AIRSPACE

CYRRUS
Enabling Excellence in Aviation

Aviation Consultancy at its best.

Specialist aviation support to help solve problems for airports and airport developers

www.cyrrus.co.uk

AIRSPACE

Airspace is a key facet of the services Cyrrus provides. Cyrrus staff between them have considerable experience as civil and military air traffic controllers, airspace planners and designers. As such, Cyrrus occupies an enviable position in the aviation consultancy market, recognised and respected for our honest and comprehensive advice and guidance.

Our airspace related services include:

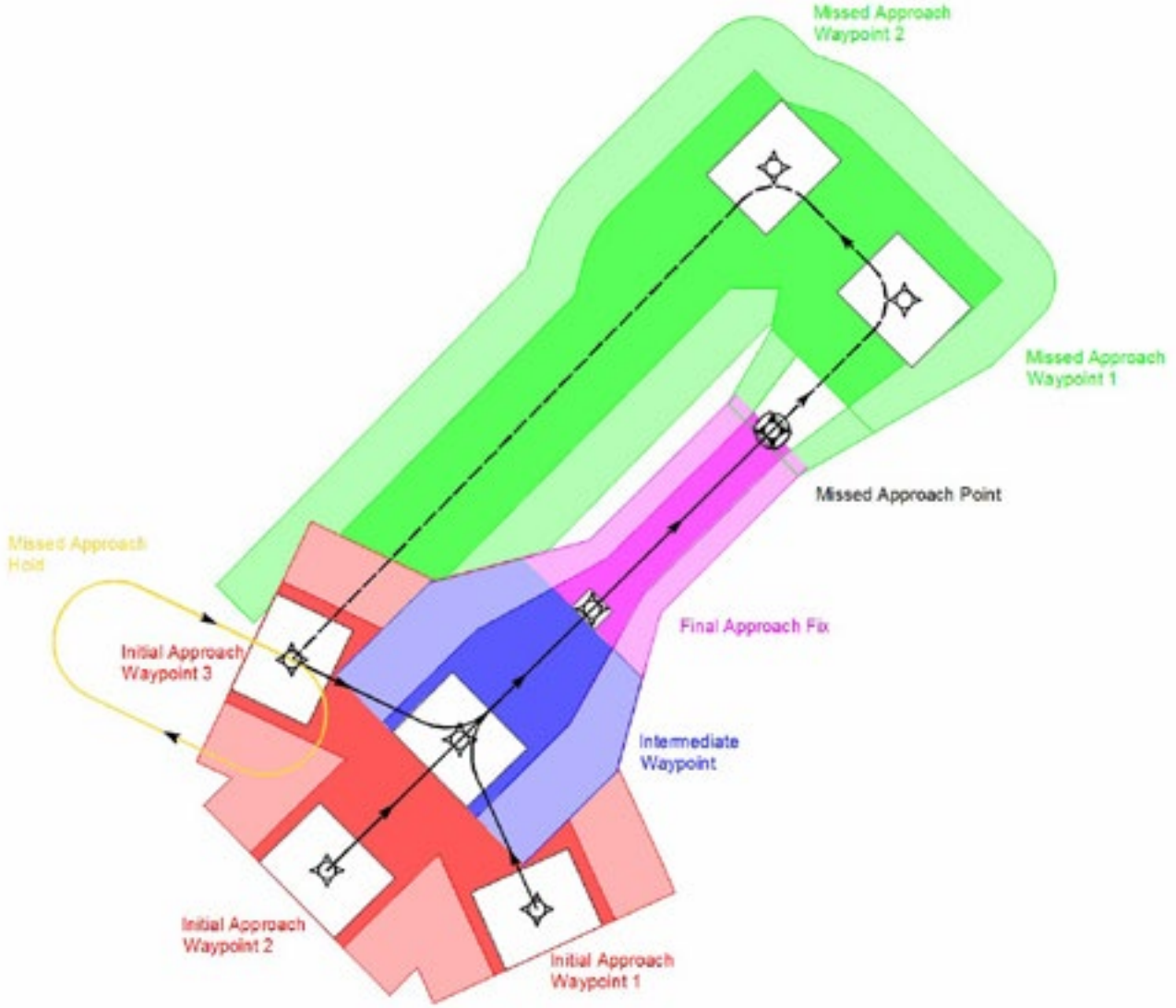
- Instrument Flight Procedure (IFP) Design;
- Airspace Change Process Management;
- Runway Optimisation;
- Operational Procedure Review;
- Safety Assessment and Audit.

PROCEDURE DESIGN SERVICES

Cyrrus holds accreditation as a accredited Procedure Design Organisation with both the UK Civil Aviation Authority (CAA) and the Irish Aviation Authority (IAA). As such, our highly trained and innovative designers can undertake a full range of design services for a wide variety of procedures.

Cyrrus offers support to clients throughout the whole cycle for introduction of new IFPs. From the assessment of the operational requirements and survey of fleet equipage, through the design process and ultimately flight validation, coding, publication and implementation. Cyrrus has the experience to ensure the entire process runs smoothly and effectively.

In addition to the initial design and delivery, Cyrrus offers safeguarding and review services of existing procedures, through controlled, quality assured and regulatory approved processes.

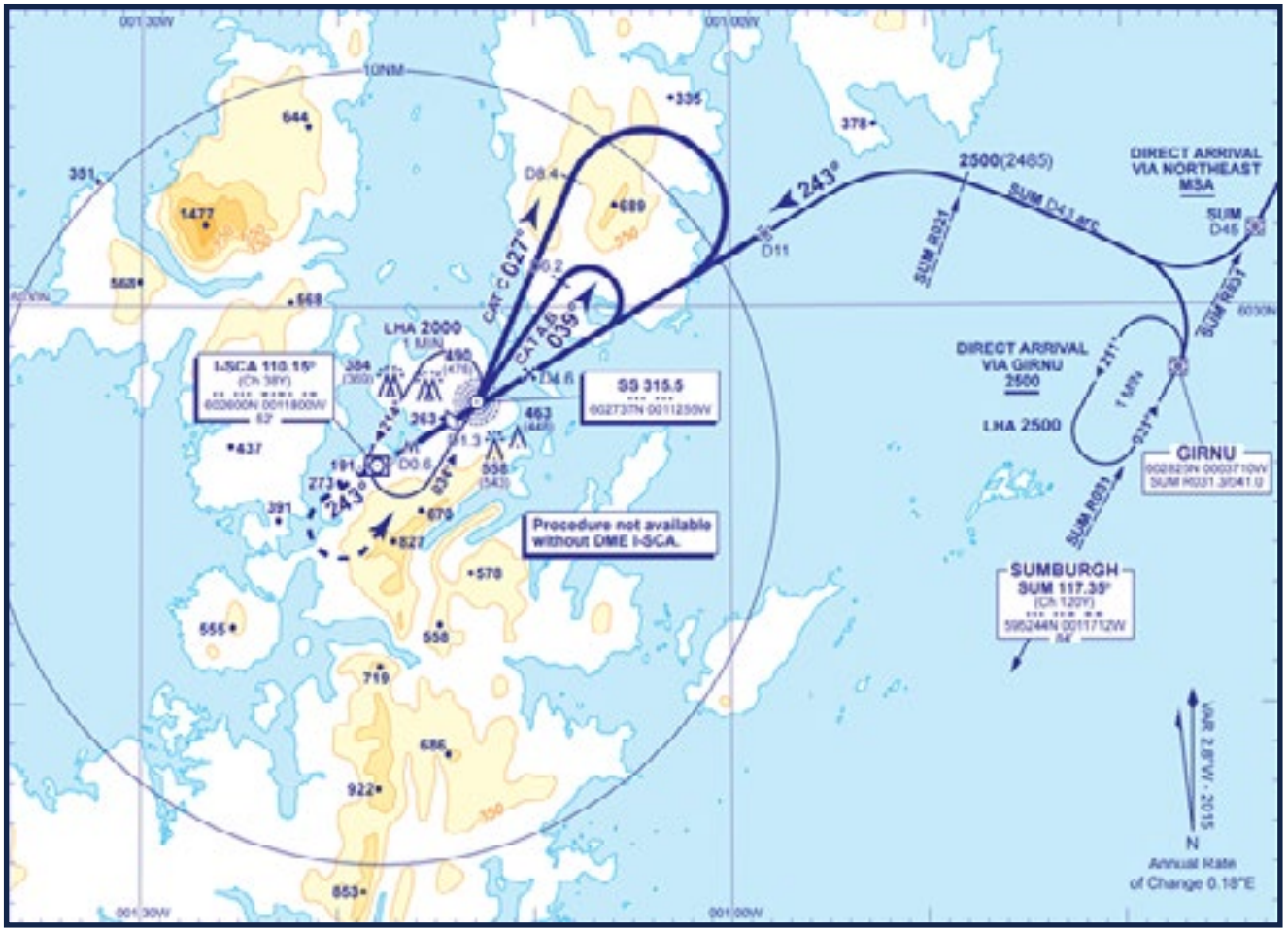


PROCEDURE DESIGN SERVICES

Conventional

Whilst the introduction of new conventional procedures in the age of Performance Based Navigation (PBN) is unlikely to offer an attractive proposition for most airports, Cyrrus designers can modify existing conventional procedures as ground based infrastructure changes dictate.

In addition, we offer a full review service including a design package that will satisfy the National Supervisory Authority's requirements under International Civil Aviation Organisation (ICAO) instruction that all flight procedures are reviewed as a minimum at least every five years.



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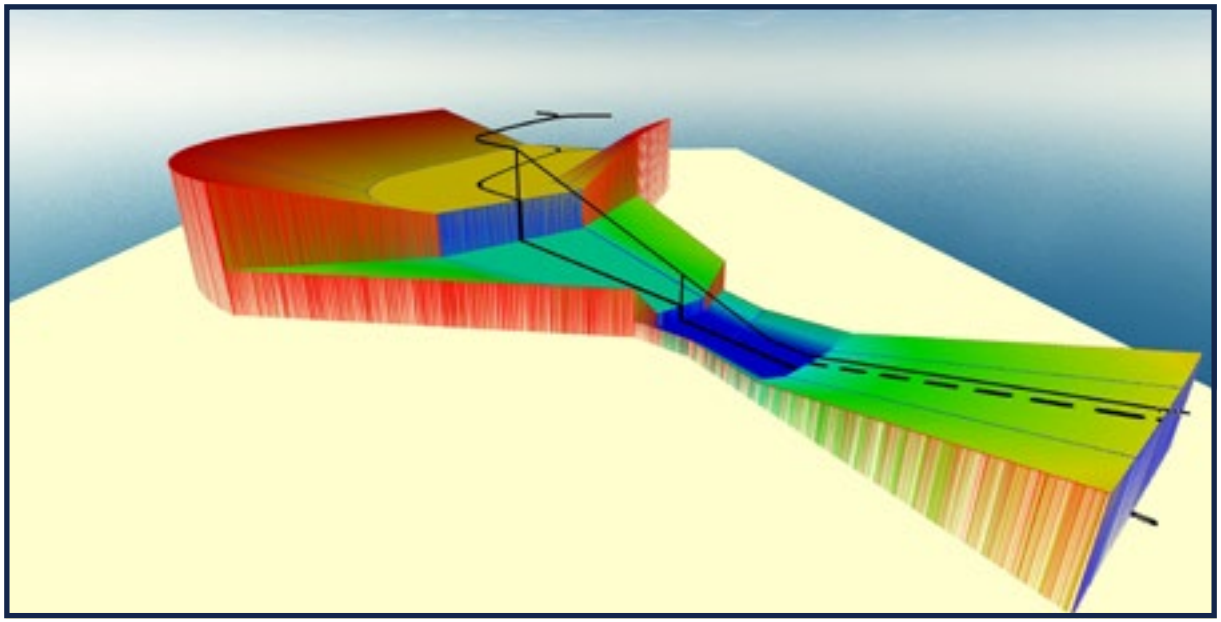
PROCEDURE DESIGN SERVICES

Performance-Based Navigation (PBN)

Global Navigation Satellite Systems (GNSS) meet the needs of airports and operators without being reliant upon expensive and, on occasions, unreliable ground based radio navigation aids. For both approach and departure procedures, Cyrrus utilises the latest PBN design techniques to ensure new procedures are cost-effective and tailor-made to satisfy operational requirements of airports.

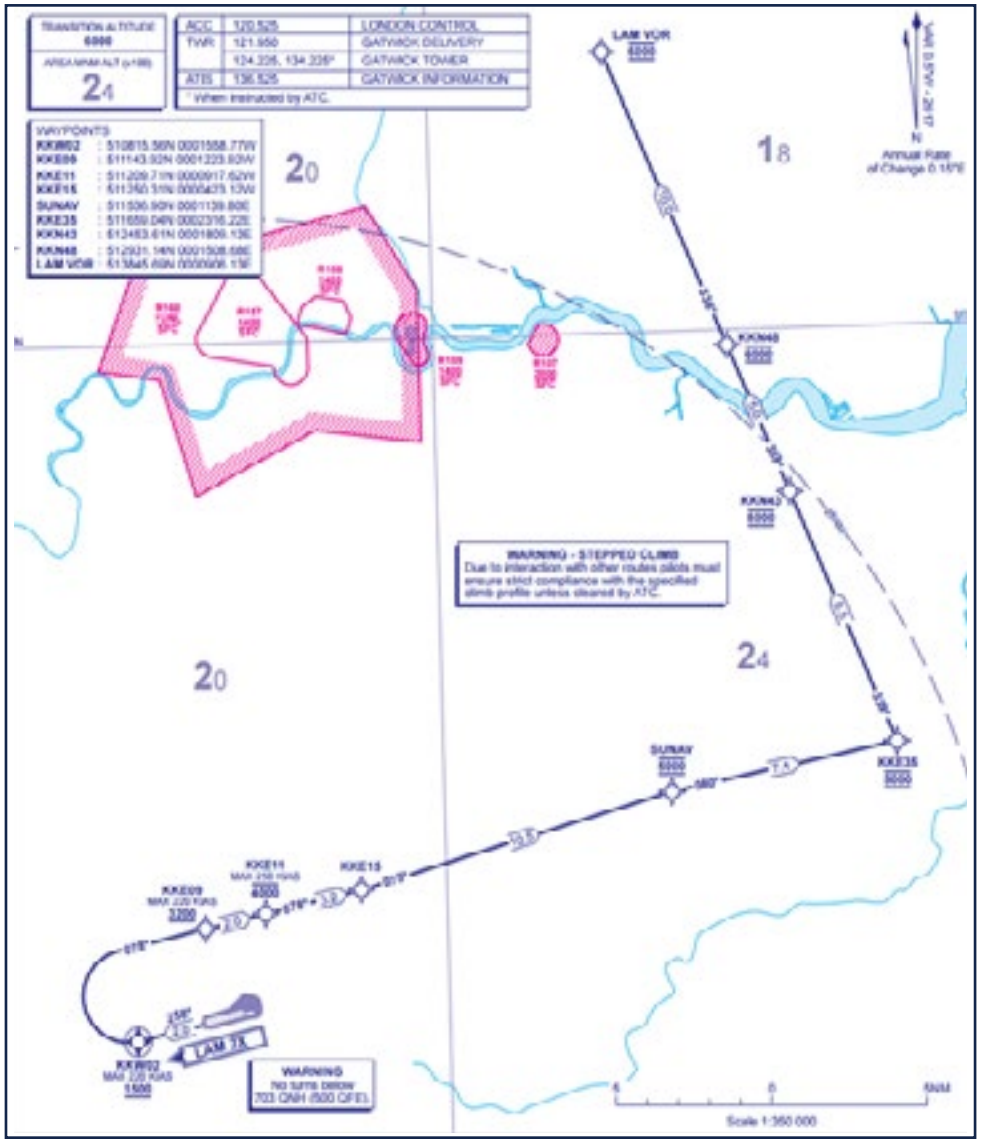


During the transition to PBN, there are naturally operators who are not yet ready to adopt new technology; Cyrrus can support both the airport and these operators in designing Omni-Directional Departures (ODDs) or RNAV procedures based on conventional ground-based navigational aids. Cyrrus retains the capability to design and deliver periodic review of conventional IFPs should that still be required.

PROCEDURE DESIGN SERVICES

Standard Instrument Departure

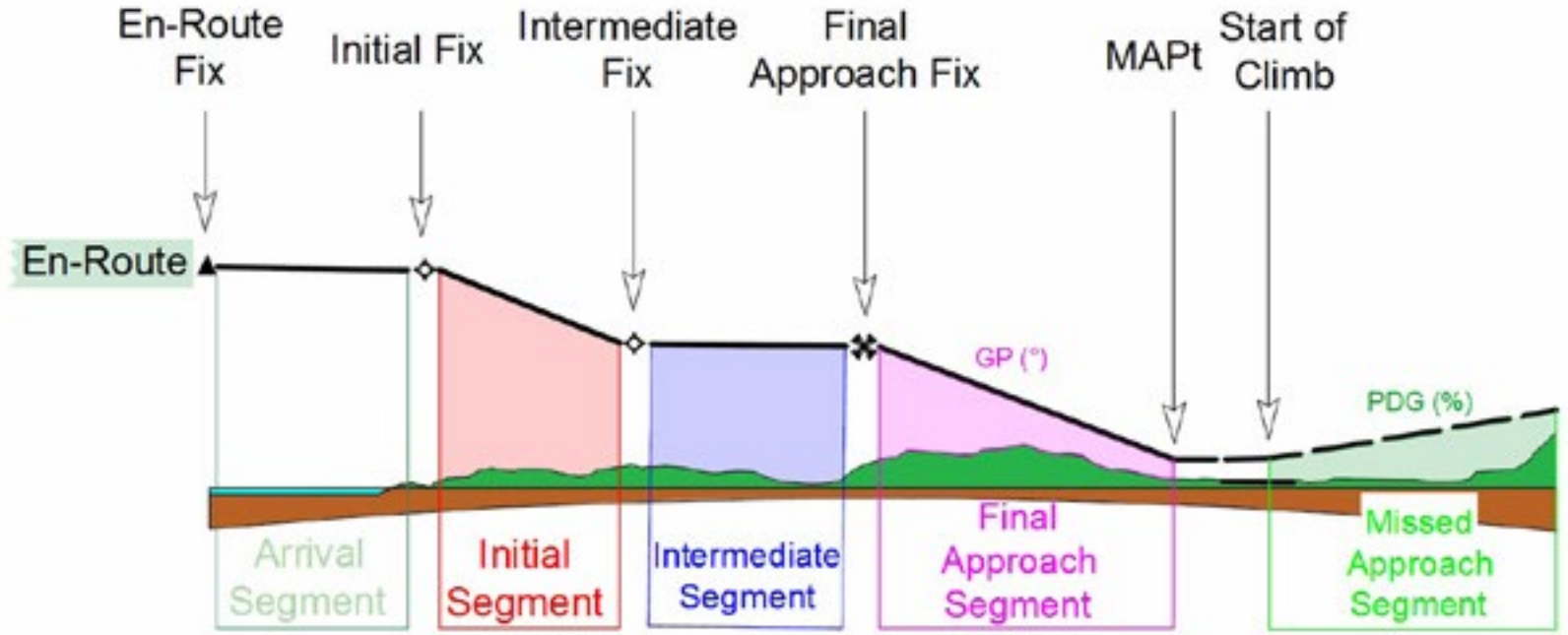
Cyrrus has experience in designing all types of Standard Instrument Departures (SIDs) including the design and publication of RNAV SIDs that, on occasion, simply formalise the RNAV overlays of conventional procedures currently being flown. Cyrrus has also provided innovative solutions to several airports that had a requirement to introduce RNAV departures that follow existing Noise Preferential Routes and conventional routings. Through the intelligent use of the Path-Terminator coding, these routes have been designed to offer both dispersion and concentration of tracks in accordance with individual client needs.



PROCEDURE DESIGN SERVICES

Standard Terminal Arrival Route

Both Standard Terminal Arrival Routes (STARS) and Approach Transitions can be designed by Cyrrus. Although in the UK all STARS are designed by NATS PDG Limited, an arm of the en-route Air Navigation Service Provider (ANSP), Cyrrus provides support to airports to ensure their terminal procedures work seamlessly and effectively at the interface with the en-route.



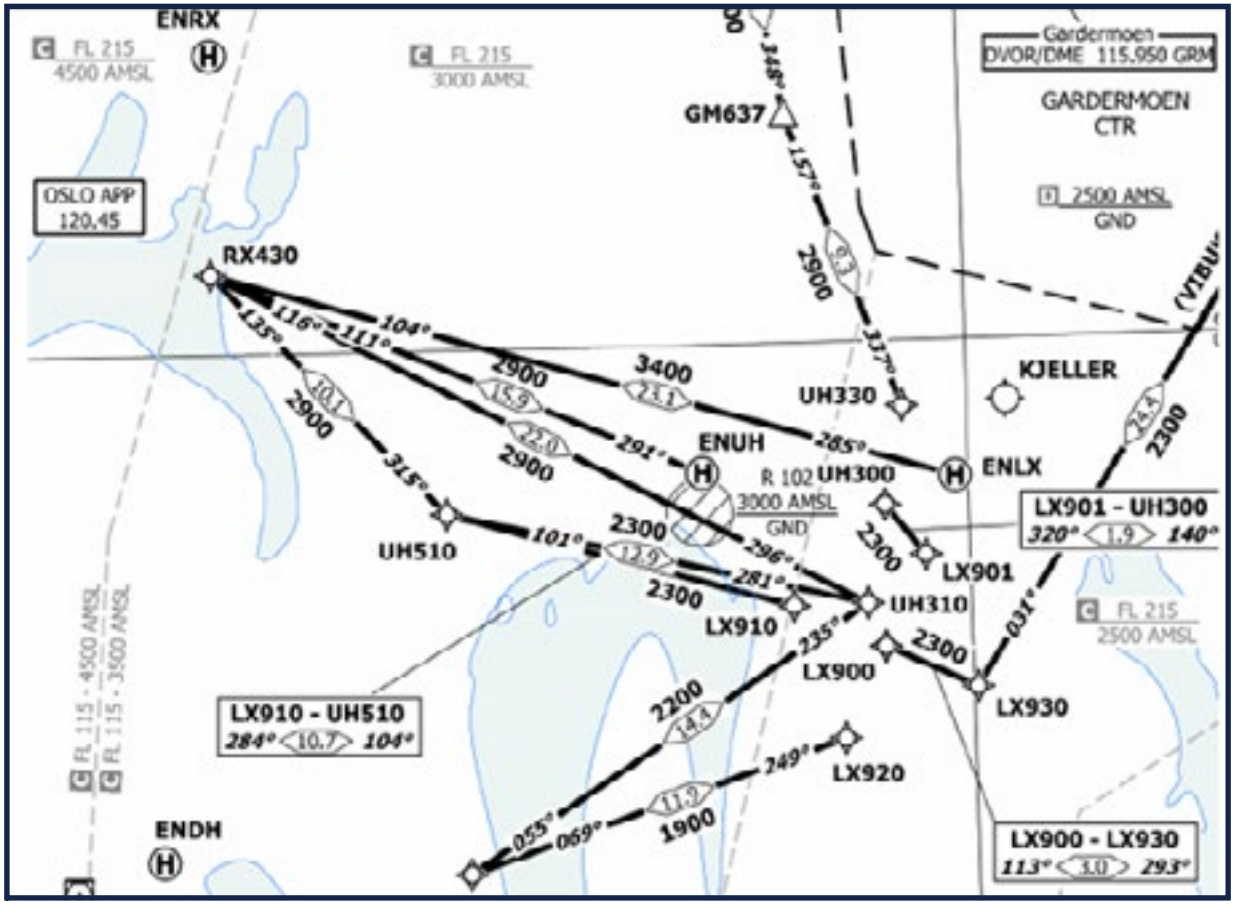
Instrument Approach Procedure

Whether an approach is an LNAV only, LPV (SBAS), LPV200, LNAV/VNAV (Baro-VNAV) or an ILS, Cyrrus has the design experience to ensure an airports' needs are met and the optimum suite (or array) of approaches suitable for the operation are implemented. There are many published examples of Cyrrus designed approaches, both precision and non-precision, currently being flown.

PROCEDURE DESIGN SERVICES

Point in Space (PinS)

As more helicopter airframes are equipped with, or upgraded to, modern cockpit avionics, RNAV procedures offer all weather flight operations to rotary fleet operators. Cyrrus offers a design service that delivers Instrument Flight Rules flight procedures for helicopters.

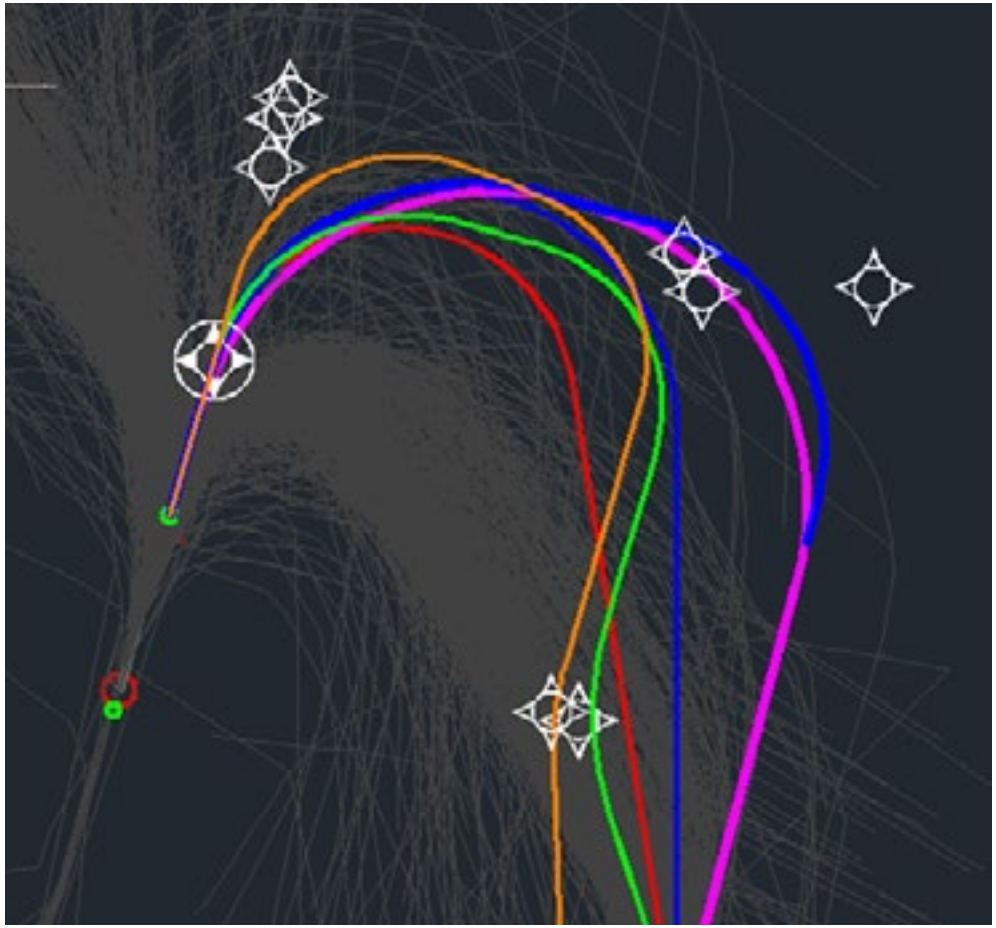


AIRSPACE CHANGE

Cyrrus has an enviable record in successfully delivering Airspace Change projects. Our staff have acquired significant knowledge and experience from operational controlling, the management of projects and previous experience within local and international regulatory bodies. This invaluable and broad insight of the industry enables us to foresee potential issues before they manifest to ensure a smooth delivery.

Design

There are a number of competing factors that make-up the resulting operational requirements for airspace design and whilst safety is always paramount, the environment and community perspectives, particularly on the effects of aviation noise, are an increasingly important aspect that must be considered from the outset. Cyrrus will develop 'Options' for airspace configuration and flight procedures, in accordance with agreed 'Design Principles' that duly consider of all of these competing factors. A balance will be sought to safely realise environmental improvements, maximise efficiency and optimise capacity. The knowledge of our Air Traffic Management Consultants, with international experience of controlling and airspace management in both the military and civilian domains, combined with the experience of our Approved Procedure Designers (APD) ensures the production of optimum and balanced airspace and procedure solutions.



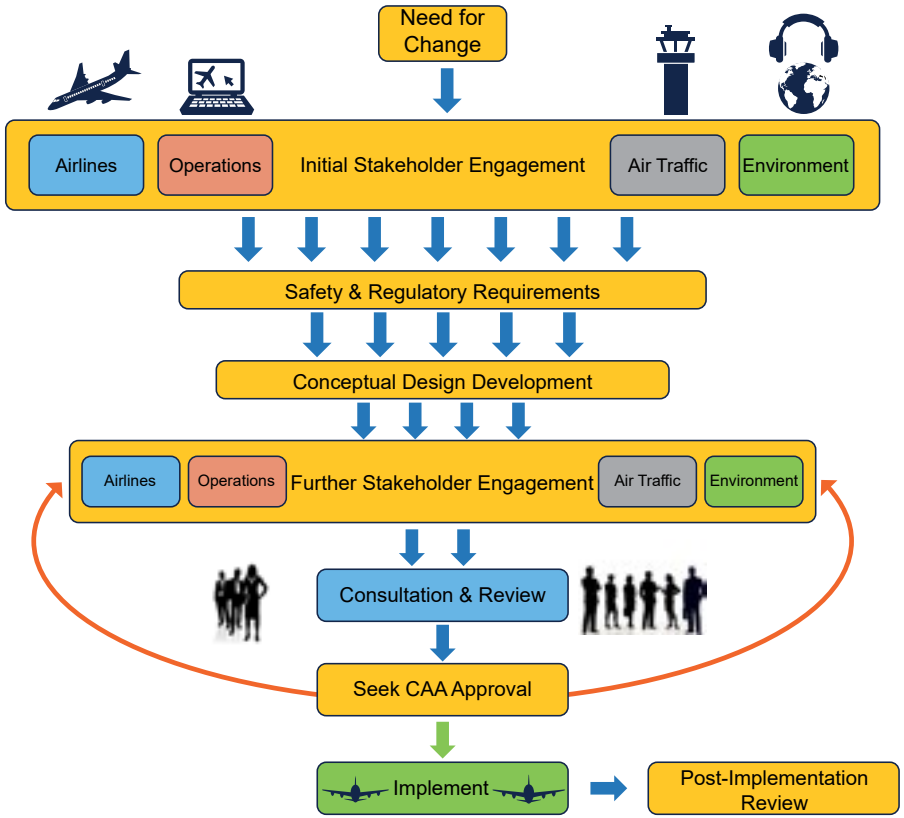
AIRSPACE CHANGE

Consultation

Consultation 'best practice' is evolving with an increasing emphasis on broad public consultation as opposed to limited stakeholder engagement. The perception of transparency is critical as airports must demonstrate that they have truly engaged with their surrounding communities on both problem and solution identification without having pre-determined outcomes. Government Departments and Regulatory Bodies are being forced to respond to a legitimate expectation by communities being consulted. It may be said that Airspace Change Processes have lacked transparency; that is why they are evolving. Cyrrus remains actively engaged with contemporary thinking on consultation, is developing its processes and, has the knowledge to guide your airport through this potential minefield.

Implementation

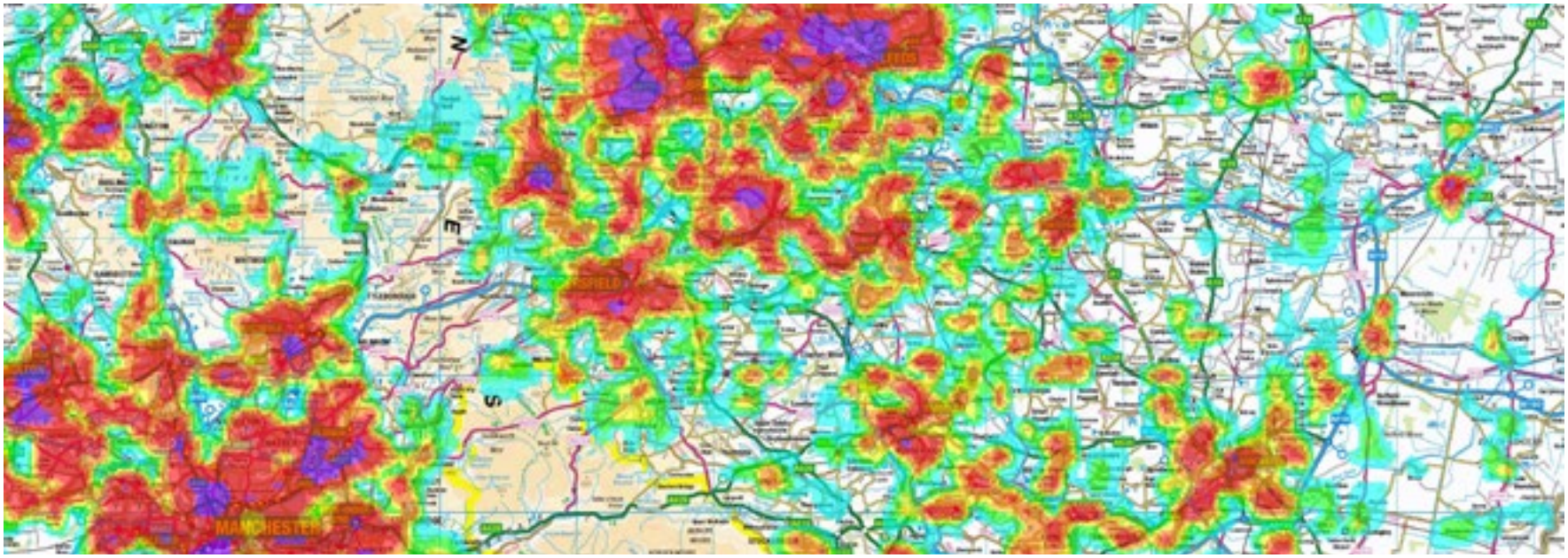
Once your proposal has successfully obtained Regulatory Approval, Cyrrus can assist in managing the change as you transition through to implementation. Whether this be through Flight Validation, the briefing and training of staff, advising on a phased or managed transition, or simply the submission of new procedure charting for publication, Cyrrus can shoulder this burden for you.



AIRSPACE CHANGE

Heat Map

Emerging government policy on environmental matters requires that airports give greater consideration to the effects of air traffic movements on the local populace. Where changes to air routes below 7000 feet are proposed in the vicinity of an airport there are several well-documented technical assessments to be undertaken to evaluate the potential impact of noise. However, it is also recommended that sponsors of a change complete a population head count which might influence the positioning of the 'nominal track' of the air route. Cyrrus has developed the "2017 POP-CHART" (based on traceable source data) to provide a graphic output which readily demonstrates the distribution of people. The process also accommodates the requirements set out in other CAA policy associated with route design. Useful transparent data to enable airport management to engage with interested stakeholders and reach an optimum solution for its air operation.



WHY CHOOSE CYRRUS

Cyrrus – Your Airspace Specialist

- Comprehensive understanding of airspace design and the constraints on airport operations.
- UK CAA and IAA accredited Approved Procedure Design organisation.
- 100% success rate in delivering Airspace Change Process projects.
- Significant experience in runway capacity and efficiency studies.
- Innovative Heat Map creation service.

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