Meeting Notes

Project Title	RAF Brize Norton Airspace Change Process
Client	RAF Brize Norton
Purpose of Meeting	Framework Meeting
Date of Meeting	11th September 2014
Held at	Camm Room, CAA House
Present	[redacted], CAA Head Airspace Regulation [redacted], CAA [redacted], CAA [redacted], CAA [redacted], A/SATCO RAF Brize Norton [redacted], SO3 ATC Plans, RAF Brize Norton [redacted], Osprey Consulting [redacted], Siluri Integration on behalf of Osprey Consulting
Copies to	RAF Brize Norton internal distribution through Proj O
Classification	Unclassified
Osprey Reference	7751 028
Issue	Issue 1

Meeting Summary

The meeting was structured around the PowerPoint presentation attached at Annex A. The following additional comments, suggestions and actions were raised during the meeting.

General

- It was agreed that there was a fine balance to be struck in meeting BZN's aims for the proposed change, not over-complicating the proposed airspace structure and operating environment, whilst meeting the legitimate concerns of the broader aviation community.

Justification

- The CAA recommended several areas where a more detailed narrative was required prior to any stakeholder engagement or consultation and before the formal consultation stage. For example, a more detailed and comprehensive list of mitigations undertaken to improve GA education and liaison should be included and it should be stressed that full primary containment of RNAV procedures was not being sought.
- The case for change would be strengthened with greater relevant statistical evidence.
- **ACTION**: [redacted] to add greater detail to the justification 'narrative', such as including all of the mitigations already introduced to improve GA education and liaison.
- **ACTION**: [redacted] agreed to ensure continued and enhanced data-gathering of evidence to support the change proposal continues as the ACP is developed.

Options

- Various combinations of RMZ/TMZ, which could satisfy the BZN requirement, should be investigated further. Accepting that they are relatively new and untested, the GA community appear to find RMZ/TMZs more popular than the introduction of new CAS. However, this is countered when VFR aircraft are under no obligations to comply with ATC requests.
- Stansted Airport operates a TMZ and Southend Airport is currently trialling a RMZ, and would soon report back to CAA on its relative success.
- **ACTIONS**:
  - [redacted] agreed to send [redacted] any publicly-available analysis of RMZ/TMZs held by CAA, and;
  - [redacted] agreed to contact [redacted] at Southend to discuss the relative merits of the RMZ.

Airspace Design Considerations

- The initial 'working draft' airspace proposal includes a CTA base level at 1700 ft [Area 2]; this is non-standard and CAA recommended this be amended to either 1500 or 2000 ft. This will be reassessed during stakeholder engagement prior to formal consultation.
- Accepting that the training requirements of BZN ac are different from standard civil airports, the requirement for 3 holds will need to be fully justified.

- **ACTION**: [redacted] to gather data on current usage of the BZN instrument hold and the number of CTR overflights.
- Standing agreement CAS joining and exit levels for BZN ac are FL 80 and FL 90 respectively, although on a tactical basis higher levels are regularly allocated. The 'working draft' takes account of these higher levels and has CAS up to FL 125 [Area 5]; this additional CAS will have to be fully justified in the proposal.

Initial Airspace Design

- A fundamental change in airways-joining routes, ie to the East from BZN to join at Westcott, was considered but, due to airspace complexity and traffic density, was quickly discounted.

Future-proofing / RNAV Challenges

- The submission should clearly reflect that full primary containment for RNAV procedures is not being sought.
- It was noted that the CAA does not have regulatory oversight of military PANS-OPS procedures. Osprey had contacted the MAA to determine how regulatory oversight of the procedures under development for this project would be discharged; the MAA were investigating the issue, but the process had not yet been defined. There was a discussion on whether the ground track of these procedures should be included in the stakeholder consultation document. Pending any alternative guidance from the MAA, on balance, it was agreed that in accordance with standard practice, the ground track of PANS-OPS procedures should be displayed on consultation material as it provided a justification and rationale for the proposed change.
- **ACTION**: [redacted] at a policy level (and [redacted] specifically for the BZN ACP) would each liaise with the MAA on how the regulatory oversight of military PANS-OPS design would be discharged as it is not a CAA accountability.
- [redacted] noted that the RNAV hold should be at the IAF, rather than in the overhead, as was the case in the current BZN proposal. Similarly, the need for a RNAV MAP was discussed.
- **ACTION**: [redacted] agreed that [redacted] could contact [redacted] (AR, CAA) to discuss procedure design, including position of the hold and requirement for RNAV MAP, with the outcome of the discussion added to the proposal justification.

Impact on Stakeholders

- London Oxford Airport.
    - London Oxford Airport had a pre-framework briefing meeting scheduled with the CAA for 17th September for their own ACP, although details of their aspirations were not known.
    - Stakeholders would rightly expect a joint and coordinated airspace solution between BZN and Oxford and CAA will insist upon this.
- **ACTION**: [redacted] agreed to facilitate a joint meeting between BZN and Oxford, at an appropriate stage in the development of the proposals, but prior to formal consultation, to agree this coordination process.

- The CAA had previously attended the Oxford AIAA User Group and would reconsider attending, but would not wish to chair the Group. The next meeting is scheduled for December 2014.
- **ACTION**: [redacted] agreed to provide [redacted] with the User Group secretary's contact details ([redacted], RAF Benson).

Mitigations

- CAA questioned whether the dedicated BZN Zone control position would have sufficient capacity to control all crossing requests if more CAS was approved. [redacted] was confident the requirement could be met.
- **ACTION**: [redacted] agreed to develop a plan, to be included in the change proposal, that demonstrated there would be sufficient controller capacity to meet increased Zone-crossing requests.

Consultation

- Whilst local GA stakeholders may have a direct and positive working relationship with BZN, national GA bodies (that are nevertheless very influential) may have differing views. At an appropriate time, i.e. when local inputs have been taken into account, it would be useful for BZN to engage early with national representative such as [redacted] (LAA), who co-chairs the Future Airspace Strategy VFR Implementation Group and with [redacted] and/or [redacted] (BGA).
- **ACTION**: [redacted] agreed to provide [redacted] with contact details of national GA reps for pre-consultation engagement.
- CAA suggested employing social media, and as a minimum monitoring Twitter, Facebook and GA Forums, in addition to more standard forms of consultation.
- **ACTION**: BZN ([redacted]) agreed to investigate the employment of social media during consultation.
- Positive feedback from local general aviation operators should be documented and referred to in the proposal.
- BZN and MoD needed to be aware that displaying the ground tracks of procedures on consultation documents could lead to objections that could quickly be raised to a senior level.

Timelines

- With the General Election set for 7th May 2015, there was discussion whether the planned ACP consultation timeline would be affected by purdah.
- **ACTION**: [redacted] agreed to seek confirmation from MoD on whether the BZN ACP consultation would be subject to purdah.

Summary of Actions

Description	Owner(s)
Add greater detail to the justification 'narrative', such as including all of the mitigations already introduced to improve GA education and liaison.	[redacted]
Ensure continued data-gathering of evidence to support the change proposal continues as the ACP is developed.	[redacted]
Send any publicly-available analysis of RMZ/TMZs held by [redacted], to [redacted].	[redacted]
Contact [redacted] at Southend to discuss the relative merits of the RMZ.	[redacted]
Gather data on current usage of the BZN instrument hold and the number of CTR overflights.	[redacted]
Raise how the regulatory oversight of military PANS-OPS design would be discharged with the MAA as it is not a CAA accountability.	[redacted]
Contact [redacted] (AR, CAA) to discuss procedure design, including position of the hold and requirement for RNAV MAP, with the outcome of the discussion added to the proposal justification.	[redacted]
Facilitate a joint meeting between BZN and London Oxford Airport, at an appropriate stage in the development of each of their proposals, but prior to formal consultation, to agree the coordination of the submissions.	[redacted]
Provide [redacted] with the Oxford AIAA User Group secretary's contact details ([redacted] RAF Benson).	[redacted]
Develop a plan, to be included in the change proposal, that demonstrates there will be sufficient controller capacity to meet increased Zone-crossing requests.	[redacted]
Provide [redacted] with contact details of national GA reps for pre-consultation engagement.	[redacted]
Investigate the use of social media during consultation.	[redacted]
Obtain confirmation from MoD on whether the BZN ACP consultation would be subject to purdah.	[redacted]

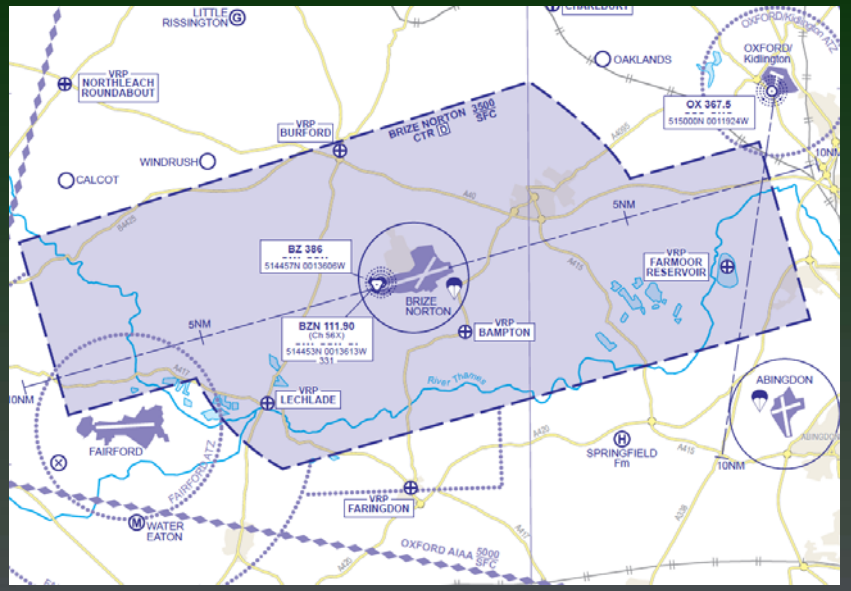
Annex A – BZN Framework Briefing Presentation

7751 027 BZN ACP Framework Briefing

RAF Brize Norton Airspace Change Proposal

Framework Briefing

11th September 2014



Osprey Consulting Services Ltd
Innovative Informed Independent

Introductions

RAF Brize Norton (BZN) attendees:

- [redacted] – Acting SATCO
- [redacted] – Project Officer
- [redacted] – Osprey Consulting Service Ltd (CSL), Consultant and Project Manager
- [redacted] – Siluri Integration Ltd (on behalf of Osprey CSL), Consultant and co-author BZN Scoping Study

Why Change?

- Current airspace not fit for purpose:
  - Approach procedures not fully contained
  - No connectivity to en-route network
  - Boundary difficult to interpret from the air
- This leads to:
  - TCAS RA in instrument circuits and during instrument arrivals and departures
  - Inefficiency as aircraft (ac) are frequently unable to complete published procedures to avoid traffic
  - Safety concerns – current operations are safe due to the level of service applied by ATC and lookout maintained by aircrew, but lack of manoeuvrability of BZN ac could lead to serious incident
  - CTR infringements by GA traffic

Justification

- Airspace around BZN is very busy:
  - LARS figures Jul-Dec 2013 = 10,400 ac;
  - CTR infringements - high number of reported occurrences.
- Current BZN airspace originally designed for different ac types and circumstances
- BZN ac temporarily leave the confines of the CTR whilst on approach:
  - 530 ac Nov 12-Jan 14;
  - combined with CTR infringements produces potentially hazardous situation.
- BZN ac receive frequent avoiding action on SID/STAR:
  - 146 ac on a DS 2012-2013;
  - Deviation from published procedure whilst on TS not logged.

Justification

- Risk of a Mid-Air Collision within 20 NM of BZN is assessed as HIGH in:
  - BZN Aviation Support Risk Register;
  - ATC BM SM Risk Register;
  - Risk is not ALARP.
- Considered that MoD should apply civilian best practice where reasonably practicable:
  - Should operate “under standards and management arrangements at least as good as those required by legislation”.

Options

- Do nothing
  - Not acceptable – airspace constraints highlighted as cause for concern.
- Do minimal
  - Extensive local liaison already undertaken with neighbouring airfields and GA community. Situation improved, but significant concerns still exist.

Options

- Other airspace constructs
  - TMZ/RMZ/Class E – whilst this creates greater situational awareness for controllers who can pass more traffic information to aircrew, deviation from published procedures will still occur and protection is not afforded to ac in the critical stages of flight on departure and approach. ***Could*** be used in conjunction with Class D to reduce overall volume of CAS required.
- Minimal Class D airspace change
  - Minimal change to Class D airspace that will not afford containment for departure, arrival and approach procedures will not meet the aim of resolving the issues currently faced by BZN ac operations.

Proposed Option

- Amend the current structure of BZN Class D airspace to:
  - Provide connectivity to the en-route structure (L9 to the south of BZN);
  - Provide full procedure containment;
  - More easily interpreted boundary.

Airspace Design Considerations

- Minimum airspace required to meet the need, whilst keeping the structure simple
- Interaction with other airspace users:
  - London Oxford Airport
  - GA transit traffic
  - GA and Military from multiple local aerodromes and glider sites
- A structure that is easy to interpret from the air – follows geographical features
- Procedures and agreements will be required to accommodate other airspace users

Airspace Dimensions Considered

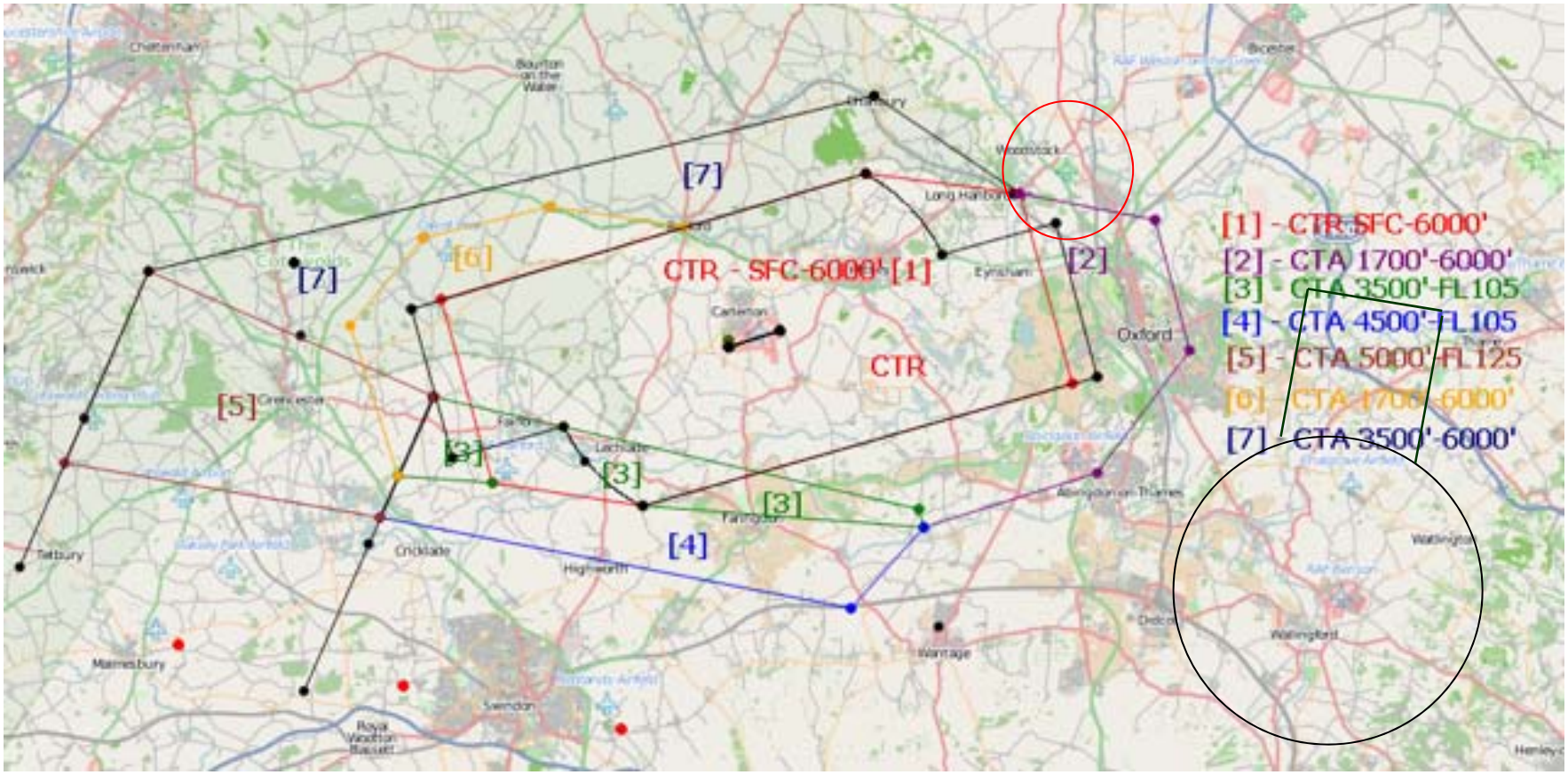
- Airways joins to be at higher level:
  - Procedurally safe level at MALBY = FL80; S23 unable to amend standing agreements due to interaction with other airspace users.
- Alternate joining points:
  - SIREN or MIMBI considered; not viable as provided insufficient time for ac to climb above the north-south flow across and into the LTMA;
  - East of BZN in Westcott area; discounted due to the adverse impact on London Oxford Airport operations.
- Procedure primary containment:
  - Volume of airspace for full primary containment of IFPs and IAPs untenable within such highly utilised airspace.

Initial Draft Airspace Design

Initial draft airspace design to be considered a “working draft” to stimulate discussions with adjacent aviation stakeholders. There are known issues to be resolved during these discussions:

- Complex structure, will need simplifying;
- Potential funnelling effect between CTA2 and RAF Benson MATZ;
- North-east ‘corner’ of the structure to be modified in discussion with London Oxford Airport;
- Does not provide full primary containment of procedures; safety assessments will be required.

Draft Airspace Design



Explanation of Design

- Higher CTR to allow for 3 hold levels separated by 1000 ft within Class D
- Reduced length of CTR stubs to allow transits
- Additional stubs 1700’ (could be 1800’) – 6000’ to contain approach procedures, but allow transits below
- Connectivity to L9 for joins at MALBY – stepped base
- Connectivity to L9 for arrivals via SIREN – stepped base
- Potential for boundary of CTA2 to align with railway line west of Oxford, with an RMZ extending east to the current proposed CTA2 boundary.

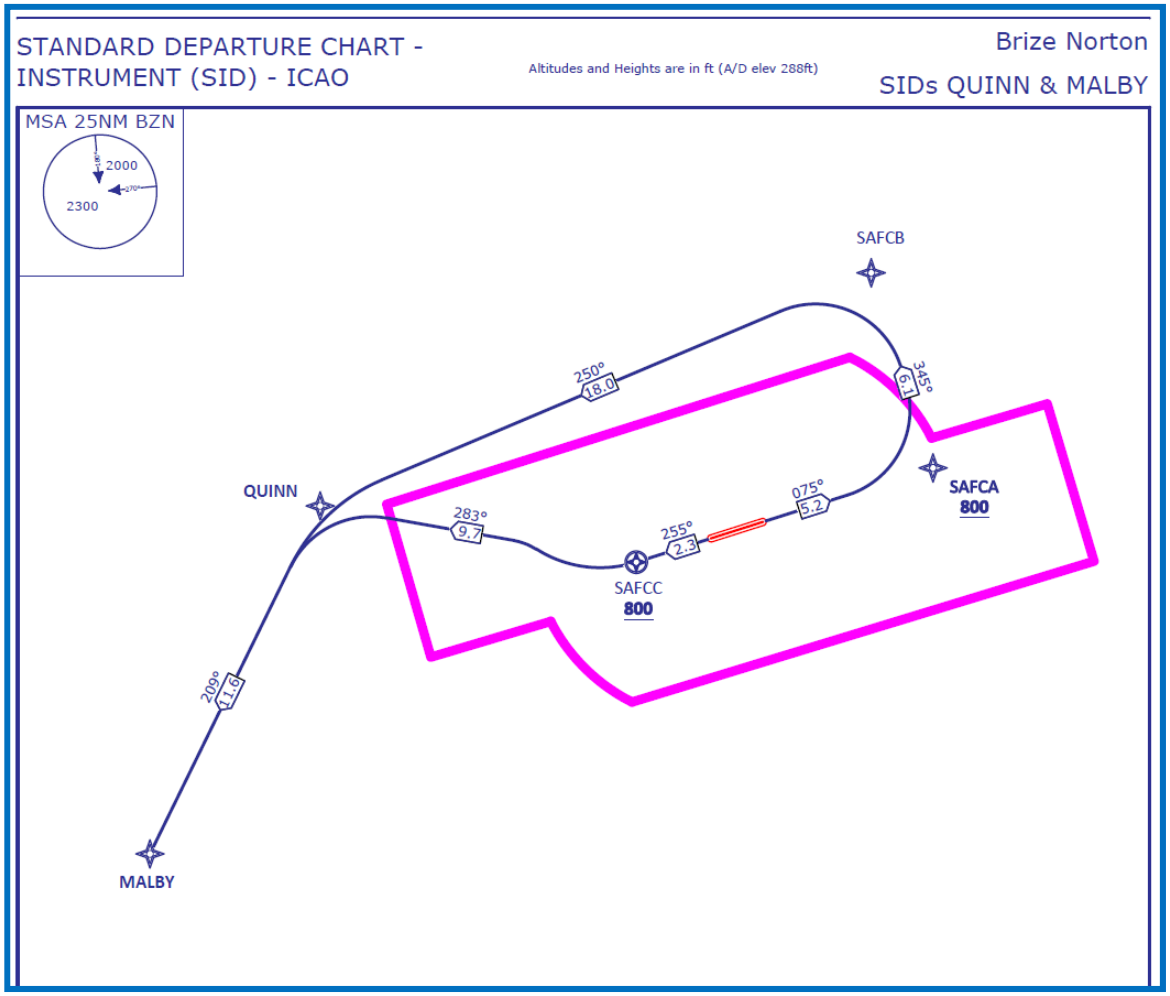
Future Proofing

- The change needs to be robust and stand the test of time;
- Future navigational requirements need to be taken into account to develop adequate containment for future procedures;
- BZN ac require RNAV capability; access to some airspace worldwide will be problematic without RNAV as early as Dec 14
- RNAV procedures (SIDs, STARs and GNSS APV (Baronav)) to be delivered as part of the BZN ACP project

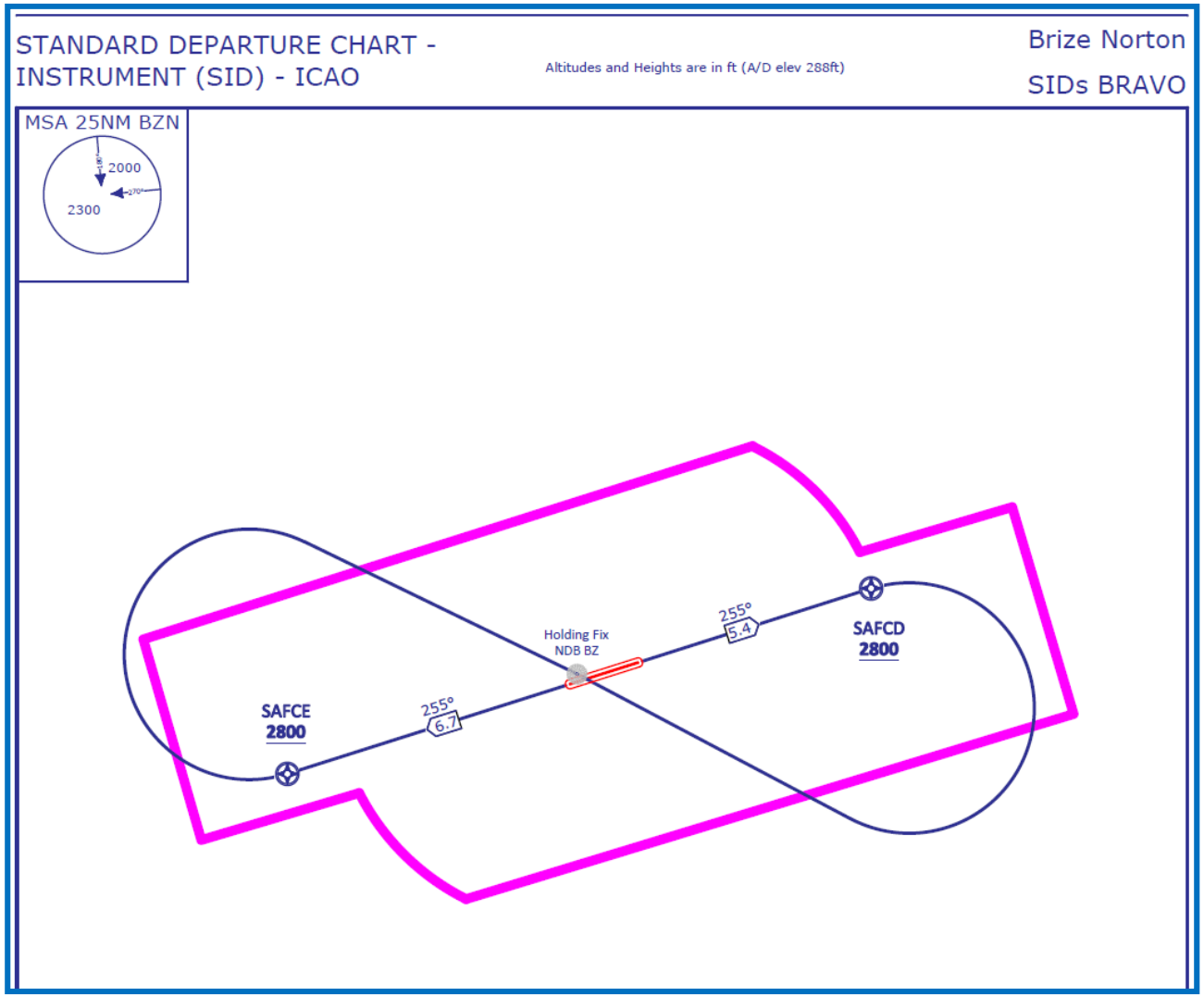
RNAV Challenges

- RNAV procedures often require larger containment areas; safety assessments will be needed to consider implications of reduced containment, especially for radar training circuits, which do not lend themselves to RNAV procedures;
- Initial draft procedures do not take airspace constraints into account;
- Only one SID from each runway (other than that for radar continuation training), one STAR and GNSS APV Baronav approaches have been designed.

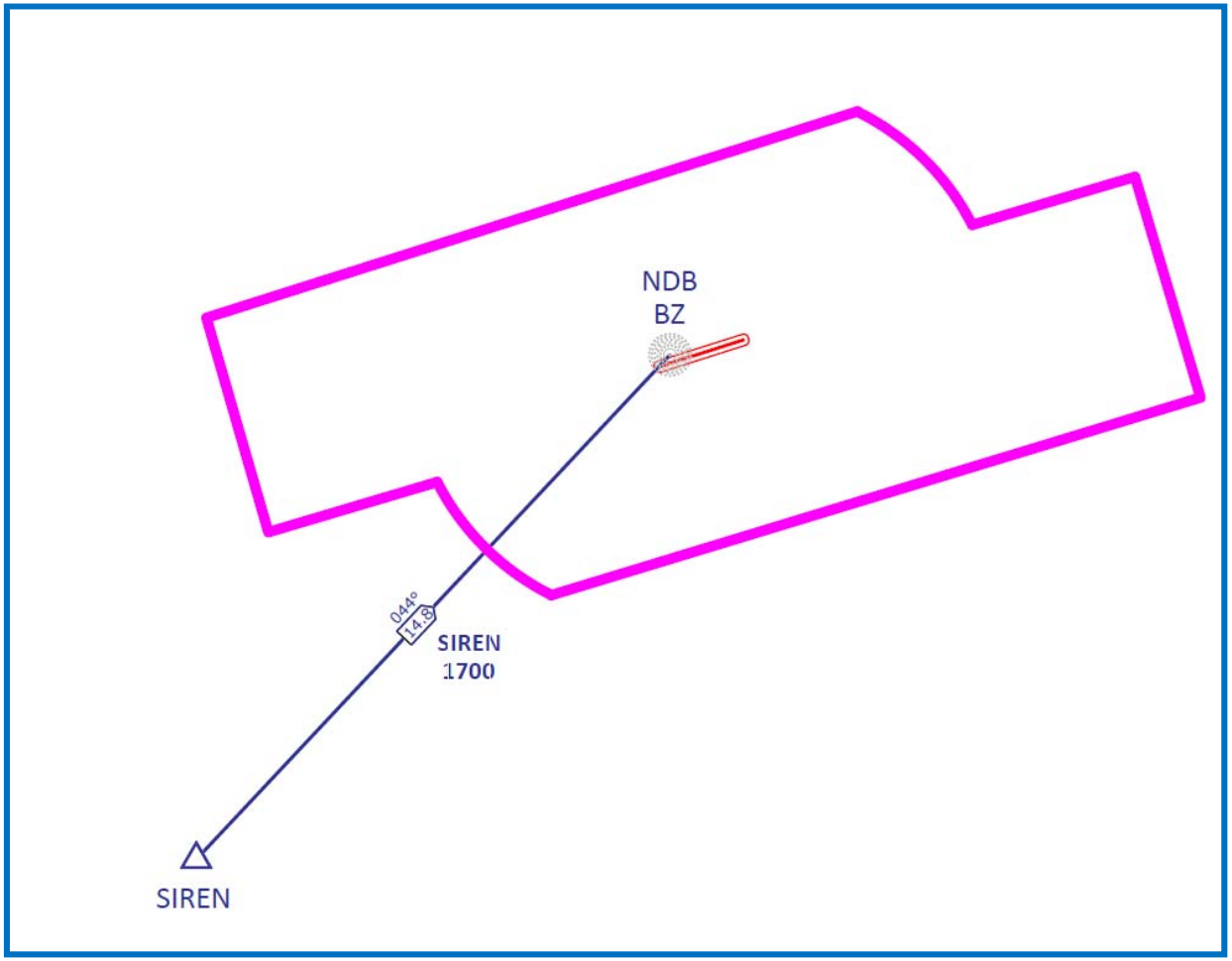
RNAV Procedures – Airways Join SIDs



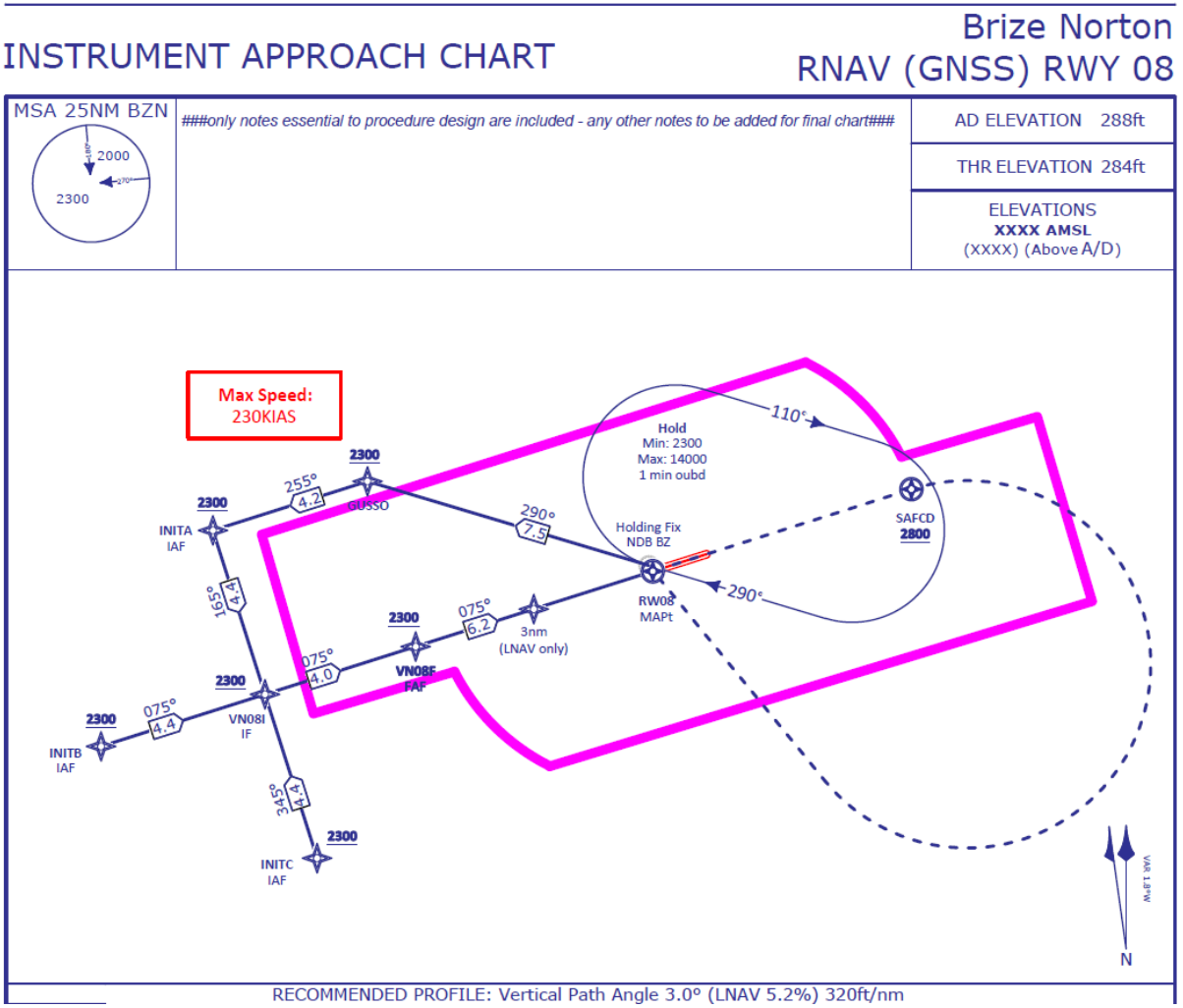
RNAV Procedures – Training Circuit SID



RNAV Procedures - STAR



RNAV Procedures – GNSS APV RW 08

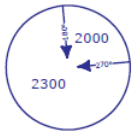


RNAV Procedures – GNSS APV RW 26

INSTRUMENT APPROACH CHART

Brize Norton
RNAV (GNSS) RWY 26

MSA 25NM BZN

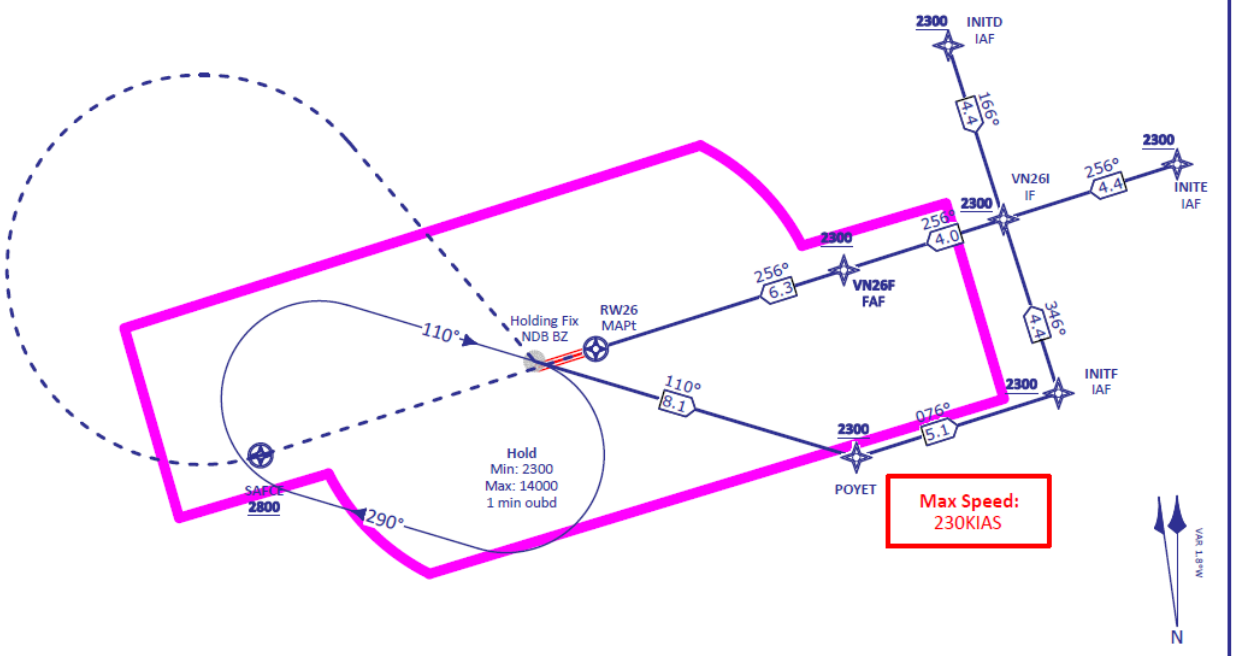


###only notes essential to procedure design are included - any other notes to be added for final chart####

AD ELEVATION 288ft

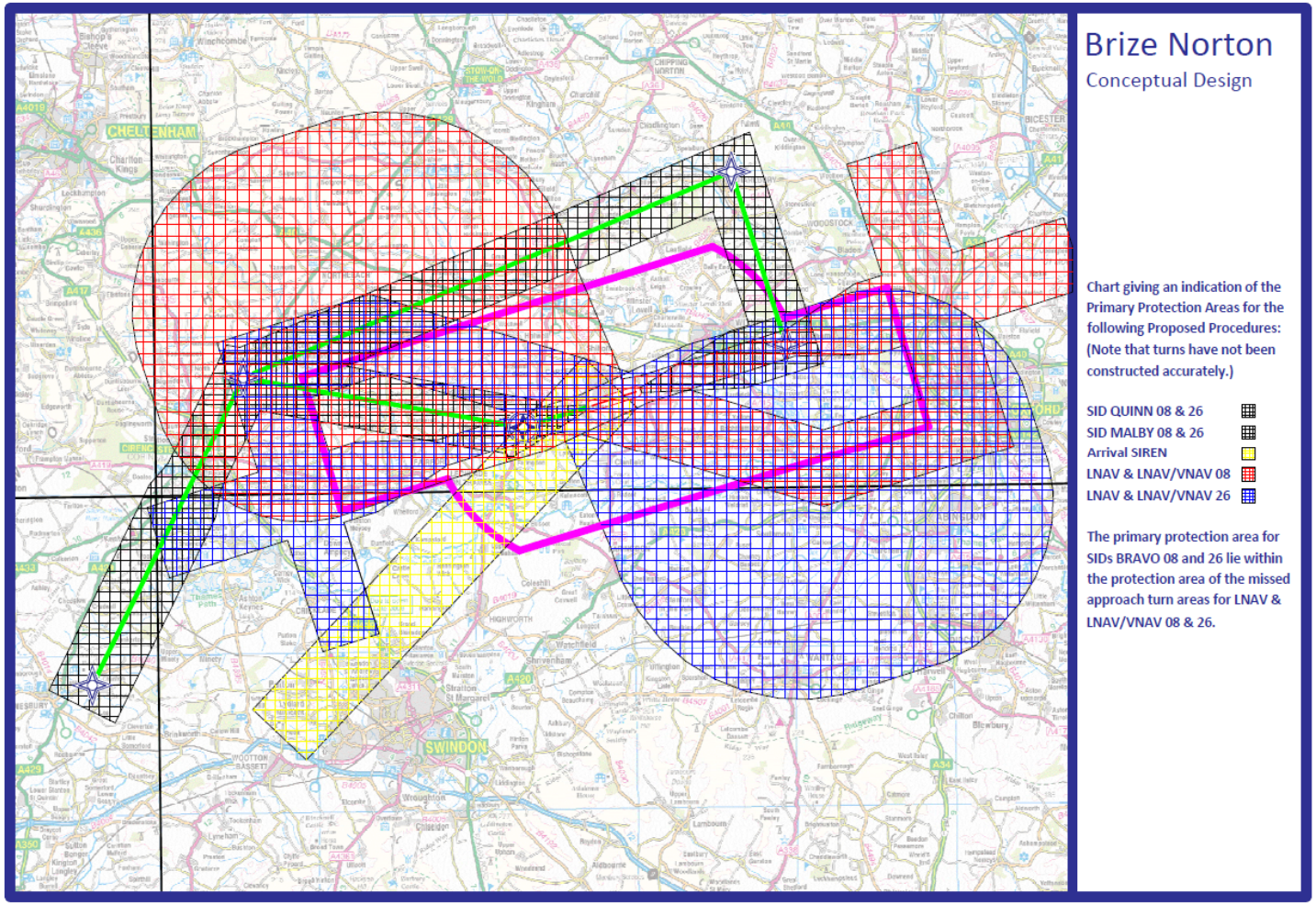
THR ELEVATION 248ft

ELEVATIONS
XXXX AMSL
(XXXX) (Above THR)



RECOMMENDED PROFILE: Vertical Path Angle 3.0° (LNAV 5.2%) 320ft/nm

RNAV Procedure Primary Containment



Impact on Aviation Stakeholders

- London Oxford Airport;
- Kemble;
- Gloucestershire Airport;
- Oxford AIAA Users;
- The Gliding and light GA Communities;
- MoD – initial draft under consideration by MUACT.

Mitigations

- Dedicated Zone control position – no logged refusals of service;
- Easily identifiable VRPs and CTR/CTA crossing routes will be established (through coordination with local flying clubs);
- Guide to airspace surrounding BZN will be updated;
- Engagement programmes will continue with local GA community, building on existing good relations;
- Letters of agreement will be devised with other aerodromes in close proximity to the proposed airspace.

Consultation

- Extensive list of stakeholders, both aviation and non-aviation, compiled;
- Aviation stakeholder engagement already underway to allow relevant parties to contribute to the design to minimise any adverse impacts:
  - S23 & LAMP;
  - London Oxford Airport;
  - Oxford AIAA Users Group;
  - MUACT.

Formal Consultation

- Consultation document will be submitted to the CAA for review ahead of publication on the BZN website;
- Dedicated email address for responses (hard copy submission details to also be provided);
- Briefings/meetings will be arranged with existing local resident groups and through local councils of those likely to experience the greatest change;
- A minimum of 12 weeks planned, with additional days for main holiday periods;
- Response to be provided to each consultee submission.

Formal Consultation

- Reminders and hasteners will be issued as appropriate in order to obtain as full a response as possible;
- Records of contacts with consultees and responses will be made in line with CAP725 Appendix C template;
- Consultation Feedback Report to be drafted on completion of consultation phase and published on-line.

- Well aware the consultation is likely to be challenging due to the location, volume of airspace involved and in the context of other ACPs currently underway.

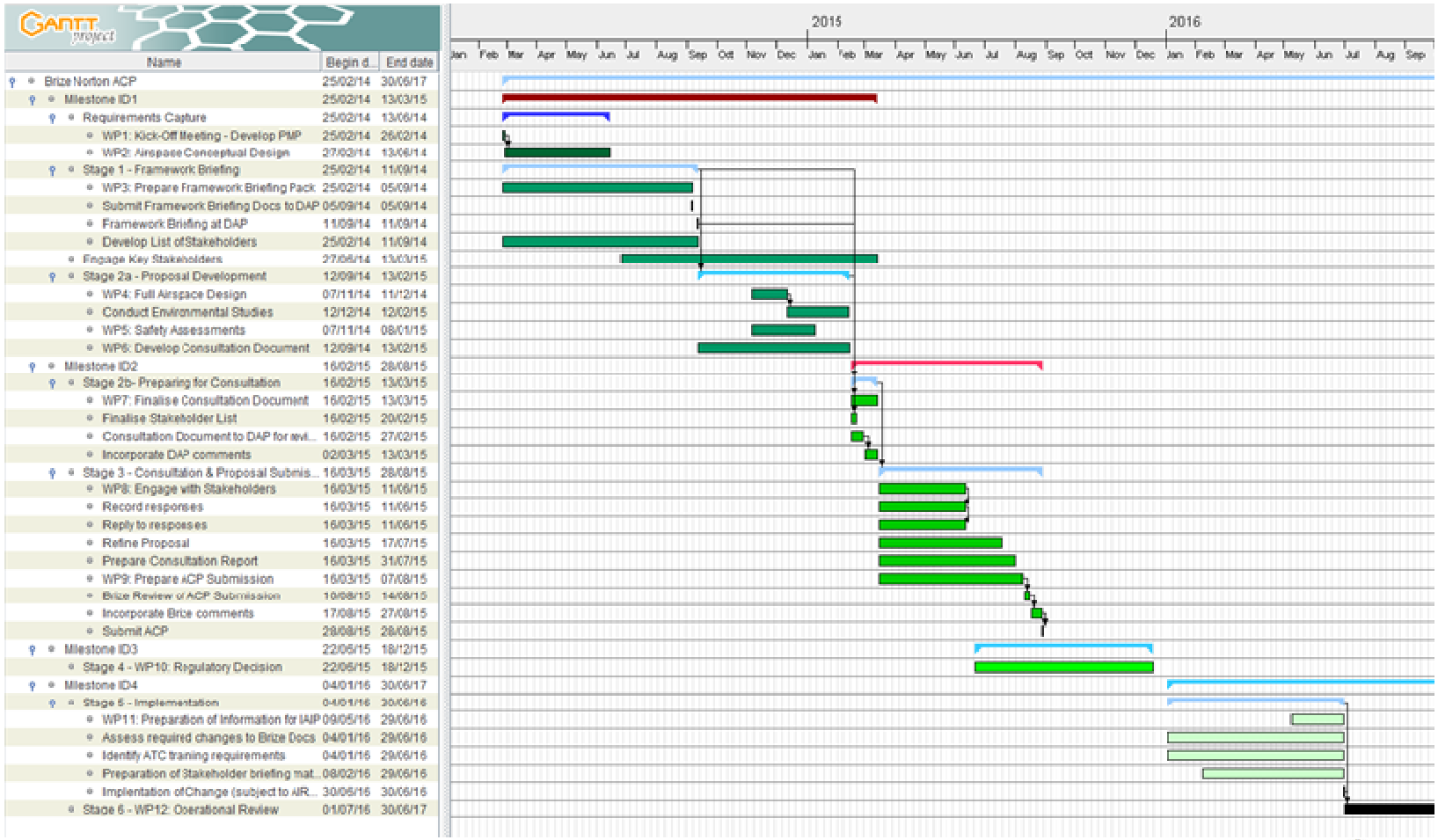
Environmental Aims and Assessments

- Noise:
  - Noise impact not expected to change significantly; acknowledged there may be some redistribution of noise;
  - Leq contours for an average summer 16-hour day will be produced, plotted from 57-72 dB(A) in 3 dB steps for:
    - Current, pre-implementation situation;
    - Post-implementation situation;
    - Forecast scenario, five years post-implementation;
  - SEL contours for noise level exposure values of 80 dB and 90 dB(A) will be produced for noisiest and most frequent BZN ac operating at night (2300-0700 local), for each new IFP.

Environmental Aims and Assessments

- CO_2 Emissions:
  - Reduction in emissions anticipated through direct routing;
  - Potential changes in fuel burn and CO_2 emissions resulting from the differences in track miles flown will be calculated based on data supplied by Eurocontrol BADA v3.11.
  - Based on traffic data fro the annual average 24-hour day for:
    - Current, pre-implementation situation;
    - Post-implementation situation;
    - Forecast scenario, five years post-implementation.
- Local Air Quality:
  - Not anticipated that Air Quality Standards will be breached;
  - Intent to “scope out” adverse effects.

Timelines



Name	Begin d...	End date
Brize Norton ACP	25/02/14	30/06/17
Milestone ID1	25/02/14	13/03/15
Requirements Capture	25/02/14	13/06/14
WP1: Kick-Off Meeting - Develop PMP	25/02/14	26/02/14
WP2: Airspace Conceptual Design	27/02/14	13/06/14
Stage 1 - Framework Briefing	25/02/14	11/09/14
WP3: Prepare Framework Briefing Pack	25/02/14	05/09/14
Submit Framework Briefing Docs to DAP	05/09/14	05/09/14
Framework Briefing at DAP	11/09/14	11/09/14
Develop List of Stakeholders	25/02/14	11/09/14
Engage Key Stakeholders	27/06/14	13/03/15
Stage 2a - Proposal Development	12/09/14	13/02/15
WP4: Full Airspace Design	07/11/14	11/12/14
Conduct Environmental Studies	12/12/14	12/02/15
WP5: Safety Assessments	07/11/14	08/01/15
WP6: Develop Consultation Document	12/09/14	13/02/15
Milestone ID2	16/02/15	28/08/15
Stage 2b- Preparing for Consultation	16/02/15	13/03/15
WP7: Finalise Consultation Document	16/02/15	13/03/15
Finalise Stakeholder List	16/02/15	20/02/15
Consultation Document to DAP for revi...	16/02/15	27/02/15
Incorporate DAP comments	02/03/15	13/03/15
Stage 3 - Consultation & Proposal Submis...	16/03/15	28/08/15
WP8: Engage with Stakeholders	16/03/15	11/06/15
Record responses	16/03/15	11/06/15
Reply to respoeses	16/03/15	11/06/15
Refine Proposal	16/03/15	17/07/15
Prepare Consultation Report	16/03/15	31/07/15
WP9: Prepare ACP Submission	16/03/15	07/08/15
Brize Review of ACP Submission	10/08/15	14/08/15
Incorporate Brize comments	17/08/15	27/08/15
Submit ACP	28/08/15	28/08/15
Milestone ID3	22/06/15	18/12/15
Stage 4 - WP10: Regulatory Decision	22/06/15	18/12/15
Milestone ID4	04/01/16	30/06/17
Stage 5 - Implementation	04/01/16	30/06/16
WP11: Preparation of Information for IAIP	09/05/16	29/06/16
Assess required changes to Brize Docs	04/01/16	29/06/16
Identify ATC traning requirements	04/01/16	29/06/16
Preparation of Stakeholder briefing mat...	08/02/16	29/06/16
Implentation of Change (subject to AIR...	30/05/16	30/06/16
Stage 6 - WP12: Operational Review	01/07/16	30/06/17

Any Questions?