

Welcome to FASVIG 4

Part of the UK Future Airspace Strategy

John Brady

Welcome to FASVIG 4

The Vision:

Safe, efficient airspace that has the capacity to meet reasonable demand, balances the needs of all airspace users and mitigates the impact of aviation on the environment

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The Vision:

**Safe
Efficient
Capacity
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Environment**

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Welcome to FASVIG 4

Vision:

To provide a sustainable future for VFR

Welcome to FASVIG 4

Vision:

To provide a sustainable future for VFR

Objective Today:

How do we make it happen

Administration

Documents

Introductions

Objective

Review the packages of change

- **Have we missed anything important?**
- **Do we agree this as a plan?**

Objective

Review the packages of change

- **Have we missed anything important?**
- **Do we agree this as a plan?**

- **What do we need to do to deliver that?**
- **How should we organise that work?**

Agenda - morning:

- Introduction and aim of the day John Brady
- Review of the work to date Tim Hardy
- Programme Management Steve Hutt

1130 – Break

- LAMP Mark Morton
- Electronic Conspicuity WG Bob Darby
- Towards a Deployment Plan John Brady

1300 - Lunch

Agenda - Afternoon:

- Break out discussion Steve Hutt

1530 - Break

- Results of the break out Steve Hutt
- Learning and Next Steps Tim Hardy
- AOB and Closing Remarks John Brady
- Next FASVIG Meeting Steve Hutt

1630 - Finish

Objective at the close

- **We agree the plan**
- **We know how to deliver it**
- **We agree an organisation to do it**

Questions?

Next Tim Hardy reviewing the work to date

Future Airspace Strategy VFR Implementation Group

Review of the work to date

Tuesday 16th September 2014

The FASVIG Vision

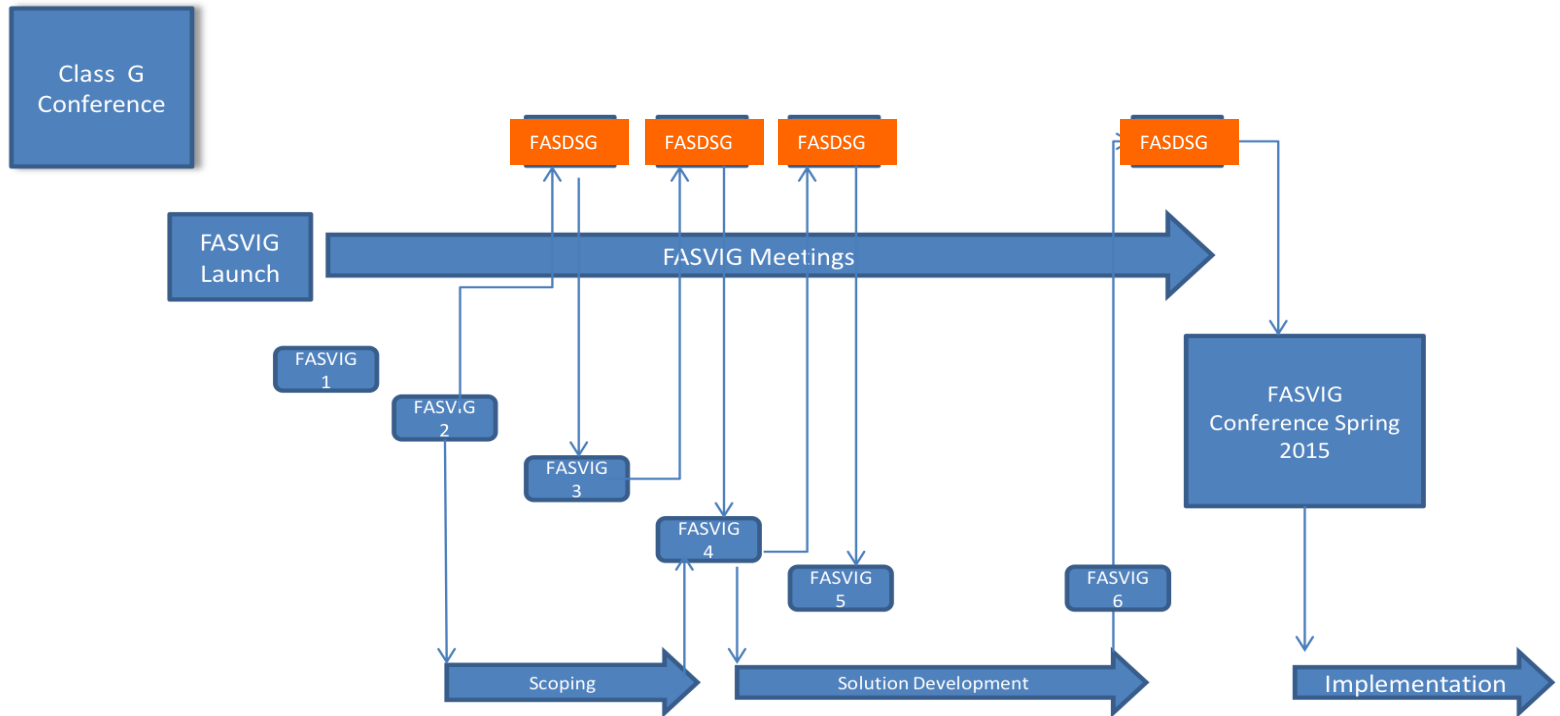
The FAS Vision is to provide safe, efficient airspace, that has the capacity to meet reasonable demand, balances the needs of all users and mitigates the impact of aviation on the environment.

The FAS captures the benefits of modernising the airspace system in the areas of safety, capacity, environment and cost.

*In a written statement on to Parliament on 6 Nov 13 the Minister for Transport said: General Aviation can and should contribute to the UK's economic success, whilst providing a safe environment for participants and the public. **The Government's aim is therefore to make the UK the best country in the world for general aviation.***

*The objective of FASVIG is **“to provide a sustainable future for VFR operations”***

FASVIG Programme



Developing the FAS VFR Implementation Plan

- Brainstorming what 2020 will look like
- Focussing on key areas of influence
- Taking safety as a transversal activity
- Other activities fell into one of three groups: -
 - Airspace and Procedures
 - Government and Regulation
 - Information Technology and Communications

How will work be organised?

- Three working groups leaders identified: -
- John Williams – Airspace and Procedures
- Tom Hardie – Government and Regulation
- Ed Bellamy – Information Technology and Communications

So how are we doing?

- FASVIG Vision ✓
- FASVIG Objectives ✓
- Leadership ✓
- Programme Management ✓
- Work Breakdown Structure ✓

What's Missing?

- Deliverables
 - What, When, Who, How
- Milestones
- Gateways / Risks and Implications

The **Planning the Plan** is not yet complete

Airspace and Procedures

- Airspace Review
- Airspace Modelling
- Data Transparency
- Transit Routes
- Access to Controlled & regulated Airspace

(Input needed from AUS)

Government and Regulation

- Mandates
- Equippage (ADS-B)
- Community Endorsed Standards
- Legislation blocking Innovation
- GPS Approaches
- Building Blocks – TMZ, RMZ, Separation Standards

Information Management

- NOTAMs
- Dynamic Airspace Management
- Airspace Sharing
- Trajectory Sharing
- Communication Datalink (AFTN?)
- System Promulgation

Transversal Activities

- Resources
- Safety – derived from GASCO / NATS RAT
- Red Tape Challenge Output

Issues

- Connecting activity from the Electronic and Visual Conspicuity Working Groups
- Engagement - MOU

FASVIG Programme Management

Steve Hutt

New Programme Coordinator

- Steve Hutt
 - Email: FASVIGcoord@laa.uk.com
 - Tel: 07500 266706



FASVIG Programme Coordinator

Responsibilities

- Coordinate the development and implementation of the FASVIG programme of work
- Report to the joint chairmen FASVIG in support of the FASVIG Terms of Reference

Challenges of FASVIG Working Groups

- Difficulties bringing dispersed groups together
- Cannot solve everything with Email !
- Need new methods to improve remote working
 - Communication
 - Information Sharing
 - Collaboration



Communication

- Have now established Conference Call Facility
- Uses POWWOWNOW
- Very simple to use



Information Sharing

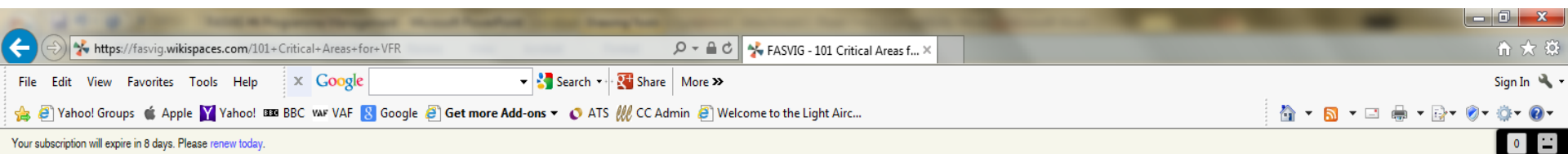
- Have setup a DropBox account
- Provides a simple group file sharing mechanism
- Requires invitation/simple user setup
- Good for sharing single-owner documents
- Not so suitable for group-development of docs



Collaboration

- Have established a FASVIG 'Wiki'
 - <https://fasvig.wikispaces.com/>
- Idea sharing/document development
- Multi-user collaborative text editing
- Requires invitation/simple user registration

FASVIG Wiki – Example page



☆ 101 Critical Areas for VFR

[Edit](#) [0](#) [8](#) [...](#)

Within the UK FIR there are areas that are critical to VFR flight, either because they provide the conditions needed for air sports, some to World Championship standard, or they are essential for military or civil training or provide VFR routes joining or around centres of population and the more open areas of the FIR. They connect airfields used for VFR operations and provide international VFR connectivity. These areas are mainly over the UK landmass including the inshore waters and islands with connections to Ireland and the near continent.

Presently there is no categorisation of these areas and when an increase in CAS is proposed, they have no particular recognised value; they are considered to an available resource for commercial development. In this regard the airspace change process does not have the safeguards provided for land planning such as the Significant Areas for Sport recognised by Sport England and by mutual agreement, by the sport governing bodies of Wales, Scotland and Northern Ireland. That is not to say that the recognition of such areas is sacrosanct but that their proper value would be recognised in national airspace decision making. FASVIG would then need to identify and propose areas for inclusion.

To properly protect Critical Areas for VFR operations for the future a published process for definition of areas and connection to the Airspace Change Process would be developed. The change process would take them into account. A map showing VFR areas could be categorised into:-

Red Areas - where areas are crucial to VFR activity and already constrained or bottlenecked creating safety concerns (priority areas for increasing available VFR airspace)

Amber Areas - where areas are critical to VFR activity and while functioning adequately today would be severely impacted by any newly developed CAS

Regulatory

Regulatory change text here (TH)

It is essential that this does not detract from the CAA statement that the default classification for UK airspace is Class G unless there is proven need for something more restrictive.

Information Management & Communication

Information Management & Communication change text here (EB)

- Critical Area 2

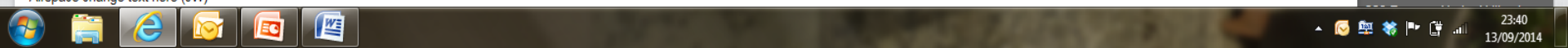
Airspace

Airspace change text here (JW)

- Wiki Home
- Recent Changes
- Pages and Files +
- Members +
- Settings
- Search

Home
FASVIP

- 1 Modernised Airspace Structures
- 2 Access to Airspace
- 3 VFR Efficiency Enablers
- 101 Critical Areas for VFR
- 102 Terminal airspace structures generally
- 103 LAMP and NTCA
- 104 Design Rules for Terminal Airspace
- 105 FUA Principles Extended to Access for VFR
- 106 Modernise Regulated Airspace
- 107 Incentivise the Release of Underused CAS
- 108 CAP 725 transparency
- 201 Understand VFR Capacity of Terminal Airspace
- 202 Optimise CTR-CTA Structures for VFR Traffic



Your Organisation's Logos

- We will be listing organisations supporting FASVIG in:
 - FASVIG Documents
 - FASVIG Web pages
(http://www.lightaircraftassociation.co.uk/FASVIG/fasvig_main.html)
- We want to include your organisation's logo
- Please send me a copy of your logo and permission to use.

FASVIG on CAA website

- The CAA website has details of:
 - FAS and FASIIG
 - but no details yet of FASVIG
- I will be working with the CAA to address this
- This will help us all publicise FASVIG

Questions ?

Electronic Conspicuity Working Group Progress

Bob Darby, AOPA.

(bob.x.darby@btinternet.com)

FASVIG 4, 16th September 2014



Outline

- Background
- Activity
- Deliverables
 - Recommendations Paper
 - Project Management Plan
- Related Activities
- Summary

Background

Tasking/TORs. (ASICG Paper, Jan 2011)

- *In response to AAIB Report 5/2010: "... accident between Grob G115E (Tutor) and Standard Cirrus Glider at Drayton, Oxfordshire on 14 June 2009"*
- *"to consider the requirements and benefits for electronic conspicuity between GA users in Class G airspace to contribute to flight safety through enhanced situational awareness"*
- *"To identify options, technical issues and funding opportunities"*

Membership

- British Balloon and Airship Club (BBAC)
- British Hang Gliding and Paragliding Association (BHPA)
- British Gliding Association (BGA)
- British Microlight Aircraft Association (BMAA)
- Light Aircraft Association (LAA)
- Aircraft Owners and Pilots Association (AOPA)
- British Helicopter Association (BHA)
- NATS

Activity

- 5 meetings over about one year
 - 2013: 7th July, 30th October
 - 2014: 1st April , 13th June, 11th July 2014
- Presentations & Discussions
 - Summary of requirements - inputs from each GA Group
 - Existing EC technology (see Recommendations Paper)
 - GA Collisions, Risk of MAC, Transponder Penetration (John Brady, LAA)
 - TSAA: Traffic Situation Awareness with Alerts (Bob Darby, AOPA)
 - Defining the Industry Standard (Adrian Price, NATS)
 - Certification Process (Paul Thomas, CAA)
 - Camera Based technology (Simon Cassia, Plextek)
 - DTI/DFT Project Plan

ECWG Deliverables

- ASI ECWG Recommendations Paper: Electronic Conspicuity in Class G Airspace
- EC Project Management Plan (SARG)

Recommendations Paper

- To encourage voluntary equipage, device must be
 - Cost effective
 - Provide a definable benefit to the user
 - Must not hinder current ways of operating
- The EC requirement is scalable in 3 main categories:
 - Basic device: transmit only with no alerts to the carrier
 - Intermediate device: transmit/receive device with minimal interoperability and audible/visual alerts
 - Full device: transmit receive device interoperable with other air and ground safety nets with visible and audible alerts

Recommendations Paper

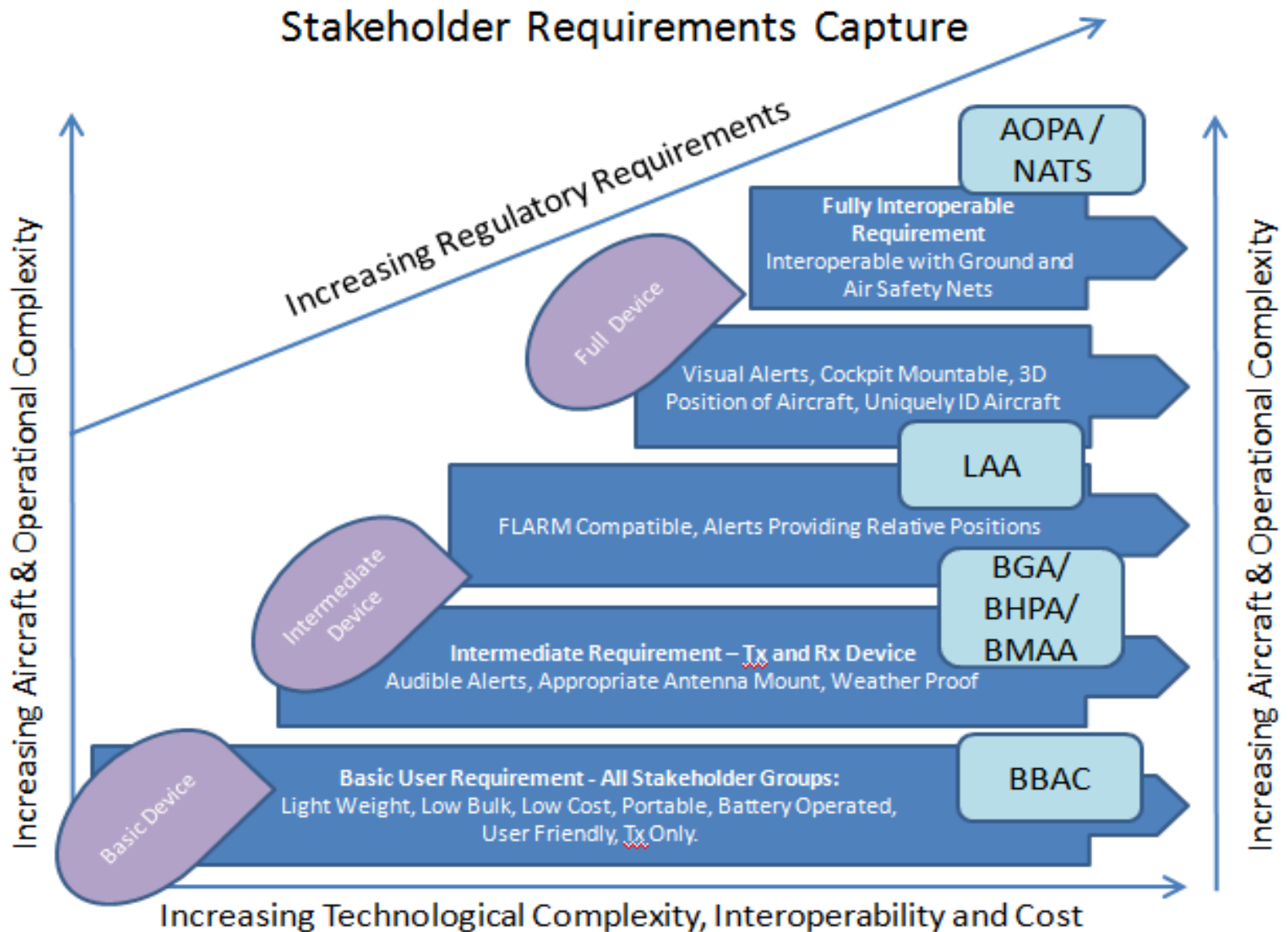
- Light weight.
- Low bulk. Universal Requirements
- User friendly: easy to operate/minimal inputs during flight/minimise “heads down”
- Appropriate antenna fit: easily achievable and appropriate to the aircraft.
- Portable: from one aircraft to another easily.
- Voluntary equipage.
- Minimal regulatory requirements.

Recommendations Paper

Additional Requirements

- Aural alerts.
- Visual alerts.
- Low cost: most basic device £250 ...
... with additional functionality at additional cost.
- Cockpit mountable or user carried.
- Self-contained.
- Power options: battery (12 hours) or internal power.
- Can operate close to handheld radios.
- Full weather proofing and low temperature.
- Operable when wearing ski gloves.

FAS VFR Implementation Group



Recommendations Paper

- TCAS Technical Options Reviewed
- Mode S Transponders
- TIS-B
- FLARM
- ADS-B-OUT: fundamental essential capability
- ADS-B-IN/OUT: LPAT, LASE
- ADS-B-IN: Funkwerk TM250, Stratus, Garmin GDL39, TSAA

Recommendations Paper

Most basic ADS-B technology

Industry Standard

- Portable, transmit-only device using ADS-B technology carried inside the aircraft. Such a device will consist of:
 - a COTS GNSS receiver
 - a COTS altitude transducer
 - an ADS-B transmitter
- Transmitter accuracy and integrity metrics must report 'zero' unless the 3D position and velocity are obtained from a certified or approved GNSS source.
- The downlink format must indicate that the device cannot be interrogated, i.e. it is a 'non-transponder device' (DF18).

Recommendations Paper

Regulation aspects

- Guidance: CAA approach to UK approval of VHF handheld radios.
- ADS-B transmit requirements concentrating on interoperability and reduction of hazards.
- Suitable requirements captured from existing regulations – inter alia:
 - ICAO Annex 10 Section IV
 - DO-303 / ED-126
 - DO-260B / ED-102A
 - AMC 20-24/CS-ACNS
 - SPI IR

Recommendations Paper

Way Forward

- Launch of CAA EC Project - September 2014
- Described in accompanying Project Management Plan (PMP)

Project Management Plan

- DfT Funding of £300K
- Covering
 - Research into the use of uncertified GPS devices including the connectivity of uncertified COTS portable GPS devices to ADS-B OUT capable transponders and the regulatory enablement thereof.
 - Research potential interference issues with EC devices.
 - Research interoperability issues for EC devices; both operational and regulatory.
 - Research potential options for Camera Based (both visual and infrared) technology.
 - Development, testing and analysis of prototype EC device.

Related Activities

- FAA
 - LASE (Light Aviation Surveillance Equipment)
- NATS
 - Low Power ADS-B Transceiver (LPAT)
- SESAR
 - EVA Project (Electronic Visibility via ADS-B)
 - Large Scale Demonstration
 - NATS-led consortium with AOPA, Funkwerk, Trig
- FASVIG A.3.4 “ADS-B out implementation”

Summary

- Options Paper recommends:
 - ADS-B on 1090 MHz as the most promising approach
 - DTI-funded Programme of Work concentrating on ADS-B, to be initiated soon.
- Imminent delivery of NATS LPAT prototype
- Kick Off Meeting of SESAR EVA Project
 - Brussels, 26th September
- FASVIG A.3.4 “ADS-B out implementation”

Questions?

Towards a Deployment Plan

Towards a Deployment Plan

- Review the Packages of change:
 - Modernising Airspace Structures 7
 - Access to Airspace 7
 - VFR Efficiency Enablers 9
- 23

Towards a Deployment Plan

- Review the Packages of change:
 - Modernising Airspace Structures 7
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- 23
- Airspace & Procedures,
 - Regulatory & Government Policy
 - Information Management and Comms
 - Safety

Towards a Deployment Plan

Identify:

- Activities needed to deliver change
- Risks
- Priorities

Break-Out Groups

One	Two	Three	Four
Safety	IM & Comms	Regulation	Airspace
John Brady	Ed Bellamy	Tom Hardie	John Williams
Nick James	Bob Darby	Mark Batin	Chris Mitchell
Andrew Gray	Deepak Mahajan	Jonathan Smith	Mark Morton
Steve Hutt	Tim Hardy	Timothy Nathan	Philip Whiteman
		Jim Walker	Sam Martin

Towards a Deployment Plan

We will then cross reference these to make
THE PLAN

During the break we will have
a quick cut at that
and report

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Questions or Suggestions?