vitalsphere
ATM-grade network performance

Intelligent routing and control
Situational awareness
Scalable networks

Air Traffic Management

FREQUENTIS
FOR A SAFER WORLD

Balancing performance and cost

Providing the best results in ATM communications and keeping aviation passengers safe requires a solution designed for the challenges of a modern air traffic management network.
By understanding your needs, Frequentis provides innovative solutions to help maintain the highest level of safety while scaling capacity and improving cost competitiveness.

Challenges of a modern air traffic management network

Innovation
Phase out legacy technologies while leveraging the benefits of a unified all-IP network.

Scalability
Flexibility matching demand with supply.

Safety
Ensure performance for safety-critical applications on a converged IP infrastructure.

Partners
Bring together the right technology affiliations and local players.

Cost
Increase operational performance while reducing costs.

Coverage
Serve large and remote areas.

Ready for the future
Support ongoing changes in operations, such as remote towers and virtualisation of control centres.

Matching air traffic and safety demands with the right network is a big challenge in ATM. It is the core element to achieving the ambitious goals of the industry globally – increasing air space capacity, increasing safety and reducing cost per flight.

While merging all of the IP applications onto a converged IP infrastructure allows for a reduction in operational costs, safety-critical applications require a dedicated solution. This is also a requirement for the implementation of SWIM, virtual centres and remote towers.

Air Navigation Service Providers (ANSPs) need to integrate multiple technologies (e.g. MPLS, microwave, VSAT) onto a single backbone from many providers. The design of such a hybrid network has many challenges – different network delays, varying jitter, routing protocols support and failover behaviour.

Frequentis solves these challenge by providing application-aware routing of communications based not only on the priority of those communications, but also the current performance of the networks available to carry the traffic.

vitalsphere: ATM-grade network performance

vitalsphere provides a level of safety and end-to-end performance not available from conventional networks. Brokering network capacity between ATM-specific applications and non-ATM specialised backbone networks reduces total cost of ownership and allows for bandwidth savings of up to 90%.

vitalsphere combines
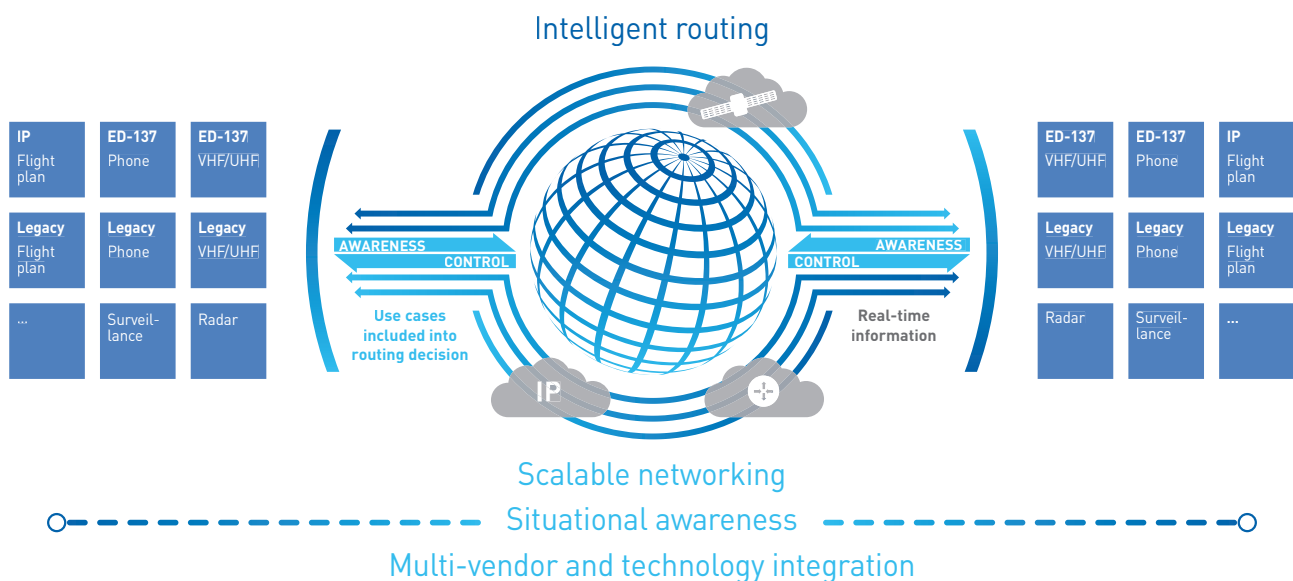
Intelligent routing & control
Matching real-time network performance and application needs. The coordination of requirements from different applications optimises bandwidth utilisation and operational cost.

Situational awareness
Vendor-neutral end-to-end monitoring of applications and networks. This includes real-time measurements for every backbone, and dedicated interfaces to VSAT modems.

Scalable networks
Integration of diverse technologies from multiple vendors. We partner with different vendors to deliver any type of IP-, TDM-, or satellite-based network.

Highest end-to-end performance for every application

Utilising brown-out detection allows for resolution of failures before they occur, as it enables action before a link black-out. This process uses real-time information of actual network performance to re-route safety-critical communication flows before the link fails.

Deterministic communication flows are the foundation for end-to-end path diversity – improving service availability by separating main and standby communication flows across the entire network.

Frequentis networks success stories

Frequentis has a dedicated networks team combining industry experience and broad expertise of safety-critical network projects that connect applications exchanging ATM data on 33% of the world's surface. We partner with technology and service providers along with local system integrators to form the best team for your needs – one team for one solution.

End-to-end voice performance

A large European customer was confronted with an end-of-life notice from a telecommunications company. Together with an international IT partner, Frequentis delivered a network solution connecting all legacy equipment with a new IP backbone, linking more than eleven operational centres with 150 remote sites. Our solution protected our customer's investment and delivered a high-performance, voice delay compensated IP network.

ATM-grade multi-WAN solution

A provider of ATC to more than 8% of the world's airspace, needed a high performance and safe communications infrastructure. Frequentis delivered an ATM-grade network solution integrating MPLS/IP, TDM and VSAT backbones hosting safety-critical and administrative communication. The network's software-defined technologies ensure SLAs on many different applications by dynamically adapting network routing.

Technical operation as a Frequentis service

Frequentis designed, delivered and operates a safety-critical network in central Europe. The solution integrates all operational centres and two redundant data centres via an IP-WAN. A custom-tailored, multi-level redundancy concept ensures the highest availability.

vitalsphere product portfolio

→ Network design
→ Network integration
→ Intelligent routing – NetBroker

→ Network operation
→ Network management
→ Safety & security assessment and design

FREQUENTIS