AIR TRAFFIC MANAGEMENT REFORM IN SOUTH EASTERN EUROPE

Tomislav Mihetec, Ana Božičević, Sanja Steiner
University of Zagreb
Faculty of Transport and Traffic Engineering
Vukelićeva 4, HR-10000 Zagreb, Croatia
tmihetec@fpz.hr, anab@fpz.hr, ssteiner@fpz.hr

ABSTRACT

In the forth coming period European air traffic management – ATM[1], will handle double flight operations then today – from 1.7 to 2.1 higher traffic level in 2025 then in 2005, generating extra capacity, sustaining high level of safety, complying the environment related requirements and decreasing the prices of air traffic service. Optimal usage of airspace will be achieved by introducing a new concept of ATC[2] management, implicating structural revision of all ATM processes. Encouraged by the Single European Sky project, and through airspace defragmentation, numerous projects have been initiated by Eurocontrol in cooperation with European Commission, where one of them is implementation of South Eastern Europe Functional Airspace Block within SESAR[3] modernization programme of EATM[4]. The implementation of regulatory, institutional and legal framework of SEE FAB[5], would ensure expansion of European air traffic market on south-east Europe, counting over 500 millions potential users. Croatia and all the other countries in the SEE region would have to adjust their national legislation with European Union transport acquis.

Key words: Air Traffic Management, South-Eastern Europe Functional Airspace Block Advisory, Single European Sky

1 INTRODUCTION

The extension of European air traffic market on South Eastern Europe will have positive outcome on tourism, business travel and broader integration of the region. By 2010 Western Balkan countries will become a part of fully integrated aviation market with 500 million potential passengers. According to European Commission, the air transport industry in 25 EU countries counts 30 percent of global air traffic with an annual turnover of 120 billion euro.

Air traffic management mid-term implementation plan (ECIP[6]) was changed because of new functional airspace block sectorisation. The European Union with ten neighbouring countries has agreed to establish a European Common Aviation Area (ECAA) by 2010. The ECAA[7]agreement participants are all EU[8] countries, Iceland, Norway and all countries of the Western Balkans, including Kosovo. Agreement commits all signatories to adopt their national air transport acquis in alignment with EU standards. This includes: legislation that would liberalizes market access, traffic rights and fares; regulation on airport, ground handling and slot allocation; safety and security regulations; rules on competition and state aid; the acquis related to air traffic management and the Single European Sky; environmental standards; and consumer rights pertaining to aviation.

[1] ATM – Air Traffic Management
[2] ATC – Air Traffic Control
[3] SESAR – Single European Sky Research Programme
[4] EATM – European Air Traffic Management
[5] SEE FAB – South Eastern European Functional Airspace Block
[6] ECIP – European Convergence Implementation Plan
[7] ECAA - European Common Aviation Area
[8] EU – European Union

2 ATM DEVELOPMENT AGENDA IN SOUTH EASTERN EUROPE

European Investment Bank in cooperation with Nordic Aviation Resources published ATIRS[9] summary report for South-Eastern Europe [1], which served as basis for investment project in the transport sector. Key element of ECAA agreement is safety and security improvements, which will ensure the integrity of regional aviation system. Eurocontrol manages with ASATC II[10] project, which provides assistance for the alignment of national (Western Balkan) ATM systems with EU standards. It should be mentioned that EASA[11] will gradually take over leading role in validation of national legislative and safety standards with European standards. All countries participating ECAA will become a full member of EASA.

Liberalisation should stimulate competition and lower prices. Over two thirds of routes that connect South Eastern Europe with other parts of Europe are served by only one airline. For instance, all eight routes from Nederland to the Western Balkans and 48 of the 66 routes between Germany and the region are monopolistic. In the United States, fares on routes used by two competitors are lower by 8 percent; while on routes used by three competitors were another 8 percent cheaper.

Table 1: Basic indicators at area control centre level – 2004, [2]

FAB	Size per ACC	As % of US centre	ATCOs per ACC	As % of US Centre	Sectors per ACC	As % of US centre
CEATS	60.350	16%	85,6	24%	5,8	15%
Central FAB	92.624	25%	146,6	41%	15,9	41%
FR-CH	176.064	48%	219,3	61%	14,9	38%
ES-PT	478.947	131%	185,5	52%	9,8	25%
NUAC	213.000	58%	78,9	22%	5,9	15%
SEE-FABA	124.684	34%	125,5	35%	7,9	20%
BUL-ROM	133.040	36%	142,0	39%	7,3	19%
UK-IE	206.333	56%	140,8	39%	13,5	35%
Average	191.346	52%	148,9	41%	11,0	28%
US Centres	366.600	100%	359,7	100%	39,0	100%

Legislative and regulatory framework of South-Eastern Functional Airspace Block countries should be in alignment with EU standards. Taking into account the fragmentation of South Eastern European airspace (specified in Table 1), [2] regional ATM reform will have to be coordinated on national levels. European Commission and Eurocontrol in cooperation with Stability Pact suggested the creation of SEE FAB, in which there wouldn't be any restrictions imposed by national borders.

Civil Aviation Authority is in charge of safety and economic regulation of air transport. Deregulation of air transport in EU with purpose of commercialisation of ANSP[12], would help the transformation of national air traffic control systems in transition countries to separate entity. Other stakeholders - such as airline, airport and ground handling services – should be separated from both the line of ministry and regulator.

Privatisation of airports would mobilize needed investment in the region. South Eastern Europe counts 19 airports used in commercial air transport. Recent decade of conflicts left diverse airport infrastructure throughout the region. Most of airports in SEE FAB are located near the national borders, so they can be used by neighbouring countries as secondary

[9] ATIRS - Air Traffic Infrastructure Regional Study
[10] ASATC – Aviation Safety and Air Traffic Control
[11] EASA – European Aviation Safety Agency
[12] ANSP – Air Navigation Service Provider

airports. Memorandum of Understanding (SEETO[13]) [3] signed on 2004 has identified eleven airports in the core transport network, while the modalities of airport development have not yet been established.

Table 2: Compliance with Selected Elements of the Aviation Acquis, [2]

	Albania	Bosnia& Herzegovina	Croatia	Macedonia	Serbia
Licensing	no	No	yes	No	n.a
fares	no	No	no	Partial	n.a
market access	no	No	partial	No	n.a
safety	no	No	partial	Partial	partial
environment	no	No	partial	Partial	partial
consumer protection	no	Partial	no	no	partial
ground-handling	no	No	no	no	no
slot allocation	no	No	no	no	no
air traffic control	no	No	partial	partial	no
state aid	no	No	partial	no	no

South Eastern Europe FAB working group has emphasize the challenge of creating the adequate regulatory framework in Western Balkan countries (Table 2), and generating great number of educated personnel, that would handle the traffic growth rate of six percent annually in the region.

With six million passengers in 2007 and with a fleet of fifty mostly smaller aircrafts, traffic load of all airlines in the region was twice as small as the traffic load of Austrian Airlines. State owned airlines have to be privatized and commercialized. One of key elements in adjusting national legislative with EU standards is economic regulation of ground handling on the airport, slot allocation and airport charges transparency. Zagreb and Belgrade airports are large enough to require a liberalization of third party handler by EU rules.[14]

3 SOUTH EASTERN EUROPE FUNCTIONAL AIRSPACE BLOCK

Establishment of functional airspace blocks is identified as a "window of opportunity" for improvements to the European airspace. SES[15] Framework Regulation [4] has defined the generic term "Functional Airspace Block (FAB)" as: "An airspace block based on operational requirements, reflecting the need to ensure more integrated management of the airspace regardless of existing boundaries." South Eastern Europe has a key role in European transport network because of its geographic position and connection between Europe and Middle East. The Eurocontrol´s mid-term traffic forecast base scenario (which includes over flight traffic) assumes an annual 6 percent growth in the region between 2005 and 2011.[16]

The Air Traffic Management (ATM) part[17]of the ECAA agreement extends the Single European Sky (SES) Regulations to Albania, BiH, Bulgaria, Croatia, FYRM, Montenegro,

[13] SEETO – South East Europe Core Regional Transport Network
[14] The EC ground-handing directive stipulates that a minimum of two providers have to be licensed per airport for most services. At least one of the third-party handlers should be fully independent from the body in charge of airport administration and the dominant airline.
[15] SES - Single European Sky
[16] Eurocontrol. 2005. Medium-Term Forecast: Flight Movements 2005-2011. This is largely in line with IATA projections that foresee average growth of 6 to 7 percent for most Western Balkan countries between 2004 and 2008.
[17] Annex 1, part B of the („Air Traffic Management") agreement European Common Aviation Area Agreement

Romania, Serbia and Kosovo. Accordingly, FABs are considered as a fundamental means of enabling the future optimisation of the pan-European ATM system.

Figure 1: Functional Airspace Block's, [5]

With regard to territorial coverage, air navigation service providers have started exploratory discussions on the feasibility of functional airspace blocks in most of the Member States [5]. Regional FAB implementation concept (Figure 1) includes: regional approach in solving problem imposed by restriction of certain parts of airspace; development and implementation of common operating concepts, creating harmonized and safe environment for managing air transport; planning and implementation of CNS/ATM[18] infrastructure; harmonized operative procedures in ATM; increase capacity and flexible use of airspace (FUA); practical usage of pre-existing infrastructure.

Accordingly to SES legislation and regional cooperation Bosnia and Herzegovina and Croatia participate in CEATS[19] project, while Bulgaria and Romania participate in BUL-ROM FAB initiative[20]. All countries of Western Balkans in cooperation with Eurocontrol and JAA[21] participate in CARDS/ASATC[22] programme, financed by European Commission. SEE FABA (Figure 2) (the South East Europe Functional Airspace Block Approach) was launched in 2005 with the objective of implementing the Single European Sky regulations in South East Europe under the umbrella of the European Common Aviation Area (ECAA) agreement [6].

[18] CNS/ATM – Communication, Navigation and Surveillance / Air Traffic Management
[19] CEATS – Agreement relating to the provision and operation of Air Traffic Services and Facilities by EUROCONTROL at the Central European Air Traffic Services (CEATS) Upper Area Control Centre.
[20] BUL-ROM FAB Initiative - for Creating the Pre-requisites for the Establishment of a Functional Airspace Block (proposed by ROMATSA and ATSA Bulgaria)
[21] JAA – Joint Aviation Authority
[22] CARDS/ASATC - Community Assistance for Reconstruction, Development and Stabilisation/Aviation Safety & Air Traffic Control Project

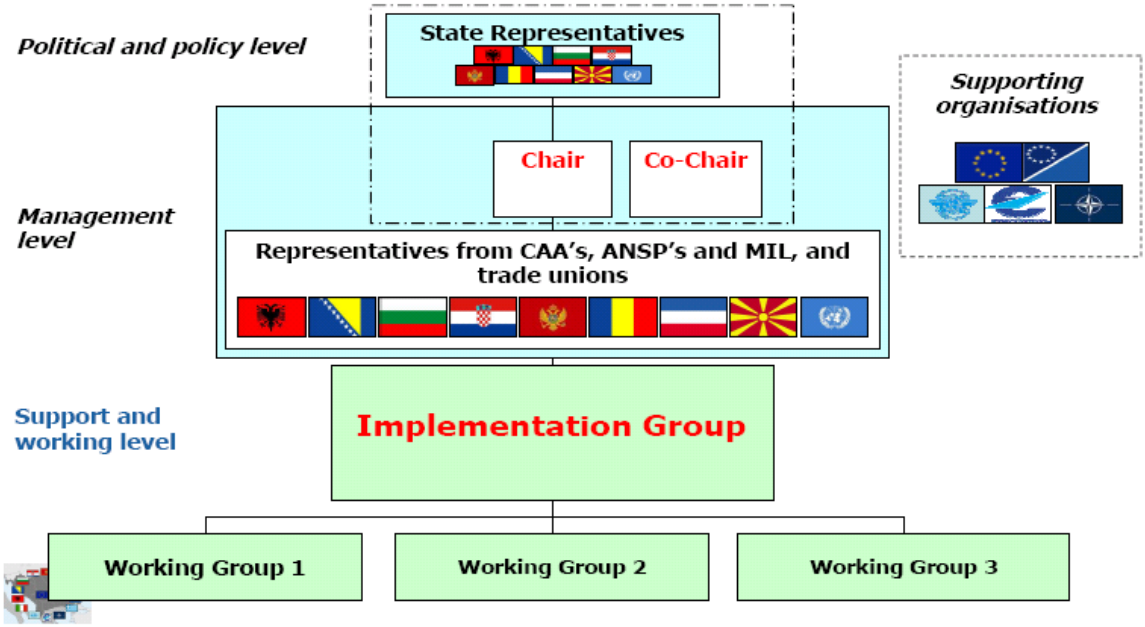

Figure 2: Governing Body South Eastern Europe Functional Airspace Block, [6]

Certain ATC sectors coincide with state borders, presenting obstacle in designing optimal pan-European airspace and affecting flight efficiency. Because of that, SEE FAB should be observed as continuum through South Eastern Europe. Main corridors and air traffic routes are mostly oriented northwest-southeast, connecting central Europe with Africa and Middle East. South Eastern Europe has significant growth level of air transport. Across the Western Balkans, air traffic is growing rapidly from a low base. Region air transport market was reduced to a shadow of its former self after the break-up of Yugoslavia, a series of armed conflicts and the economic turbulences of the past decade. According to European Commission, traffic between EU and South Eastern Europe rose by 121 percent between 2000 and 2005.

Air traffic network is the reflection of economic development and geographical structure of the region. Majority of South Eastern Europe countries are geographically small and it is normal that the foundation of their air traffic is in the regional connectivity, rather than inside their national borders. Croatia and Serbia are the only countries in the region that have satisfactory level of domestic air traffic. Significant characteristic of air traffic in South Eastern Europe is regional market share, with regional traffic counting two thirds of total traffic, following EU standards (in Bosnia 69 percent, while in Albania 87 percent).

Zagreb and Belgrade airport are the main airports (Zagreb had 1 917 000 passengers and Belgrade 2 512 890 passengers in 2007), but there is still no central hub in the region. Zagreb airport can be considered as Croatian hub from the view point of national flag carrier Croatia Airlines. Airports in Vienna, Milan and Munich provide hub services to Western Balkan countries. Key determinants of regional network structures are code-sharing agreements and airline alliances. Of the world's three major alliances, Star Alliance is the dominant player in the region. Its members include Austrian Airlines, Lufthansa, Croatia Airlines and Slovenia's Adria Airways. Most successful flag carrier is Croatia Airlines with fleet of 11 aircraft and number of 1 715 027 passengers in 2007.

4 ASSESMENT OF AIR TRAFFIC MANAGEMENT IN CROATIA

Air traffic in Croatia is characterized by two relevant attributes, which distinguish itself from other domestic traffic in the region. First characteristic is high level of domestic traffic.

Traffic routes between Zagreb – Split and Zagreb – Dubrovnik are among five ´thickest´ in South Eastern Europe (Figure 3). This is the result of Croatia Airline's hub-and-spoke system (with feeder traffic to Zagreb), the country's peculiar geography (with a very long coastline) and the popularity of Split and Dubrovnik as tourist destinations. Second characteristic is high percentage of low-cost and charter traffic. More than half a dozen budget carriers from the EU fly to Split and Dubrovnik. This fact upholds that Croatia a more liberal air traffic regime than most of its neighbours. The traffic situation in the region is illustrated (Figure 3) by the CEATS Airspace Structure Fourth SAAM Evaluation traffic flows on a busy day: 8th September 2000 [7].

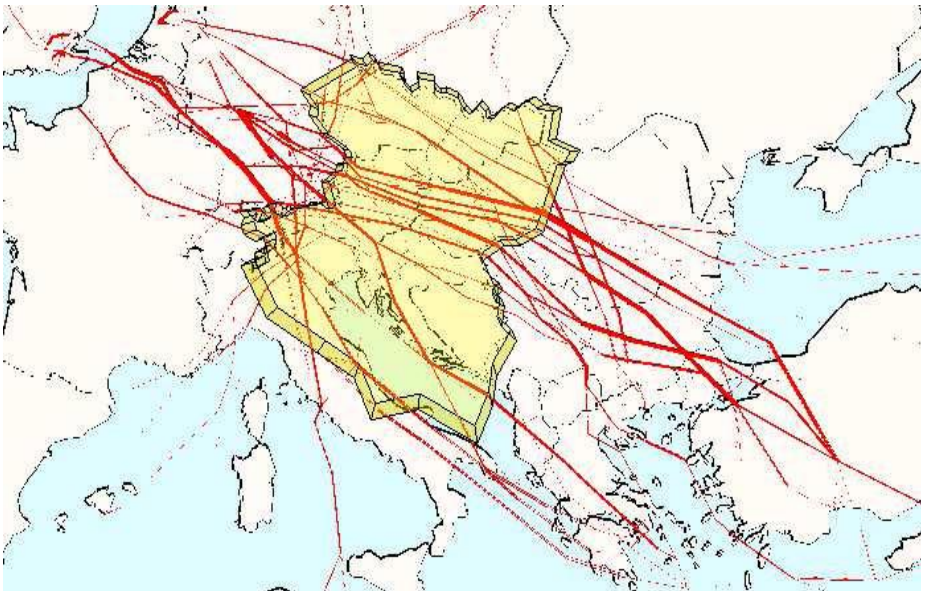

Figure 3: Main air traffic routes in the region, [7]

Civil Aviation Authority is part of Ministry of sea, traffic and infrastructure. Agency for Civil Aviation was established in 2007 [8], and includes services relating air traffic safety, especially certification and professional surveillance in terms of satisfying national conditions for air traffic practice. Agency is autonomous and it is responsible to Croatian government [9].

The routes from Zagreb to Frankfurt, Munich and Vienna are among those with the highest traffic levels in the region. Zagreb airport operates on commercial level and it is owned by state and local governing body. Zagreb Airport authority is planning to make Zagreb a regional hub, with modernisation of navigation systems and construction of new terminal, that's already planed (new terminal of 65 000m^2, eleven air bridges and generating extra capacity for 3.3 million passengers). Funding for this project is ensured by loans taken from European Bank for Regional Development, European Investment Bank and certain commercial banks. Ground handling services are monopolistically oriented, conducted by airport operators.

National flag carrier is founded 1989 and is still state-owned. Croatia Airlines has cabotage agreements with more then dozen European carriers and has become a full member of Star Alliance in 2004, where it has Lufthansa as strategic partner. The success of Croatia Airlines also stems from its professional management and a coherent regional strategy: It has built a network of short to medium-distance routes throughout Europe, while counting on its partners for long-distance and intercontinental connections. Due to its competitiveness and attractive home market Croatia Airlines could become a promising candidate for privatization.

Croatia has joined Eurocontrol in 1997 as first country in South Eastern Europe. In 2002 the EBRD and the EIB approved a joint project of € 55 million to upgrade Croatia's main air traffic control centre in Zagreb. This was successfully completed in 2006 and involved the construction of a new building and installation of new equipment. The ultimate aim of the project, which is part of a broader of Croatia's air traffic control system, has been to improve the operational performance of Croatia Control Limited and to facilitate Croatia's integration into pan-European ATM structures.

5 CONCLUSION

As a part of their ECAA obligations, Western Balkan countries have to adopt about two dozen EU regulations and directives. The legal and regulatory framework needs to be aligned with the EU acquis. The adjustment of domestic laws, bilateral agreements between the Western Balkan countries will have to be gradually liberalized, but governments may accelerate the process bilaterally if they wish. Accepting the EU measures, countries will have to harmonize national civil aviation authority in the region and create independent regulatory body. Stability in the region will facilitate regional cooperation stimulating further development and foreign investment in South Eastern Europe.

In contexts of Single European Sky, development of SEE FAB will perform sectorisation of South East Europe airspace in which there wouldn't be any restrictions imposed by national borders. Planning the European ATM network capacity, National Authorities, ANSPs and aircraft operators work closely and in cooperating effort with Eurocontrol ensuring timely delivery of ATM capacity. European airspace development should have to established collaborative processes, in alignment with established International Civil Aviation Organisation processes. However it is inevitable that some compromises are required and States/ANSPs may need to accept changes that are not necessarily in their own interest but may be beneficial to the network as a whole.

Regulatory and institutional framework of Croatia is governed by the national Air Traffic Law of 1998 and a series of laws. The new aviation law should provide an opportunity to align the regulatory framework with ECAA requirements. Croatia has set up an independent accident investigation bureau in compliance with EU rules.

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