Can our ATM systems cope?

Integration of commercial space operations into the existing ATM system

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European Organisation
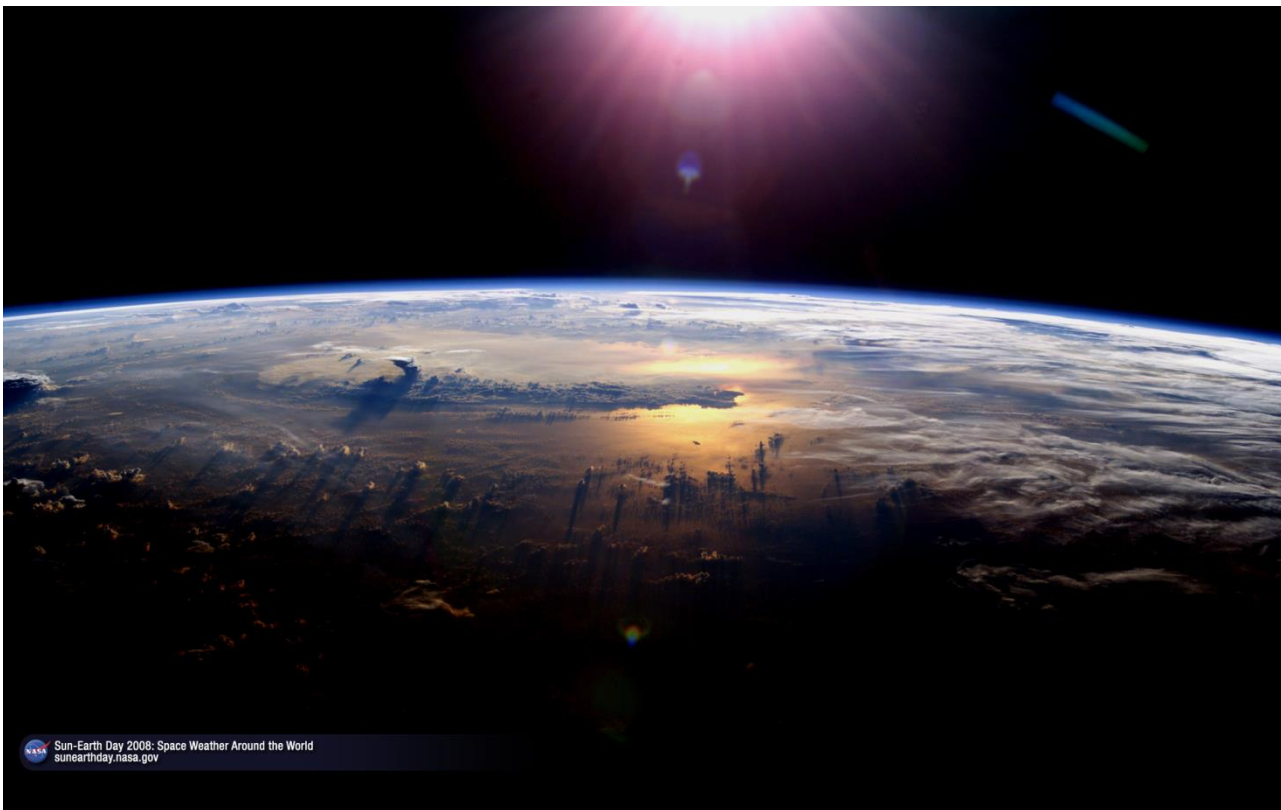

+

National Regulatory Authorities

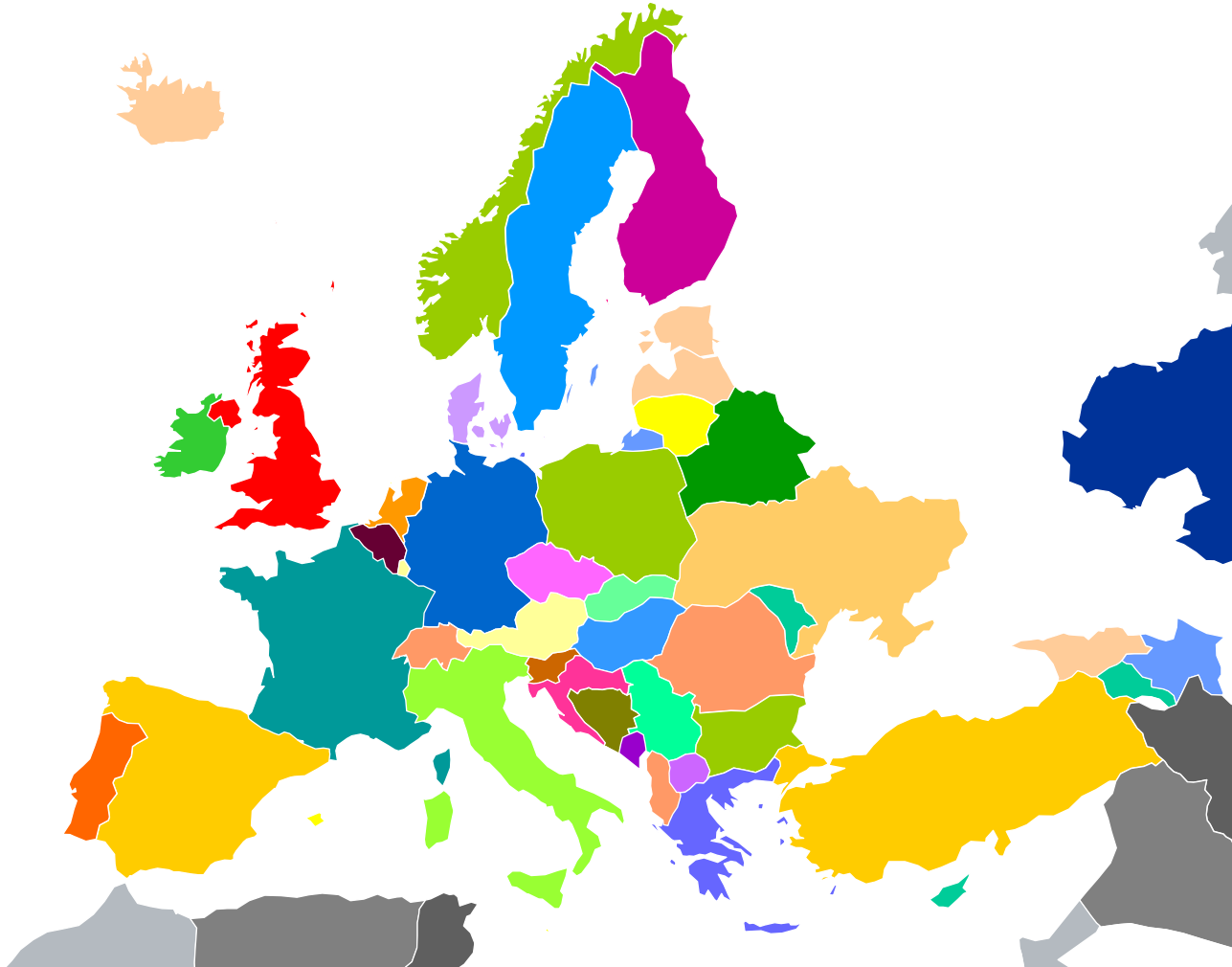Air Navigation Service Providers

A starting point

ICAO: The contracting States recognise that every State has complete and exclusive sovereignty over the airspace above its territory.
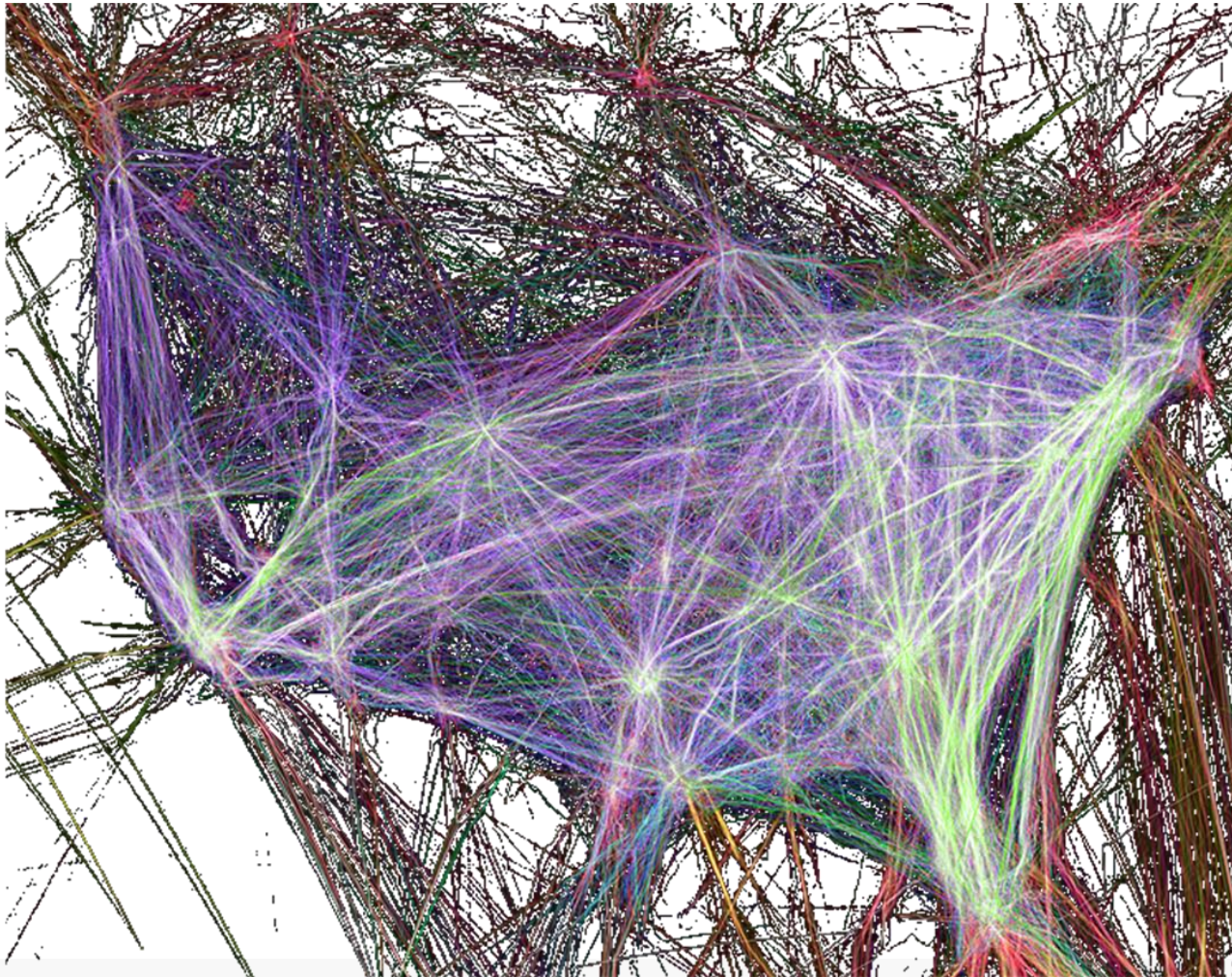
But…………

Where does airspace end??

Fragmentation

Comparison with USA
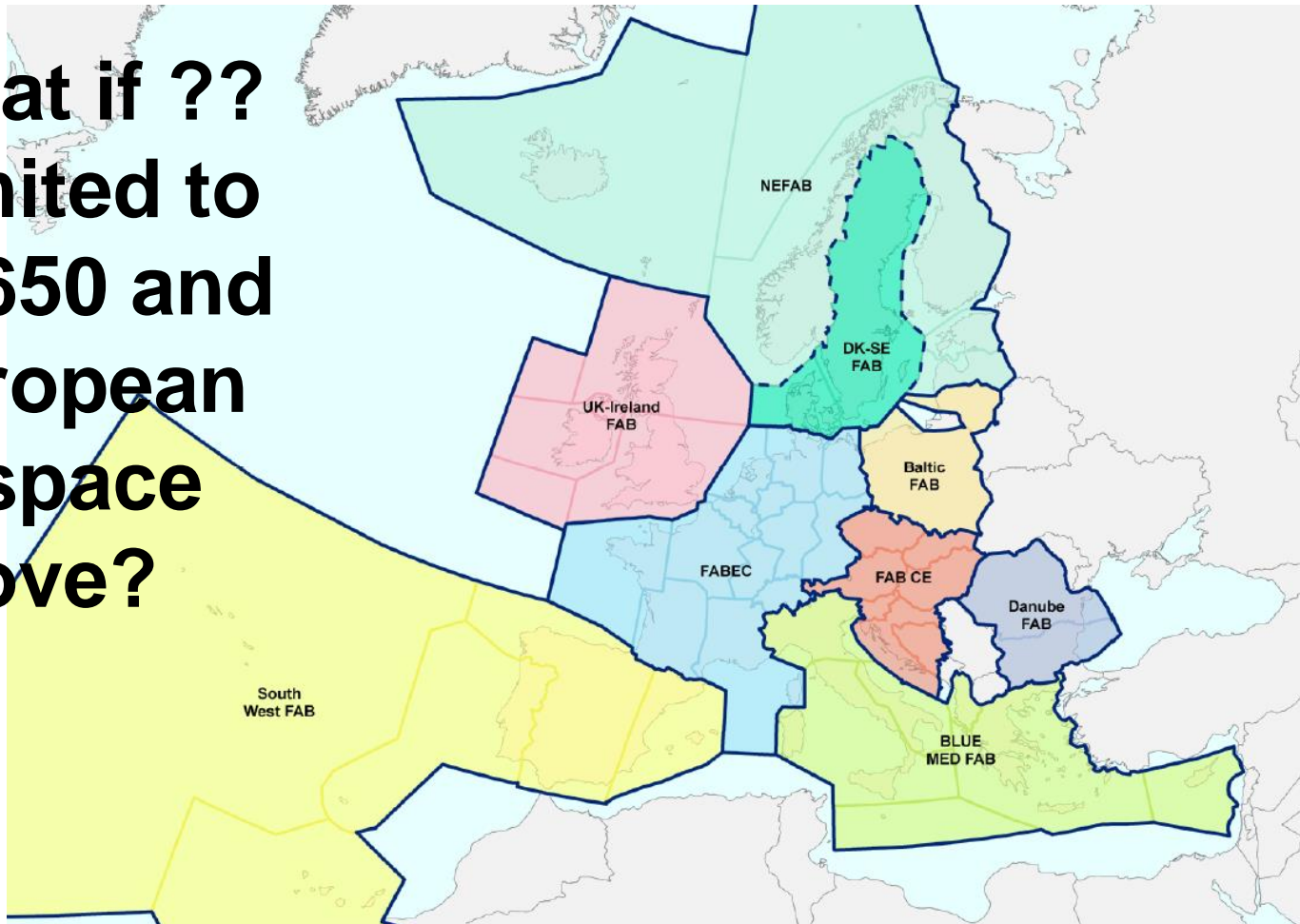

IMPORTANT
DIFFERENCE

USA

1 Service Provider
1 Regulator
+/- 22 ACCs

EUROPE

41 States
EASA + national
regulators
+/- 63 ACCs

Defragmentation – FABs

**What if ??
Limited to
FL650 and
European
airspace
above?**

Equitable Access to Airspace

- Predictable and equitable access to airspace for commercial operations.

- Segregated operations require a volume of airspace to be sterilized to accommodate activity.

- Sterile airspace disrupts civil aviation traffic flows causing increased economic and environmental costs.

Target Levels of Safety

- In aviation, the acceptable level of safety is generally defined in terms of the probability of an aircraft accident occurring.

- Commercial space operations Target Levels of Safety.

- Need to ensure existing levels of safety for other airspace users is not compromised.

Columbia debris trail

Radar Image from National Weather Service: KSHV 17:14 UTC 02/01/2003
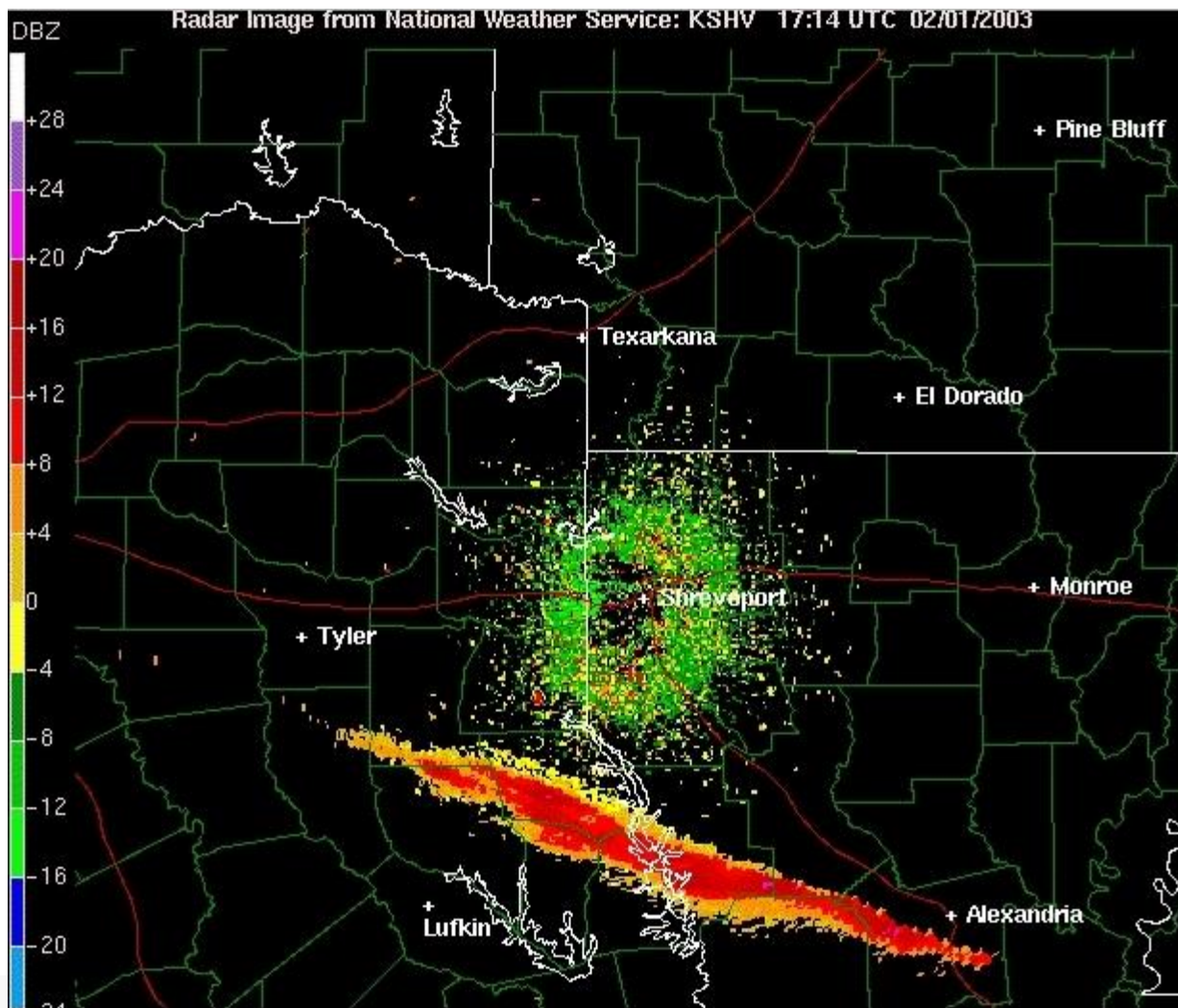
ATM Technical Systems

- **Communications**
- **Navigation**
- **Surveillance**

- Requires minimum aircraft equipage standards
- Can the existing systems cope
- What technical upgrades are needed

ATC Operating Procedures

- Conventional radar control.

- Existing separation standards.

- Instrument Flight Rule requirements.

- **Can they be applied to aerospace operations?**

A Possible Solution?

Past	**Today**	**Future**
Procedural Control	**Radar Control**	**Trajectory Management**
the current and planned a/c positions	**Know** the current and **estimate** planned a/c positions	**Know & share** the current & planned a/c positions
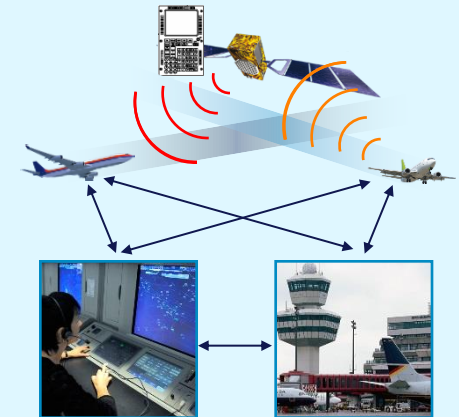
Questions ??

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