

# UK/Ireland FAB Implementation Plan 2013

November 2013

## FOREWORD

The UK Department for Transport and the Irish Department of Transport, Tourism and Sport are pleased to present this implementation plan for ongoing and future projects for the UK and Ireland Functional Airspace Block (FAB). The UK and Ireland remain committed to achieving the aims of the Single European Sky (SES) programme, which has created the legislative framework for FABs. We have worked together effectively, were the first to create a FAB in 2008 and have continued our partnership since then to deliver ongoing improvements. Through our FAB partnership our Air Navigation Service Providers (ANSPs), National Supervisory Authorities (NSAs), Military Authorities and airspace users have worked collaboratively to deliver a number of projects that have resulted in real capacity, environmental, safety and cost benefits. The ongoing optimisation of FAB airspace, through more direct routeings, has delivered over 70 million Euros of enabled savings to airspace users including 232 000 tonnes of CO<sub>2</sub> and 73 000 tonnes of fuel.

Progress in our FAB is reviewed jointly on an ongoing basis at the highest political levels in both States. In line with the cooperative and collaborative approach that is the hallmark of the FAB's operation, we wish to take this opportunity to emphasise our continued commitment to the further optimisation of air navigation services to the benefit of airspace users and EU citizens. This work forms an important part of the portfolio of activity that will ensure steady and sustained progress towards the SES goals. This plan further demonstrates that commitment by laying out a detailed framework for the timely delivery of some critical projects that will continue to deliver benefits through the mechanism of the FAB and the collaboration it provides.

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## INTRODUCTION

This document sets out the detail of the projects planned for the UK/Ireland FAB to continue to optimise the FAB's airspace, as well as our approach to selecting and ensuring adequate resources are in place. It comprises our response to the Commission's request for an implementation plan for the FAB.

Since its establishment in 2008, the UK/Ireland FAB has a history of selecting and planning projects, with the close cooperation of airspace users, which successfully deliver benefits quickly. This customer-focused approach is considered to be the best possible means of realising the aims of FABs and in turn the goals of SES. Until recently the ANSPs produced a rolling five year plan for the FAB in consultation with airspace users and published it on the ANSPs' websites, after discussions with the NSAs. With legislative requirements now in place for RP2, the decision was taken not to produce a separate FAB plan to cover the period 2015-2019 and instead focus on the required FAB plan for RP2 as the mechanism to publish information on our planned projects.

Although this document is being produced in response to the recent EU pilot process for the UK/Ireland FAB it can be seen that our approach has always been consistent with the Commission's requirement to have an implementation plan in place. If it were not for the RP2 Performance Plan requirement the FAB would have continued to generate a refreshed ANSP plan each year planning out projects over the next five years.

The production of this plan represents a useful opportunity to set out the detail of a number of particularly significant projects underway by both the ANSPs and NSAs that will see the FAB continue to deliver real benefits and play a part in delivering the high level SES goals.

## CONTEXT AND EU PILOT PROCESS

Following a process that began with the UK/Ireland FAB providing information to comply with Commission Regulation (EU) No 176/2011 on information requirements to be provided on the establishment or modification of FABs; and continued with the Commission's EU pilot letter to the FAB (Ref 4567/13 and 4581/13) and our subsequent response, the Commission wrote to the States in July 2013 making the following request:

*'In light of the United Kingdom's and Ireland's joint reply to the EU Pilot 4567/13 (Ireland) and 4581/13 (United Kingdom), the Commission considers that the United Kingdom and Ireland could be fully compliant with Article 2(25) of Regulation (EC) No 549/2004 and Article 9(a)(1) of Regulation (EC) No 550/2004 if all the positive elements indicated in the joint reply were successfully implemented, including inter-FAB coordination and optimisation with FABEC, NEFAB, and the DANISH/SWEDISH FAB. Consequently, the Commission requests that the United Kingdom and Ireland present an implementation project plan encapsulating all actions described in the joint reply, including resourcing elements and implementation milestones by 21 October 2013. If such an implementation project plan can be agreed between the Commission and the UK/IRELAND FAB, the Commission would then initiate an infringement procedure under Article 258 of the Treaty only if it detects issues with the actual implementation of the plan later on, or if evidence of non-compliance other than mentioned in the EU Pilot 4567/13 and 4581/13 is brought to light at some later stage'. (the date of 21 October was subsequently amended to 30 November).*

The content and purpose of this plan has specifically been aimed to meet the Commission's request for an implementation plan for the UK/Ireland FAB set out above. The planning of many of the projects included, and the resources required to deliver them, is already in place. It should be noted though that not all elements of the UK and Ireland joint reply to the EU pilot are considered appropriate for the Implementation Plan and therefore there are some areas of work that we have not included here. In the main this is because the pilot response included information on a number of projects or collaborative pieces of work that had been completed between the time our response to regulation No 176/2011 was submitted and our Pilot response, in order to demonstrate ongoing successful developments in the FAB. These are complete, not subject to future actions and therefore unsuitable for a forward plan. There are though a couple of additional areas, which are not appropriate for the plan.

The Commission's request calls for the inclusion of inter-FAB coordination and optimisation with NEFAB and the Danish/Swedish FAB. The UK/Ireland FAB does not have any current plans for any collaborative work with NEFAB, although it would be considered in the future if an operational benefit became apparent. Although feasibility work has taken place between the ANSPs of UK/Ireland and Denmark/Sweden on the potential for intra-FAB projects; plans to progress these are currently on hold due a political imperative for Denmark/Sweden and NEFAB to work together and the need to allocate ANSP resources within Denmark/Sweden accordingly. Once resources become available again within the ANSPs of Denmark/Sweden to consider collaborative projects with our FAB, we stand ready to recommence discussions and in preparation for this potential the NSAs of UK/Ireland and Denmark/Sweden have built a good working relationship.

The Commission's request that this plan is submitted by the end of November comes ahead of the planned Single Sky Committee (SSC) vote of EU targets for RP2 of the Performance Scheme and seven months ahead of the deadline for submitting draft plans for RP2 to the Performance Review Body. An integrated process is evidently required to address this misalignment, in the absence of which it is inappropriate for us to make any commitments in respect to performance planning for the FAB against the targets for RP2, ahead of the RP2 process being completed. Nevertheless we have included some information on our planned process and timescales to produce the required FAB performance plan. We do though consider this plan to be a living document and will update it as we make progress on the projects it contains.

Finally as noted in our response to the Pilot Letter, the UK/Ireland FAB recognises that with the level of maturity that our FAB has achieved through its incremental design and build approach we could soon reach a point where the merits and advantages of business integration between the ANSPs could again be considered. We will consider structural change within the FAB where this demonstrates an overall benefit to airspace users within a reasonable time period and the associated risks can be appropriately mitigated. With this in mind we will give some thought to considering the potential and benefits of business integration and structural change at an appropriate time during RP2 with a mind to RP3, however we do not feel it is appropriate to set this out as project with milestones at this time and our approach continues to be one of delivering benefits quickly to airspace users through collaborative projects.

## FAB PROJECTS

This section sets out our principles for deciding which projects we present as FAB projects. The partners in the UK/Ireland FAB define FAB projects as those which:

- Have a positive performance impact across FIR boundaries (examples in this plan include the Dynamic Sectorisation Operational Trial (DSOT), Queue Management (QMAN) and Common Transition Altitude)
- Provide greater value to the customers, either environmentally or through service delivery, cost efficiency or safety enhancements by working on a cooperative basis (e.g. Joint Network Management, Point Merge, Y124, P600) than would be the case if pursued individually by the ANSPs.

The UK/Ireland FAB partners believe it is important to maintain transparency in respect of the projects we take on and chooses not to badge all National projects as FAB projects where they do not have implications or add customer value on a FAB-wide basis.

## PROJECT SELECTION PROCESS AND RESOURCES

The UK/Ireland FAB partners select projects to pursue on the basis of:

- Legislative / Regulatory mandate
- Performance improvements
- Customer demand

Both the IAA and NATS operate well developed customer care programmes. The IAA conducts regular meetings with its main customers and carries out an annual on-line survey which provides an opportunity for customers to comment on and rank the business in five key areas and make requests for action in operational areas. NATS interfaces regularly with its customers through regular bilateral meetings and the Operational Partnership Agreement (OPA) which meets regularly throughout the year. The IAA attends the OPA and the UK/Ireland FAB is a fixed agenda item at these meetings. The OPA provides a forum for customers to provide feedback to NATS on operational and performance issues and is a mechanism for the agreement of “hotspots” to be actioned over the short to medium term. Where it proves beneficial, the FAB has created specific FAB development workshops for customers to support the prioritisation of plans.

The IAA and NATS consider the feedback on customer requirements from their respective customer care programmes and where FAB cooperation will deliver a better outcome, a FAB project is proposed for consideration by the FAB Management Board (FMB). The FMB, which includes representatives from the ANSPs, the customers and the Military, will then decide on which projects are possible, practicable and valuable to include in the work programme. Once agreed by the FMB plans are shared with the NSAs (through the FAB Supervisory Committee) who ensure that any regulatory issues have been considered and plan their own resources to ensure the necessary regulatory oversight and approval occurs.

It should be noted that the UK/Ireland FAB does not have its own budget. Resources are drawn from the ANSPs and NSAs to carry out the projects and for this reason all FAB projects are included in the resource plans of those organisations. The UK/Ireland FAB partners believe that this process offers the lowest cost solution to delivering high quality customer driven outcomes across the airspace that we manage.

## JOINT LEARNING & COST AVOIDANCE

As well as the projects set out in this plan, the UK/Ireland FAB partners have identified benefits from joint learning opportunities arising not only from FAB projects but also from National level activities. This cooperation helps reduce costs and supports operational convergence by jointly developing capabilities and deploying them across the FAB. This avoids potential duplication of development costs and helps procedural alignment among the FAB partners.

Some examples of this approach are:

- The IAA introduced Point Merge at Dublin in December 2012 and Point Merge is one of the concepts under consideration for some of the UK airports under the London Airspace Management Programme (LAMP) and Northern Terminal Control Area (NTCA) terminal airspace projects. The experiences of the IAA project team has been used to inform and assist the NATS team in the planning and implementation of Point Merge at airports across the UK, thereby reducing the time and cost required to bring the procedures into operation. Fuel burn savings of over 19% at Dublin as a result of Point Merge have been independently verified and the earlier and lower cost introduction of enhanced procedures at UK airports is a stated customer priority.
- In the area of safety, NATS has assisted the IAA in implementing its “safety in the wild” programme at the Irish centres. NATS & IAA air traffic controllers now regularly visit the Area Control Centres (ACCs) of their FAB counterparts and observe operational safety on an “over the shoulder” basis. The debrief sessions provide excellent feedback and allow for a new perspective on operational safety and standardisation to be shared among our operational teams. Additionally, cooperation by the Safety Teams on the FAB Safety Arrangements will provide additional alignment in this area across the FAB partners’ operations.
- NSA co-operation extends beyond FAB project to National initiatives such as the deployment of the UK’s Future Airspace Strategy (FAS) which enables deployment of future concepts and techniques envisaged within the SES Air Traffic Management Research (SESAR) initiative and which meet objectives that improve safety, capacity and provide environmental benefits. The IAA is represented in all of the FAS governance structures including the, CEO-led, FAS Oversight Group and the Policy and Regulatory Programme Board (PRPB). Under the mantle of the FAS structures, both NSAs have worked together to produce policy such as for the application of Performance Based Navigation (PBN) and are actively contributing funding and resources to a Low Density/Low Complexity Area (LDLCA) Scoping Study which is considering future surveillance and navigation options for airspace in the FAB away from the high density and high complexity terminal and en-route areas. This is important work that has the potential to address issues so far outwith the FAB scope and feed into SESAR deployment options and national objectives for this generic airspace type.

These joint activities help the FAB partners avoid costs by developing some capabilities with a FAB-wide deployment instead of having two programmes running in tandem.

## SUMMARY OF IMPLEMENTATION PROJECTS

The following work activities are included in the Implementation Plan:

- Dynamic Sectorisation Operational Trial (DSOT) - follow-on project to High Level Sectors feasibility study)
- Queue Management (QMAN)
- Common Regulatory Functions:
  - Common Procedures for the Oversight of Change to the ATM Systems
  - Exchange of Regulatory Personnel in Safety Auditing Action
  - Cooperative Preparation for EASA Safety Audit
  - Safety Partnership Arrangement between UK and Ireland
  - Performance Plan for RP2
- Harmonised Safety Management
- FAS work at the FAB level
  - Harmonised Transition Altitude
  - LDLCA
- Introduction of the 3Di metric into Irish airspace
- Technical Convergence Strategic Plans

The format for the presentation of the implementation projects is as follows:

- High level description of the FAB work areas
- Project benefits description
- Milestones & deliverables, where applicable and available, for the implementation of work areas

### FAS work at the FAB level

The tangible progress made in deploying FAS initiatives during 2013/14 has demonstrated the project is fundamentally well placed to deliver its objective of coordinating the modernisation of FAB Airspace and ATM Systems in line with SESAR. The continued success of FAS is dependent on strong collaboration between industry stakeholders, Regulators and Governments, clear implementation plans and the effective prioritisation of activity towards delivering benefits. For example:

- The CAA and IAA announced the intention to harmonise the Transition Altitude at 18 000ft across the UK and Ireland FAB in November 2017. A higher transition altitude is critical to the deployment of departure procedures that climb continuously to the cruise, implemented as part of other FAS project such as the London Airspace Management Programme (LAMP).
- As part of the FAS initiative NATS and the IAA are working with European ANSPs (MUAC and DSNA) to trial arrival management procedures across State boundaries. Messages from the different ANSP's arrival manager tools are shared electronically as part of the trial, which aims to absorb delays in the en-route phase of flight. A study into the benefits of arrival management in the UK/Ireland FAB has demonstrated absorbing delays in the en-route saves 90% of the fuel that would otherwise be burnt in stack holding.
- Arrival management implemented across the FAB has reduced stack holding in the LTMA by up to 2

minutes, since the procedures were made permanent in October 2013. Absorbing 2 minutes of delay in the en-route rather than stacking is equivalent to c. £20m saving in aircraft fuel, CO2 emissions and passenger delays.

- NATS and the IAA are trialling the delegation of portions of en-route airspace between ANSPs to examine the issues associated with an external ANSP providing a service in sovereign airspace. Full implementation of Dynamic Sectorisation depends on the development of controller support tools. The trial is gathering important information to ensure the benefits to airlines in terms of reduced track miles is maximised. In addition NATS are introducing a number of direct routes through the RATHLIN and West End sectors to provide airlines with more opportunities to fly direct routes. The changes are expected to provide a c.3400 tonne reduction in CO2 per year and are due for implementation in the winter of 2014.

## DYNAMIC SECTORISATION

### *Project Description*

One of our joint goals is to implement full free route airspace across the UK/Ireland FAB using Dynamic Sectorisation capability, whereby sector responsibility can be changed on a tactical basis between ACCs.

Dynamic Sectorisation is defined as:

‘airspace which by design consists of a number of individual sectors (system sectors) which can be band-boxed both vertically and laterally into a multitude of different sized and shaped configurations to match traffic flows and capacity enabling safe, efficient and effective air traffic management and resource

allocation.'

The concept of delegated ATS and flexible sectorisation is currently widespread throughout the world within individual Flight Information Regions (FIRs)/ACCs.

To achieve the full implementation of Dynamic Sectorisation NATS will need to implement significant updates to its operational ATS systems to deploy enhanced FDP and workstation capability through the iTEC collaboration, currently planned to start in 2016, and the IAA will need to adapt its COOPANS system, planned for 2015. Until such time that the required level of mutual system interoperability to enable Dynamic Sectorisation between the UK and Irish systems is available the FAB needs to look at ways to prepare for and confirm in practice the concept.

An operational trial, with a comprehensive set of safety mitigations and control mechanisms, in three phases has been identified that will help determine the move to Dynamic Sectorisation through the temporary delegations of ATS in the following volumes.

Rathlin (West) from NATS to IAA

Dublin High Level from IAA to NATS

Lands End from NATS to IAA

The intention for each phase of the trial is to temporarily delegate Air Traffic Service (ATS) between the two organisations with the objective of validating, within a predetermined measured environment, individual aspects of the concept. The results of each trial will therefore inform the development and the subsequent requirements for the supporting systems and procedures

Dynamic Sectorisation progress to date is as follows:

- Core team established with representatives from NATS, IAA (ANSP and Regulatory), CAA, UK MOD and Irish Defence Forces (DF).
- Initial Airspace definition workshops held for all phases.
- The Operational Impacts of the current proposals for each phase have been assessed.
- Military engagement meeting held to understand the Military impact of proposed work.
- Project estimates and plans are being generated by both NATS and the IAA to deliver the trial.
- Leadership Team agreed the proposed Rathlin Airspace.
- Training of ATCO and other Engineering and technical personnel has commenced.

### *Project Benefits*

The benefits of Dynamic Sectorisation project are as follows:

- Inform the concept of delegated ATS and flexible sectorisation and the issues that need resolving in order to deploy this concept of flexible use of airspace across FIR/ACC boundaries.
- Determine how sector responsibility can be changed on a tactical basis between ACCs to deliver the most effective ATM service.
- Creation of a roadmap to deploy future capability in the en-route airspace.

### *Milestones and Deliverables*

The high level target dates for dynamic sectorisation are as follows:

- 7 Oct 13 - training for RATHLIN Phase commenced
- 9 Jan 14 - commencement of RATHLIN Phase
- Sep14 - completion of RATHLIN Phase
- Oct 14 - commencement of DUBLIN Phase
- Mar 15 - completion of DUBLIN Phase
- Apr 15 - commencement of LANDS END Phase
- Oct 15 - completion of LANDS END Phase
- Dec 15 - Project Complete

DSOT is an enabling project that shall gather evidence and information in support of the following areas:

- The future airspace designs that will be required in support of Dynamic Sectorisation.
- The sets of procedures that will be required in support of Dynamic Sectorisation, including ATC, Engineering, Supervisory and Airspace and Capacity Management.
- The changes to existing technology and any new systems that will be required in support of the concept.
- The safety, training, licensing and legal frameworks that will be required to support the Dynamic Sectorisation concept.
- The necessary agreements with the Military, Trade Unions and Regulators that will be required for the concept to be implemented.

All of the above information will be gathered throughout the trial. The information is essential to enable the UK/Ireland FAB to generate a roadmap for the successful implementation of the Dynamic Sectorisation concept when the technical capability exists.

## QUEUE MANAGEMENT

### *Project Description*

QMAN is a crucial project to deliver optimisation of the FAB airspace and also demonstrates our commitment to working with other FABs. Basic arrival management capabilities already exist in London and Dublin and recent trials have been assessing the best ways to exploit this capability.

These trials focused on extending the horizon of the use of Arrival Management (AMAN) into longer range operations.

The next stage of this is a Cross Border Arrival Management (XMAN) trial which will begin in early 2014 and will reinforce this extended use of AMAN across FAB airspace as well as extending into neighboring airspace, in particular FABEC. During the trial there will be collaboration with DSNA/MUAC/IAA & NATS to ensure coordination with the FABEC XMAN project. This has been initiated by the UK's status as collaborative partner in FABEC.

AMAN information will be sent to neighbouring ANSPs via XML (Web Based) message. At 350nm from London Heathrow partners will act on Heathrow delay information as necessary and cruise speed will only be reduced if delay anticipated is to be 10 mins or more.

### *Project Benefits*

The proposed benefits of QMAN are as follows:

- Absorb delays en-route and better managing descent speeds so creating a sequence of traffic in FAB airspace that requires reduced controller intervention and reduced holding at Heathrow.
- Remove a further 2 minutes of stack holding by end of 2014.
- Enhance cooperation with all ANSPs.
- Deliver traffic sequencing across UK/Ireland FAB and FABEC.

#### *Milestones and Deliverables*

- XML message from London Heathrow AMAN.
  - Factory acceptance in Bremen completed – Aug 2013.
  - Site acceptance testing at NATS CTC completed– Sep 2013.
- SWIM Masterclass completed - October 2013.
- Simulator time with British Airways completed - October 2013.
- Web Servers installed at London Centre – Nov 2013.
- Implementation date - early 2014.
- Simulator time with Airbus - early 2014.
- Trial to continue through 2014.

## COMMON REGULATORY FUNCTIONS

#### *Project Description overview*

The UK/Ireland FAB is implementing coordinated, collaborative and cooperative regulatory arrangements.

The development, planning and execution of the arrangements are being done under inter-State and Inter-NSA agreements and through close collaboration between NSAs. The NSAs provide coherent safety oversight and work with ANSPs through provision of regulatory advice and opinion.

Keys actions being taken by the NSAs in the context of a Common Regulatory Function are:

- Dynamic Sectorisation. (NSA inputs and deliverables in accordance with project timescales – see above)
- Common Procedures for the Oversight of Change to the Air Traffic Management (ATM) Systems
- Exchange of Regulatory Personnel in Safety Auditing Action
- Cooperative preparation for EASA standardisation inspection
- Safety Partnership Arrangement between UK and Ireland
- Performance Plan for RP2

#### *Project Benefits*

The overall benefits of common regulatory functions are as follows:

- To deliver optimum regulatory oversight functionality and utilisation of human resources in the NSAs, in compliance with EU Regulations.
- To support development of common ANSP Safety Management Arrangements and risk assessment and mitigation processes.

## **Common Procedures for the Oversight of Change to the ATM Systems**

### *Project Description*

The UK and Irish NSAs are developing a common Code of Practice for the oversight of Change to ATM systems in the FAB. The UK/Ireland FAB Regulatory Function will refine, and enhance the working level regulatory oversight arrangements to be compatible with the joint Safety Management Arrangements as set out by ANS Provision in the FAB.

### *Project Benefits*

The benefits of common procedures for the oversight of change to the ATM systems are in providing an effective, efficient and mutually compatible NSA function and regulatory interface with ANSPs

### *Milestones and Deliverables*

Milestones for Common Procedures for the Oversight of Change to the ATM Systems are as follows:

- Dec 13 - Review Safety Oversight arrangements and refine procedures as appropriate at FAB Harmonisation Working Group (FHWG).
- Dec 13 – Report results and progress to FSC.
- Feb – Apr 14 - Review Safety Oversight arrangements and refine procedures as appropriate at FHWG.
- May 14 – Report results and progress to FSC.
- Jun 14 - Review Safety Oversight arrangements and refine procedures as appropriate at FHWG.

## **Exchange of Regulatory Personnel in Safety Auditing Action**

### *Project Description*

NSA personnel from both the UK and Ireland attend and observe key audit activity in each Member State. The UK/Ireland FAB Regulatory Function will continue to exchange and utilise auditing and regulatory staff from the UK CAA and IAA to support planned auditing activity in UK and Ireland.

### *Project Benefits*

The benefits of an exchange of regulatory personnel in safety auditing action are as follows:

- Enhancing a cohesive FAB Regulatory Function through the exchange of staff.
- Informing work towards a common regulatory approach.
- Offering potential for staff inter-deployment opportunities.

### *Milestones and Deliverables*

Milestones for the Exchange of Regulatory Personnel in Safety Auditing Action are as follows:

- Nov 13 – Develop UK CAA and IAA audit plan and calendar for En-Route (ACCs) ANSPs in 2014
- Dec 13 – Plan joint sharing and utilisation of UK/IAA NSA Audit Human Resources in 2014
- Jan-Dec 14 – Maintain mutual participation in auditing action by UK/IAA NSA Human Resources to develop and refine common oversight principles and methodologies

## **Cooperative Preparation for the European Aviation Safety Agency (EASA) Safety Audit**

### *Project Description*

The UK/Ireland FAB are taking a cooperative approach to the review of procedures and processes in preparation for the EASA Standardisation Audits in each Member State. The UK CAA and IAA will cooperate and work towards preparation for the EASA Standardisation Audits of each State to ensure common and full compliance using best working practices.

### *Project Benefits*

The benefits of cooperative preparation for the EASA Safety Audit are in enhancing commonality of regulatory methodologies and practices within the FAB.

### *Milestones and Deliverables*

Milestones for the Cooperative Preparation for the EASA Safety Audit are as follows:

- Aug 13 – Prepared and initiated preliminary NSA cooperative arrangements for EASA Standardisation Audit.
- Sept 13 – Established a cooperative and coordinated UK CAA/IAA NSA team for planning and action in the UK.
- Oct 13 to Jan 14 – Work through UK preparations and actions for EASA Standardisation Audit building a common and complimentary position in Ireland as matters are addressed and agreed.
- Jan 14 - Establish a cooperative and coordinated UK CAA/IAA NSA team for planning and action in Ireland.
- Feb 14 onwards - Work through Ireland preparations and actions for EASA Standardisation Audit confirming a common and complimentary position in UK as matters are addressed and agreed.

## **Safety Partnership Arrangement between UK and Ireland**

### *Project Description*

The UK CAA and IAA have agreed to establish a formal Safety Partnership arrangement. The arrangement is underpinned by the sharing of safety data and intelligence in a total aviation system environment, including safety matters relating to Flight Operations, Airworthiness, ATM and Aerodrome industry sectors.

### *Project Benefits*

The proposed benefits of a safety partnership arrangement between UK and Ireland are as follows:

- Address specific operational safety risks, issues and incidents, which require common mitigation and cooperative corrective action.
- Build a risk picture for the UK/Ireland FAB.

### *Milestones and Deliverables*

Milestones for the Safety Partnership Arrangement between UK and Ireland are as follows:

- Sept 13 – Established and implemented bi-lateral UK/Ireland Safety Partnership (total aviation scope)
- Oct 13 – Enabled and initiated sharing of mutual Safety Risk Data and Intelligence
- Dec 13 – Review safety data and intelligence in ATM matters at FHWG identify possible actions
- Feb 14 - Convene a formal Safety Partnership Review and Action Meeting (total aviation scope)
- Feb 14-Oct 14 – Explore and where possible develop an evidence based risk picture for the FAB

### **Performance Plan for RP2**

#### *Project Description*

Production of a FAB Performance Plan for RP2 of the Performance Scheme.

Two groups have been established to support the development of the UK/Ireland FAB Performance Plan for RP2:

- The FAB Performance Advisory Group (PAG) – The PAG comprises representatives of UK and Irish NSAs and ANSPs and reports to both the FSC and FMB. It provides a coordination and engagement forum for FAB-related performance scheme matters relating to the UK/Ireland FAB, for example consideration of FAB-level traffic forecasts and identification of FAB contributions to the key performance areas. The PAG is *not* responsible for the drafting of the FAB Performance Plan and does not specifically consider terminal aspects of the performance scheme.
- The NSA FAB Performance Group (NFPG) – The NFPG comprises representatives from both the CAA and IAA Safety Regulation Division (SRD) and reports to the FSC. It is responsible for the development of the FAB Performance Plan and will bring together the respective streams of regulatory work for the UK and Ireland in relation to the Performance Scheme. In accordance with the revised performance scheme regulations for RP2, a single NSA is responsible for relations with the Commission and coordinating within the FAB. The CAA fulfils this function and coordinates with the IAA SRD through the NFPG.

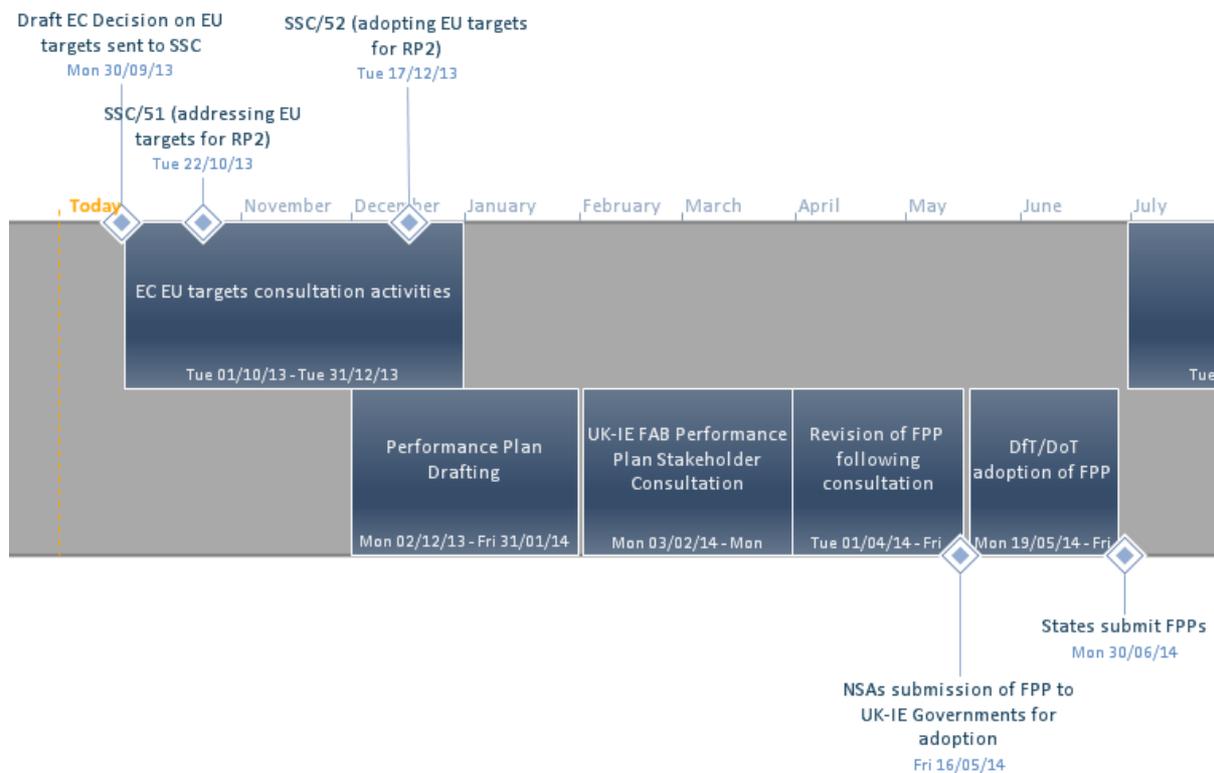
Whilst we are unable in this plan due to its timing to commit to specific actions in the FAB performance plan we are able to set out the timeline we will work to in order to develop the plan.

### Project Benefits

The benefits, beyond the requirements of the legislation for RP2, are that the FAB will consider areas where performance improvements can be managed at a FAB level including considering how work at FAB level can contribute to safety improvements and for the environment looking at vertical as well as horizontal flight efficiency – see the section on the 3Di metric later in this document.

### Milestones and Deliverables

The timeline for development of the FAB Performance Plan is as follows:



## HARMONISED SAFETY MANAGEMENT

A Safety Management Arrangements Manual (SMAM) has been developed for the UK/Ireland FAB and subject to final NSA input should be completed by the end of 2013. The arrangements are produced as a means of maintaining a harmonised approach to safety management and safety assurance between the UK NATS and the IAA, and hence a more closely aligned approach to safety within the UK/Ireland FAB.

The Manual provides a framework for managing safety in the FAB by:

- Documenting the FAB Safety Policy (signed by both ANSP CEOs)
- Documenting the responsibilities for FMB members and senior staff within each organisation
- Providing clarity on the flow of safety accountabilities within the FAB
- Highlighting the responsibilities of the NSAs

- Providing clarity on the processes that are harmonised within the FAB to provide a harmonised approach to safety management and safety assurance
- Documenting the process for safely managing change within the FAB

### *Project Benefits*

The primary benefit of the SMAM is in providing the UK/Ireland FMB with a clear and agreed status account and management control of, the safety policy, principles, processes and procedures within the scope of the FAB Safety Management Arrangements.

## **FUTURE AIRSPACE STRATEGY**

### *Project Overview*

The Future Airspace Strategy (FAS) aims to enable a modernised air traffic management system that provides safe, efficient airspace, that has the capacity to meet reasonable demand, balances the needs of all users and mitigates the impact of aviation on the environment. FAS is managing a programme of work by providing a governance structure for the Strategy and its associated implementation work; included in this work is a Harmonised Transition Altitude, and the LDLCA project.

### **Harmonised Transition Altitude**

#### *Project Description*

The UK and Ireland have announced its intention to implement a Harmonised Transition Altitude (TA) of 18 000ft across the entire FAB airspace at the earliest opportunity. This endeavor is supported by the FAB TA Oversight Group (FABTAOG), which meets regularly to ensure that both countries are aligned in their plans and timescales. In order to support major projects to modernise UK/Ireland airspace, the UK/Ireland FAB needs final agreement on the level of the TA by March 2014. It is unlikely that the EASA led Harmonised European TA (HETA) project will be sufficiently mature at that point to make a European decision, however it is anticipated that the European position will be better understood by then and the final FAB choice will be aligned with the options put forward in the EASA consultation.

The UK and Ireland NSAs and ANSPs are currently working to agree on a joint high level Concept of Operations (CONOPS); this includes a simplified system of cross border Altimeter Setting Regions (ASRs) supported by shared met data from both the UK and Ireland Meteorological Authorities. Both countries also propose to conduct their respective consultations at the same time.

The FAB is also coordinating its efforts in the international arena to ensure that a unified position is presented in all dealings with EASA, Eurocontrol and other adjacent States in order to pursue the optimum outcome for FAB customers.

### *Project Benefits*

The benefits of a harmonised higher TA for the UK/Ireland FAB are as follows:

- Consistency for operators across both FIRs as procedures will be based on the same high level CONOPS.

- The ability to design ASRs which traverse the FIR boundary and which are therefore more suited to the needs of the airspace.
- All QNHs will be based on actual readings rather than some on actual and some on forecasts.

#### *Milestones and Deliverables*

- Nov 13 – UK/Ireland hosted 'Adjacent States' meeting to deliver UK/Ireland FAB high-level CONOPS for a harmonised 18 000ft TA in UK & Irish Airspace.
- Nov 15 - Jan 16 – UK & Ireland conduct 2<sup>nd</sup> Consultation<sup>1</sup> on 18 000ft TA.
- Feb – Apr 16 - Consultation Findings/Impact Assessment.
- Not before Nov 17 – implementation date for 18 000ft TA in UK/Ireland FAB.

### **LDLCA Project**

#### *Project Description*

Helios has produced a LDLCA scoping study on behalf of the UK CAA, IAA, Highlands & Islands Airports Ltd (HIAL), UK MOD, UK Department for Transport, Scottish Government and Renewable UK. The project considers the airspace in the north and west of Scotland, Northern Ireland (excluding Belfast) and the Republic of Ireland (excluding Dublin) as a representative low density, low complexity environment – recognising that LDLCA refers to airspace use rather than to fixed and clearly defined geographical boundaries. The en-route service above FL 195 is outside the scope of this study. The LDLCA is a vital part of the overall ATM network in the context of the UK/Ireland FAB.

#### *Project Benefits*

The primary benefits of the LDLCA project are in assisting and informing stakeholders in identifying the options to meet the objectives of the FAS in the low density airspace within the FAB.

#### *Milestones and Deliverables*

In October 2013 Helios provided a report to the LDLCA Scoping Study's funding partners. The intention is to make the Scoping Study publicly available shortly thereafter. The UK CAA Safety & Airspace Regulation Group (SARG) and IAA Safety Regulation Department (SRD) will then undertake a programme of work, informed by the Scoping Study, to produce a strategy for low density, low complexity airspace types within the UK/Ireland FAB. It is the UK CAA and IAA SRD's intention to include this within the main FAS.

- Q1 2014 - FAS LDLCA consultative group formed with TORs produced by IAA SRG and UK CAA SARG in consultation with the Scoping Study's Funding Partners
- Q3 2014 - Draft UK-Ireland FAS LDLCA strategy completed
- Q3 2014 - Draft UK-Ireland FAS LDLCA strategy industry consultation
- Q4 2014 – UK-Ireland FAS LDLCA strategy incorporated into the main FAS document<sup>2</sup>

## **INTRODUCTION OF THE 3DI METRIC INTO IRISH AIRSPACE**

#### *Project Description*

<sup>1</sup> 1<sup>st</sup> Consultation took place in 2012 (UK only).

<sup>2</sup> The LDLCA milestones are complementary to the Spectrum Release Programme's published milestones.

3Di is a model which provides an estimate of fuel inefficiency based on the three dimensional path of each flight in UK airspace. It has been developed by the Environment Team at NATS in consultation with Airline Customers and the CAA. The 3Di score incorporates both horizontal and vertical flight inefficiencies (as compared with the European measure which focuses solely on horizontal inefficiency). The 3Di score applies to the complete airborne portion of flights in UK domestic airspace, whereas the European measure excludes a 40nm radius around the airport.

In the horizontal plane, it compares the actual radar ground track with the most direct (great circle) route possible between the first and last radar points in the airspace. Horizontal inefficiency is defined as the difference between these two distances. The actual vertical profile (from radar data) of each flight is compared with an ideal profile model. This model includes a continuous climb to the aircraft's Requested Flight Level (for cruise) followed by a continuous descent approach. Vertical inefficiency is defined as the difference between the 'actual' and 'ideal' flight profiles. These factors are combined to give an inefficiency score for each flight in UK airspace, these scores are then averaged over a period to calculate the 3Di metric.

The IAA and NATS are in discussions about the implications of implementation of 3Di methodology for Irish airspace. A trial was conducted using data from both pre and post the introduction of Point Merge at Dublin to validate the benefits of this innovative arrivals sequencing procedure. Analysis using 3Di methodology identified fuel savings for Point Merge arrivals of over 19% and track mileage reductions of over 20% over standard vectoring techniques.

From an Irish perspective, the greatest opportunities will lie in the Terminal area as flight planning constraints were removed from en-route airspace in December 2010 with the introduction of Free Route Airspace. The issue of the cost of 3Di introduction does however remain a concern. There will be a cost involved in expanding the capacity of the 3Di model to take the additional (Irish) airspace on a permanent basis and additional processing power would be required. Additionally, the model will have to be modified to automatically include those flights which will not enter UK airspace at any time. For example, to complete the Point Merge trial, transatlantic arrivals to Dublin had to be manually added to the 3Di system.

### *Project Benefits*

The 3Di concept can potentially offer the following benefits:

- Opportunities to measure the efficiency of airspace and can help to validate the benefits of any changes.
- Produce more fuel efficient flights and CO2 savings.

### *Milestones and Deliverables*

The IAA and NATS will provide advice to the NSAs by 31 December 2013 on the feasibility of introducing 3Di methodology to Irish airspace. Following receipt of this advice and taking into account the implications for all stakeholders of a potential increase in Regulatory cost burden, the NSAs will consider the benefits of the introduction of 3Di methodology to Irish airspace and the inclusion of 3Di targets for RP2 in the FAB Performance Plan in advance of the proposed Stakeholder consultation planned for Feb 2014.

## **TECHNICAL CONVERGENCE STRATEGIC PLANS**

Long-term strategic plans under development by the FAB to cover the following areas:

- Operations
- Network Management Evolution
- Technical Convergence

These plans will underpin the roadmap for the future of UK/Ireland FAB airspace. These will be aligned with SES High Level Goals, ATM Master Plan & Common Projects and will be measured through the UK/Ireland FAB Performance Plan for RP2 and beyond.

Strategic Plans will be assessed against the finally agreed RP2 plan and amended accordingly. Strategic Plans will become living documents.

#### *Milestones and Deliverables*

- First draft presented to FMB on 19th November 2013
- Second draft due 31 March 2013
- Final draft post agreement of RP2 Performance plan

## **SUMMARY AND CONCLUSION**

The UK/Ireland FAB believes that the projects set out in this plan will deliver real benefits in line with SES goals. They demonstrate our commitment to continue to work in collaboration within the FAB to optimise our airspace and deliver benefits quickly through this partnership to airspace users.

As set out these projects have been planned carefully in consultation with airspace users considering the resources available of all actors.