



HARMONIZED AND OPTIMIZED USE OF REGIONAL AIRSPACE WITH ENHANCED AIR TRANSPORT CONNECTIVITY IN THE SEE

THE JSPA I PRIORITY PROJECTS TO BE REALIZED IN COOPERATION WITH SEETO

In accordance with the high level objectives stemming from South East Europe 2020 Strategy – Jobs and Prosperity in a European Perspective, adopted at ministerial level on November 21 2013 in Sarajevo, and reflecting the determination of all the governments in South East Europe to embrace the bold policy approaches required to attain the levels of socioeconomic growth necessary to improve the prosperity of all citizens and to facilitate eventual integration with the European Union, SEETO – as a Dimension Coordinator, and JSPA Initiative – as a Responsible Structure, propose:

Regional Programme: HARMONIZED AND OPTIMIZED USE OF REGIONAL AIRSPACE WITH ENHANCED AIR TRANSPORT CONNECTIVITY IN THE SEE

Programmed in partnership between SEE2020 Strategy Dimension Coordinator for Transport and its SEE2020 Strategy Responsible Structure for Air Transport.

In Podgorica, February 2015

The Regional Programme Coordinators

In Serbian/Montenegrin: *Harmonizovana upotreba regionalnog vazdušnog prostora sa poboljšanjem vazdušnog transporta u jugoistočnoj Evropi;* **in Hungarian:** *Harmonizált és Optimalizált regionális légtérhasználás a növekvő légiközlekedés érdekében Dél-Kelet Európában;* **in Albanian:** *Shfrytëzimi i harmonizuar dhe i optimizuar i hapësirës ajrore rajonale me lidhje të zgjeruara të transportit ajror në Europën Jug-Lindore.;* **in Macedonian:** *Хармонизирано и оптимизирано користење на регионалниот воздушен простор со подобренi воздухопловни конекции во Југоисточна Европа.*

INTRODUCTION

Harmonised and optimized use of regional airspace with enhanced air transport connectivity programme focuses on the **increase of air traffic safety and ATM capacity, decrease of CO₂ and noise emissions** by shortening route length and fuel burn leading to the **regional economic growth** and increased **mobility**. It directly elaborates possibilities and provides guidelines for the enhancement of overall air transport connectivity in the region.

Implementing Free Route Airspace Concept (FRA) and Performance-Based Navigation (PBN), for en-route phase of a flight and in the terminal areas around airports, respectively, along with the establishment of Wide Area Multilateration (WAM/MLAT) shall protect environment, reduce fuel consumption, distance flown and operating costs of ATS and CNS providers as well as reduction of operating costs for aircraft operators. Availability of air transport services in the South-East Europe (SEE) region will increase, and improved air – rail/road connections shall be noticed.

The Regional Programme is to deliver the **SEE Airspace Study**, which is the input in unifying regional approaches by delivering an efficient Regional Concept of Operations and in optimized implementation of **FRA, PBN and WAM/MLAT** or as appropriate **ADS-B** in the region, with detailed local i.e. national peculiarities. The application of these concepts, as stemming from the European ATM Master Plan (Commission Implementing Decision of October 8, 2012, on the adoption of the European Union's position on the approval of a modification to the European Air Traffic Management Master Plan, ref.: COM (2012) 6943 final), shall help to reducing fuel consumption, thus to protecting the environment and reduce emissions, and provided for costs reduction to aircraft operators.

A well-functioning (safe, cost efficient and capacity constrains free) regional airspace and air traffic management network might attract more transit aircraft i.e. new customers for the air navigation service providers in the region bringing more jobs and revenues. As the synergy with the airspace architecture effects, the enhancement of the connectivity between regional city-pairs shall come along as delivered by the study that will comprise **elaboration of a new air transport connectivity within the SEE region** that could considerably improve mobility and accelerate economic integrations and cooperation processes.

The Regional Programme is, therefore, consisted of five (5) interconnected projects, which could be structured as: those dealing with facilitation of regional air traffic (namely: **SEE Airspace Study, FRA Implementation in SEE, PBN Implementation Plan in SEE and WAM/MLAT Feasibility Study**), and one dealing with enhancement of regional air transport (**Elaboration of a new air transport connections within the SEE region**).

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LIST OF ABBREVIATIONS

AIP	Aeronautical Information Publication
ANSP	Air Navigation Service Provider
ATC	Air Traffic Control
ATM	Air Traffic Management
ATS	Air Traffic Service
CAA	Civil Aviation Authority
CBA	Cost-Benefit Analysis
CEO	Chief Executive Officer
CO ₂	carbon-dioxide
CNS	Communication, Navigation, Surveillance
DG	Director General
EASA	European Aviation Safety Agency
EC	European Commission
ECAA	European Civil Aviation Area
EUROCONTROL	European Organisation for the Safety of Air Navigation
FAB	Functional Airspace Block
FIR	Flight Information Region
FRA	Free Route Airspace
GHG	Green-house gasses
GNSS	Global Navigation Satellite System
ICAO	International Civil Aviation Organisation
ICJ	International Court of Justice
IPCC	Intergovernmental Panel on Climate Change
JSPAI	Joint Service Provision Area Initiative
LSSIP	Local Single Sky Implementation
NATO	North-Atlantic Treaty Organization
NDB	Non-directional Beacon
NO _x	nitrogen-“x”oxide
PANS-OPS	Procedures for Air Navigation Services – Aircraft Operations
PBN	Performance-based Navigation
RCC	Regional Cooperation Council
RNAV	Area Navigation
SAAM	System for traffic Assignment and Analysis at a Macroscopic level
SEE	South East Europe
SEE FAB	South East Europe FAB Approach
SES	Single European Sky
SESAR	Single European Sky ATM Research
VOR	VHF Omni Directional Radio Range
WAM	Wide-Area Multilateration

1. RATIONALE

1.1 Problem and stakeholder analysis

Due to rather mountainous landscape in the South-East Europe, in particular Western Balkans, and due to the long construction time and high amount of investments needed to improve inland infrastructure, aviation will remain an essential contributor to tourism and mobility for transporting people and cargo in the region.

The Regional Programme builds upon the assessment that the current state of air transport in the SEE region is underdeveloped¹ and thus poses a major constraint for the region to fully utilize its potentials. This evaluation of the current situation gradually emerged from a series of meetings and conferences held in the region, with relevant stakeholders attending. The conclusion resembles the main impetus to develop and implement the Regional Programme and to undertake appropriate actions to improve the situation.

In addition to the needs of society, tourism industry and overall wealth for a well-functioning local and regional air transport system, the airspace of the SEE represents an important transit area for flights operating to and from North and West Europe to the South, as well to the Middle- and Far-East. Any Air Traffic Management (ATM) delay, ATM capacity or safety constrain in the SEE region might have a huge impact on European air transport system, too.

The EU White Paper 2011 put additional focus on the territorial cohesion policy whereas good traffic connections within the European Union and with the third countries are stated as a prerequisite for further development. The SEE region suffers from poor inland transport infrastructure and thus it needs to improve its transport conditions by further developing the air transport network. Regional stakeholders hence acknowledge a great deal of under-utilization of air transport infrastructure (airports, etc.) and call for a stimulation of the SEE region's enhancement of non-scheduled air transport services, air charter and helicopter transport operations, along with facilitation and stimulation of General Aviation² which is assumed to be beneficial to the region in many ways. This should be achieved in the

¹ References:

a) SEETO Comprehensive Network Development Plan 2013,

b) SEETO Regional Visits Report 2014,

c) Šimecki, Ana: Doctoral Thesis „Air Transport Connectivity Model in South East Europe“, Faculty of Transport and Traffic Sciences, University of Zagreb, Croatia, 2013,

d) Conference „Air transport as a driver for development and economic prosperity in the South East Europe“ conclusions, Regional Cooperation Council, May 2014, Sarajevo, Bosnia and Herzegovina,

e) Seminar on „Air Transport Development in the Danube Region“ conclusions, EU Strategy for the Danube Region (EUSDR) Priority area 1b: To improve mobility and multimodality - rail, road and air links, September 2013, Belgrade, Serbia

² General Aviation is all civil aviation operations other than scheduled air services and non-scheduled air transport operations for remuneration or hire [ref.: ICAO]. This means: instructional flying, business flying (on company's aircraft for company's purposes), pleasure flying, aerial work (special services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement, etc.) and other flying (other than glider and free balloon flights).

framework of widely integrating the different modes of transport and by close cooperation between EU and non-EU Member States. Also, for a great number of relevant intraregional connections the choice of transport modes is limited and needs to be improved in order to appropriately service passengers.

In 2004, the EU launched the Single European Sky (SES) Initiative³ with the objectives to enhance current air traffic safety standards, to contribute to the sustainable development of the air transport system and to improve the overall performance of the European ATM system and air navigation services. In the SEE, the national flight information regions (FIRs) i.e. the sizes of states, are relatively small. Consequently, current air traffic management systems in the SEE are fragmented, where all the plans and investments in the transport systems are nationally minded. However, the intention of the SES Initiative is to reduce the existing fragmentation of ATM in Europe by establishing enhanced cooperation among Air Navigation Service Providers (ANSPs) and among regulators, in particular through optimization of the use of airspace by delivery of effective airspace sectorisation⁴ and use of available capacity of air traffic control sectors optimally, also by creating the shortest routes⁵ which can be flown by the airlines, thus reducing fuel burn and improving environment protection.

Misleading perceptions of sizes, significances and capabilities of relatively small SEE's FIRs are considered to be the main triggers to establish Joint Service Provision Area Initiative (JSPAI), which ultimate goal is to group the regional potential in all domains.

The agreed JSPAI activities incorporate the new generation approaches defined in line with progressive SES legislation and already tested by international organizations (i.e. EU, EUROCONTROL and EASA) which, ultimately, tend to further develop and implement solutions in the regional context along with addressing regulatory challenges, training and technology upgrades as due enablers for the expected successful airspace defragmentation.

The stakeholders of this Regional Programme, and also members of JSPAI and of SEETO Comprehensive Network⁶, are:

- Civil Aviation Agency of Albania,
- Civil Aviation Agency of Kosovo*,
- Civil Aviation Agency of Montenegro,

³ The EU aviation legislative package.

⁴ Airspace sectorisation provides a partition of a given airspace into a given number of control sectors, subject to geometry and Air Traffic Controller's workload.

⁵ Also known as: great circle distance.

⁶ SEETO Comprehensive Network is a multimodal regional transport network defined under the MoU signed by the Governments of Albania, Bosnia and Herzegovina, Croatia, the Former Yugoslav Republic of Macedonia, Montenegro and Serbia and the United Nations Mission in Kosovo and the European Commission. It is a commonly agreed main and ancillary transport infrastructure in the South East Europe (SEE) which is the base for the implementation of the transport investment programmes. SEETO Comprehensive Network IS TEN-T Comprehensive Network in the South East Europe.

- Civil Aviation Agency of the Republic of Macedonia,
- Hungarian Aviation Authority ⁷,
- HungaroControl zrt,
- Air Navigation Services of Albania,
- Macedonian Air Navigation,
- Prishtina International Airport “Adem Jashari” – Air Control.

The Regional Programme aims to deliver unified regional approach along with local peculiarities in setting up and/or increasing internal capacities of civil aviation authorities and of air navigation service providers and to provide for operational use of the airspace enhancements by the airspace users i.e. commercial airlines.

By setting the operational environment for airlines’ operational costs to reduce the airfares reduce, in parallel.

1.2 Relevance with the SEE 2020 Strategy

The areas of interventions under the SEE 2020 Strategy are stipulated under the different dimensions within the five pillars. The **Sustainable Growth Pillar** aims to raise the level of competitiveness in the private sector, facilitate development of energy, transport and communication infrastructure, and encourage greener and more energy-efficient growth. The area of intervention, among others, is the **transport dimension** which focuses on achieving affordable, reliable and sustainable transport services in order to build a more competitive economy, while making efficient use of resources, protecting the environment and reduce emissions. For **air transport**⁸, the established **JSPA Initiative** aims to support national efforts to integrate further into the EU’s Single European Sky concept. The key benefits of SES implementation are: increased air traffic safety, safeguarded environment, lowered operating costs, and increased ATM capacity.

Stated actions along with those aiming at promoting the SEE air transport connectivity will not require considerable investments in transport infrastructure. However, following the proposed evaluations of airports KPIs, certain amount of investments might be requested for the improvement and development of air transport infrastructure. However, substantial stimulation for the regional economy (employment, added value) can be expected in the

* This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence.

⁷ Hungary has been invited to participate in the JSPAI, as appropriate, based on their temporary ATC provision in the upper airspace over Kosovo. However, Hungary is not SEE beneficiary but as the EU State Member an active stakeholder in the JSPAI.

⁸ Not under SEETO’s mandate yet the RCC’s.

short term. Direct impacts are visible in direct improvement of connectivity among the SEE which will improve the quality of life of the inhabitants and directly provide possibility for development of industry as one of the SEE 2020 Strategy goals. Reduction of travel time will have direct economic benefit perceivable through the value of travel time that might alternatively be spent for other purposes. For leisure travel, the approach is to apply the net wage rate since that is the amount the wage earner must sacrifice to have additional leisure time.

Successful defragmentation, therefore complying with the SES goals, is achievable through implementation of FRA and PBN concepts, whilst safeguarding the environment and enhancing safety level by implementation of WAM/MLAT concept. By grouping the regional potential in terms of delivering a development programme at the regional level, provides for efficient use of regional resources, thus avoiding overlapping and waste of resources when compared to performing the same efforts by each state individually. Bringing operational benefits to the aircraft operators by enabling them to fly shorter routes, therefore spending fewer costs for jet fuel, brings the reduction of their operational costs which shall, ultimately, adjust the price of an airfare. This process is constant as such.

PBN operations offer a number of advantages over the conventional method of designing instrument flight procedures and obstacle clearance criteria, therefore it allows for more efficient use of airspace in terms of closer route placements due to higher navigational accuracy of navigation avionics and of flight management system computers, enhancing fuel efficiency by flying shorter routes and noise mitigation enabled by more flexible trajectories.

The main objective of implementing the FRA concept is to shorten the distance flown for the en-route phase of a flight. Furthermore, PBN aims to reducing the distance flown in terminal airspace around airports and increasing the airspace capacity. Given the fact that there is a straightforward proportion between the distances flown, fuel burnt and amount of CO₂ emitted, the main objectives of the Regional Programme are accomplished by implementation and application of these, inter alia, concepts in the SEE area. Followed by implementing WAM/MLAT concept, thus reducing surveillance system costs, further lowers the airlines' operational costs in the region.

1.3 Relevance with other key references

SES and its technical support programme (called SESAR) was launched in 2004 by Madam Loyola de Palacio, Commissionaire for Energy and Transport at the European Commission, as the largest aviation programme of the EC. Since 2004, the SES Initiative has been updated by amended regulations, but the original goals remained the same: better utilization of the European airspace and improved performance of the European Air Navigation Service Providers. There is specific focus by the EU that SES Initiative has to cover the entire European airspace and as such there should not be any discontinuity in the skies.

The legal commitment for the non-EU SEE States to comply with SES legislative package was introduced by establishing the European Common Aviation Area (ECAA). The Multilateral ECAA Agreement between the European Union, its Member States and the Western Balkans on the establishment of the European Common Aviation Area, sets conditions for the gradual integration of the signatory parties into the EU internal market for aviation. The Agreement's signing was approved by the Decision 2006/682/EC of the Council of the European Union and the Representatives of the Member States of 9 June 2006. With this Agreement, the SEE partners have agreed to the full application of the EU's aviation *acquis*. By implementing all of the EU's aviation *acquis*, ECAA airlines will have open access to the enlarged European single market in aviation.

The Joint Service Provision Area Initiative (JSPAI), established in April 2013, under auspices of the RCC, is an important contributor to the Single European Sky (SES) Initiative in the SEE. The JSPAI proposed projects are fully complementary with SES/SESAR, providing a link between national Single Sky implementation (LSSIP) and regional (cross-border) planning and implementation.

Besides strategic objective of territorial and social cohesion, as well as polycentric regional development, the establishment of the intra-regional air transport operations within the SEE region would also comply with the objectives of Single European Sky legislation, especially in the aspects of reducing the length of routes, improving the efficiency of flight and cost efficiency of transport operations, and the rationalisation of energy consumption and consequent reduction of negative environmental impact.

The Regional Programme supports implementation and introduction of air services on new air transport connections in defined short, medium and long term scenarios developed in line with the development of high speed rail services in the Danube region which is stated in the new EU Regulatory framework - EU White Paper 2011:

- By 2050 connect all core network airports to rail,
- Deployment of SESAR by 2020 and completion of the ECAA,
- By 2050 the majority of medium-distance passenger transport should go by rail. Until 2050 air transport is a most efficient mode of transport that can provide services on mentioned lines.

The Regional Programme is directly addressing the major issues identified in European Strategy for the Danube region - EUSDR (ref.: COM (2010) 715 of December 8, 2010) under the First Pillar Connecting Danube Region and first Priority Area - Improve mobility and multimodality: b) Road, rail and air links.

1.4 Lessons learned and link to previous financial assistance

One of the previous actions in the region in the field of Air Traffic Management was the SEE FABA project (South East European Functional Airspace Block Approach). SEE FABA was established in 2004 under the governance of EU DG MOVE and the Stability Pact for SEE (nowadays the RCC).

The initiative was supported by the involved States and international organizations. However, SEE FABA had to modify its original objective in order to concentrate on the regulatory conditions to support the FAB approach, which at that time seemed to be premature. NATO has considered carefully the Final Report produced by SEE FABA and recommended a step by step approach as the most viable and pragmatic way ahead.

Lessons learnt from SEE FABA non-successful approach could be summarized as:

- Too complex top-down programme with lack of regional ownership;
- Lack of resources to work on more than 20 sub-projects without clear operational needs;
- Lack of attendance in technical/operational meetings due to significant mission costs;
- To gain better knowledge of the forecast of regional air traffic and the expected congested areas in the short and medium term perspective;
- Lack of coherence with other regional initiatives;
- Lack of detailed impact assessment (e.g. Airspace Study) of the high-level SEE FABA concept, and finally
- Lack of regulatory training and operational validation.

The lessons learnt from SEE FABA were carefully studied. It has been concluded that the proposed SEE Airspace Study shall be a key enabler to move step by step ahead in a pragmatic way, as recommended by NATO.

Lessons learned from SEE FABA also highlighted the need that the development of a long term regional airspace solution has to be supported by the necessary regulatory/supervisory (i.e. *NSA Pool of the Experts*) cooperation. Without these (pre-implementation) capacity and know-how building activities (workshops on FRA, PBN, WAM/MLAT and possible on ADS-B) the goals of SES in SEE cannot be achieved.

2. DESCRIPTION OF THE ACTIVITIES

2.2 Overall objectives

The overall objective of the Regional Programme is to achieve improvement of the air transport and traffic in the SEE by reducing costs, thereby integrating three core aspects of the air transport and traffic – Air Navigation Services, Airports and Airlines. The necessity for integral approach within the SEE region was identified and confirmed by the regional participant's Air Transport Authorities which are integral part of the JSPA Initiative and SEETO cooperation.

The five (5) projects, as programmed in the Regional Programme, focus on the reduction of flight routes thereby enabling more efficient use of the available airspace across the region, Europe and the entire continent.

In general, the Regional Programme aims at the:

- Increase of air traffic safety and ATM capacity,
- Economic growth and improvement of mobility within the region,
- Decrease route length, fuel burn, CO₂ emission and noise effects over populated areas.

Developing Regional Programme for Harmonised and optimized use of regional airspace with enhanced air transport connectivity in the SEE by the means of exploring and identifying airspace utilization possibilities i.e. by producing the SEE Airspace Study, thus implementation of the recommendation provided therein including local peculiarities for the application of **FRA** and of **PBN concepts**, for the en-route phase of a flight and in the terminal areas around the airports, utterly aiming to protect the environment and reduce **GHG emissions** along with the **more reasonably organized and structured national airspaces in the regional context**.

Direct routes, which can be flight-planned under FRA operations *au contraire* to the current situation, offer major advantages both for the operators and for the European ATM Network. The main benefits of FRA are: lower fuel carriage, less engine running time, better network and flight predictability, better flight efficiency, greater cost-effectiveness, reduced environmental impact and better air traffic management performance through more accurate traffic prediction and improved sector workload.

Enhancement of Air Traffic connection in the SEE aims to the definition of a short, medium and long term action plan for the improvement of air transport connectivity, including other possibilities such as enhancement of non-scheduled air transport services, air charter and helicopter transport operations, along with facilitation and stimulation of General Aviation within the region.

The aviation impact on climate change mainly stems from emission of CO₂, NO_x, as well as formation of contrails and cirrus clouds. The CO₂ emissions are the largest by far.

The aviation is estimated to account for 2% of CO₂ emissions and is not expected to increase beyond 3% by 2050, according to the Intergovernmental Panel on Climate Change (IPCC). In Europe, the aviation is expected to grow 4-5% per year over the next years. This means that emissions from aviation are growing despite the reductions in emissions per flight due to technological progress (where, for instance, fuel burn per passenger seat has been reduced by 70% over 40 years).

Even though that aviation is not considered as a major contributor to climate change, it shall however reduce its impact on climate change.

All stated above confirms that the aim of the Regional Programme is in line with the area of intervention in the transport dimension, which focuses on achieving affordable, reliable and sustainable transport services in order to build a more competitive economy, while making efficient use of resources, protecting the environment and reduce emissions.

Summing, the Regional Programme, containing five (5) different but interdependent projects, aims to deliver five interdependent documents and roadmaps:

1. Project: **SEE Airspace Study** (responsible: **JSPAI**),
2. Project: Recommendations and guidelines to implement state-tailored **FRA concept**, based on regional context and in accordance with results the SEE Airspace Study (responsible: **JSPAI**),
3. Project: Recommendations and guidelines to implement state-tailored **PBN concept**, based on regional context and in accordance with results the SEE Airspace Study (responsible: **JSPAI**),
4. Project: Recommendations and guidelines to implement state-tailored **WAM/MLAT**, based on regional context and in accordance with results the SEE Airspace Study (responsible: **JSPAI**),
5. Project: Guidelines and recommendations for enhancement of **air transport connectivity** in the SEE region including recommendations for enhancement of non-scheduled air transport services, air charter and helicopter transport operations, along with facilitation and stimulation of General Aviation in the SEE region (responsible: **SEETO**).

The achievements of the Overall Objectives are to be measured by:

1. Distance flown:
 - a. current flight trajectory lengths between entry/exit points of a national airspace to be **reduced by 10%**, if proven achievable by the SEE Airspace Study,
2. Fuel consumption:

- b. **specific area of improvement** is to support less jet fuel carriage in line with shortening flight trajectories,
3. CO₂ emission:
 - c. current CO₂ emission to be **reduced by 10%**, if proven achievable by the SEE Airspace Study,
4. Noise and nuisance over populated area:
 - d. **specific area of improvement** is to position instrument flight procedures in terminal areas off the residential areas or so adjusted to make no harm for the habitants.

Furthermore, this would be a step forward towards Implementation of SES 2 and SESAR requirements on performance, which are stipulated by the application of the Regulation (EU) Nr. 390/2013.

2.3 Specific objectives

Following specific objectives are to be achieved:

- To identify, indicate and implement the highest possible reduction of unnecessary surplus lengths of flights operating in the SEE,
- To ensure harmonized air traffic management performance to provide seamless services in the SEE region, to utilize available regional capacity and coordinate regional ATM interface development in cooperation with e.g. ICAO and the European Network Manager,
- To provide identification of new air transport connections in the SEE region including other possibilities, such as enhancement of non-scheduled air transport services, air charter and helicopter transport operations, along with facilitation and stimulation of General Aviation,
- To identify KPIs for air transport stakeholders (airports and airlines) in the SEE region,
- To achieve affordable, reliable and sustainable air transport services.

The Regional Programme consisted of separate deliveries, precisely the SEE Airspace Study, FRA, PBN and WAM/MLAT implementation plans together with those related to the enhancement of air transport connectivity, stand for the steering set of documents applicable to the region of SEE airspace. With (national) local peculiarities it addresses the implementation plans, the tasks and commitments for a State and its responsible national structures.

JSPAI will address this specific objective by implementing three interdependent project's elements: the stepwise cross-border implementation of FRA in the SEE and another – especially in the lower airspace at and around the airports - the implementation of PBN and WAM/MLAT.

SEETO will focus on the evaluation and identification of guidelines and recommendation for the improvement of city-pair connectivity in the SEE.

The combined implementation of these Regional Programme's elements will be, as a part of performing the SEE Airspace Study, measured by fast-time simulation and validated by active air traffic controllers using a real-time simulation platform giving the opportunity to check the quantity, quality and safety aspects of the Regional Programme's high level objectives.

The Regional Programme, for the purpose of preparatory activities for the implementation of the projects, shall also include:

- Overview of current national airspace structures organization;
- Overview of the current traffic situation and forecasts;
- Identification of other areas for improvement, based on the results of the SEE Airspace Study,
- Identification of new air transport connections in the SEE region including other possibilities such as enhancement of non-scheduled air transport services, air charter and helicopter transport operations, along with facilitation and stimulation of General Aviation.

The information regarding the delivery of the SEE Airspace Study are the input information for the other three (namely points 2, 3 and 4 as described in the Title 2.2), will be published in accordance with the study conduct dynamics i.e. end of 2016.

In accordance with the recommendations provided therein, the implementation of the concepts is expected by end of 2020.

2.4 Results

Currently, civil aircraft have to fly according to predefined ATS routes, which are majorly designed in accordance with and dependable on the available ground-stationed navigation aids. While flying on the ATS routes duly consideration is taken due to different airspace reservations⁹ stemming from different airspace users, where such airspace restrictions may

⁹ Airspace reservation is a defined volume of airspace temporary reserved for exclusive or specific use by category of users.

be either constant or variable on daily and hourly basis. Due to the predefined flying conditions and operational constraints, most of the flights have to plan to fly longer and actually to fly longer when compared to the shortest i.e. great circle distances. When compared to the designed ATS route system in a FRA environment pilots may choose to plan and to fly the most direct line between entry and exit point of a national airspace. However, real benefit for the airlines can only be achieved if the free-routes or direct routes are applied cross-border and in the regional context.

According to calculations made by the EU and European Network Manager, a realistic goal shall be to reduce the current surplus length of operating flights in the SEE region by 10%. On average, aircraft today fly 42 km longer than the shortest distance between their departure and destination airports. By shortening the flight routes and assuming an average fuel consumption of 2.9 litres per 100 km it makes it possible to reduce fuel consumption and emissions by about 10% per flight¹⁰.

Besides, instrument flight procedures in terminal airspace¹¹ designed in line with the PBN concept may be supported by the use of satellites, which gives the possibility to the pilots to fly the shortest trajectories more accurately instead of traditional ground based navigational infrastructure. It is obvious that by using space-based navigation aids, flight procedure designers have much more freedom to design departure and arrival (or en-route) flight trajectories taking into account traffic complexity and environment protection.

The principal benefit derived from PBN concept is the transition to a complete Area Navigation (RNAV) environment. This leads to flight efficiency and allows optimization of the utilization of airspace including reduced holding containment areas. Without the constraints of navigating via fixed, ground-based navigation aids, the airspace designer has a powerful tool in terms of positioning of ATS routes and instrument flight procedures in relation to areas of congestion or population density.

Therefore, the results of the Regional Programme shall contain recommendations indicating and quantifying:

1. Increase of ATC capacity,
2. Improvement of safety,
3. Reduction in the effects on the environment,
4. Reduction of air navigation services costs.

The navigation infrastructure is a key element in PBN and the transition to the RNAV environment is linked to a move towards a space-based navigation environment (usage of Global Navigation Satellite System – GNSS) and a move away from dependence on traditional ground-based navigation infrastructure such as VOR and NDB facilities. This in turn will

¹⁰ Source: ec.europa.eu/transport/modes/air/single_european_sky

¹¹ Means: in a defined volume of airspace around an airport.

allow rationalization of infrastructure leading to savings from capital investment; maintenance and radio-frequency spectrum utilization with commensurate savings passed onto the operators through reduced navigation services charges and a requirement to carry less equipment.

In accordance with the stated above, the Regional Programme’s expected results are:

- **Result 1:** Explored and identified airspace utilization possibilities (the SEE Airspace Study),
- **Result 2:** Recommendations and guidelines for state-tailored FRA implementation,
- **Result 3:** Recommendations and guidelines for state-tailored PBN implementation,
- **Result 4:** Recommendations and guidelines for state-tailored WAM/MLAT (or optionally ADS-B) technical solutions,
- **Result 5:** Identified KPIs for airports and airlines in the SEE region,
- **Result 6:** Guidelines and recommendations for enhancement of air transport connectivity in the SEE region including enhancement of non-scheduled air transport services, air charter and helicopter transport operations, along with facilitation and stimulation of General Aviation.

The projects and their results are summarized in the Table 1.

Table 1. Structure of the Regional Programme

	PROJECT TITLE	EXPECTED RESULTS	
REGIONAL PROGRAMME FOR AIR TRANSPORT	SEE Airspace Study	Explored and identified airspace utilization possibilities	
	Recommendations and guidelines to implement state-tailored FRA concept , based on regional context and in accordance with results the SEE Airspace Study	Recommendations and guidelines for state-tailored FRA implementation	
	Recommendations and guidelines to implement state-tailored PBN concept , based on regional context and in accordance with results the SEE Airspace Study	Recommendations and guidelines for state-tailored PBN implementation	
	Recommendations and guidelines to implement state-tailored WAM/MLAT , based on regional context and in accordance with results the SEE Airspace Study	Recommendations and guidelines for state-tailored WAM/MLAT implementation	
	Guidelines and recommendations for enhancement of air transport connectivity establishment in the SEE region including recommendations for enhancement of non-		Identified KPIs for airports and airlines in the SEE region
			Guidelines and recommendations for enhancement of air transport

	scheduled air transport services, air charter and helicopter transport operations, along with facilitation and stimulation of General Aviation in the SEE region	connections in the SEE region including enhancement of non-scheduled air transport services, air charter and helicopter transport operations, along with facilitation and stimulation of General Aviation in the SEE region
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2.5 Measures/operations/components to achieve results

In order to deliver the desired results, the following high level tasks shall be undertaken:

1. Activities to achieve Result 1:

- a. JSPA Contact Points nomination (Contact Point shall be responsible to support production of the SEE Airspace Study, including support of production of the Regional PBN Implementation Plan, preparations for FRA simulation and WAM/MLAT Feasibility Study, to provide necessary documentation and data, to coordinate activities within his/her respective organization);
- b. Operational environment data collection i.e. establishing baseline data (existing legal grounds, procedures, infrastructure, operational environment) **(by the JSPA)**;
- c. Production of the SEE Airspace Study **(by an external tenderer)**;
- d. Overall cost-benefit analysis of the Regional Programme **(by an external tenderer)**.

2. Activities to achieve Result 2:

- a. Successful achievement of expected **Result 1**;
- b. Development of appropriate Airspace Concept of a State i.e. to define and prioritize Strategic Objectives in term of safety, capacity, environment and cost-efficiency **(by the JSPA)**;
- c. Production of the Regional FRA Implementation document, detailing peculiarities for each State, including possible cross-border sectorization accompanied by the adequate safety case **(by the JSPA)**;
- d. Validation of recommended solutions using fast-time and real-time simulations **(by an external tenderer)**;

- e. Building the internal capacities of the civil aviation authorities and of the air navigation service providers for the processing and approval of the use of the recommended solutions stemming from the Regional FRA Implementation Plan through organisation of workshops and trainings for the future intra-organisational trainers, assessors and examiners (**by an external tenderer**);
- f. Publication of Regional FRA Implementation Plan translations into respective languages (**by the JSPAI**).

3. Activities to achieve Result 3:

- a. Successful achievement of expected **Result 1**;
- b. Successful achievement of expected **Result 2.b** (developed appropriate national Airspace Concepts);
- c. Production of the Regional PBN plan, detailing peculiarities for each State and its selected aerodromes (PBN favourable), including PBN Performance Measurement Plan (**by the JSPAI**);
- d. Validation of recommended solutions by flight checks (**by an external tenderer**);
- e. Building the internal capacities of the civil aviation authorities and of the air navigation service providers, in particular their PANS-OPS offices, for the processing and approval of the use of the recommended solutions stemming from the Regional PBN Implementation Plan through organisation of workshops and trainings for the future intra-organisational trainers, assessors and examiners (**by an external tenderer**);
- f. Publication of Regional PBN Implementation Plan translations into respective languages (**by the JSPAI**);
- g. Procedure designs for chosen airports in compliance with the international standards and recommended practices contained in the ICAO Document 8168 (**by an external tenderer**, if applicable);
- h. Procedures publications into national AIPs (**by the JSPAI**).

4. Activities to achieve Result 4:

- a. Successful achievement of expected **Result 1**;
- b. Successful achievement of expected **Result 2.b** (developed appropriate national Airspace Concepts);
- c. Production of the WAM/MLAT Feasibility Study, detailing peculiarities for each State and its selected aerodromes (**by the JSPAI**);

- d. Identification of the proper locations for the system components and proposal of the WAM/MLAT system architecture for the SEE (**by an external tenderer**);
- e. Development of the system and operational requirements documentations (**by an external tenderer**);
- f. Publication of WAM/MLAT documentations translations into respective languages (**by the JSPAI**).

5. Activities to achieve Result 5:

- a. Valorisation of air transport in the SEE region;
- b. Identification of KPIs for SEE Airlines;
- c. Identification of KPIs for SEE Airports.

6. Activities to achieve Result 6:

- a. Valorisation of current air transport in the SEE region including valorisation of current road and rail connections with the Air Transport infrastructure;
- b. Macro-economic cost benefit evaluation of air transport connection with action plan for improvement of road and rail connections with the Air Transport infrastructure;
- c. Evaluate possibilities for enhancement of non-scheduled air transport services, air charter and helicopter transport operations, along with facilitation and stimulation of General Aviation;
- d. Cost benefit evaluations of scheduled and non-scheduled air transport services, air charter and helicopter transport operations, along with facilitation and stimulation of General Aviation in the SEE region;
- e. Guidelines for enhancement of non-scheduled air transport services, air charter and helicopter transport operations, along with facilitation and stimulation of General Aviation in the SEE region;
- f. Study “Enhancement of Air Transport connectivity in the SEE Region” including proposal for inclusion of services on new connections.

Each high level task, the outcomes and possible risks will be documented in separate project management plans.

2.6 Sustainability

Given that good accessibility by air is a prerequisite for a great majority of economic and social activities (in particular relating to cutting-edge and innovative branches) the mid- and long-term structural effects can be expected to be substantial. In particular, by attracting new local and foreign corporate investments due to the locational upgrading within the SEE region will yield sustainable effects in terms of regional economic performance and regional labour markets. Apart from that, safe and eased access to areas that used to be peripheral in terms of their accessibility on the European level will greatly benefit from improved travelling options (modal choices, routes) and reduced travel times.

Sustainable economic and social effects will without dispute yield convergence in terms of social and economic conditions. This is both true for the intra-regional cohesion as well as the cohesion between the SEE region and the rest of Europe. Improving air transportation network seems to be a prime target in order to reduce gaps and to catch up, given that it is a vital requisite for advanced economic activities (e.g. tertiarization of jobs, growing shares of high-tech industries, etc.) and fighting brain drain.

Developing Harmonised use of regional airspace with enhanced air transport connections in the SEE – as described under Title 2.5 – is a stepwise process. Whilst the implementation of the PBN concept will not require significant investments by ANS providers (except know-how on instrument flight procedure design, production of safety cases, staff training and validation activities), the implementation of FRA concept will need modification of the existing safety nets (conflict detection, as a computer software solution) of flight data processing systems, therefore they will have to be included in the respective stakeholder's business plans.

In the projects of FRA, PBN and WAM/MLAT significant training will be required for the regulators, procedure designers and air traffic controllers.

However, after these initial investments the operational concept will remain stable for several years and the required training on FRA, PBN and WAM/MLAT will be part of future regular training plans. Sustainability of the Programme will have to be ensured by the commitment of the JSPAI partners. The commitment will be ensured by two simple facts: the ATM cost reduction triggered by the upcoming EU regulations (e.g. RP2) can be best achieved by cooperation and sharing regional resources. Secondly, JSPAI is a bottom up initiative. It is obvious that a pro-active bottom up regional "commitment" is more "attractive" and better plannable for the ANS providers than "top-down" decisions made at European level.

The maintenance of the applicable elements of the Regional Programme shall be therefore part of the future Business Plan of ANS providers. Once the Regional Programme is completed the JSPAI partners can cover the medium and long term needs for human resources by utilizing the existing regulatory expertise, safety oversight and by coordinated regular refresher training of operational air traffic controllers and other ATM specialists (e.g. ATSEP).

2.7 Preconditions, assumptions and risks

The preconditions could be structured as:

1. **Commitment** – Due to the specific nature of air transport that is fully connected with the decisions and directions from the national governments in the SEE, the initial precondition for the implementation of the Regional Programme for the Air Transport is full commitment on the introduction of proposed guidelines and recommendations and support by the respective governments and all regional air transport stakeholders. Precisely, the derived evaluations and identified KPIs as well as recommendations and implementation plans of the projects are accepted by the respective stakeholders. This is followed by the continuation of regional common work within the JSPAI multinational project management teams.
2. **Baseline data** – The precondition for the successful implementation of the Regional Programme is the creation of a data base i.e. baseline data and to undertake initial preparatory activities needed to perform the SEE Airspace Study. These activities have to be built on previous work done by national experts and by the EUROCONTROL Network Manager.
3. **Extensive cooperation** – JSPAI has already demonstrated that there is willingness for cross-border cooperation as its overall objective is achieving extended partnership for cooperation and coordination between participating CAAs and ANSPs on every level.
4. **Timely availability** – The timely implementation of FRA and PBN concepts will depend on the availability of validation/simulation platform and the capacities of training organizations in the region to develop harmonized continuation training packages for the regulators, subject matter experts, air traffic controllers and technicians.

2.8 Implementation modalities

The JSPAI assumes overall management responsibility and accountability for the projects implementation of the Regional Programme. Accordingly, JSPAI ensures obeying to all policies and procedures established for its own operations regarding conduct of projects.

The JSPAI Management Board shall decide on the grant holder responsibility for the execution of the Regional Programme. The project management and supervision is integrated into the existing JSPAI governance structure.

The responsibility for the execution of the projects is with JSPAI and SEETO (as indicated hereafter). These roles are to be reflected in the grant agreement, signed by the JSPAI (represented by its chairman) and granter.

JSPAI and SEETO may identify a tenderer to carry out an activity identified as a project in the Regional Programme. A tenderer is defined as an entity that has been selected to act on behalf of the JSPAI/SEETO on the basis of a written agreement or contract to purchase goods or provide services using the project budget. In addition, the tenderer may manage the use of these goods and services to carry out project activities and produce outputs. All tenderers are directly accountable to the Project Steering Board in accordance with the terms of their agreement or contract with JSPAI.

The JSPAI and SEETO will designate Project Team Leaders for the identified separate projects covered by the Regional Programme:

1. Project: **SEE Airspace Study** (responsible: JSPAI),
2. Project: Recommendations and guidelines to implement state-tailored **FRA concept**, based on regional context and in accordance with results the SEE Airspace Study (responsible: JSPAI),
3. Project: Recommendations and guidelines to implement state-tailored **PBN concept**, based on regional context and in accordance with results the SEE Airspace Study (responsible: JSPAI),
4. Project: Recommendations and guidelines to implement state-tailored **WAM/MLAT**, based on regional context and in accordance with results the SEE Airspace Study (responsible: JSPAI),
5. Project: Guidelines and recommendations for enhancement of **air transport connectivity** in the SEE region including recommendations for enhancement of non-scheduled air transport services, air charter and helicopter transport operations, along with facilitation and stimulation of General Aviation in the SEE region (responsible: SEETO).

Irrespective of whether a tenderer is selected, the Project Team Leader is responsible for:

1. Managing the overall conduct of the project;
2. Implementing activities by mobilizing goods and service;
3. Checking on progress and watch for plan deviations;
4. Ensuring that changes are controlled and problems addressed to the JSPAI Management Board;
5. Monitoring progress and risks;
6. Reporting on progress to the JSPAI Management Board including measures to address challenges and opportunities.

It is foreseen that at least 6 calls for tender will be published covering, in particular:

1. Production of the SEE Airspace Study (high-level business case by data collections and fast-time simulation activities);
2. Overall cost-benefit analysis (CBA) of the Regional Programme;
3. Production of the Regional al FRA Implementation Plan, Regional FRA Safety Case and Impact Assessment;
4. Validation of airspace solutions by real-time simulations;
5. Organisation of workshops and trainings for the future intra-organisational ATC trainers, assessors and examiners;
6. Validation of PBN and WAM/MLAT recommended solutions by flight checks.

The Regional Programme Coordinator, in close cooperation with the RCC, shall in particular ensure the integration of sub-activities, quality control of the deliveries and contract management.

Anticipated Regional Programme's budget is **1,298,870 - EUR**.

The implementation of the Regional Programme lays with JSPAI and SEETO. In its capacity, JSPAI will employ its efforts as shown in the Table 2, column *Bearer*. The budget share is approximatively 12:1.

The anticipated budget breakdown is in the Table 2.

Table 2. Activity-cost description table

PROJECT TITLE	EXPECTED RESULT	ACTIVITY	BEARER	ACTIVITY BUDGET	PROJECT BUDGET
1. SEE Airspace Study	R1. Explored and identified airspace utilization possibilities	A1.R1. JSPAI Contact Points nomination	JSPAI	N/A	227,620
		A2.R1. Operational environment data collection i.e. establishing baseline data	JSPAI	7,620	
		A3.R1. Production of the SEE Airspace Study (high-level business case and fast-time simulation)	external tenderer	150,000	
		A4.R1. Overall cost-benefit analysis of the Regional Programme	external tenderer	70,000	
2. Recommendations and guidelines to implement state-tailored FRA concept , based on regional context and in accordance with results the SEE Airspace Study	R2. Recommendations and guidelines for state-tailored FRA implementation	A1.R2. Successful completion of R1	JSPAI	N/A	582,480
		A2.R2. Development of appropriate national Airspace Concepts	JSPAI	22,860	
		A3.R2. Production of the Regional FRA Implementation document	external tenderer	12,000	
		A4.R2. Regional FRA Safety Case, Impact Assessment, and Validation of recommended solutions using real-time simulations	external tenderer	470,000	
		A5.R2. Building the internal capacities of the civil aviation authorities and of the air navigation service providers (workshops and trainings)	external tenderer	70,000	
		A6.R2. Publication of Regional FRA Implementation Plan translations into respective languages	JSPAI	7,620	

3. Recommendations and guidelines to implement state-tailored PBN concept , based on regional context and in accordance with results the SEE Airspace Study	R3. Recommendations and guidelines for state-tailored PBN implementation	A1.R3. Successful completion of R1	JSPAI	N/A	199,150
		A2.R3. Successful completion of A2.R2	JSPAI	N/A	
		A3.R3. Production of the Regional PBN plan, including PBN Performance Measurement Plan	external tenderer	12,000	
		A4.R3. Validation of recommended solutions by flight checks	external tenderer	90,000	
		A5.R3. Building the internal capacities of the civil aviation authorities and of the air navigation service providers (workshops and trainings)	external tenderer	40,000	
		A6.R3. Publication of Regional PBN Implementation Plan translations into respective languages	JSPAI	7,620	
		A7.R3. Procedure designs for chosen airports in compliance with the international standards and recommended practices contained in the ICAO Document 8168	JSPAI	45,720	
		A10.R3. Procedures publications into national AIPs	JSPAI	3,810	
4. Recommendations and guidelines to implement state-tailored WAM/MLAT , based on regional context and in accordance with results the SEE	R4. Recommendations and guidelines for state-tailored WAM/MLAT implementation	A1.R4. Successful completion of R1	JSPAI	N/A	109,620
		A2.R4. Successful completion of A2.R2	JSPAI	N/A	
		A3.R4. Production of the WAM/MLAT Feasibility Study	external tenderer	12,000	
		A4.R4. Identification of the proper locations for the system components and proposal of the WAM/MLAT system architecture for the SEE	external tenderer	50,000	

Airspace Study		A5.R4. Development of the system and operational requirements documentations	external tenderer	40,000	
		A6.R4. Publication of WAM/MLAT documentations translations into respective languages	JSPAI	7,620	
5. Guidelines and recommendations for enhancement of air transport connectivity in the SEE region including recommendations for enhancement of non-scheduled air transport services, air charter and helicopter transport operations, along with facilitation and stimulation of General Aviation in the SEE region	R5. Identified KPIs for airports and airlines in the SEE region	A1.R5. Valorisation of air transport in the SEE region			180,000
		A2.R5. Identification of KPIs for SEE Airlines			
		A3.R5. Identification of KPIs for SEE Airports			
	R6. Guidelines and recommendations for enhancement of air transport connections in the SEE region including improvement of General Aviation and helicopter transport in the SEE region	A1.R6. Valorisation of current air transport in the SEE region including valorisation of current road and rail connections with the Air Transport infrastructure			
		A2.R6. Macro-economic cost benefit evaluation of air transport connection with action plan for improvement of road and rail connections with the Air Transport infrastructure			
		A3.R6. Evaluate possibilities for introduction of enhancement of non-scheduled air transport services, air charter and helicopter transport operations, along with facilitation and stimulation of General Aviation in the SEE region			
		A4.R6. Cost benefit evaluations of non-scheduled air transport services, air charter and helicopter transport operations, along			

		with facilitation and stimulation of General Aviation in the SEE region			
		A5.R6. Guidelines for introduction of non-scheduled air transport services, air charter and helicopter transport operations, along with facilitation and stimulation of General Aviation in the SEE region			
		A6.R6. Study “Enhancement of Air Transport connectivity in the SEE Region” including proposal for inclusion of services on new connections.			

2.9 Cross cutting issues

With the ECAA Agreement, the SEE partners have agreed to the full application of the EU's aviation *acquis*. The ECAA is based on the free market access, the principle of non-discrimination on grounds of nationality, freedom of establishment, equal conditions of competition, and common rules including in the areas of safety, security, air traffic management, social and environment.

The Regional Programme is of a technical nature and does not pose any impact on social domain. However, obeying to the ECAA Agreement's provisions ensures the preservation of cross-cutting issues.

2.10 Monitoring, Evaluation and Audit of the programme

The Project Team Leaders are responsible for monitoring progress of the project and risks associated to its implementation. In addition, in accordance with the JSPAI Framework Document, a Project Team Leader is responsible for reporting on progress of the projects implementation to the JSPAI Management Board including measures to address challenges and opportunities.

In addition, monitoring and evaluation reports (Airports, Airlines and Governments) will be used within the monitoring process as well as the additional EU reports on aviation (ECAA, ISIS - FAB).

2.11 Communication and visibility

The dissemination process has clear internal and external target elements, internally among the projects partners themselves and externally to potential investors and public authorities at local, regional, national and European level, educational and research establishments, utilities, the general public and other relevant interest groups.

The clear identification and definition of each of the target groups to whom the project results and to whom messages will be disseminated is of crucial importance. Four main target categories have been identified:

- Civil society – civil society associations, aviation associations, consumers, consumer protection associations, NGOs, community groups and financial institutions;
- Policy – European Commission, national and local governments, relevant stakeholders and policy makers in transportation, infrastructure and urban planning;

- Research community – Universities and research centres, R&D private centres and standardisation bodies;
- Industry/manufacturer – technology providers, construction companies, carriers and service companies.

In order to achieve Regional Programme's objectives it is necessary to integrate in the process of the development all respective air transport stakeholders in the SEE region, whilst final results should be presented to the wider audience. In order to spread the results, it is necessary to inform and engage the target groups and to promote identified enhanced air transport connections to those with decision-making and financial functions. Overall, the main objectives of the dissemination is to convey, demonstrate and promote to a vast audience the enormous potential for air transport services, which can be achieved by addressing the relevant stakeholder groups with a fully integrated approach (i.e. action plans).

Communication among the CAAs and ANSPs will be established and maintained by delegation of a Contact Point of each respective participating organization, thus enabling internal communication and coordination within the participating organization. Regularly organized information exchange fora, project meetings, interim results and fine-tuning coordination among delegated Contact Points and other involved stakeholders will maintain regional information exchange.

2.12 Potential source of funding for the Regional Programme

Developing Harmonised and Optimized use of regional airspace with enhanced air transport connections in the SEE is a prioritized Regional Programme supported by the participating Civil Aviation Authorities and Air Navigation Service providers and international organizations.

The envisaged efforts for the implementation of the Regional Programme are based on the budget share i.e. co-financing. The JSPAI participating organizations will employ their own efforts with one (1) stake while external finances twelve (12) stakes in overall budget, approximatively.

The Regional Programme stems from the SEE2020 Strategy and potential source of funding is the IPA II.

3. LOGICAL FRAMEWORK MATRIX

OVERALL OBJECTIVE	OBJECTIVELY VERIFIABLE INDICATORS (OVI)	SOURCES OF VERIFICATION	
<p>The overall objective of the Regional Programme for harmonised use of regional airspace with enhanced air transport connections in the SEE is the improvement of the air transport and traffic in the South-East Europe</p> <p>The Regional Programme aims to increase air traffic safety and ATM capacity, to improve economic growth and mobility, to decrease route length, fuel burn, CO₂ emission and noise effects over populated areas.</p>	<ol style="list-style-type: none"> 1. Published SEE Airspace Study, 2. Implemented recommendations and guidelines on implementation of state-tailored FRA concept, 3. Implemented recommendations and guidelines on implementation state-tailored PBN concept, 4. Implemented recommendations and guidelines on implementation of state-tailored WAM/MLAT, 5. Published guidelines and recommendations for enhancement of air transport connections establishment in the SEE region, 6. Published recommendations for and improvement of General Aviation and helicopter transport in the SEE region, 	<ol style="list-style-type: none"> 1. Project Team Leaders periodic reports on progress of the projects implementation to the JSPAI Management Board, 2. Monitoring and Evaluation reports (Airports, Airlines and Governments), 3. EU reports on aviation (ECAA, ISIS - FAB), 4. National Aeronautical Information Publications (AIPs). 	

	7. Distance flown reduced by 10%, enabled 20% less jet fuel carriage per flight, CO ₂ emission reduced by 10%, instrument flight procedures positioned off the residential areas and/or so adjusted inducing zero complaints raised by the local population.		
SPECIFIC OBJECTIVE	OBJECTIVELY VERIFIABLE INDICATORS (OVI)	SOURCES OF VERIFICATION	ASSUMPTIONS
<p>1. To identify and implement the highest possible reduction of unnecessary surplus lengths of flights operating in the SEE,</p> <p>2. To ensure harmonized air traffic management performance to provide seamless services in the SEE region, to utilize available regional capacity and coordinate regional ATM interface development in cooperation with e.g. ICAO and the European Network</p>	<p>1. Published SEE Airspace Study containing identified highest possible reduction of unnecessary surplus lengths of flights,</p> <p>2. Analytical macro-economic cost benefit evaluation of air transport connections in the SEE,</p> <p>3. Defined 17 KPI for SEETO Comprehensive network airports in the SEE region</p> <p>4. Guidelines for the Air Transport Stakeholders on the introduction of non-scheduled air transport services, air charter and helicopter transport</p>	<p>1. Project Team Leaders periodic reports on progress of the projects implementation to the JSPAI Management Board and SEETO,</p> <p>2. Monitoring and Evaluation reports (Airports, Airlines and Governments),</p> <p>3. EU reports on aviation (ECAA, ISIS - FAB),</p> <p>4. Reduced operational cost of aircraft operators and lower ticket prices.</p>	<p>1. Identification of the highest possible reduction of unnecessary surplus lengths of flights operating in the SEE,</p> <p>2. The SEE Airspace Study's results and therein provided recommendations accepted and by the respective Stakeholders along with full commitment to their implementation,</p> <p>3. The KPIs are accepted by the respective Stakeholders,</p> <p>4. Full commitment on the introduction of proposed aviation</p>

<p>Manager,</p> <p>3. To provide identification of new air transport connections in the SEE region including other possibilities, such as heliport network and General Aviation development,</p> <p>4. To identify KPI for air transport stakeholders (airports and airlines) in the SEE region,</p> <p>5. To achieve affordable, reliable and sustainable air transport services.</p>	<p>operations, along with facilitation and stimulation of General Aviation in the SEE Region in the SEE</p>		<p>services is supported by the respective governments and stakeholders</p>
RESULTS	OBJECTIVELY VERIFIABLE INDICATORS (OVI)	SOURCES OF VERIFICATION	ASSUMPTIONS
<p>Result 1: Explored and identified airspace utilization possibilities (the SEE Airspace Study),</p> <p>Result 2: Recommendations</p>	<p>1. Identified and quantified increase of ATC capacity and cost reduction to provide air navigation services, enabled greater access to airports with improvement of safety levels and reduction of the effects on the</p>	<p>1. Project Team Leaders periodic reports on progress of the projects implementation to the JSPAI Management Board and SEETO,</p> <p>2. Monitoring and Evaluation</p>	<p>1. Identification of the highest possible reduction of unnecessary surplus lengths of flights operating in the SEE,</p> <p>2. The SEE Airspace Study's</p>

<p>and guidelines for state-tailored FRA implementation,</p> <p>Result 3: Recommendations and guidelines for state-tailored PBN implementation,</p> <p>Result 4: Recommendations and guidelines for state-tailored WAM/MLAT implementation,</p> <p>Result 5: Identified KPIs for airports and airlines in the SEE region,</p> <p>Result 6: Guidelines and recommendations for enhancement of air transport connections in the SEE region including enhancement of non-scheduled air transport services, air charter and helicopter transport operations, along with</p>	<p>environment,</p> <p>2. KPIs included in 6 national and JSPA/RCC and SEETO regional strategic documents,</p> <p>3. Guidelines and recommendations included in 6 national and JSPA/RCC and SEETO regional strategic documents.</p>	<p>reports (Airports, Airlines and Governments),</p> <p>3. EU reports on aviation (ECAA, ISIS - FAB).</p>	<p>results and therein provided recommendations accepted and by the respective Stakeholders along with full commitment to their implementation,</p> <p>3. The KPIs are accepted by the respective Stakeholders,</p> <p>4. Full commitment on the introduction of proposed aviation services is supported by the respective governments and stakeholders.</p>
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<p>facilitation and stimulation of General Aviation in the SEE Region in the SEE region.</p>			
ACTIVITIES	MEANS	OVERALL COST	ASSUMPTIONS
<p>Activities for Result 1:</p> <p>1.a. JSPAI Contact Points nomination and establishment of Project Teams,</p> <p>1.b. Operational environment data collection i.e. baseline data;</p> <p>1.c. Production of the SEE Airspace Study;</p> <p>1.d. Production of the overall cost-benefit analysis of the Regional Programme.</p> <p>Activities for Result 2:</p> <p>2.a. Successful achievement of expected Result 1;</p>	<p>1. Appointed and delegated JSPAI human resources and organisational knowledge,</p> <p>2. Appointed consultants,</p> <p>3. Service and supply contracts (simulation centres and flight check operators).</p>	<p>1,298,870.- EUR</p> <p>(external funds:JSPAI=12:1)</p>	<p>1. Identification of the highest possible reduction of unnecessary surplus lengths of flights operating in the SEE,</p> <p>2. The SEE Airspace Study’s results and therein provided recommendations accepted and by the respective Stakeholders along with full commitment to their implementation,</p> <p>3. The KPIs are accepted by the respective Stakeholders,</p> <p>4. Full commitment on the introduction of proposed aviation services is supported by the respective governments and stakeholders.</p>

<p>2.b. Development of appropriate Airspace Concept of a State;</p> <p>2.c. Production of the Regional FRA Implementation document;</p> <p>2.d. Validation of recommended solutions using fast-time and real-time simulations;</p> <p>2.e. Building the internal capacities of the civil aviation authorities and of the air navigation service providers (workshops and trainings)</p> <p>2.f. Publication of Regional FRA Implementation Plan translations into respective languages.</p> <p>Activities for Result 3:</p>			
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<p>3.a. Successful achievement of expected Result 1;</p> <p>3.b. Successful achievement of expected Result 2.b;</p> <p>3.c. Production of the Regional PBN plan;</p> <p>3.d. Validation of recommended solutions by flight checks;</p> <p>3.e. Building the internal capacities of the civil aviation authorities and of the air navigation service providers (workshops and trainings)</p> <p>3.f. Publication of Regional PBN Implementation Plan translations into respective languages;</p>			
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<p>3.g. Instrument flight procedure designs with regards to the Regional PBN Implementation Plan;</p> <p>3.h. Instrument flight procedure publications into national AIPs (by the JSPAI).</p> <p>Activities for Result 4:</p> <p>4.a. Successful achievement of expected Result 1;</p> <p>4.b. Successful achievement of expected Result 2.b;</p> <p>4.c. Production of the WAM/MLAT Feasibility Study;</p> <p>4.d. Identification of the proper locations for the system components and proposal of the WAM/MLAT</p>			
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<p>system architecture for the SEE;</p> <p>4.e. Development of the system and operational requirements documentations;</p> <p>4.f. Publication of WAM/MLAT documentations translations into respective languages.</p> <p>Activities for Result 5:</p> <p>5.a. Valorisation of air transport in the SEE region;</p> <p>5.b. Identification of KPIs for SEE Airlines;</p> <p>5.c. Identification of KPIs for SEE Airports.</p> <p>Activities for Result 6:</p> <p>6.a. Valorisation of current air transport in the</p>			
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<p>SEE region including valorisation of current road and rail connections with the Air Transport infrastructure;</p> <p>6.b. Macro-economic cost benefit evaluation of air transport connection with action plan for improvement of road and rail connections with the Air Transport infrastructure;</p> <p>6.c. Evaluate possibilities for introduction of non-scheduled air transport services, air charter and helicopter transport operations, along with facilitation and stimulation of General Aviation in the SEE region;</p> <p>6.d. Cost benefit evaluations of non-scheduled air transport services, air charter and</p>			
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<p>helicopter transport operations, along with facilitation and stimulation of General Aviation in the SEE region;</p> <p>6.e. Guidelines for introduction of non-scheduled air transport services, air charter and helicopter transport operations, along with facilitation and stimulation of General Aviation in the SEE region. Proposal for inclusion of services on new connections.</p> <p>6.f. Study “Enhancement of Air Transport connectivity in the SEE Region” including proposal for inclusion of services on new connections.</p>			
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