

# SINGLE EUROPEAN SKY IN PART OF ECAC

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Current development of air transport in Europe but also throughout the world indicates an upward trend and it is expected that from year to year, this trend will increase. European sky did not pass more fundamental changes from its inception. This fact caused the Sky began to overflow. This fact has substantially limited the capacity of European airspace causing an increase in flight delays and waiting planes in the air. The situation in Europe began to deal with the European Union with EUROCONTROL by creating so-called Single European Sky and Functional Airspace Blocks. I will deal with the following functional blocks and their objective evaluation. The European Union has ordered the creation of functional airspace blocks as mandatory for all its member states. And because the Republic of Macedonia and Turkey are candidates for entry into this community, my work will also focus on the integration initiatives into functional airspace blocks.

Keywords. European Union, Single European Sky, Functional airspace block, an initiative

## 1 INTRODUCTION

Current development of air transport in Europe but also throughout the world indicates an upward trend and it is expected that from year to year, this trend will increase. European sky did not pass more fundamental changes from its inception. This fact caused the Sky began to overflow. This fact has substantially limited the capacity of European airspace causing an increase in flight delays and waiting planes in the air. The European continent is one of the most advanced in the world and therefore we are aware of the impact of aviation on the environment. The European Union in cooperation with Eurocontrol began to solve these issues and as an appropriate tool for resolve this situation introduced the Single European Sky. It is a reform of the architecture of European air traffic management (ATM). An essential element of the Single European Sky is initiative to create a "functional airspace blocks", these units are no longer managed as yet but they will be managed and organized transnationally in accordance with the needs of the airline industry. Functional airspace blocks create an opportunity to improve the design and layout of airspace.

In my work I would like to solve the integration of Macedonia and the Republic of Turkey to the Single European Sky and the functional airspace blocks. In solving this issue, I have studied individual legal standards which have to be complied with individual states in the implementation of the Single European Sky

and I have known with the existing functional blocks of airspace. Although at first glance it may seem that the inclusion of one or two states in such a community has almost no importance, so the opposite is true. Enter every state which borders with at least one functional airspace blocks or create a new separate functional block and consequently the adjustment of air traffic services routes can significantly help in increasing the capacity of European airspace.

## CREATION OF THE SINGLE EUROPEAN SKY

Single European Sky was created on behalf of the European Commission. Make it possible to create the required the Single European Sky, national authorities and navigation service providers have to try to control the air space through international cooperation.

Therefore, the essential element of the Single European Sky is initiative to create a "functional airspace blocks" which will be organized transnationally in accordance with the needs of the airline industry.

Implementation of the common transport policy requires an efficient air transport system which allows safe and regular operation of air transport services and facilitate the free movement of goods, persons and services. At special meeting in Lisbon on 23 and 24 March 2000 European Council invited the Commission to put forward proposals on airspace management, air traffic control and air traffic flow management, based on

the work of the High Level Group on the Single European sky, established by the Commission. This group made up largely of military and civil authorities of the Member States, submitted its report in November 2000. Smooth operation of the air transport system requires a consistent, high level of safety in air navigation services allowing optimum use of European airspace and a consistent, high level of safety in air transportation, in compliance with the undertakings of general interest of air navigation services, including undertakings of public services. It should be carried to the highest standards of responsibility and competence.

It was agreed that the initiative for the creation of the Single European Sky should be developed in accordance with the obligations arising from membership of the Community and its Member States of Eurocontrol, and in accordance with the principles set by the Chicago Convention about International Civil Aviation 1944.

Decisions concerning the content, scope or carrying out military operations and training, do not fall within the competence of the Community. According to this declaration, Member States should increase the cooperation between civil and military authorities, if and to the extent all Member States deem it necessary, to facilitate cooperation between their armed forces in all matters of air traffic control. Airspace constitutes a limited resource, the optimal and efficient use will only be possible when considering the requirements of all users, and when in the whole development decision-making process and implementation of the Single Sky, including the Single Sky Committee.

Community should be taking into account developments in Eurocontrol, establish common goals and an action program to mobilize the efforts of the Community, Member States and the various economic actors to create a more integrated operating airspace the Single European Sky. Air navigation services, in particular air traffic services that are comparable to public authorities, require functional or structural separation and are organized according to very different legal forms in different Member States.

Creating a Single European Sky and Functional Airspace Blocks is positive progress in aviation in the European Union and Europe.

At the beginning of this initiative may seem like a major hit in the restructuring of air traffic management will not be possible and functional airspace blocks will not fulfill its purpose.

The first functional block was the UK – Ireland FAB.

This initiative is working today for the fourth year and fulfills all the expectations that were placed to creation the Single European Sky. As a negative aspect in the creation of this initiative may seem a long period of implementation of the unctional blocks.

In my opinion this period was necessary since common regulations had to be taken and creation of a well-established functional airspace blocks is a big change in their current air traffic control.

### **3. Functional airspace blocks**

To create the required the Single European Sky, national authorities and air navigation service providers will need to ensure that the airspace is controlled through international cooperation. An essential element of the Single European Sky II was to create "functional airspace blocks" FAB.

A functional airspace block (FAB) is an airspace block based on operational requirements and is determined without regard to national borders. Provided air navigation services and related functions are performed, controlled and optimized with respect to the introduction of enhanced cooperation between air navigation service providers.

It is expected that functional airspace blocks are an essential tool for achieving performance objectives which are requested by "Single European Sky". Till 4. December 2012, Member States have to take all necessary measures to ensure the implementation of functional airspace blocks with a view to achieving the requested capacity and efficiency of air traffic management network within the Single European Sky and maintain a high level of security and contribute to the overall performance of the aviation system

Functional airspace blocks (FAB) create an opportunity to improve the design and layout of airspace. It's also a way to reduce fragmentation of services.

Single European Sky requires that the upper airspace in Europe and AFI ICAO regions must be converted to functional airspace blocks. "Single European Sky" is binding for EU Member States and the States which have concluded bilateral or multilateral air transport agreement with the European Union. These states include Norway, Switzerland, the Balkan countries and Iceland. Island joined the initiative of functional blocks, although it's not his responsibility because it is not in the EU or AFI airspace. Although the Island has been involved in this initiative, the Island resigned from it in 2011 and currently is not in any of the nine functional airspace blocks. At 7<sup>th</sup> December 2011, the initiative did not participate in any of the states as:

- Serbia
- Montenegro
- The former Yugoslav Republic of Macedonia

The distribution of functional airspace blocks appears to be very effective although there are also shortcomings. We could talk about the shortcomings of the geographic distribution of functional blocks in the eastern part of this initiative. In this part of Europe there are states that are not involved in the Single European Sky or they are still preparing to join the initiative. Examples include the Baltic FAB. This FAB consists of two states between which most of the Kaliningrad region is located. Connecting this area to Baltic FAB initiative would be greatly benefit for this function block. Currently there are nine FAB-s, which were announced by the European Commission:

### 3.1 FAB Central Europe

The total estimated controlled airspace in FAB CE is 432 733 km, which includes more than 63 managed sectors and 8 regional management positions.

FAB CE initiative is the successor CEATS what was the project of seven States and air navigation services.

- Slovakia,
- Austria,
- Bosnia and Herzegovina
- Croatia,
- Czech Republic
- Hungary and
- Slovenia.

This is an important step towards creating the "Single European Sky". Member States shall keep taking measures necessary for the establishment of functional airspace blocks. Political objectives of the legislation for the Single European Sky which were adopted in 2004, slowly acquiring real dimension. The agreement means the creation of the fourth block of FAB in Europe.

### 3.2 Baltic FAB

The total estimated controlled airspace in the Baltic FAB is 410 126 km

- Flight Information Region (FIR) Warsaw, 334 000 km

- Flight Information Region (FIR) Vilnius 76 126 km

Even though the BALTIC FAB is relatively small, it could support a substantial increase in performance in areas where there are specific issues, such as high growth operations in Kaliningrad. Strong commitment to air navigation services in the respective States and close relations with neighboring states increase the benefits of FAB.

This functional block is composed of only two states which are not neighborhood with any functional airspace blocks only from the eastern side. Between these two states is the Kaliningrad region and it is not part of this initiative. This area is really not participating in the percentage of traffic. More exploited route air traffic services combine functional airspace block with Belarus. Therefore, the inclusion of Belarus in this initiative would be positive to this initiative. This assumption is unrealistic in the near future because Belarus did not show any interest in joining the Single European Sky.

### 3.3 NEFAB

The initial phase was initiated by NEFAB States, Sweden, Denmark, Norway, Finland,

Estonia and Iceland. During the autumn of 2009, Latvia became a partner of NEFAB. Sweden and decided to withdraw from this initiative Denmark in January 2011. In June the same year, ISLAND also resigned from the NEFAB. The feasibility study was altered as a result of these changes. On the basis of a final feasibility study, Estonia, Finland, Latvia and Norway decided to establish the Northern functional airspace block NEFAB.

NEFAB is a functional block which took place about the most change. This initiative was so uncertain process but withdrawal from the initiation were done at an early stage, the feasibility study has managed to recast. A functional airspace block manages to put in place by the deadline.

### **3.4 FAB EC**

In 2005, Eurocontrol MUAC with four Member States (Germany and the Benelux countries) started to develop a project FAB Europe Central. At the same time the next initiative FAB ran between France and Switzerland. In 2006, the high political level decided that these two states are attributed to the FAB EC initiative. After these two countries affiliated to the FAB EC initiative, 6 states and 7 positions of air navigation services participated in initiative. This composition continues till today. The area of Europe which is included in this FAB is one of the densest air traffic in the world. This region in the total area of 1 713 442 km<sup>2</sup> is characterized by closely linking civilian and military air corridors. Most major European airports and major civil and military air corridors is precisely in this area. Because of this size and position in Europe, FAB EC is the cornerstone of the "Single European Sky".

### **3.5 SW Portugal – Spain FAB**

The geographical position of Portugal and Spain is on the edge of Europe, which means that they are natural partners of functional airspace blocks. Cooperation to create SW FAB was launched in 2008 by air navigation service providers – NAV Portugal in Portugal and AENA in Spain. FAB Software will include air traffic control services in southwestern Europe, covering the whole sky falling, Portugal and Spain ICAO EUR airspace falling under Spain and ICAO AFI airspace under the responsibility of Portugal ICAO

NAT. It is characterized by high traffic density over the Iberian Peninsula and its 65% the size of the airspace located over the ocean. In SW FAB is about 15% of all European traffic and there are 15% of all ATM/CNS costs.

### **3.6 UK – Ireland FAB**

FAB UK - Ireland has developed by air navigation services UK – NATS and Irish Aviation Authority IAA. It was founded in 2008 and now it works for business four years. Ireland and Great Britain are in the forefront in the implementation of the Single European Sky. It is the first functional airspace block that originated in Europe and its impact can be assessed as successful. All 24 plans that were listed in the Project Plan for 2010 – 2013 has already been fulfilled. These have been agreed in partnership with airspace users and to achieved the creation of airspace by reducing CO<sub>2</sub> emissions, reducing fuel burned and reducing track miles flown.

### **3.7 Danube FAB**

Danube FAB initiative was created by air navigation service providers ROMATSA in Romania and ATSA in Bulgaria. The initiative began to develop since 2004. The trigger of this initiative was the Memorandum of Understanding for cooperation ATM in south-eastern Europe. The long-term good cooperation relations between the two countries serve as the basis for this initiative as well as a long common border provides a significant proportion of traffic flow in a common airspace. According to statistical data, 9% of European Union air traffic flies in Bulgaria and Romania and this trend is stable.

### **3.8 DK/SE FAB**

NUAC began a joint cross-border harmonization of operational support, planning processes, training and optimization of the airspace in Denmark/Sweden airspace.

NUAC is an integrated service provider. It is expected that LfV and Naviair reduce its annual costs by €13 million and annual savings of 52,000 tons of CO<sub>2</sub>.

### 3.9 Blue Med FAB

Blue Med FAB wants to develop ATM in the southeastern Mediterranean. This initiative is a unique opportunity to unite much of the Mediterranean area of the countries that joined the EU with African countries and Middle East states.

### 3.10 Inclusion of the Republic of Macedonia and Turkey to the "Single European Sky"

Aviation in 2009 in the Republic of Macedonia increased about 0.8% and is expected to still grow. This year was a minimum delay of flights, but it is expected that with increasing flight delays increase the number of flights increases. For the years 2009 – 2015 is expected to increase the number of flights increased by 3.7%. This figure may differ by  $\pm 5\%$  relative to the traffic situation in the airspace of Kosovo. In solving this situation integration of functional airspace blocks could contribute significantly. The main benefit of this integration would be a restructuring of the previously existing lines of air traffic services. Macedonia is bordered by two functional blocks of airspace and the Danube FAB and Blue Med FAB. For the Republic of Macedonia would be the best if it candidature for membership in the Blue Med FAB initiative.

Air travel in Turkey during the summer (May – October) in 2010 increased by 13.2% when we are comparing the same period in 2009. This large increase in air traffic has increased an average delay by 0.1 minutes per flight during the summer of 2010. It is assumed that in this area, air transport will be increased annually. If in this region are not modified ATS, the delay will be increase from year to year. When tracks air traffic services are edited, flight operators should take into account the integration into the Single European Sky. The inclusion of Turkey to the Danube FAB initiative would significantly linked the Single European Sky, and therefore Europe and South Asia. If the Turkish Republic enter in the Danube FAB, the total area of this initiative would be increased.

## 5 CONCLUSION

In my work I have dealt with the theme of the Single European Sky in terms of ECAC. After closer staged this topic, I appreciated this initiative

as an effective tool to solve the problems of capacity in European airspace. Single European Sky currently has nine functional blocks. These functional blocks are precisely divided to suit the requirements of air transport in Europe. In this paper I have tried to objectively evaluate the activity of each functional block.

Development of functional blocks to see the admission of new members in Eastern and Southern Europe, and therefore in my work I have dealt with the integration of Macedonia and the Republic of Turkey to the individual initiatives. Specifically, the Republic of Macedonia should be added to the Danube FAB and the Republic of Turkey to the Blue Med FAB.

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