

SINGLE EUROPEAN SKY CONCEPT

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In condition of increasing quantity of civil and military airspace users, the delays in delivering of air navigation services appeared. The main reason is the significant fragmentation of European airspace. This leads to an increase in the air traffic controllers' workload and, accordingly, a decrease in flight safety. To deal with these problems, a Single European Sky (SES) concept is proposed.

The Single European Sky (SES) endeavor is established to optimize the performance of air traffic management (ATM) and air navigation services (ANS) by fostering improved integration of European airspace. The projected benefits of the SES are considerable: upon its anticipated completion around 2030-2035, it could potentially triple airspace capacity compared to levels seen in 2004, decrease ATM costs by half, elevate safety standards by tenfold, and mitigate the environmental impact of aviation by 10% [1] [2].

The extensive regulatory framework is significantly advancing the reorganization of European airspace and the delivery of air navigation services (ANS). It achieves this by implementing the division of regulatory roles from service delivery, enhancing flexibility in both civilian and military airspace utilization, ensuring equipment compatibility, standardizing the categorization of upper airspace, establishing a unified charging structure for ANS, and implementing consistent licensing criteria for air traffic controllers. In addition, it establishes the 'key components', which form the structure of the SES:

- Within the 'performance scheme,' mandatory performance objectives are established across critical domains, including safety, environmental impact, capacity, cost-effectiveness, and incentives, aiming to enhance the overall effectiveness of ATM and ANS. These performance objectives undergo adoption by the Commission via the comitology procedure. The Commission appoints a 'performance review body' tasked with assisting in the formulation of these objectives and overseeing the implementation of the performance scheme.
- The 'network manager,' presently Eurocontrol, is responsible for enhancing the efficiency of the EU aviation network. It oversees centralized management of network functions, including the design of the European route network, air traffic flow management (ATFM), and the coordination of radio frequencies utilized by general air traffic.

- Functional airspace blocks (FABs) aim to address the division of European airspace by reorganizing it based on air traffic patterns rather than national borders. This approach enables improved collaboration, such as more efficient airspace management, route network optimization, and cost reduction through the integration of services or potential mergers between service providers spanning national boundaries. This initiative ultimately aims to decrease the expenses associated with air navigation services (ANS).
- Establishment of the SESAR (Single European Sky ATM Research) Joint Undertaking oversees the technological and industrial aspects of the Single European Sky (SES) initiative. Its primary focus is on developing and implementing the new European air traffic management (ATM) system, with the goal of enhancing automation levels, ensuring secure data exchange, and improving connectivity within ATM as part of the Digital European Sky initiative. [3]

Military aviation requirements within Single European Sky extend beyond the European Union (EU) to include NATO and Eurocontrol Members, underscoring the imperative for sustained collaboration across this broader spectrum. The implementation of the Single European Sky (SES) initiative will invariably affect military operations, necessitating seamless civil-military coordination to optimize SES performance. Incorporating military involvement from the outset is crucial, particularly when SES impacts Armed Forces activities. This early engagement ensures the development of comprehensive regulations conducive to smooth integration. When formulating SES governance frameworks, due consideration must be given to military needs and constraints. This holistic approach ensures a balanced alignment of economic imperatives with security and defense requirements. Effective collaboration between military and civil entities, both domestically and within the EU, is paramount. This cooperation ensures equitable consideration of commercial aviation expectations and military imperatives, transcending EU borders for comprehensive airspace management. [3]

Conclusion

The fragmentation of European airspace leads to delays in air navigation services amidst increasing civil and military airspace users. The Single European Sky (SES) initiative aims to rectify this by optimizing air traffic management and navigation services, anticipating significant benefits such as tripling airspace capacity and halving ATM costs. The SES regulatory framework emphasizes role division, airspace flexibility, equipment interoperability, and standardized classification. Functional airspace blocks (FABs) streamline collaboration, while the SESAR Joint Undertaking advances technological aspects. Effective civil-military cooperation is crucial for SES success, ensuring comprehensive regulation development and balanced consideration of economic and security needs.

References

1. Regulation (EC) No 549/2004 of the European Parliament and of the Council of 10. March 2004 laying down the framework for the creation of the single European sky
2. Regulation (EC) No 1070/2009 of the European Parliament and of the Council of 21 October 2009 in order to improve the performance and sustainability of the European aviation system
3. Eurocontrol civil-military coordination document from 23.10.2023