



FAB EC NEWSLETTER

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FAB Europe Central:

Getting closer

In November 2006, work on Europe's largest Functional Airspace Block (FAB) project was started: the Functional Airspace Block Europe Central (FAB EC). The study area covers about 1.7 million square kilometres of airspace. In this airspace, 5,500 air traffic controllers from Belgium, France, Germany, Luxembourg, the Netherlands and Switzerland handle more than half of all European flights. And air traffic is expected to increase.

These figures alone show the importance of the FAB EC project. But its real challenge only becomes apparent when considering the basic idea behind a functional airspace block, namely the provision of air traffic control irrespective of national borders. Cross-border air traffic control services always affect national sovereign powers, cooperation between civil and military organisations, liability issues, diverging labour-law systems and, of course, the financing of the system.

But even though the task is very complex, experts are sure that the future of European air navigation services will be characterised by FABs. Jules Kneepkens, Chairman of the High Level Policy Group (also Director General of the Civil Aviation Authority of Belgium) says: "The air traffic volume in the core area of Europe will continue to increase in the coming years. We will be able to

meet this challenge only if we enhance safety, capacity and cost-effectiveness together with our partners across borders." This objective is based on the requirements which the European Commission laid down in its Single European Sky (SES) Regulations. But according to Mr Kneepkens, the FAB EC project surpasses these requirements in two ways. "Not only did we extend the study to the lower airspace in order to ensure the integration of the large international hubs in Frankfurt, Paris, Amsterdam, Zurich and Brussels, but we also voluntarily included the issue of air transport and the environment in our strategy. Our experts have, for example, been assessing how optimised routing can contribute to reduce the impact on the environment."

The practical work has shown that it was the right decision to choose a bottom-up approach where the study is conducted by experts from the participating air navigation service providers (ANSPs). "Activities in the seven working groups are characterised by technical discussions among the experts. Despite the complex topic and the differing national perspectives, we have already secured some results", says Bernard Martens, Chairman of the Steering Group (Project Leader International Development at Belgocontrol). The deliverables of the individual working groups will form the basis for the final study which is to be concluded in summer 2008.

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Further important input for the study will come from the requirements and opinions of the stakeholders. Mr Martens says: "During a workshop in January 2007, we asked our customers about their expectations. The suggestions were then directly considered in the work of the Operational Working Group." In mid-February, around 120 stakeholders, including representatives of the unions, the adjacent States and the European Commission, were informed about the work of the FAB EC at the first Stakeholder Forum. The participants returned more than 40 feedback forms with further questions. In July, the CEOs of the civil ANSPs met with the professional



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ne a long-term ATM concept for the whole of Europe. In this sense the FAB ATM concept could be seen as an intermediate step to SESAR.

OPS WG chairman Karl-Heinz Gatz (DFS Head of Munich ACC, Unit South) admits that his Group adopted a new approach “because”, as he explains “people all of a sudden had to start acting within a new FAB environment.” Now work is well under way. The work packages that have already been completed concern the initial FAB ATM concept, traffic forecasting, user expectations, and the contingency concept.

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organisations and trade associations ETF, ATCEUC, IFAT-SEA and IFATCA for the first time to exchange views on this matter. Mr Martens concludes: “The consultation of our stakeholders is of the utmost importance for the quality of our study.” Further events will take place in the coming months. “The most difficult aspect will be to combine the individual interests and views, which in some respects, vary to a great extent, and to bring them together with the requirements and solutions which are developed in the project”, says Mr Martens.

Mr Kneepkens and Mr Martens agree that the FAB EC will make a significant contribution towards the improvement of safety, the enhancement of capacity and towards better cost-effectiveness.

These initial results have provided Mr Gatz and the other Group members with an understanding of a number of essential parameters that are needed to answer the key question whether or not a FAB EC is feasible. Still on the working table are the packages covering the airspace design based on fast-time simulations, key performance indicators, and the aeronautic information services (AIS) and meteorological (MET) concepts. The implementation roadmap for the FAB EC ATM concept should be ready in the fourth quarter of 2007.

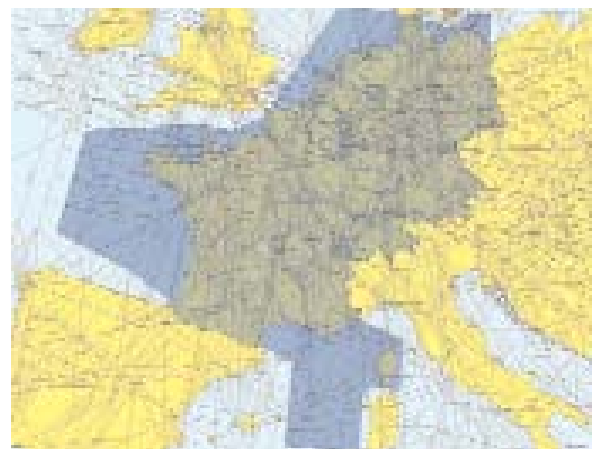
Operational Working Group:

Looking from a network perspective

Air Traffic Management (ATM) has thus far been closely linked to national boundaries and cooperation between air navigation service providers could be further improved. To be able to cope with the expected further rapid growth of air transport, the only solution is for the civil and military ANSPs of neighbouring countries to work more closely together. The Operational Working Group (OPS WG) therefore looks at airspace from a network perspective, regardless of existing boundaries or current areas of responsibility.

The work of the OPS WG is considerable and complex. It covers the whole range of operational aspects - from airspace design to aeronautical information. The outcome of the study will be fully in line with the Single European Sky ATM Research (SESAR), the project being jointly undertaken by the European Commission and Eurocontrol to defi-

To outline the initial FAB EC ATM concept, the 80 members of the OPS WG first carried out an extensive inventory of the current working practices of the various ANSPs, as their operational concepts and procedures sometimes differentiate considerably. After this pooling of experiences the best practices and innovative ideas were singled out. Says Mr Gatz: “There now exists a common under-



the FAB Europe Central



standing of the operational changes that are necessary to build this new concept." The so-called Main Operational Changes (MOCs) relate to a whole range of issues, such as cross-border sector design and management, with flexible sectors designed to cope with changing traffic flows, common arrival and departure management, conflict management, improved weather forecasting, and the creation of dynamic cross-border military training areas. The starting point was and remains that new tools should be implemented only if they decrease workload or allow capacity gains without an increase in workload.

A salient feature of the FAB EC ATM concept is the FAB-wide integration of flow management with airspace management designed to balance demand and capacity by freeing up latent capacity. This common Air Traffic Flow and Capacity Management/Airspace Management (ATFCM/ASM) function would have a regional civil and military dimension, and would include all types of users (commercial, private, military and recreational). It would act as an interface with the pan-European Central Flow Management Unit (CFMU) of Eurocontrol in Brussels. An illustration of how this function could improve the users' every day lives is that the location of military exercise areas could vary on a daily basis and regardless of national boundaries depending on the civil demand for the use

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of certain routes. And civil flows could be rerouted to accommodate military exercise needs. Says Mr Gatz: "This flexible use of airspace will represent a major operational improvement compared to the present situation which is more static and where the military occupy a whole batch of fixed blocks of airspace, and where flow management and airspace management are executed on a stand-alone basis by ANSPs and States."

Another important accomplishment of the Group so far is the identification of a tailor-made fallback solution (contingency). In the event of a catastrophic outage of one of the main radar centres for area control (ACC) or approach (APP), our customers can be offered sufficient levels of contingency capacity to ensure business continuity. At the same time Mr Gatz stresses that the final decision on contingency arrangements will depend on the amount of

investment and on the thrust to forge ahead with key decisions.

Because of the complexity of the FAB EC project as a whole, Mr Gatz says that it is still too early to precisely quantify the future benefits of the work of his Group: "The initial results of our work clearly show that closer cooperation presents many good opportunities for increasing ATM capacity. But it is still very difficult to forecast what the airspace will look like in 2015 or what the exact number of controllers or sectors will be."

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Apart from the long term FAB goals, the OPS WG is also trying to identify short term improvements. Says Mr Gatz: "We don't want to tell our customers to wait and see what will happen only in ten years' time." Against this background the Group has identified three high traffic density areas ('hot spots') where the situation could be improved in the short term, together with MUAC and the military partners. The three hot spots are Arkon-Rekken (Germany/the Netherlands), Nattenheim-Diekirch (Belgium/Germany/France/Luxembourg/) and Trassadingen (Germany/France/Switzerland). The civil and military ANSPs of the countries concerned, using their expert knowledge of these busiest parts in the core area of Europe, will redraw the airspace map. The objective is to improve the overall benefits of the FAB EC airspace design within the next five years.

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Technical Working Group:

Heading for enhanced cooperation

Together with the OPS WG the Technical Working Group (TECH WG) is one of the main players in the FAB EC project. The mandate of the Tech WG is to develop a roadmap leading to common technical systems and services.

Just like the OPS WG the work of the TECH WG started with an inventory of the multitude of technical systems currently operated by each of the seven ANSPs and a study of where there might be opportunities for cooperation. Specifically, the Group focussed on those systems which constitute cost drivers including flight data processing (FDP), human-machine interface (HMI), and Communication, Navigation and Surveillance (CNS) infrastructure. Says Peter Naets (Head of Engineering at the Maastricht Upper Area Control Centre (MUAC) who chairs the TECH WG: "With over six hundred pages of information we have gathered a host of data on the systems in place and those planned in the next five years and we have been able to identify five main areas of cooperation for the short to medium term."

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A disadvantage for the Group is that the procurement and development of new technical systems takes many years and that most ANSPs already have major programmes which are ongoing for the coming five years. Says Mr Naets: "Therefore, from a technical perspective, the areas for cooperation will be limited in terms of benefits in the short term." The current systems of the FAB EC partners are quite diverse although a limited number of common systems have been identified, mainly concerning the CNS infrastructure where short term cooperation is possible. Says Mr Naets: "Nevertheless, upgrade and replacement activity is ongoing and hence there are potential opportunities for an advanced level of cooperation. The rate of change of systems is so great that, un-

less collaboratively planned, the diversity that exists in the system currently will be propagated into future systems, maintaining and increasing the system fragmentation."

For the short term the TECH WG is concentrating on cooperation measures for which activities could start right away. Mr Naets explains that although the benefit of these measures might be relatively slight, they are first and foremost meant to show that cooperation is possible and to launch this process. Over the coming month specific task forces will report in more detail on the five promising areas relating to optimisation and rationalisation of CNS infrastructure, FDP interoperability, a common data server, and a common function for ATFCM/ASM.

The remaining work of the TECH WG will be to look at longer-term cooperation measures (beyond 2012) related to the emerging FAB EC Concept of Operations, expected to provide greater levels of benefit. Mr Naets stresses that ANSPs will seek opportunities for cooperation at technical level whether or not a FAB EC materialises. The first real major opportunities will appear with major renewal projects: "We are looking in particular at the technical developments that will take place in the context of the SESAR Programme." These developments are now being planned by the various ANSPs as the deliverables of the SESAR definition phase become available.



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FAB EC FEASIBILITY STUDY FACT SHEET

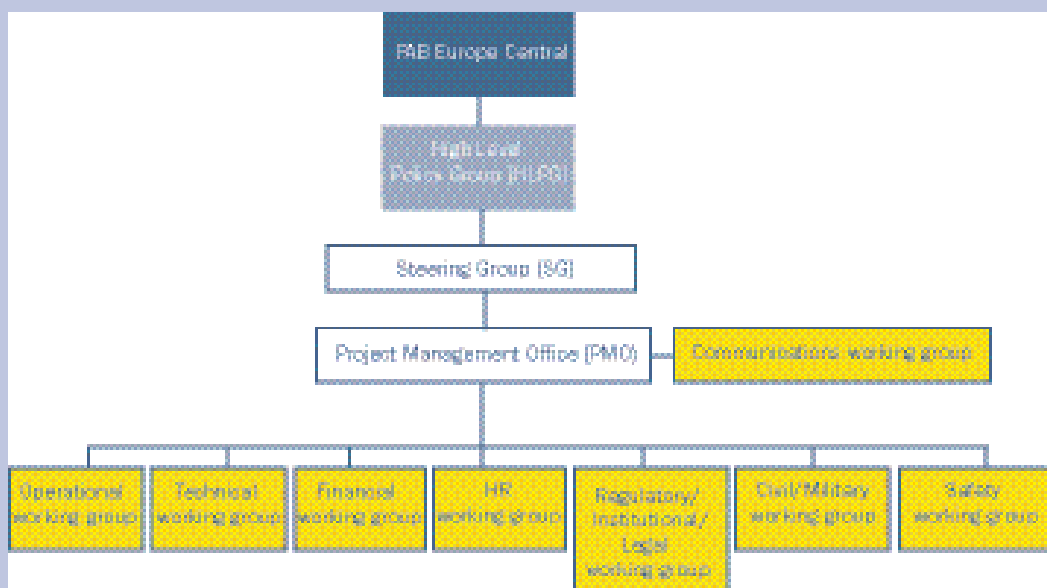
The FAB EC feasibility study is intended to create a FAB in the core area of Europe. It was officially launched in November 2006 by six countries: Belgium, France, Germany, Luxembourg, the Netherlands and Switzerland. The United Kingdom joined as a cooperative partner.

The development of FABs is a key component of the SES initiative launched by the European Commission in 2004. The SES aims to optimise airspace use and capacity, in order to minimise restrictions related to ATC and maximise airport throughput. The initiative requires States to redesign their airspace in such a way that they are no longer constrained by national boundaries, to meet the needs of fast growing air traffic. A FAB is initially intended only for the upper airspace. But the objective for the FAB EC is to use and control the upper and lower airspace of the six nations as one continuum with harmonised regulations, and in such a way as to be compatible with the European ATM network. The FAB EC study has received the commitment of the area's seven ANSPs to improve ATM safety, capacity and costeffectiveness. The project also requires the cooperation of States, and has the support of Eurocontrol. With a budget of € 3.5 million financed by the ANSPs, the study will be concluded by June 2008. The States will then decide to establish the FAB EC. Once this decision has passed through the various national parliaments, the FAB EC can be implemented step by step.

The FAB EC measures 1.7 million square kilometres. It encompasses several major European airports, generating dense terminal and en-route traffic flows, and accounts for 5.5 million flights per year, representing 55% of all European air traffic. The military also make extensive use of the same airspace, which contributes to its overall complexity.

Civil and military air traffic routes are closely interlaced and several military training areas are established within major pan-European air traffic flows. A traffic growth of 40% on 2005 is expected in 2015 for the FAB EC as a whole. The FAB EC project organisation reflects a joint approach. States and the CEOs of the ANSPs are represented in a High Level Policy Group (HLPG). Representatives of Civil Aviation Authorities (CAAs), equivalent military authorities and ANSPs are overseeing the project process in a Steering Group (SG). It is estimated that currently around 200 people in seven expert working groups are active within the project.

The consultation process of the various stakeholders (i.e. customers, staff representatives, neighbouring States or the European Commission), started in January 2007.



LIST OF ABBREVIATIONS

AIS	=	Aeronautical Information Systems
ANSP	=	Air Navigation Service Provider
ACC	=	Area Control Centre
APP	=	Approach Centre
ATC	=	Air Traffic Control
ATFCM/ASM	=	Air Traffic Flow and Capacity Management/Airspace Management
ATM	=	Air Traffic Management
CAA	=	Civil Aviation Authority
CEO	=	Chief Executive Officer
CFMU	=	Central Flow Management Unit
CNS	=	Communication, Navigation, Surveillance
DFS	=	Deutsche Flugsicherung
FAB	=	Functional Airspace Block
FAB EC	=	Functional Airspace Block Europe Central
FDP	=	Flight Data Processing
HLPG	=	High Level Policy Group
HMI	=	Human Machine Interface
MET	=	Meteorological
MOC	=	Main Operational Change
MUAC	=	Maastricht Upper Area Control Centre
OPS WG	=	Operational Working Group
SES	=	Single European Sky
SESAR	=	Single European Sky ATM Research
SG	=	Steering Group
TECH WG	=	Technical Working Group

FORTHCOMING EVENT:

11 DECEMBER - PARIS: SECOND FAB EC STAKEHOLDER FORUM

The second FAB EC Stakeholder Forum will be held on 11 December 2007 at the premises of the Direction des Services de la Navigation Aérienne (DSNA), in Paris.

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