

## Fragmentation in Air Traffic and its Impact on ATM Performance

Research workshop  
Hungarian Academy of Sciences  
Budapest, 14-15 May 2019

- FAB Central Europe and FAB Europe Central organized the research workshop on 14 - 15 May 2019 hosted by HungaroControl in Budapest. The conference was held in partnership with the FSR Florence School of Regulation and the German Aviation Research Society (GARS).
- About 130 participants from: Universities, institutes, European Commission, States, NSAs, airspace users, ANSPs, trade unions, and industry. Delegates from: Austria, Belgium, Bulgaria, Croatia, Cyprus, Finland, France, Georgia, Germany, Hungary, Italy, Lithuania, Netherlands, Norway, Slovakia, Slovenia, Spain, Switzerland, UK, Ukraine.
- Workshop context provided by Hungarian Minister for Innovation and Technology László Palkovics; European Commission DG MOVE Eric Perrin, FAB CE Programme Director Matej Eljon, and FABEC Chairman CEO Board Michiel van Dorst.

### Key Messages

- The term “Fragmentation” itself is actually neutral, but in ATM is often used in a negative context. Yet, there are multiple examples where local procedures serve to increase efficiency and this local knowledge benefits performance of the wider network.
- The fragmentation debate currently only focuses on ANSPs. However, it extends across the industry to include legal, financial, institutional, cultural and labour elements that shape the aviation industry as a whole.
- Defragmentation requires political, legal, regulatory and institutional challenges to overcome. Another challenge is wide variation in labour rates and social aspects.
- Technology developments and automation have helped to reduce fragmentation in ATM, however as long as human beings are

involved fragmentation is inevitable. Only 100% automation will overcome fragmentation.

- From an efficiency analysis point of view there is no relevant indication that defragmentation in ATM would increase efficiency – it may decrease efficiency. In some cases defragmentation can lead to economies of scale but research analysis has shown that merging some large ANSPs is likely to result in decreasing economies of scale.
- Cooperation activities resulting FAB activity currently delivers annual savings to airspace users of more than EUR150 million according to the FAB performance study.
- Civil/military cooperation allows airspace users to optimise traffic flow. This activity is effective and expanding at central and regional levels. National defence obligations mean that military airspace is introducing some inherent fragmentation although examples show that a symbiosis is possible.
- Free Route is established from the Black Sea to the North Atlantic and to the Mediterranean, and is facilitated and accelerated at ANSP- and FAB-level. Greater coordination between ACCs could benefit performance and further analysis is needed to examine if a flow-oriented airspace structure can reduce delays further.
- Technological developments are contributing to defragmentation: for example the adoption of a common operating system by ANSP groups increases interoperability and synergies. This could be accelerated and supported by harmonised regulation.
- Digitisation is contributing to defragmentation: data service providers operate across borders; virtualisation is not limited by geography or flight information regions.

Several case studies demonstrated the high complexity of ATM business with regard to operations, technology, institutional issues and legal/regulatory framework. Therefore, more detailed work is required to determine in which areas and how efficiency gains may be achieved either by de-fragmentation or by re-fragmentation – and where the system is already optimized. Currently there is a lack of instruments to measure and understand where fragmentation occurs and whether this brings inefficiency in the system.

