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AVIATION FACTS N°08

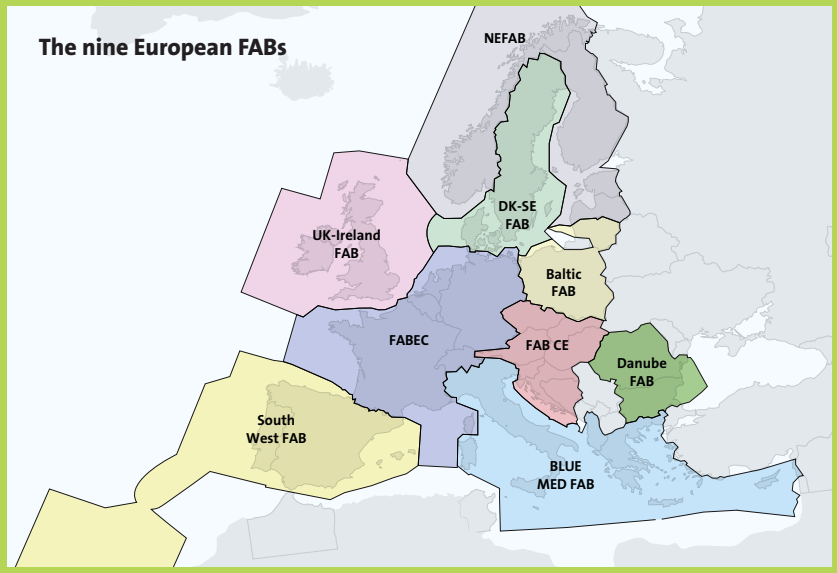
THE ADDED VALUE OF FUNCTIONAL AIRSPACE BLOCKS

Europe's airspace capacity challenge

Air traffic management (ATM) in the European Union is the responsibility of nation States, with airspace borders over the continent largely following national boundaries. Crossing national borders can involve considerable workload for pilots and controllers – permission to fly into the airspace of a neighbouring state has to be requested and agreed, radio frequencies often need to be changed and different operational procedures observed. In the 1990s the number of flight delays and cancellations began to grow as this airspace design resulted in large numbers of bottlenecks in the core traffic areas of Europe. In response, the European Commission developed its vision of a Single European Sky : an airspace above Europe managed as a single continuum, with airspace sectors designed to reflect traffic demand and not national borders. The aim was to reduce workload for controllers and pilots while increasing safety, cost-efficiency and the environmental performance of all aircraft operators. In 2004 the SES programme was formally launched in all European Union states.

Functional Airspace Blocks – a key component to the Single European Sky

Functional Airspace Blocks (FABs) were one of the fundamental elements in the European Commission's SES vision. FABs are single blocks of airspace designed and developed by neighbouring states together with their air navigation service providers (ANSPs) to deal with traffic loads irrespective of national boundaries. There are nine FABs in Europe.



- BALTIC FAB: Poland, Lithuania;
- BLUE MED: Italy, Malta, Greece, Cyprus, as well as Egypt, Tunisia, Albania and Jordan as observers;
- DANUBE: Bulgaria and Romania;
- Denmark-Sweden: Denmark, Sweden;
- FAB Central Europe (FABCE): Czech Republic, Slovak Republic, Austria, Hungary, Croatia, Slovenia, Bosnia and Herzegovina;
- FAB Europe Central (FABEC): France, Germany, Belgium, Netherlands, Luxembourg and Switzerland;
- FAB (NEFAB): Estonia, Finland, Latvia, Norway;
- South West FAB (SW FAB): Portugal and Spain;
- UK- IRELAND: FAB United Kingdom and Ireland

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FABs' achievements and benefits

In 2017, the European Commission acknowleged that "FABs are the best vehicle for airspace development where national and military interests are a barrier to progress in optimising the delivery of air navigation services."[1] Despite the considerable challenges of bringing together organisations with different legal, employment and operational systems together with each State's challenges of ensuring national sovereignty issues and military stakeholder interests – it is now becoming clear that FABs have paved the way for new levels of cross-border cooperation among ANSPs, delivering real, significant ATM improvements for all airspace users.

According to another recent study *(The added value of FABs A generic Cost-Benefit Analysis[2])* FABs are generating increased levels of safety and capacity, a reduction in the overall environmental footprint of aircraft operations and a positive cost-benefit, which will result in more than €1.6 billion by 2029. Most of the benefits will stem from the introduction of inter-FAB free route airspace (FRA) procedures which by 2029 will have delivered €1.36 billion in savings to airlines. According to the Network Manager the inter-FAB FRA projects across Europe, implemented since 2014, have resulted in €500 million savings for airspace users in fuel costs alone.

FABs are currently conducting or planning 77 performance-improving projects and activities – 65 of these are ANSP initiatives and 12 are being pioneered by States themselves.

Of these programmes:

- 14 activities have been developed to increase safety levels;
- 15 will increase available capacity;
- 16 support environmental targets;
- and six will improve the efficiency of the ATM system.

The study also shows that FABs are playing an important role in facilitating and accelerating new technology programmes. Most FABs have integrated military operations into their structures, although this is an area not included in the original SES regulations. In the critical area of improving safety, an inter-FAB benchmarking exercise has been undertaken to identify the application of safety net components among neighbouring ANSPs, improving safety levels, reducing development costs and paving the way for future common development.

Common procurement programmes are also gaining traction, for example, voice communication system (VCS) common specifications are now being defined at a FAB level and used for future Calls for Tender (CFT), reducing costs and harmonising system deployment throughout the continent.

How effective have FABs been in dealing with airspace congestion?

According to the European Commission the rationalisation of services and resource optimisation remained challenging[2]. FABs and ANSPs vary considerably in size and scope – while integrating operations among smaller ANSPs can generate efficiency improvements once a certain size of operation is reached the benefits of cross-border integration start to diminish[3].

[1] https://ec.europa.eu/transport/sites/transport/files/2017-01-study-on-functional-airspace-blocks.pdf

[2] https://www.inter-fab.eu/images/user-pics/pdf-downloads/20190228_AddedValueofFABs_v1.pdf

[3] https://www.researchgate.net/publication/320797652_Efficiency_gains_through_Functional_Airspace_Blocks_An_analysis_of_Economies_of_Scale_in_European_Air_Traffic_Management/download