

## Research Workshop

# Turbulent times – academics and experts seek solutions for more resilient air traffic management

**16 September 2022;** Around 100 participants from all over Europe and America attended the research workshop *Single European Sky and Resilience in ATM* in Sofia, Bulgaria, on 15-16 September. Organised by Danube FAB, Functional Airspace Block Europe Central (FABEC) and the German Aviation Research Society (GARS), the workshop brought together senior academics, high-level industry experts and regulators to exchange views on how to manage increasing uncertainty in air traffic management. In response to shocks such as tumbling demand during the pandemic, geopolitical upheaval, unpredictable weather phenomena and changing traffic patterns, delegates identified priority areas to increase resilience during challenging times.

Unpredictable events have become everyday reality and take different forms and range from local loss of traffic or local extreme weather to global shocks such as the pandemic and the war in Ukraine. Rather than dwell on their frequency and cause, the workshop highlighted the importance of preparing for future uncertainties and shocks. For example, shifting traffic flow leads to excess demand and additional income in some states while others experience unused capacity and falling income. Just-in-time resource management is unsuited to these extreme fluctuations, and capacity planning take on greater importance. Disruptive events take different forms and range from local loss of traffic or local extreme weather to global shocks such as the pandemic and the war in Ukraine. There is a balance to be found between operational and financial resilience to withstand such events. Societal concern over climate change and environmental changes have a slow but long-lasting impact, but it is so far attributed minor importance in the regulation defining the mandate of air navigation services.

Among senior speakers, delegates heard from Princeton University Professor of Economics and Director of the Bendheim Center for Finance, Markus Brunnermeier, about managing uncertainty, and from Embry-Riddle Aeronautical University's Radu Babiceanu about cyber security resilience. Industry representatives and academics from more than ten European countries and the United States contributed to in-depth discussions about the challenges and opportunities facing air traffic control and the value of resilient infrastructure. This resulted in key findings that highlight the importance of balanced performance targets, financial and operational buffers, regular stress tests and a collective approach to forecasting to best help manage future uncertainty.



*The airspace of the six FABEC States of Belgium, France, Germany, Luxembourg, the Netherlands and Switzerland is one of the busiest and most complex in the world. The majority of major European airports, major civil airways and military training areas are located in this area. FABEC airspace covers 1.7 million km<sup>2</sup> and handles over 55% of European air traffic. In 2020, FABEC won the ATM Environment Award for the second consecutive year.*

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