Newsletter Blue Med - n°6 - July 2015

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1. BLUE MED FAB Implementation Programme updated!

With the BLUE MED FAB State Level Agreement duly ratified by all the four European Member States composing the FAB and entered into force on the 22nd August 2014, the BLUE MED FAB was able to boost its activities and add a formal layer to the various FAB initiatives ongoing. BLUE MED is one of the most important FAB initiatives in Europe, for its geographical extension and for its potential development towards non-EU countries of the Mediterranean basin. In line with SES provisions the BLUE MED FAB established a solid cooperation framework among the Member States involved, with the objective to optimize ATM Performances over the Mediterranean Area through a number of initiatives embracing a wide variety of ATM domains.

The BLUE MED master plan for its pragmatic development and for the deployment of activities agreed at Member State level is the BLUE MED FAB Implementation Programme (BM-IP).

Continue on next page >>

Summary

1. BLUE MED FAB Implementation Programme updated!

>> From the previous page

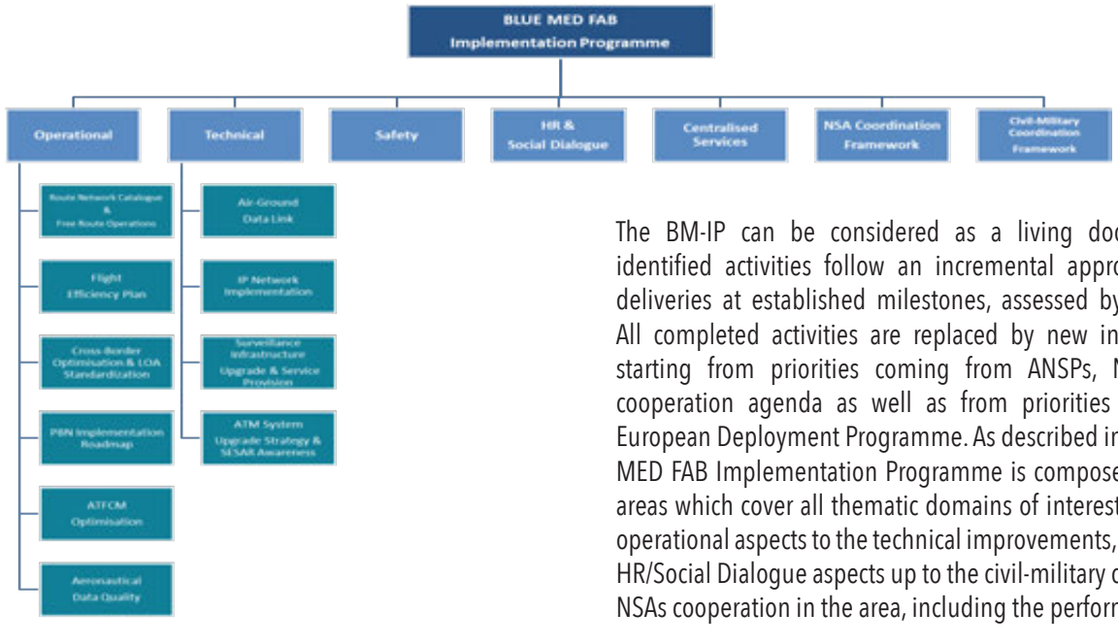

Figure 1 - Structure of the BM Implementation Programme

The BM-IP can be considered as a living document, where all identified activities follow an incremental approach, with defined deliveries at established milestones, assessed by verifying entities. All completed activities are replaced by new initiatives, identified starting from priorities coming from ANSPs, NSAs, Civil-Military cooperation agenda as well as from priorities addressed by the European Deployment Programme. As described in Figure 1, the BLUE MED FAB Implementation Programme is composed by seven activity areas which cover all thematic domains of interest for FABs: from the operational aspects to the technical improvements, from the safety and HR/Social Dialogue aspects up to the civil-military cooperation and the NSAs cooperation in the area, including the performance framework.

The BM-IP is the reference planning document for all activities from the BLUE MED FAB. Its first release was issued in 2013, and the most recent version has been recently approved by the Member States of the FAB last 16th of April. The latest version of the BLUE MED Implementation Programme has been updated in order to embrace most of the initiatives from the SESAR Deployment Phase and in order to meet some newly identified requirements from the ANSPs and the NSAs of the FAB. Specifically, the new version rationalises the Programme structure in accordance with the BM Governance structure, integrates updates resulting from the application of both a top-down and bottom-up approach, provides revised contents (work plans, deliverables and deadlines) identified in line with the BM priorities and, finally, defines an efficient progress monitoring mechanism relying on biannual progress reports and on an ad-hoc developed Excel tool to oversee the BM deliverables status.

The Implementation Plan is also the document that will be considered as an added value in all cooperation initiatives of the FAB. As a matter of fact BLUE MED has recently established some inter-FAB cooperation activities (DANUBE FAB and FAB CE) as well as some cooperation initiatives with neighboring non-EU countries. In this regard, the BLUE MED Implementation Programme will be a relevant platform to compare the BLUE MED planned measures and activities from other partners in the region, thus allowing an harmonization process profitable for all parties.

The BM-IP is being processed by a number of BLUE MED Committees, working groups and task forces, all bodies coordinated by a Project Management structure, which is also responsible for aligning all FAB developments with the SESAR Deployment requirements and Reg. (EU) 716/2014. Each identified working area of the FAB is assigned to a dedicated team of experts, who despite the socio-economic difficulties sometimes encountered, are performing an outstanding effort in order to ensure timely delivery of all expected products (over 95% of due milestones were met at April 2015, among which it is worth mentioning the release of the new version of the BM Route Network Catalogue).

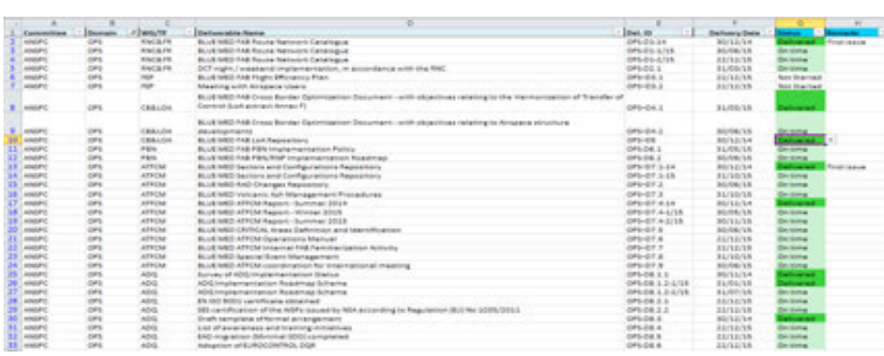

Figure 2 – Screenshot of the BM Deliverable Monitoring Tool

The Deployment of all initiatives within the Implementation Programme of the BLUE MED FAB will be highly beneficial for the Mediterranean Area and will be considered a real step forward a more integrated, efficient and flexible management of the concerned regional airspace, thus allowing a number of advantages for all concerned stakeholders, Airspace Users and ANSPs in primis.

Daniele Teotino - *ENAV International Strategies Office*

2. Towards an interoperable CNS infrastructure within BLUEMED area

With the objective to harmonise the local deployment activities/tasks of the BLUEMED countries, aiming to identify synergies between partners and to create common technical initiatives, the Technical aspects Working Group (WG) of the BLUE MED FAB (BM) has developed 4 Task Forces (TFs). The work progress within the TFs focuses mainly in the areas of common interest and future deployments in the BLUEMED region. The surveillance function in ATM operations, the IP network deployment / OLDI implementation, the AGDL and the SESAR awareness / coordinated ATM system strategy, are the 4 main initiatives undertaken by these TFs.

A considerable number of common tasks and activities have been already jointly identified, within the TECH WG, proving a common approach in many projects. A number of synergies have been also identified, leading towards an interoperable CNS infrastructure within the BLUEMED region. Nevertheless, additional activities need to be performed to achieve this target.

First of all, local plans of BM countries need to be aligned, especially in terms of the excepted delivery time. Obviously, priorities are not the same between the BLUEMED partners, but the strong willingness for succeeding to this objective will overcome all possible difficulties. Communication, Surveillance and SESAR alignment projects, running locally for the time being, need to become regional projects under the coordination of the BLUEMED initiative. An aligned / common plan to materialize the agreed action plan of the Technical WG is beneficial for everyone.

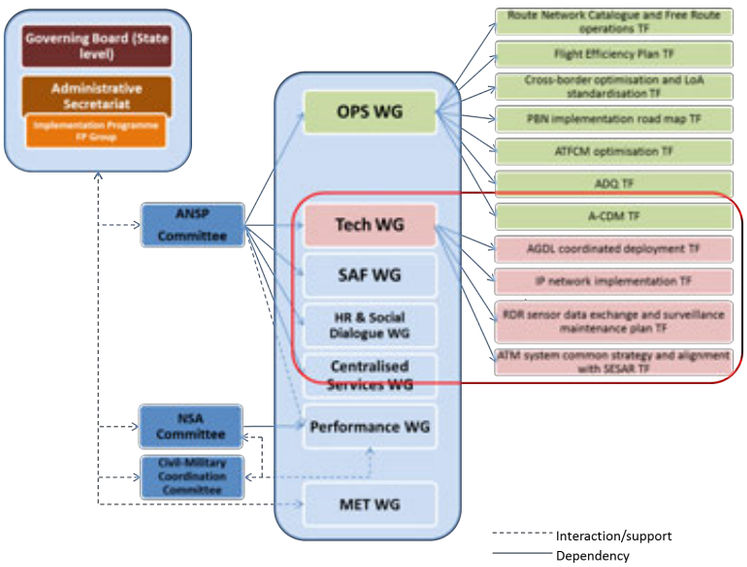

***Figure 3** - The BLUE MED Technical Aspects working group and its Task Forces*

The communication function is undoubtedly very critical in the ATM operations. New technologies are coming to replace old technologies which become obsolete. Therefore, all ANSPs "are forced" by new technologies to change and focus on continuous improvement of the communication infrastructure. Issues related to AGDL (Air to Ground DataLink) implementation, IP networks in ATM, and OLDI messages implementation over IP, are discussed in the framework of AGDL TF and IP network TF.

The SESAR programme could not be missing from the operations of BLUEMED. The alignment of BLUEMED activities and objectives with the SESAR Deployment objectives is considered as a prerequisite to succeed in this initiative.

Surveillance is also one of the most critical functions supporting ATC operations, where we would like to focus, since surveillance infrastructure is changing dramatically. During the works of the Technical Working Group - Surveillance TF a considerable progress has been achieved towards an interoperable surveillance infrastructure, overcoming the difficulties revealed during this process. Probably the main difficulty that surveillance TF has to address is the fact that over the years the surveillance infrastructure in Europe has been deployed locally, in an independent way, considering only the local needs of each ANSP. However, the local needs of each ANSP, and especially the need to reduce operational costs, pushed ANSPs to think regionally and most of the times globally. The first step was to implement a mechanism of surveillance data sharing between neighboring countries in order to optimize surveillance function and achieving high cost savings.

In addition to that, the Single European Sky regulation aims to introduce common practices to fulfil the need of an interoperable surveillance infrastructure. Surveillance data sharing could be more efficient if a legal framework comes in place, guiding countries not only to unify their local surveillance infrastructures, but to put in place common initiatives for the future surveillance developments. Supporting this idea the European Commission has developed the regulation EC 1207/2011, imposing to European countries the goal of a unified and interoperable surveillance infrastructure.

The BLUEMED Surveillance Task Force has recently launched an initiative to analyse the requirements of the regulation 1207/2011, and to suggest a Project Management Plan to meet these requirements. During this process, a gap analysis is required as a first step. The gap analysis will identify the position of each BLUE MED partner with respect to the regulation requirements. A new roadmap will be developed based on the gap analysis, aiming to align the surveillance local plans and developments, as far as reasonably practicable. Probably new projects will have to be planned, under the coordination of BLUE MED, to meet this objective. However, the overall objective of these activities remains the same: The development of a common plan, applied by all BLUE MED countries, in order to achieve the targets of the regulation.

Common plans and common projects under the framework of the surveillance regulation 1207/2011 will be for the benefit of all BM countries, leading to further reductions on the operational costs of ATM, and providing also the means towards an interoperable CNS infrastructure within the BLUE MED area.

Chrysanthos Marouchos - ***DCA Cyprus, Chairman of the BLUE MED Technical Aspects WG***

3. Libyan crisis: the impact on ATM Performances

While Libyans marked the third anniversary of their Arab Spring revolution on February 17, 2014 there was good reason to be optimistic with the political evolution taking place in Libya despite a background of political division and sectarianism. A transitional parliament was in place following Libya's first ever free election in July 2012 where 2.7 million voted out of an eligible 3.4 million and a national constitution was being drawn up from a blank sheet of paper. It was through this period that MATS continued to engage actively with the Libyan aviation authorities to develop a roadmap towards ATM/CNS normalisation which was endorsed by ICAO and the airspace users. Limited progress was being achieved with acquisition of radars and communication equipment and the eventual transfer of Tripoli ACC to a new operations room. Together with the Libyan authorities a package of cross-border transit routes was developed and eventually implemented in phases within the Tripoli FIR. These upper RNAV routes were not only connecting with the original ICAO 'red carpet' routes which were implemented in the Tripoli FIR before the Ghaddafi uprising but were essentially direct routes connecting a huge expanse of airspace between Europe and the sub-Sahara towards Sudan, Egypt, Niger and Chad.

The mandatory routing scheme that was developed in the HLLLFIR enabled the return of operations over Libyan airspace while taking into account known ATM/CNS limitations. Operators like British Airways, KLM, Air France, Lufthansa, Swiss, Brussels Airlines, Ethiopian Airlines, Kenyan Airways and a number of Italian carriers progressively started to flight plan these routes from their main hubs to service their key African schedules or seasonal charter traffic. Traffic was picking up to the extent that MATS had registered record peaks during the first six months of 2014. The international scheduled traffic to Tripoli international airport had also registered a modest increase with European carriers returning to Tripoli (Lufthansa, Alitalia, British Airways, Austrian, Air Malta) and the two main Libyan carriers (Libyan Airlines and Afrikiya) trying their best to operate into European airspace with leased aircraft due to EU safety and airworthiness issues.

But it was during this same period in early 2014 that the first signs of serious trouble started to flare up. On March 2nd the parliament in Tripoli was stormed by armed protestors while legislators were in session shooting and wounding six MPs. Terrorist attacks in the eastern part of Libya targeting national authorities, infrastructure and individuals were reported with increased frequency. In late March reports of artillery rockets landing on the runway of Tripoli's international airport and causing temporary closure were making headline news on international media.

It was clear that the security situation was fast deteriorating with the launch of Operation Dignity in Benghazi by General Haftar on May 18. Forces loyal to General Haftar in western Libya also stormed the Parliament and effectively ended the parliamentary proceedings in Tripoli as

the legislature was ransacked. In retaliation opposing forces which were loyal to the outgoing General National Congress launched Operation Dawn on July 13 with the main objective of taking the strategic Tripoli International Airport. Tripoli airport was subjected to heavy artillery with huge damage to aircraft and airside infrastructure and the airport finally fell to Islamist forces on August 23rd.

These events effectively reversed most of the ATM progress that had been achieved since the Libyan CAA regained control of Libyan airspace from NATO following the end of Operation Unified Protector. With the two main international airports in Libya closed (Tripoli and Benghazi) and only four regional airports declared open for international traffic (Tobruk, Labraq, Misurata and Mitiga) there was a sudden drop in international traffic to Libya with all but one European carrier willing to continue operating scheduled flights (Turkish Airlines). It was a direct threat to Turkish nationals later in the year that marked the end of Turkish operations into Libya.

The airspace of the Tripoli FIR was once again closed for international transit traffic forcing operators to re-route their flights to African destinations like Entebbe, Nairobi, Johannesburg, Cape Town, Addis Ababa, Kilimanjaro, Mombasa via Algerian or Egyptian airspace. The re-routing via Algiers FIR to Constantine (CSO) occurs via the Marseille/Algiers FIR entry/exit points of KAMER and CIRTA. The re-routing to the east of Libya towards south-east Africa shifts traffic towards the Adriatic into Greek/Egyptian airspace with the southbound flights entering the Cairo FIR via SALUN and the northbound flights entering the Hellas UIR via METRU.

With partial overflight through Italian airspace and almost negligible penetration into the Malta FIR the loss of flights has therefore been significant for ENAV and MATS in particular. The latest EUROCONTROL/NMD/STATFOR forecast for Malta has strongly been revised downward in 2015 to -4.5% due to the closure of the north-south flows . The re-routings caused by this long-term closure has increased the average distance flown (although weight factors have slightly declined) which resulted in an upward revision of the TSU forecast but this is not a guarantee for any future planning in a region which is in a perpetual state of instability.

The downing of the Malaysian B777 over eastern Ukraine and the fallout from that tragedy has led to an international effort to identify as early as possible areas of potential hazards to aviation. ICAO is already taking the lead together with a number of States and international safety agencies issuing alerts for their operators to avoid airspace which is potentially dangerous to aircraft.

With the Libyan airspace in a de facto No Fly Zone status since July 2014 and a civil war raging across the three regions of Libya the only shimmer of hope is that the UN brokered peace talks ongoing in Morocco would lead to some form of national unity government. Failure of the peace talks could push Libya further to the edge of becoming another failed State. Even if the peace talks were to lead to some form of agreement as the international community is hoping, there is no guarantee that there will be the required stability to reverse course and gain a degree of ATM normalisation which would bring operators back to overflying and landing in Libya.

Closely linked with Libya in terms of north-south traffic flows is Sudan and South Sudan where safety advisories are already in place to avoid overflight below medium levels. The Saudi led Operation Decisive Storm has also introduced Yemen to the ever growing list of prohibited airspaces further disrupting the normal flow of traffic in the Middle East / Persian Gulf region.

With such complex geo-political scenarios the prospect of further disruption to the ATM network cannot be dismissed. The future of traffic flows in the region is difficult to predict feeding in to higher levels of risks to ATM investment and progress on the periphery of SES airspace. The BLUEMED ANSPs have been tried and tested and despite everything that has been thrown at us, we have learnt to adapt to the situation and to do our considerable best to contain the damage. It is perhaps the price to pay for being in the Mediterranean.

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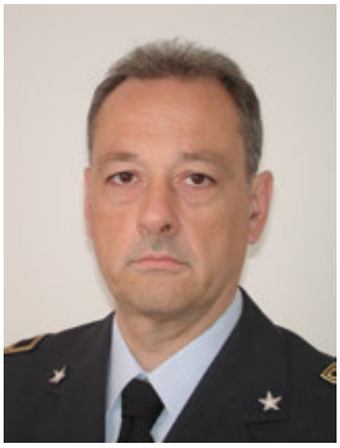
[1] *Reference EUROCONTROL/NMD/STATFOR 7-year IFR Flight Movements and Service Units Forecasts 2015-2021*

Robert Sant - *COO Malta Air Traffic Services*

4. Civil-Military cooperation in the BLUE MED FAB



In Cyprus, Greece, Italy and Malta there are fully integrated civil/military provision of Air Navigation services and already established and functioning cooperation by the Air Navigation Service Providers with the military authorities of the four States – with the required highest consideration for the national military requirements.

The FAB governance structure identified by the BLUE MED State Level Agreement includes representatives of the military authorities besides representatives from other competent authorities, ANSPs and NSAs. In particular, the highest body of the BLUE MED Governance is composed by one civil and one military representative and one of the three relevant bodies supporting the Governing Board of the initiative is the Civil-Military Coordination Committee.

All BLUE MED civil and military organizations own their respective national experience in relation to the civil-military cooperation. All national arrangements, once shared into the BLUE MED Civil Military Coordination Committee, revealed a number of commonalities as well as a number of areas where the working arrangements were developed differently. As a consequence of the initial sharing of information, all areas where different provisions were identified were also considered as areas where harmonization would have been highly beneficial, in a wide portion of the European Airspace (mostly over high-seas).

All the above considerations brought the involved administrations to identify the main topics that will be object of an harmonisation process within the FAB. In particular the most relevant items considered of common interest for all civil-military authorities of the FAB are:

1) Harmonization of procedures for coordination of military activities over high-seas within the Blue Med Airspace.

CMCC has identified four main areas of interest, related to military operations conducted over the high-seas, in which to attempt processes harmonization to the greater extension:

- Air to Air Refueling corridors network;
- Remote Piloted Aircraft corridors network;
- activation of Danger Areas due to military activity over the high-seas;
- "due regard" operations.

The purposes are to develop a coordinated process to manage a seamless network of corridors addressed to AAR and RPA activities and to promote a unique interface to improve/encourage the information exchange in case of military activity over the high-seas under the provision of "due regard". This activity will be managed by BLUEMED and the NM will provide support as requested for the purpose of traffic and airspace solutions. These areas are considered of particular interest for the BLUE MED FAB, representing the areas where we expect major benefits to arise from the coordination among the partners.

2) Harmonization of AIP Routes/Areas publication

This activity will be conducted in the framework of the current action managed by ASMSG/RNDSG. NM will provide a summary of the inconsistencies identified within BLUEMED airspace. For AIP Areas, in addition NM will highlight those cases (e.g. R AMC manageable) eligible to be classified as TRA/TSA. These activities should also be coordinated with national AIS in the framework of BLUE MED activities.

3) Re-categorization of CDRs

NM and BLUE MED CMCC will contribute to a study to verify the possibility to re-categorize CDR 3 into CDR 1 and 2. Live trials could be organized accordingly. CMCC will use this study as the basis for selecting the best possible routes which could provide added value to operators.

4) Harmonization of AMC procedures

For this task, AMC procedures existing within each organization have been collected with the objective to identify the main features implemented by each organization. The harmonization activity will identify "best practices" to be gradually applied within the FAB.

5) ASM in Free Route environment

BLUE MED and the Network Manager will cooperate with specific reference to the management of FUA/EU restrictions for areas, on how to perform ASM in a free route environment aiming to improve FPL processing. Live trials could be organised accordingly. This activity would be helpful to provide a general clarification of all the associated issues and to understand how best to apply FUA and danger area activation over the high-seas in a free route environment (including systems support).

Civil-Military Coordination Committee activities are part of the Implementation Programme of the BLUE MED FAB, which encompasses a number of deliveries that the Committee have to produce within determined deadlines for the BLUE MED Member States representatives.

Col. Ferdinando Sparpaglia - Italian Air Force

A word with...

5.1. Maurizio Paggetti ENAV Director of Air Navigation Services and BLUE MED Representative at the Network Management Board

Italy is geographically strategic for air traffic flows, being affected by the Middle-East crisis as well as by flows from the northern part of Africa. Which are the most relevant operational and technical challenges that ENAV is facing today?

ENAV is currently engaged into a number of challenging technical and operational changes, which are all linked with the improvement of local operational performances that are expected to enable increased safety levels in an environment where air traffic demand is expected to grow substantially. ENAV is planning to implement major changes within its ATM System through the implementation of the Coflight FDP (in coordination with the French DSNA and Skyguide) as well as of the 4-Flight system, enabled by Coflight and comprising new technical enablers for full regional Free Route as well as additional ATCOs supporting tools. Coflight is entering into a further phase with the "Coflight as a service" initiative.

Launched in March 2014 during the World ATM Congress (WAC) by DSNA,ENAV,MATS and Skyguide, the program "Coflight as a Service" is studying the feasibility of providing remote flight data processing and related services based on the Coflight Product. Our expectations are that "Coflight as a Service" concept development will enable ANSPs to make synergies, share investments and reduce operating costs. In the process just described, we expect to raise the BLUE MED interest and jointly agree a regional framework for that specific improvement. Furthermore we are also implementing new tools for ATCOs: by the end of 2015 new Medium Term Conflict Detection (MTCD) will be available in Brindisi ACC and by the end of 2016 in all the Italian ACCs.

By the end of 2015 also Data Link service will be gradually implemented within Italian Airspace at FL285 and above: we'll start with Brindisi ACC and then will expand to the entire Italian airspace by the end of 2016. New ATCO HMI will be implemented jointly with data link services in order to make possible all Controller-Pilot dialog directly through the radar label.

In addition to the above, ENAV is a shareholder of the Aireon LLC, which is a Company to design, finance, procure, deploy and operate a global, satellite-based aviation monitoring service utilizing ADS-B technology. I would take this opportunity to recall that during the latest World ATM Congress (WAC) of March 2015, the BLUE MED FAB signed an Agreement of Cooperation with Aireon.

Indeed BLUE MED Countries are deeply interested in evaluating space based Automatic Dependent Surveillance – Broadcast (ADS-B) capabilities and demonstrating how those capabilities could help to improve ATS performance over the BLUE MED Airspace and beyond. And a satellite-based surveillance system could reinforce BLUE MED flight safety and flight efficiency throughout the Mediterranean basin and significantly improve BLUE MED ANSPs surveillance capabilities, while driving the international harmonization of ADS-B standards with neighboring regions.

Taking into account its geographical position, ENAV started in 2014 a significant Airspace reorganization in order to review the existing airspace structure while considering the Key Performance Areas, in a flight efficiency oriented solution. The main areas of intervention can be summarized as follow:

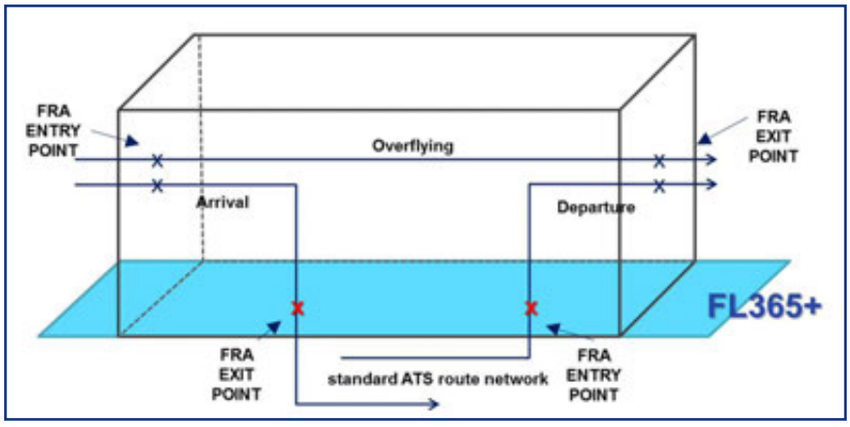
- ACCs Line of responsibility Optimization
- Review of ACCs vertical limits
- Flexible configuration
- New ATS route scheme
- Cancellation of inter-ACC FLAS (Flight Level Allocation Scheme)

Thanks to the reorganization ENAV improved the Airspace Management increasing ACC sectors configuration, optimized northern-southern flows and, at the same time, reduced time planning constrains for AUs.

Flight efficiency benefits have been obtained as well by improving both horizontal and vertical profile for airspace users.

In line with such review, ENAV is also introducing free route operations through a stepwise approach. Three phases of implementation have been defined with the aim to improve capacity and flight efficiency, decreasing environmental impact of flight operations:

- 1st and 2nd phases were introduced in January 2015 by a system of DCTs at FL315 and above within the Italian FIRs during night and weekends.
- 3rd phase is foreseen to be effective in winter 2016/2017 and it will consist of implementing "the Full Free Route concept", within all Italian airspace above FL365 H24. All the ATS routes will be cancelled above FL365 and the Airspace Users will plan a direct route between entry and exit point within Italian airspace, taking into account the availability of military areas and the preferred route to avoid them.



Free route will be available also for arriving and/or departing flights above FL365 until/from defined points before/after which the flights will use standard ATS route network.

The European ATM scenario is rapidly changing. FABs and the SESAR Deployment in particular will radically change the EU ATM fragmentation as we know it today. How will ENAV in itself and within the BLUE MED approach this moving framework? How should NM assist in this changing scenario?

We are convinced that FABs have a role in the SESAR Deployment, since a regionally synchronized implementation will be a key aspect of the wider European deployment activity. BLUE MED will reduce its regional fragmentation through the harmonization of cross-border practices, common ATFCM working methods and a Free Route scenario meeting the expectations of the users. All this requires a lot of effort but the ANSPs of the area got the required strategic mandates from the Member States and we are confident to meet the deadlines identified within the European Deployment Programme.

We are confident that the NM will play its key role in this process, providing its technical support and taking into consideration the FABas a relevant and unique stakeholder for any operational matter developing in the area.

How do you see BLUE MED developing in the next future especially in the field of relationship with the Airspace Users?

BLUE MED has to develop a shared approach with users. We have already started an internal discussion in order to study some arrangements for regional customer care sessions, which are a normal practice for ENAV and that are recognized also by the users as very beneficial. A BLUE MED forum dedicated to our customers could be useful to tackle issues from operators covering a wide portion of the European airspace. A forum that takes the cue from the yearly event we have just had, the ENAV Customer Relationship Management event, where a significant amount of customers participated (representing almost 60% of the air traffic managed by ENAV). An occasion in which it is possible to share the current and future activities that are foreseen; an occasion to share them and get a feed-back from the stakeholders.

Experience teaches that through the sharing of information it is possible to better understand the Customer's needs that results in more efficient operations and improved business for all.

A word with...

5.2. Nicolas Warinsko, Director Technical and Operations - Deputy Managing Director SESAR Deployment Manager

In the last few years FABs demonstrated to be a proactive platform in order to reduce the European ATM fragmentation, with their mix of top-down and bottom-up approach. However a lot more could have been achieved if more instruments and leverage had been assigned to FABs. How could the SESAR Deployment Manager contribute in evolving FABs into a more effective industrial cooperation?

The SESAR Deployment Manager (SDM) is the industrial partnership that synchronises and coordinates the modernisation of Europe's air traffic management system under the political oversight of the European Commission. The main task of the SESAR Deployment Manager is to develop, submit to the European Commission for its approval and execute the Deployment Programme (DP), a project view strictly drawn from the Pilot Common Project (PCP) set by Commission Implementing Regulation (EU) No 716/2014, as well as any subsequent Common Projects in future regulations.

The Pilot Common Project is a regulation which has to be implemented by operational stakeholders in targeted geographical areas to bring the expected benefit for European ATM and European Transport Industry. The Deployment Programme is the breakdown of the PCP to project level, including clear timelines and planning details ("setting the HOW") while the PCP sets what to implement, where and by whom as well as the time windows for implementation. This means that the Deployment Programme has direct influence on the investment plans and investment decisions of each investor. Early planning is key for the stakeholders and the DP is the tool to guide investment planning by each stakeholder. The aim of the DP is to provide the best planning to optimise the investments in ATM and bring the most value for money.

Through the Deployment Programme, the SESAR Deployment Manager is obliged to ensure efficient synchronisation and coordination of implementation projects required to implement the PCP, as well as the related investments. By doing so, the SDM will contribute to make ANSPs of the particular FABs synchronize and coordinate their investments, and ultimately strengthen industrial cooperation among them. The process of SESAR deployment is an opportunity for partners within the same FAB to enhance their cooperation and reinforce FABs added

value. Joint implementation activities at FAB level would then facilitate for instance:

- joint procurement of systems to be implemented, hence costs reduction and also infrastructure harmonisation and defragmentation.
- the overall coordination and synchronisation by SDM during projects execution, reducing the total number of projects and designating FABs level projects manager as efficient interface to SDM;

On top of this, FABs could also be the framework to facilitate regional civil-military coordination. Lack of such coordination both at local and regional level has already been identified as one of the risks for the PCP implementation by the SDM. In this context, FABs could play a vital role to mitigate the threats identified.

The BLUE MED FAB groups small and big organisations. In some cases, not all organisations are affected by the priorities in the Deployment Programme (Airport/TMA initiatives). How can the Deployment Manager ensure that all stakeholders, together with the relevant authorities in the FAB, evolve in a synchronized manner?

With the exception of two ATM Functionalities, i.e. AF#1 Extended Arrival Management and Performance Based Navigation in the High Density Terminal Manoeuvring Areas and AF#2 Airport Integration and Throughput, which have their local geographical scopes as defined by the Commission Implementing Regulation No 716/2014, all other ATM Functionalities are EU-wide. This means that they impact all FAB partners to the same extent. Therefore, most of PCP objectives translate into the FAB-wide objectives.

From the SESAR Deployment Manager perspective there are no "small" and „big" operational stakeholders. All operational stakeholders, regardless of their size, are treated equally. Therefore, all of them have been invited to organise their participation in the Stakeholders' Consultation Platform (SCP).

FABs are evolving their own activities into inter-FAB challenges, how can this regional process be tackled best, in order to capture all opportunities from the Deployment Manager?

In the light of the already shared information, The SESAR deployment process may and should be seen as a vehicle for strengthening of cooperation between operational stakeholders within the same FAB. But as this process is EU-wide, synergies and operational benefits should be sought within different FABs structures as well. To this end, activities aimed at inter-FAB cooperation will be widely endorsed and supported by the SDM.

A Functional Airspace Block is an environment where a mixture of NSA, Military and industry oriented (ANSP) requirements coexists, can this be helpful to the Deployment Manager in its effort to consult stakeholders on the evolution of the Deployment Programme?

The SESAR Deployment Manager is committed to working closely and openly with all stakeholders involved in the SESAR deployment process. A robust Stakeholders' Consultation Platform has been established to seek operational stakeholders' opinions on SDM's proposals. Other stakeholders will be consulted or even directly involved into SDM's work through a series of Cooperative Arrangements currently under development. We recognise that it is only by working together that we can ensure the successful deployment of SESAR across Europe.

And more specifically on the Stakeholders' Consultation Platform: the Deployment Programme v1, being a first deliverable by the SESAR Deployment Manager, was consulted in the period from mid-May to mid-June within this special-purpose arrangement. The SCP is for operational stakeholders, investing in current or future PCP related implementation projects and future Common Projects. The notion of "operational stakeholders" is defined in Commission Implementing Regulation (EU) No. 409/2013 and comprises civil airspace users, civil ANSPs, civil airport operators and the military. The purpose of the SCP is to seek stakeholders' opinion on SESAR Deployment Manager's proposals for Deployment Programme updates and new Common Projects definition prior to their endorsement by SESAR Deployment Manager's Supervisory Board and their submission for approval to the European Commission.

In parallel to the SCP, other types of specific arrangements – the Cooperative Arrangements – have been foreseen to complement the consultation of the Deployment Programme. The European Commission has requested the SDM to establish Cooperative Arrangements with a number of interfaces. The SESAR Deployment Manager has furthermore proposed an extension of the concept by establishing two groups of Cooperative Arrangements:

- Group 1 (required by Commission Implementing Regulation (EU) No 409/2013) that comprises: SJU, NM, EDA, NSAs and manufacturing industry
- Group 2 (further proposed by SDM to EC, not exhaustive yet): Eurocontrol, PRB, EASA, EUROCAE, professional staff associations, etc.

Having said this, all stakeholders, i.e. ANSPs, military (with EDA acting as focal point) and NSAs, have already been or will be involved by the SDM to express their views on the SESAR deployment process.

In this context, FABs could be used as a channel for the DP consultation process. And to give some more concrete examples, ANSPs have been encouraged to make use of existing grouping structures for organising their participation in the Stakeholders' Consultation Platform. ANSPs responded positively to the SDM's recommendation and are now widely represented in the SCP through the FAB groupings.

The SDM's idea was to leave room for manoeuver by the stakeholders to decide how they can best group together to achieve implementation activities that fall within PCP in the most efficient manner. This flexibility is a direct encouragement to ANSPs within the same FAB to consider such grouping to implement jointly at FAB level parts of the PCP.

The BLUE MED FAB witness the need to extend SES requirements beyond the EU boundaries. The established BLUE MED Implementation Programme identifies activities with the participation of non-EU countries who established a formal cooperation with the FAB. Is there any opportunity in the Deployment Manager provisions to involve non-EU countries whose contribution is key to achieve better EU network performances?

In order to reach full benefits of the Pilot Common Project, certain operational stakeholders from third countries are expected to implement parts of the Pilot Common Project. For instance, ATM Functionality #1, i.e. Extended AMAN and PBN in high density TMAs, should be operated at the Istanbul Ataturk Airport. The same is true for ATM Functionalities #2 on Airport Integration and Throughput as this AF is expected to be deployed at the Istanbul Ataturk Airport.

In order to support PCP implementation on a Europe-wide scale, a significant number of financial resources has been earmarked under the EU's Connecting Europe Facility (CEF). The core target for CEF funding are civil operational stakeholders in the EU Member States, however, potentially extended to non-EU Member States and military stakeholders. These potential extensions of the EU-funding will be subject to the demonstration that related projects brings benefit to the EU ATM Network. The involvement of the operational stakeholders from third countries will be ensured by the Deployment Manager in accordance with Implementing Regulation No 409/2013.

More info on SESAR Deployment Manager can be found here:

www.sesardeploymentmanager.eu

@SESAR_DM

info@sesardeploymentmanager.eu

A word with...

5.3. DANUBE FAB: Dr. Ion-Aurel Stanciu, Director General ROMATSA and Mr. Georgi Peev, Director General BULATSA

FABs are no longer a concept but a well-established experience. What are the major achievements of DANUBE FAB?

(Dr. Stanciu) Since DANUBE FAB's State Agreement was enacted on 16th November 2012, the key objective of the FAB has been to optimise its airspace, regardless of national boundaries. Particular projects which illustrate major achievements in airspace optimisation include the introduction of night Free Route operations and the first implementation of Cross Border Sectors under a FAB framework. DANUBE FAB exceeded its Reference Period One performance targets, reporting zero minutes of Air Traffic Flow Management delay, demonstrating an optimised airspace. Both these initiatives provide significant benefits to airspace users and mark a further step towards the defragmentation of the European airspace - a key objective of the Single European Sky. Other significant achievements include technical rationalisation through common procurement, studies to implement Data-Link Services at FAB-level and optimising hand-over procedures between Romania and Bulgaria to enable reduced separation.

How do you see FABs evolving in the medium-longer term?

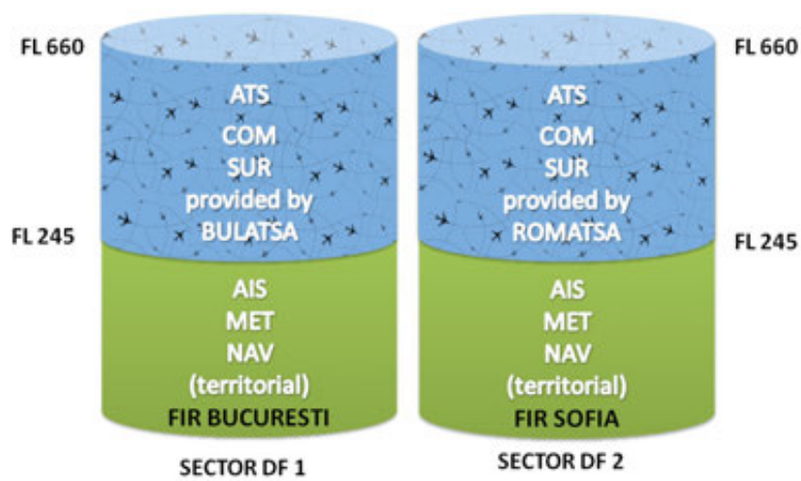
(Mr. Peev) Many FABs are currently under formal infringement proceedings by the European Commission since the shift from FABs being an airspace optimisation issue to one of service provision has not yet materialised. Seeking "industrial partnerships" (as suggested in SES2+ draft legislation) may replace the service provision integration between FAB Member States, leading to a re-focus on airspace optimisation within FABs. This would place real obligations on Member States to have genuine cross-border airspace structures with optimised traffic flows. DANUBE FAB are currently looking further afield towards cooperation initiatives with other States or Industry partners, as well as retaining a core focus on airspace projects within the FAB framework (such as the recently completed cross border sectors implementation and the ongoing progress up-to full FRA).

What is, in your opinion, the critical success factor to ensure FABs are a decisive driver for ATM performance improvements throughout Europe?

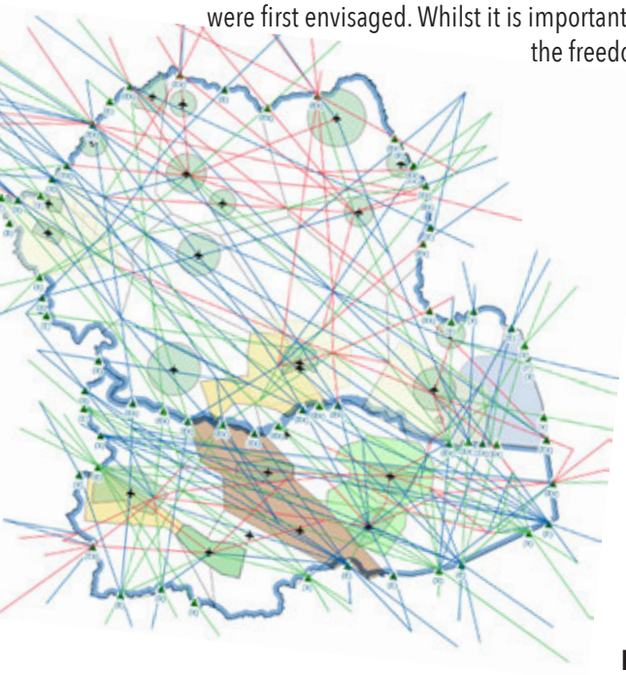
(Dr. Stanciu) ATM performance improvements can be measured with respect to the EU performance framework. Environment and capacity targets can be partly met through airspace optimisation, however, cost efficiency depends heavily on closer and more pro-active cooperation between Air Navigation Service Providers. Whilst projects to optimise FAB airspace contribute to EU performance, Member States need to be aware that airspace is a state asset. The critical success factor for performance improvement is to drive real cooperation within FABs regardless of national boundaries, considering the needs of the aviation industry. That said, it is important to ensure that FABs are not just a paper-based formality driven by political will, but its members are active in pursuing projects which deliver tangible improvements based on business needs.

What kind of support should FABs receive from EU institutions?

(Mr. Peev) Clear guidance on the European Commission's expectations for FABs is required, as well as valuable support from EU institutions in meeting these expectations. SES 2+ has confused the FAB vision slightly; a clear and agreed FAB strategy is needed to clarify how the Commission sees FABs as an integral part of the



future European ATM system. In order to set realistic expectations for the future, it is important for Member States and the Commission to openly share experiences from FAB implementation, carefully considering the reasons behind successes and failures compared to how FABs were first envisaged. Whilst it is important for the Commission to set the end goals for what FABs are aiming for, FABs should be given the freedom to develop initiatives to meet their operational needs. It is worth noting that what is most beneficial for one FAB is not necessary the most beneficial to another as FABs operate in a wide spectrum of environments.



Where can inter-FAB cooperation deliver results in the short-medium term?

(Dr. Stanciu) DANUBE FAB actively seeks to cooperate and to coordinate with other FABs. DANUBE FAB is an active contributor to the Gate One Alliance and is supporting the newly formed Inter-FAB coordination platform. In this role DANUBE FAB is looking forward to hosting the second State-level Inter-FAB workshop later this year in Bucharest, Romania. In the short and medium term, DANUBE FAB believes that airspace initiatives will deliver the most benefits. Encouraging FABs to share experiences about projects recently undertaken will enable cooperation (such as FRA, Data-Link or CBS) to be extended to neighboring FABs without duplication of work. Common procurement is also a promising prospect which could be explored at Inter-FAB level, increasing cost efficiency and enabling harmonisation and interoperability of ATM systems.

FABs will be relevant stakeholders for the SESAR Deployment Manager, in view of a widely synchronized implementation of Deployment objectives. How do you think FABs can contribute to the Deployment Manager expectations?

(Mr. Peev) The existing relationships developed between Member States within FABs facilitate close cooperation on SESAR and allow for alignments at FAB-level to enable synchronized and timely deployments. Whilst joint deployment of particular SESAR projects within a FAB may be beneficial on a case-by-case basis, each DANUBE FAB ANSP is also looking further afield for partners who are best suited for each project. The Inter-FAB cooperation agreement with BLUE MED FAB opens up a new avenue to seek joint participation in SESAR projects with other ANSPs.

Bearing in mind the EU performance framework, how can the BLUE MED-DANUBE FAB cooperation add value to the Aviation Industry?

(Dr. Stanciu) The EU performance framework establishes four Key Performance Areas: safety, environment, cost efficiency and capacity. The BLUE MED and DANUBE FABs will encourage collaborations at all levels under the new agreement, from technical and operational issues to political direction and strategic vision. The arrangement will allow regular exchange of information, identifying areas to jointly improve performance. For example, joint participation in the upcoming Pilot Common Project calls for tender could lead to a more cost-efficient SESAR deployment and optimal implementation of new concepts. Coordinating DANUBE FAB's existing airspace optimisation plans (e.g. FRA project) with BLUE MED's recently announced plans for FAB-wide FRA is a particular example which could improve both environmental and capacity performance areas. This will contribute to the flight efficiency of the overall European network, maximizing operational and environmental benefits. Finally, sharing practices in the safety domain, will lead to the identification of potential areas of common interest and cooperation, which could significantly improve safety assurance and monitoring.

Both the DANUBE FAB and the BLUE MED FAB are European gates towards non-EU countries, which will be key to support a substantial growth for the economy of the EU. How would you expect the involvement of non-EU members in FABs and in a regional coordinated implementation scenario?

(Mr. Peev) DANUBE and BLUE MED FABs are ideal gateways to expand the influence of SES, having a close working relationship and local geographical proximity with non-EU countries. Several cooperation and information sharing agreements are already in place. Utilising the new cooperation agreement with BLUE MED FAB, these existing relationships can be strengthened to develop regional initiatives in the field of ATM and ANS to enable a faster, more cost-effective implementation of ATM and ANS facilities. This would in turn support the extension of the SES to non-EU countries, therefore acting as a first step to consider whether there is added value in integrating these countries within the FAB framework.

Activities from Designated ANSPs

6.1. CyANS- Winds of Change in the Department of Civil Aviation of the Republic of Cyprus.

The Civil Aviation in Cyprus has been facing important challenges related to the changing aviation environment for the provision of ANS Services and in particular the requirements stemming from the Single European Sky (SES) initiative. It became clear to the management and to the Government that the current organisational structure needs to be reconsidered in order to meet the performance challenges of the coming years.

Following an initiative by the Minister of Transport Communications and Works (MTCW), the Republic of Cyprus decided to corporatize the provision of air navigation services in Cyprus through the establishment of a State owned company operating under Cyprus company law.

The high level objectives of this project is the creation of a company (CyANS- Cyprus Air Navigation Services) in accordance with the EU and the national regulatory framework governing the provision of ANS and draw upon international best practices and expertise of other European Countries, whilst taking into account local specificities. CyANS will benefit from financial autonomy from State budget and from restrictive governmental processes. The corporate governance of CyANS will cater for a performance driven policy. CyANS will be given the possibilities to evolve within predefined levels of performance and to become a robust organization with sustainable development and adapt to the changing environment.

The project was phased into a detailed plan for the establishment and operation of CyANS as well as into an implementation phase. The project, which now spans the implementation phase is being led by EUROCONTROL and is supported by the local KPMG offices. Currently the legal package is being completed and the legal framework is expected to be endorsed within summer 2015. The collective labour agreements for all staff to be transferred to CyANS are being finalised. The company is expected to be operational late 2015 – early 2016.

An important outcome of the project is the complete separation of service provision from regulation, as CyANS will be completely detached from the Department of Civil Aviation. The latter will be reformed into an autonomous, self-sustained regulatory body that will be able to cover all the aviation regulatory needs of the State.

CyANS is expected to positively contribute to the Blue Med FAB and to its European obligations and is expected to provide benefits in the form of service quality to its stakeholders.

Haris Antoniades - SATCO DCA Cyprus, Head Nicosia ACC

Activities from Designated ANSPs

6.2. HCAA: Free Route Airspace implementation within HELLAS UIR

It is still common practice over most of the European Airspace that air transport flights operate along a fixed network of airways/way-points rather than flying directly from a departure airport to the arrival destination. With the availability of current Satellite Navigation, Air Traffic and Network Management systems, soon this will no longer be the case. In particular, Free Route allows airspace users to freely plan a route between fixed published entry and exit points, with the possibility to route via intermediate (published or unpublished) way points, without reference to the published European route network, subject to airspace availability. Free Route may be deployed both through the use of permanent Directs (DCTs), published within the fixed-route network, and through Free Route Airspace (FRA), where airspace users are free to define and fly via user-defined points and segments not previously published.

Benefits deriving from the implementation of Free Route operations had been clearly demonstrated since early research investigations, which were subsequently confirmed by the actual operational implementation where already in place. Following optimized trajectories, airspace users can sensibly improve the overall flight efficiency and predictability. In turn, reducing the distance flown results in time savings, significant cut in tons of fuel burnt/lower fuel carriage and so in fuel costs, last not least in reduction of gaseous emissions (tons of CO2 and NOX) alleviating the environmental impact. At the end of 2014, 30 of the 64 European ACCs had implemented various steps of Free Route operations, which offer potential annual savings of approximately 7.5 million NMs of flying distances, representing the equivalent of 45,000 tons of fuel saved, or reduced emissions of 150,000 tons, or €37 million.

Free Route implementation on the other hand requires coordinated deployment due to the potential network performance impact in a wide geographical scope involving a number of stakeholders. From a technical perspective, the deployment of targeted system and procedural changes needs to be carefully synchronized to ensure that the performance objectives are met. This synchronization of investments will involve multiple civil and military air navigation service providers, airspace users and the Network Manager.

Free Route implementation has already been defined as one of the top priorities within the SES/SESAR framework. A characteristic example of such European partnership activities that aim to increasingly address and deploy Free Route operations is the FREE Solutions project (https://twitter.com/FREESolutions1). This 2-year project initiated in 2014 is supported by a large group of airlines and air navigation service providers, who already work together to physically demonstrate the SESAR Free Route concept and several focused operational solutions, including ad-hoc new City-Pairs routes, long-range Direct Routes (DCTs) and Free Route operations over a wide multi-FAB continental area.

Focusing on the South-eastern Europe, the BLUEMED FAB partners are implementing the FRA concept according to the agreed BLUEMED FAB Implementation Program, based on gradual steps ranging from the implementation of night DCTs up to more ambitious Free Route scenarios on regional scale. Under this scope, the Hellenic ANSP has recently developed an ambitious project regarding the gradual FRA implementation within Hellas UIR and submitted a relevant proposal to the Connecting Europe Facility (CEF) programme of the EC Innovation & Networks Executive Agency (INEA; inea.ec.europa.eu). The INEA CEF programme finances projects of common interest in transport, energy and telecommunications infrastructure sectors, in order to accelerate investment in the trans-European networks and to exploit potential synergies between these sectors.

The HANSP project, which is in full coordination with the ongoing local projects submitted to INEA by the other FAB Members, aims to implement Free Route operations in Greece through a seamless integration of the two Greek ACCs enabling airspace users to flight-plan their preferred trajectories within the airspace of HELLAS UIR. The deployment will also cover the prerequisites for enabling Free Route operations according to EC Regulation 716/2014, namely, the upgrade of ATM Systems and the ATS-route network optimization, including arrival and departure procedures and sector adaptation to accommodate the changes in traffic flows where needed.

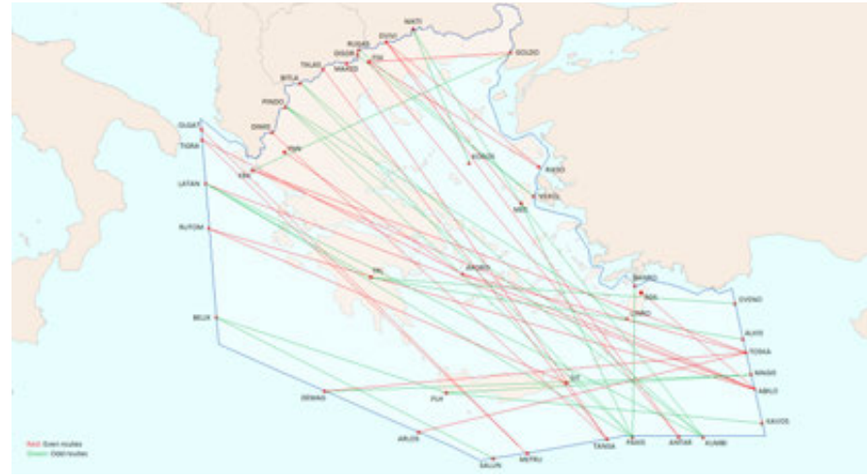


***Figure 4** - Night DCTs expected to be implemented within HELLAS UIR from November 2015 onwards.*

The basic implementation elements of the HANSP Free Route project are presented in the table below. The deployment is composed of two different phases, of which the first one was the object of the proposal currently submitted to INEA CEF call. All HANSP personnel dedicated to work on the project are really excited with the preparatory steps of the project and are indeed looking forward to the delivery of Free Route operations over the Mediterranean Basin, in full cooperation with the other BLUEMED members.

	Phase I	Phase II	Future Plan
Implementation Timeframe	11/2015-12/2016	01/2017-12/2019	01/2020 and beyond
Airspace	FL355 to FL460	FL355 to FL460	FL355 to FL460
Time Availability	2100-0400 UTC	(a) H24 (b) 2100-0400 UTC	H24
Objectives	Implementation of DRA within HELLAS UIR from specific published entry-to specific published exit points	(a) Enhanced DRA implementation (b) FRA Implementation	Full FRA implementation

Efthymios Serpetzoglou - HANSP, Member of the BLUEMED Support Team

Activities from Designated ANSPs

6.3. ENAV and Coflight as a service

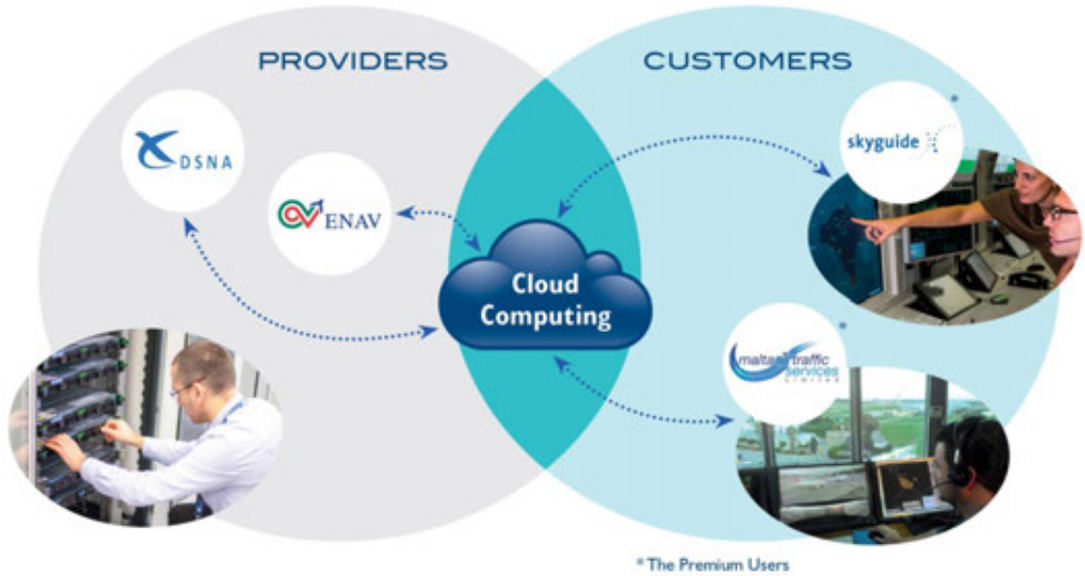
Since 2014, ENAV together with DSNA, MATS and skyguide conducted a feasibility study with the objective of delivering remote Flight Data Processing service to ANSPs for enhanced European ATM Performance.

The programme has evolved in a close collaboration process to ensure customers' needs addressing not only the technical and operational aspects but also the legal and economic dimension.

Furthermore this undertaking is designed to have an iterative approach taking into account the global SESAR SWIM architecture.

Coflight as a service will provide a remote service delivery instead of deploying a new physical system component. This is the beginning of a new business model in ANS.

Coflight as a service concept development will enable ANSPs to share investment and reduce operating costs.



Coflight as a service will remotely provide:

- 4D-trajectory prediction, a trajectory always close to the actual behavior of the aircraft
- Vertical profile management using all the Requested Flight Level (RFL) as filed in the initial flight plan
- Modification of routes
- Monitoring alerts for flight data discrepancies
- Interoperability functions
- Datalink capabilities
- Gate-to-gate eFDP
- Flexible use of airspace

The program "Coflight as a Service" was launched in March 2014 during the World ATM Congress (WAC) 2014 by DSNA, ENAV, MATS and skyguide CEO's. The four ANSPs wanted to partner in order to study the feasibility of providing flight data processing and related services based on Coflight-efdp.

The program has been built in three phases:

- The Program initiation phase will deliver the Cooperation agreements between ANSPs
- The Program definition phase will deliver the Program Management Plan and the Financial Annex
- The Program execution phase will deliver the feasibility study and the trials to demonstrate the services.

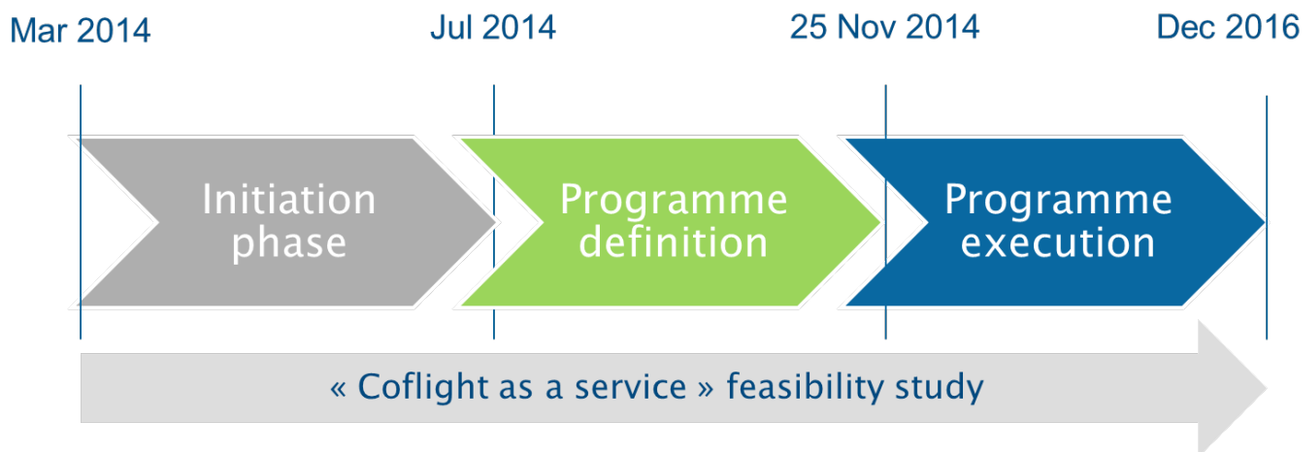


***Figure 5** - Coflight as a service - Roadmap*

The main purpose of the "Coflight as a service" program is to study the feasibility of providing a set of remote services based on the Coflight Product. This high level objective has been split into the following objectives:

- Defining "Coflight as a Service" architecture, including network scope;
- Defining Coflight product evolutions' needs;
- Defining "Coflight as a Service" business model based on the completion of an ad hoc market study;
- Defining" Coflight as a Service" operational environment and the whole set of associated services (eg. maintenance, reliability of the delivery of services);
- Defining "Coflight as a Service" legal environment (security, safety, institutional, IPR framework, liability, listing and analyzing states 'requirements);
- Organizing trials to test" Coflight as a Service" operational & technical capability;
- Setting up "Coflight as a Service" demonstrators and reporting documents.

The following breakdown structure is based on the above mentioned objectives of the program.

Claudio Cannavicci - ENAV International Strategies

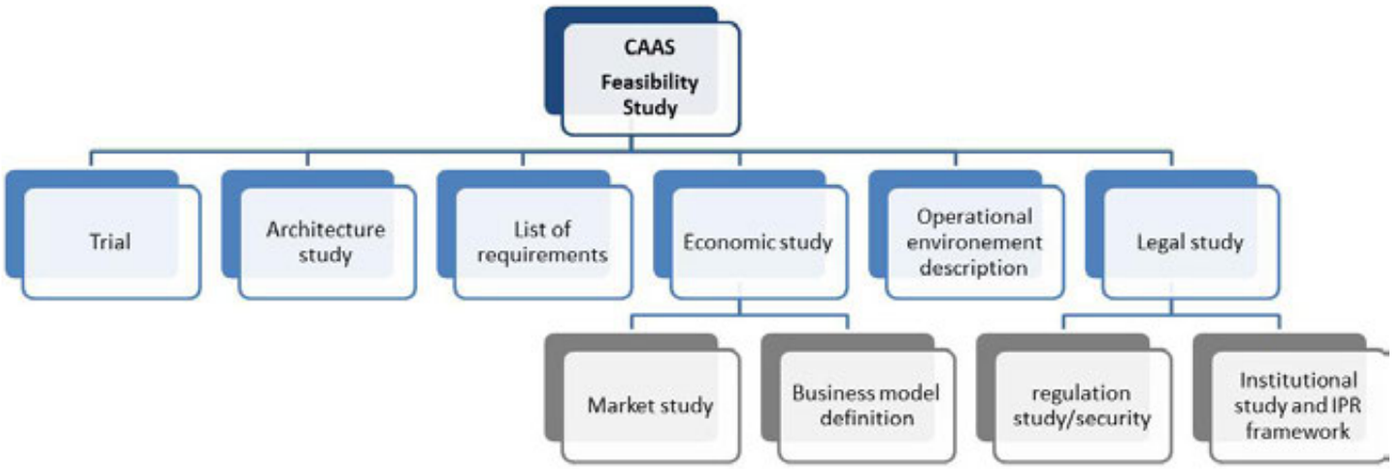


Figure 6 *- Coflight as a service - Roadmap*

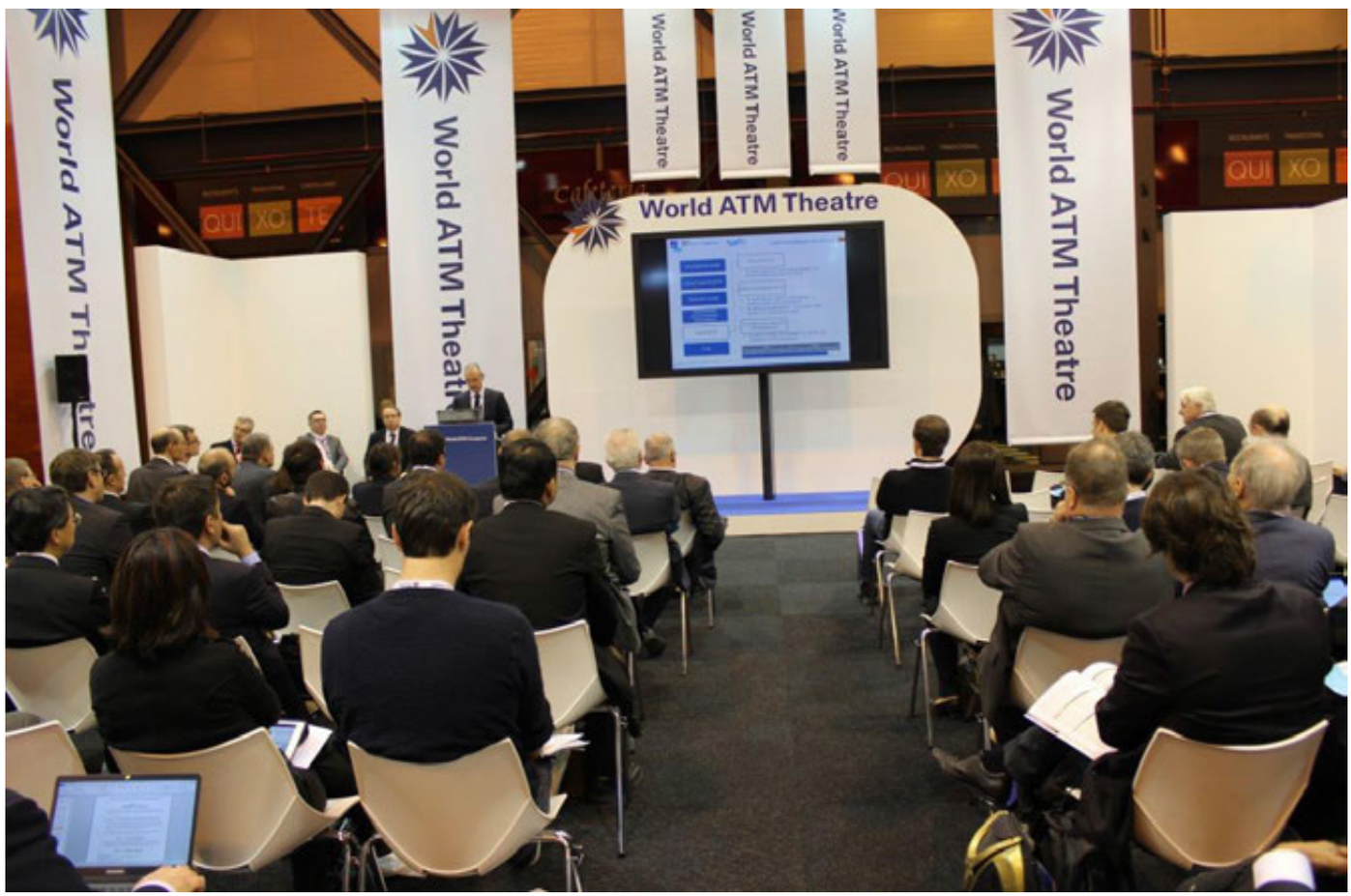


Figure 7 *- Coflight as a service presentation held by DSNA, ENAV, MATS and Skyguide at the ATM Theatre during the latest World ATM Congress (WAC) of March 2015.*

Activities from Designated ANSPs

6.4. MATS and the Free Solutions Project: from Innovation to Free Route Operations

FREE Solutions is part of a series of SESAR Large Scale Demonstration activities launched by the SJU with the aim to bridge R&D towards deployment, proving the benefits of SESAR solutions in real-life environments.

Against this background, a large group of airlines and air navigation service providers have decided to work together on a project lasting 24 months to demonstrate the SESAR Free Route concept and several focused operational solutions.

In its 2-year timeframe (2014-2016), FREE Solutions will aim to prove the short-term implementation of Free Route operations, as well as the exploitation of more direct and non-congested routes as a first step towards the implementation of Airspace Users' preferred business trajectories.

Through a wide campaign of live trials, the operational impact of Direct Routing and Free Routing will be investigated by a high level consortium composed by: ENAV (project coordinator), Air France, Alitalia, DFS, DSNA, EUROCONTROL/Network Manager, Lufthansa, MATS, Ryanair, Skyguide and Swiss. HOP! and KLM are participating in the project as third parties of Air France, while SICTA and Techno Sky as affiliates of ENAV.

The FREE Solutions project is part of a series of European partnership activities that aim to increasingly address and deploy Free Route operations exploiting more advanced Flexible Use of Airspace (FUA) and defining ad-hoc new City-Pairs routes, long-range Direct Routings (DCTs) and Free Routing operations over a wide multi-FAB continental area.

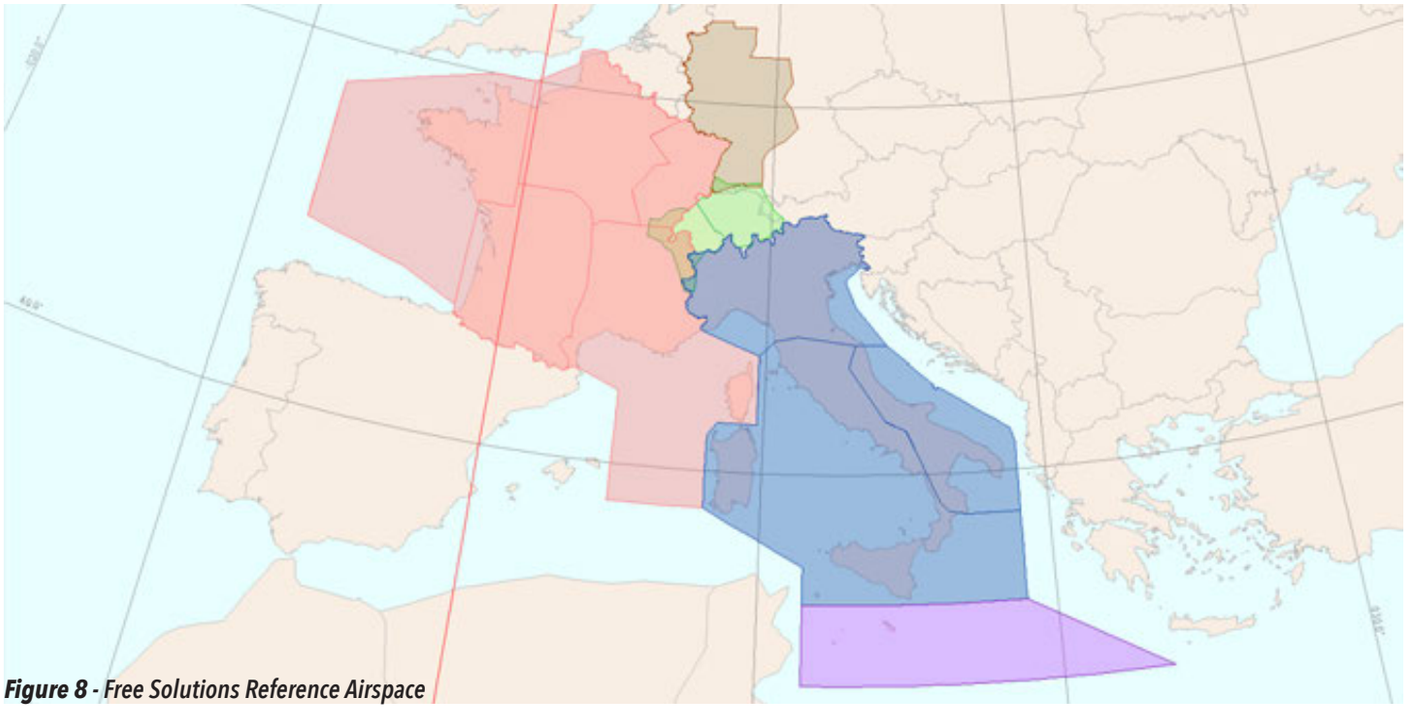


***Figure 8** - Free Solutions Reference Airspace*

Making reference to current ATM system capabilities and a more focused use of the reference Airspace, FREE Solutions demonstration activities are expected to bring effective solutions to meet the need for fuel cost and environmental savings, reduction of CO2 emissions, real-time flight planning requirements, as well higher ATM performances and efficiency.

In March 2015 a first set of flight trials addressing the selected multi-FAB City Pairs have been performed over two weekends and 1 weekday involving more than 50 flights and savings more than 1000 NM and 6000 Kg of fuel.

One of the most representative City Pair tested in the first bunch of live trials has been the route from London Stansted (EGSS) to Malta (LMML) having Ryanair flying on a direct route for almost 2 hours across the airspace of 4 States and 5 Area Control Centers.

The second set of demonstration flights is expected in the fall of 2015 (i.e. November) and will be focused on the identification of specific Direct Routes that will connect more efficiently some groups of continental airports and others outside the European region, thus allowing to link with other DCT/Free Route initiatives being synchronized in the framework of the BLUE MED working groups. The execution of demonstration flights in a defined transnational and multi-FAB Free Route Area (FRA) having a lower limit set at FL365 are scheduled to take place in March 2016.

In conclusion, through the project activities, FREE Solutions partners will:

- Demonstrate the benefits of the Direct Routing and Free Routing operations in a cross-border multi-FAB Scenario to the wider aviation community.
- Build on the SESAR delivery approach defining a set of live-trials demonstration to prepare and de-risk the following Free Route deployment activities.
- Accelerate the Free Route operational acceptance and the subsequent deployment of the defined solutions.

***Figure 9** - Free Solutions Kick off Meeting - Rome 18th September 2014*

For the latest project activities and future initiatives follow us on twitter:

@FREESolutions1

https://twitter.com/FREESolutions1

Robert Sant - COO Malta Air Traffic Services
Giancarlo Ferrara - ENAV Very Large Scale Demonstration & Exploratory Research Coordinator

7. Collaboration at regional level: BLUE MED Safety workshop hosting all FABs

BLUE MED FAB has hosted the second inter-FAB safety workshop which took place between the 21st and 22nd of May 2015 in Larnaca, Cyprus. The workshop was held in cooperation with EUROCONTROL and was framed within its ES2 program. It was a follow-up of the ES² workshop that was held in Rome in May 2014 which recognized the importance of such an event for the implementation of Safety Management within the FABs and the role of the Network Manager to support the SMS Roadmaps of the ANSPs and the FABs.

The Rome workshop highlighted the challenge for FABs to interact, not only internally but also beyond their borders. Furthermore, it showed the high level of interest which existed towards understanding the mechanisms and role of the regulatory institutions with respect to the performance measurement of the three SKPIs and then the need for a balance between performance and safety in day-to-day operations to achieve safely the performance targets.

FAB's SMS roadmaps have adopted different structures to move from a prescriptive safety regulation to a performance-based regulation and build common SMS arrangements. Performance targets are achievable through the implementation of the FAB's safety roadmap. However they require continuously implementing safety improvement processes within FABs. These processes rely on the collection and management of data coming from different sources that goes beyond human performance and need automation to be implemented. In this respect, the subject of this workshop were the software tools available today and their potential use at FAB or regional level. It focused on the ways that SMS harmonization can be achieved through the integration and implementation of common Safety Tools and how its implementation could be best prepared. The tools presented included eTOKAI (for safety occurrence reporting and assessment), ASMT (for automatic monitoring of separation minima infringements), and Aerospace Performance Factor (APF) (for safety performance monitoring).

The workshop featured prominent speakers from the ATM domain who pioneer the development and implementation of these tools and included experts from the United State's Federal Aviation Authority (FAA). The aim was to provide FABs with sufficient and updated information on the added value and potential issues associated with their regional application (e.g. synergies, language issues, confidentiality issues, safety data collection issues, aggregation of data, etc.).

Representatives from various ANSPs shared their experiences from the use of these tools and discussed their plans for using them at FAB level. As an example, BLUE MED FAB informed the participants of its intention of using eTOKAI as the platform for recording and assessing FAB-wide safety occurrences. Overall, the workshop was recognized as being a very useful forum of information exchange and all stakeholders committed to continuing the inter-FAB cooperation.

Petros STRATIS - DCA Cyprus, BLUE MED Safety WG Leader

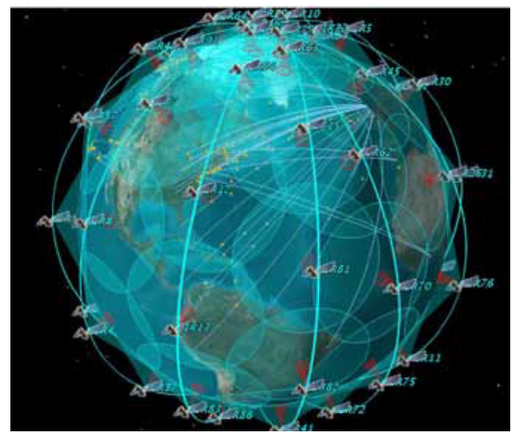
8. BLUE MED signs agreement with AIREON

During the latest World ATM Congress held in Madrid from the 10th to 12th of March 2015,the BLUE MED FAB signed an Agreement of Cooperation with Aireon.

The Agreement of Cooperation was established by the four BLUE MED States' representatives Mr. Nicos Nicolau (Cyprus), Mr. Carmel Vassallo (Malta), Mr. Alexandros Khoury (Greece) and Mr. Sebastiano Veccia (Italy) and Mr. Don Thoma (Aireon CEO).

Aireon LLC is a Company to design, finance, procure, deploy and operate a global, satellite-based aviation monitoring service utilizing ADS-B technology. ENAV is member of AIREON with 12,5% of shares, other shareholders being NAVCANADA, Iridium Communications Inc., IAA (Irish Aviation Authority), and Naviair.

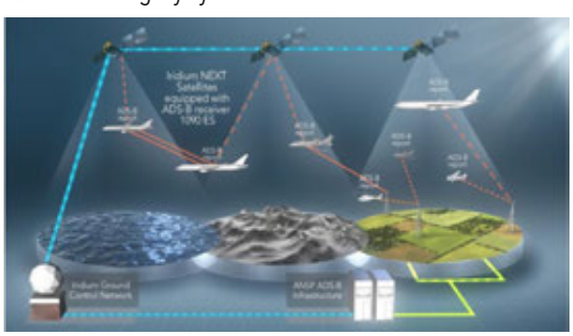
Aireon will take benefit of the world's furthest reaching network, being Aireon special ADS-B receiver payloads to be hosted on each of the Iridium Next 66 LEO operational satellites constellation.



The Iridium Next constellation is to be lunched from 2015 to 2017, once deployed this constellation in 2017, the Aireon design will deliver the first-ever space-based global aviation surveillance system.

Thanks to Aireon service, the ADS-B message transmitted by the aircraft and including information on its position as accurate as calculated onboard could reach an ANSPs wherever the aircraft is flying on the globe. This new capability will extend the benefits of current radar-based surveillance systems (which are estimated to cover less than 30% of the world) to the entire planet with dramatic increase in the efficiency of routes over remote areas, oceans, deserts and poles.

The Aireon surveillance service does not require any additional equipment by the airlines as it makes use of the hardware currently available compliant to ADS-B and T-CAS mandates. The 1090 MHz Extended Squitter signal is transmitted from all equipped commercial airplanes. This signal, including information on the airplane position, will be received by the ADS-B receiver installed on the Iridium NEXT satellites and, through the inter-satellite link and the ground segment, will be transmitted to ANSPs users of the Aireon service to deliver the surveillance service. The Aireon ADS-B data have the same format of the ground-based ADS-B consequently will be easily integrated in the current ATC legacy systems.



Aireon's Space Based ADS-B system will support an array of services. The primary service is to provide surveillance data for air traffic control use. Space Based ADS-B can serve as the sole source of surveillance data, augment existing surveillance systems, or provide a contingency in the case of a failure with existing surveillance systems. Space Based ADS-B will be the sole source of surveillance in regions that currently lack surveillance coverage. This will provide opportunities for reduced separation standards as well as lowering the infrastructure costs associated with obtaining surveillance data. Working with neighboring ANSPs will allow to establish buffer zones at the FIR boundaries, where the surveillance data will be shared with both the ANSPs to enable a smooth transition of traffic across these FIR boundaries.

In addition to these services, Aireon is developing an Aircraft Locating and Emergency Response Tracking (ALERT) service. This is a global emergency tracking solution that will make it possible for rescue agencies to request the location and last flight track of any ADS-B equipped aircraft flying in airspace beyond the reach of existing surveillance. This public service will be offered free of charge to all authorized organizations, allowing them to track an aircraft with which they have lost communication, anywhere over the surface of the earth.

BLUE MED Countries are deeply interested in evaluating space based Automatic Dependent Surveillance – Broadcast (ADS-B) capabilities and demonstrating how those capabilities could help to improve ATS performances over the BLUE MED Airspace.

Indeed a satellite-based surveillance system will reinforce BLUE MED flight safety and flight efficiency throughout the Mediterranean basin and significantly improve BLUE MED ANSPs surveillance capabilities, while driving the international harmonization of ADS-B standards with neighboring ANSPs in the region.

By this Agreement of Cooperation the BLUE MED FAB Countries will have the unique opportunity to:

- Evaluate the technical and operational performance of space-based ADS-B surveillance within the BLUE MED FIRs;
- Engage in periodic exchange of information in relation to space-based ADS-B surveillance system;
- Identify and document BLUE MED requirements and interfaces for potential use of space-based ADS-B surveillance;
- Examine the policies, standards, and operational procedures for using space-based ADS-B surveillance, including but not limited to concepts of operations, required navigation performance standards, required communications performance standards, required surveillance performance standards, hazard and safety analysis, and international standards and recommended practices;
- Examine potential scenarios to incorporate space-based ADS-B into BLUE MED Airspace, including improvements and upgrade eventually requested to existing air traffic control systems and operational procedures.

Furthermore, this Agreement of Cooperation will allow BLUE MED FAB to investigate, whenever deemed of mutual interest, the development of an improved cooperation framework defining the terms for the deployment of space-based ADS-B surveillance data over the BLUE MED Airspace.

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