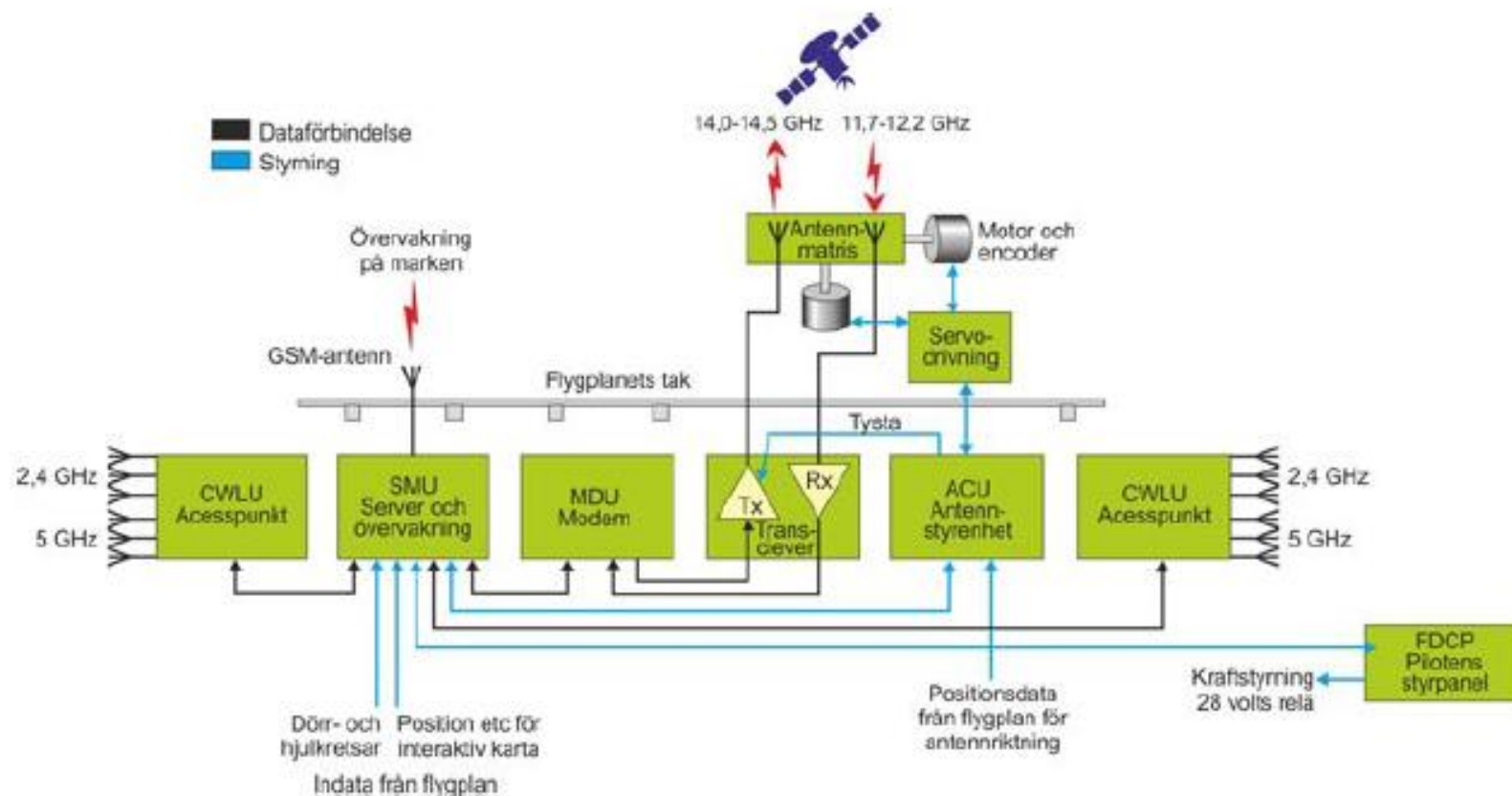


**Flykaptein er bekymret over
«støy-krigen» som foregår i
Nord-Norge: - Har ikke
opplevd et tidligere**

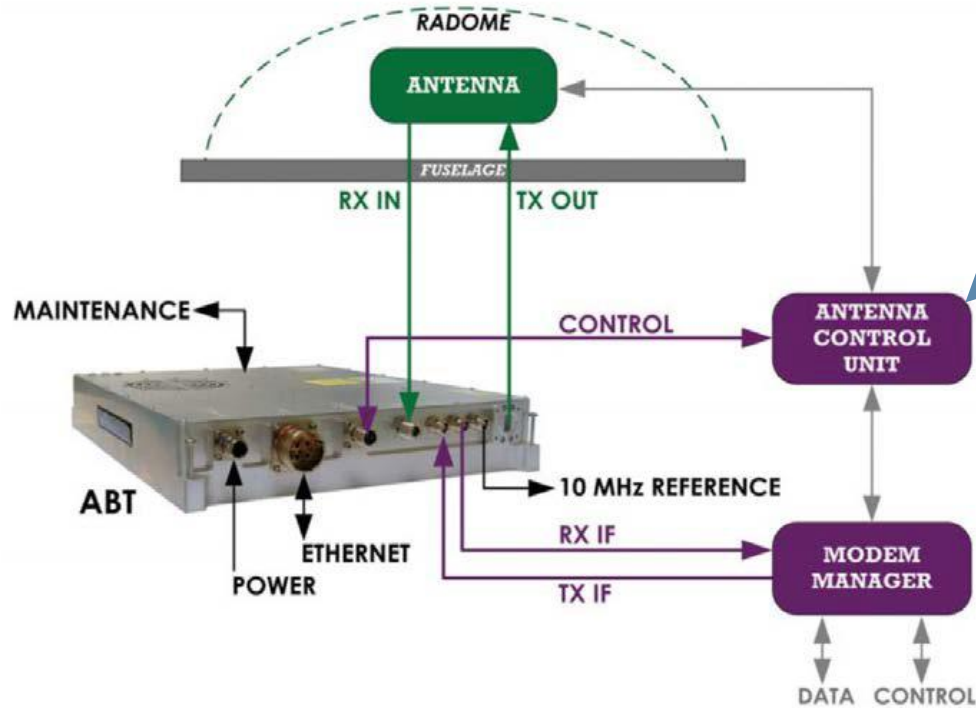
Example: PAX Entertainment Services - SATCOM



PAX Entertainment system – block diagram

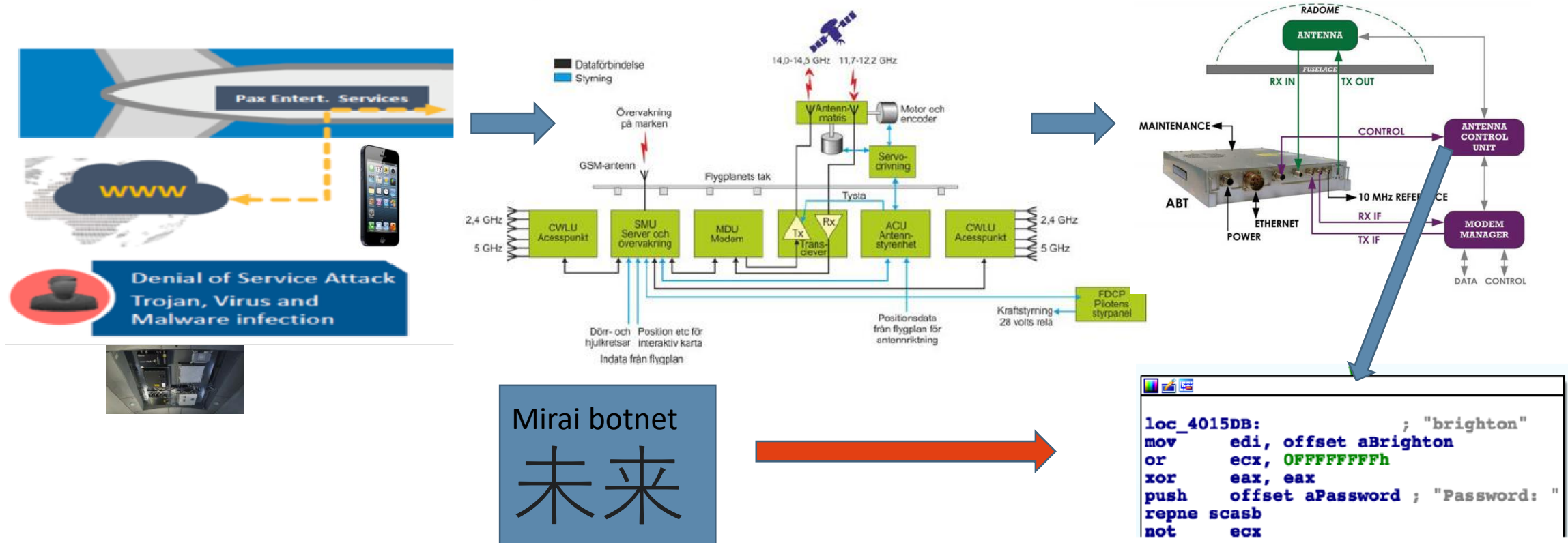


PAX Entertainment system – Antenna Control Unit (ACU)



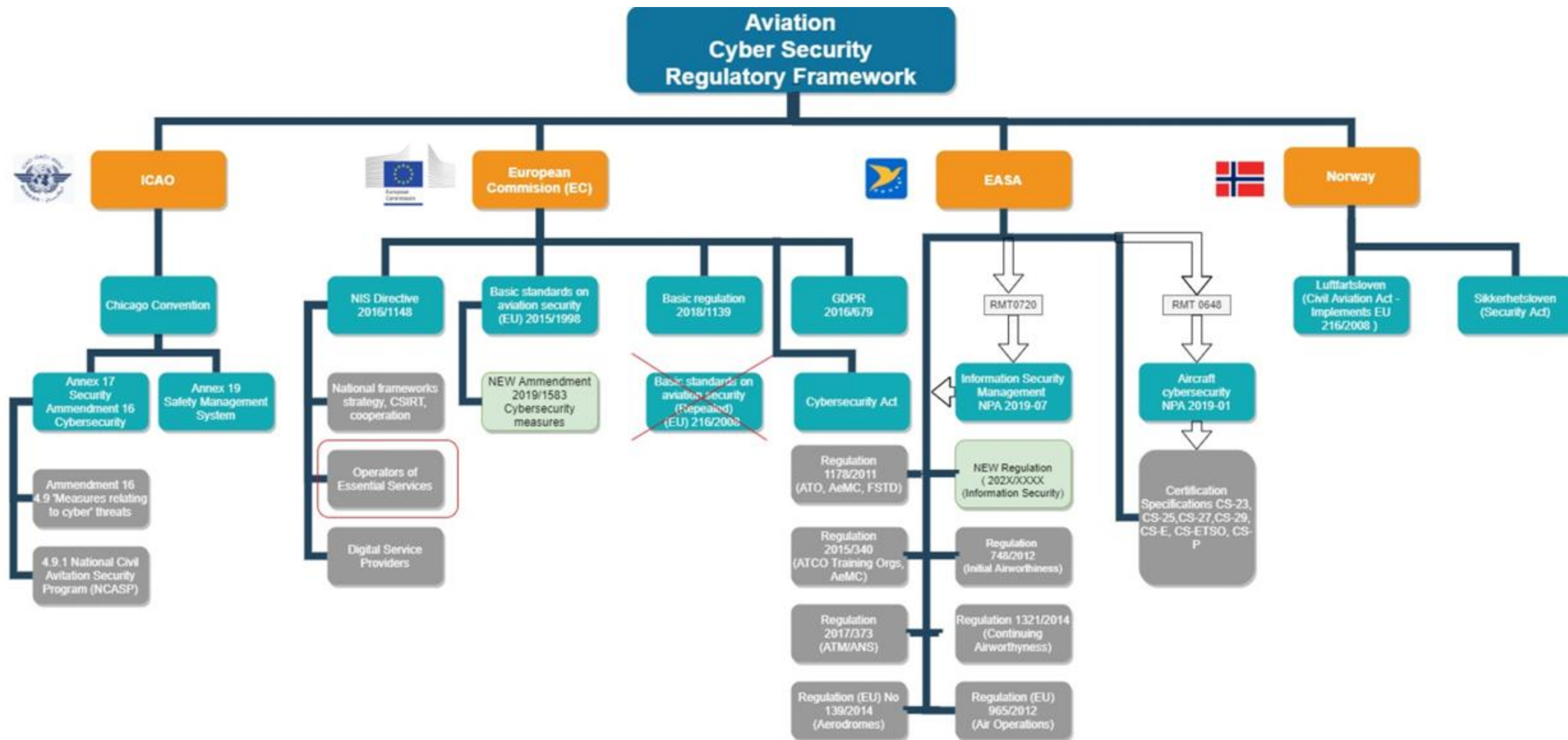
```
loc_4015DB:                                ; "brighton"
mov     edi, offset aBrighton
or      ecx, 0FFFFFFFh
xor     eax, eax
push    offset aPassword ; "Password: "
repne   scasb
not     ecx
```

PAX Entertainment system – the whole picture...



Cybersecurity from a legal perspective





Cybersecurity in aviation - CAA Norway tasks

- Implementing rules (EASA NPA-2019-07 etc,)
- Mapping/surveillance (e.g. ISMS)
- National Cyber Security Center - Partner
- Information sharing (Forum for digital security)
- 2021(2022?) Oversight within cybersecurity
 - ISMS
 - Resources
 - Information security policy
 - Roles and responsibility
 - Risk assessments
 -
- Get involved with cybersecurity research and innovation



European Union Aviation Safety Agency

Notice of Proposed Amendment 2019-07

Management of information security risks

RMT.0720

ANNEX I

AERONAUTICAL INFORMATION SYSTEM SECURITY — AUTHORITY REQUIREMENTS

[PART-AISS.AR]

AISS.AR.005 Objective

AISS.AR.100 Personnel requirements

AISS.AR.200 Information security management system (ISMS)

AISS.AR.400 Allocation of tasks to qualified entities

AISS.AR.500 Record keeping

AISS.AR.600 Oversight

AISS.AR.610 Oversight programme

AISS.AR.620 Information to the Agency

AISS.AR.630 Immediate reaction to an information security problem with safety impact

AISS.AR.800 Assessment of changes to organisations

AISS.AR.900 Findings and corrective actions

Questions?

- We can also be reached at CAA Norway:
 - Bjørnar Andre Davidsen bad@caa.no
 - Sjur Hartveit sjh@caa.no



CAA NORWAY

Thank you for your time.