

Civil-Military coordination in the French airspace

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 Green Aviation

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PROMOTING A DYNAMIC AIRSPACE MANAGEMENT FOR ENVIRONMENTAL-FRIENDLY FLIGHTS

France is known for its highly efficient coordination of military and civil air traffic.

This trust-driven collaboration ensures a high level of flight safety while sharply optimising use of airspace in order to minimise delays. At the end of the day, this leads concomitantly to substantial benefits in terms of fuel consumption and CO₂ emissions for a greener aviation!

France strives to promote this collaborative dynamic among its European partners.



FUA CONCEPT, AN ASSET FOR A GREENER AVIATION

France has been a leading country in implementing the concept of the Flexible Use of Airspace (FUA). This concept aims at optimising the use of the airspace for both civil and military stakeholders via a dynamic management process. Thus, the use of military training areas in middle and high altitude is strictly tailored to the need. Moreover, in order to alleviate the impact on the civil network, air fighting training cross-border areas have been created.

For more than 15 years, French civil and military authorities have strived to improve FUA tools and operational processes to address every stakeholder's needs.

Initially aimed at reducing delays, this flexible use of airspace contributes also to optimise flight trajectories (shorter routes, optimised vertical flight profile) as well as reducing CO₂ emissions.

THE FRENCH CIVIL-MILITARY COOPERATION DOCTRINE IS REDUCING DELAYS

In France, civil and military are working closely on a daily basis to continuously improve the organisation and the management of an airspace that represents 1 million km², one of the largest in Europe. The objective is to provide a high quality service to airline operators, general air traffic as well as military users.

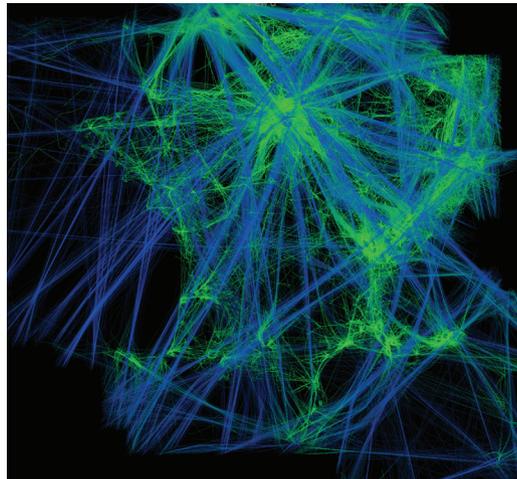
For many years thanks to an advanced civil-military coordination, France has demonstrated through its performance indicators that an efficient implementation of the FUA concept enables the realisation of the military activities while diminishing drastically their impact on the civil traffic flows. In the record-breaking year of 2019 when almost 3.3 million civil controlled

flights took place, **air traffic regulation related to airspace management barely reached 1% of en-route total delays.**

These outstanding results within a particularly busy airspace hinge upon the robustness of the use plan of that airspace which gives the civil users sufficient notice to adapt to the constraints stemming from military activities, as well as an airspace use tailored to the need.



The implementation of these best practises in Europe will render Aviation greener.



THE FRENCH CIVIL-MILITARY COOPERATION DOCTRINE FOSTERS MORE ENVIRONMENTAL-FRIENDLY FLIGHTS

In Western Europe, the en-route Horizontal Flight Efficiency (HFE) remains stable and high (97% in FABEC¹ airspace). To further improve this figure, the concept of advanced flexible use of airspace (A-FUA), developed by EUROCONTROL in 2015, aims at managing as a whole airspace, flow of traffic and capacity and no longer independently, along with Military Variable Profile Areas (MVPA), Variable Geometry Areas (VGA) or Dynamic Mobile Areas (DMA).

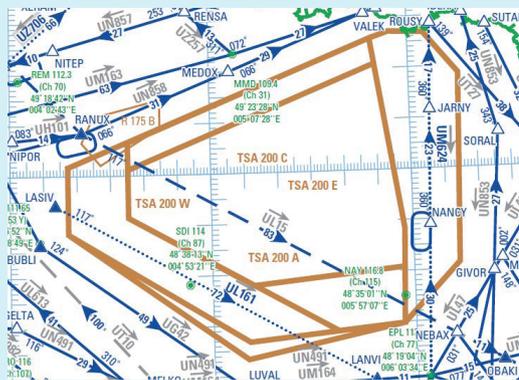
France, pioneer in that matter, has endorsed MVPA/VGA airspaces for more than 10 years along with innovating management processes. A means of selection of civil traffic priorities so called Traffic Light Scheme (TLS) analyses the expected traffic flows for several days in a more reliable way than before. It grants civil traffic some priority slots of few hours per day while guaranteeing military activities in the remaining slots. Both authorities jointly validate thresholds called Traffic Volume and representing a number of planned flights on some routes. When they are reached, these

thresholds trigger automatically, without further negotiation, predefined priorities. These operational measures are totally fulfilling both stakeholders expectations and are regularly highlighted as one of the key factors of the excellence of the French civil-military relationship.

The efficiency of those measures requires a fine-tuned knowledge of local needs and constraints, a prior agreement at State level and adequate exchange with the EUROCONTROL Network Manager for overall coherence.

¹ FABEC is composed of six States: Germany, Belgium, France, Luxemburg, the Netherlands and Switzerland.

TSA 200: MILITARY VARIABLE GEOMETRY AREAS (VGA) AND EXAMPLE OF ASSOCIATED DECISION MAKING PROCESS (TLS)



TRIGGER POINT

TRAFFIC VOLUME

Evolving flights South of TSA 200A

Overload threshold: 20 aircraft/hour from Paris-Orly, Paris CDG and Beauvais via BUBLI/LASIV or towards Switzerland via GELTA.

PREDEFINED PRIORITIES AFTER TRIGGER POINT

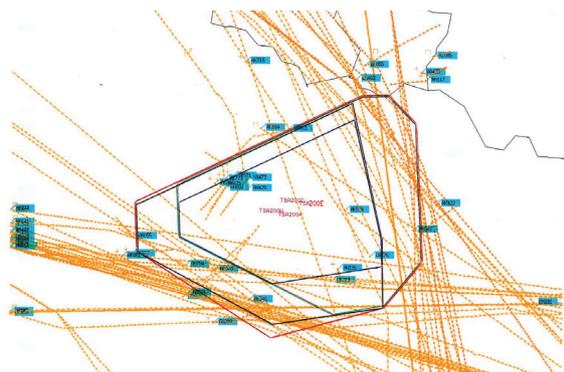
- Before 0700 UTC: GAT priority
- Between 0700 UTC and 1600 UTC from MON to FRI: 3 hours GAT priority eventually divided in various slots, with allocation for Defence needs of TSA 200E or TSA 200W or TSA 200C and TRA 22 and R122.



The implementation of this decision-making process Europe wise will render Aviation greener.

A BETTER INVOLVEMENT OF AIRLINES AND THEIR COMPUTERISED FLIGHT PLAN SERVICE PROVIDERS (CFSP) FOR MORE SIGNIFICANT ENVIRONMENTAL BENEFITS

Trajectories compilation clearly shows that flights continue to avoid military areas even though the information of their deactivation is made available at large notice, even during weekends and holidays. Efforts pursued by civil and military authorities related to FUA in order to timely use and manage the airspace should be reinforced by airlines operators and their CFSP using the released airspace and direct routes thereof.

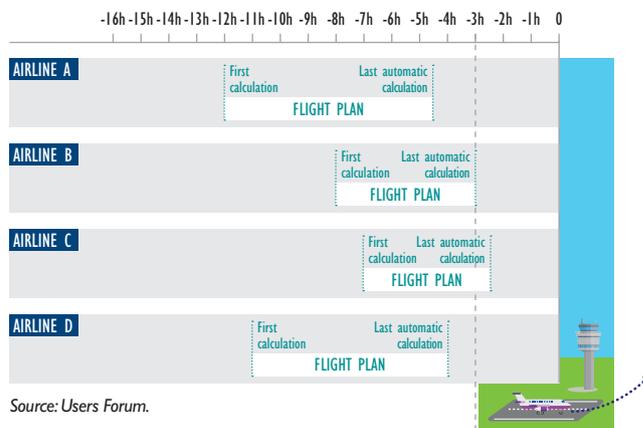


TSA 200 AICIE/W: trajectories compilation of Saturday, October 3rd 2020 from 0640 to 0940 UTC. While these military areas have been deactivated well in advance, numerous civil flights continue to circumnavigate those areas instead of using direct routes.

The implementation of a dynamic airspace management in correlation with an improved management of the activation/deactivation of military areas at middle and high altitude bring substantial benefits in terms of environment. Nevertheless it must be

appraised using a coherent and pragmatic cost-benefit analysis taking into account safety, commercial aspects as well as military activities.

CFSP flight plan preparation time per airline



Source: Users Forum.



The entire operational stakeholders of the aeronautical community are totally committed to build a more environmental-friendly aviation. A global approach is the key to achieve this goal.



WINNER

FABEC was awarded in February 2021 a prestigious international prize for its commitment in terms of environment and its encouraging results.

120,000 tons of fuel have been spared along air route network in France in 2018 representing a reduction of CO₂ emissions of approximately 400,000 tons.