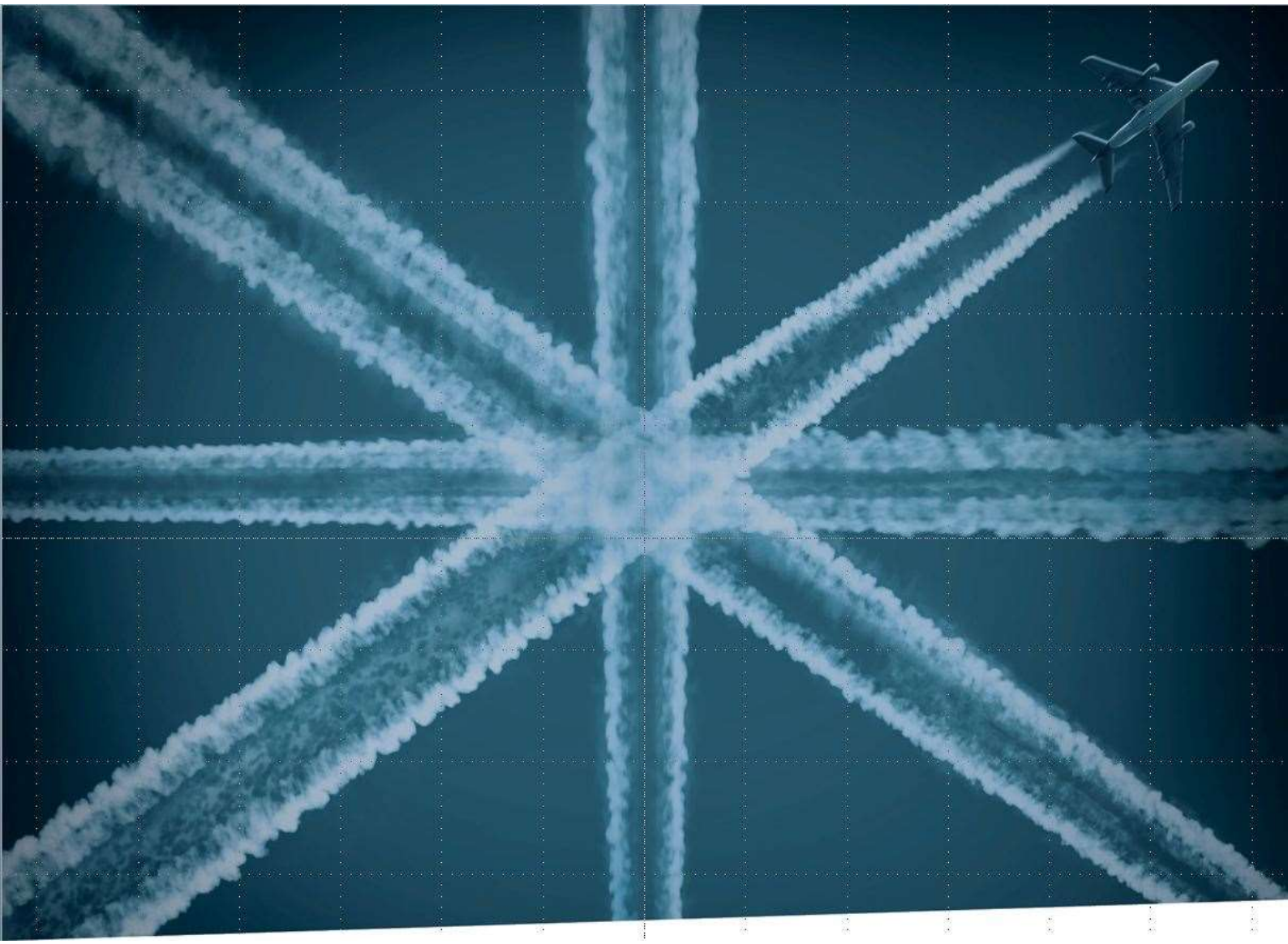
Introducing RNP1 (RF) SIDs

Post Implementation Review Report

London Stansted Airport – January 2018



Contents

1. CAA Airspace Change Proposal Decision

London Stansted received notification from the Civil Aviation Authority's (CAA) Safety and Regulation Group (SARG) in May 2017 that the requirements of the Airspace Change Proposal (ACP) submitted by London Stansted Airport on 3rd February 2016, to adopt the trialled RNP1 (RF) SID's, had been approved. The ACP detailed the stated objectives as follows,

- To reduce the number of people directly over-flown by departing aircraft by improving aircraft navigational accuracy immediately after take-off.
- Introduce Required Navigation Performance (RNP)1 Standard Instrument Departures (SIDs) in addition to the existing conventional SIDS already in use.

2. Adoption of RNP1 (RF) Procedures

Since the ACP was submitted and throughout the trial period, Stansted Airport has continued to encourage all operators to adopt the RNP1(RF) procedures to maximise the benefits of the Performance Based Navigation. Shortly before the full publication of the procedures in the August 2017 AIRAC cycle, London Stansted's largest operator, Ryanair, announced that all their remaining regulatory requirements had all been approved by their state regulator, the Irish Aviation Authority. Shortly after this, Ryanair could flight plan and fly the RNP1 (RF) SID's for all their departing aircraft which has led to a significant increase in the overall percentage of RNP1operations as opposed to the conventional departure procedures flown.

3. Post Implementation Review Requirements

The Airspace Change Proposal submitted by London Stansted Airport, as the change sponsor was undertaken through the CAP725 process and satisfied the CAA's Conventional SID Replication Policy. The CAA, in their decision letter, have highlighted a non-exhaustive list of post implementation review requirements in Annex A of the CAP1547 decision letter that must be met by the change sponsor, as detailed below.

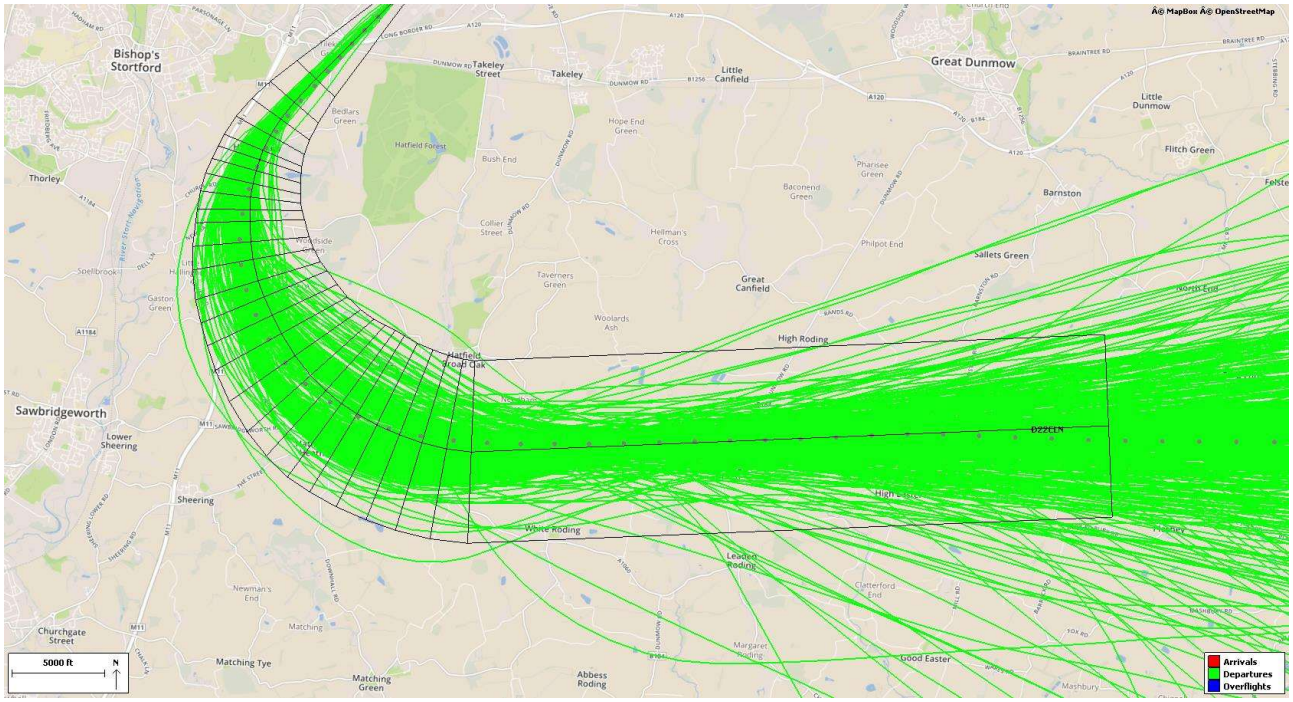
- Make available to CAA, Safety and Airspace Regulation Group, Airspace Regulation, track diagrams that enable a comparison between pre-implementation and post-implementation traffic patterns for aircraft up to 7,000ft. The diagrams should portray both traffic dispersion and extent of any concentration (i.e. a density plot of traffic). Data to be available by Post Implementation Report (PIR) commencement date, planned for 18th January 2018.

- Make available to CAA, Safety and Airspace Regulation Group, Airspace Regulation figures for usage of both RNP1 SIDs, and comparison to the usage of the remaining conventional SIDs. Data to be available by Post Implementation Report (PIR) commencement date, planned for 18th January 2018.

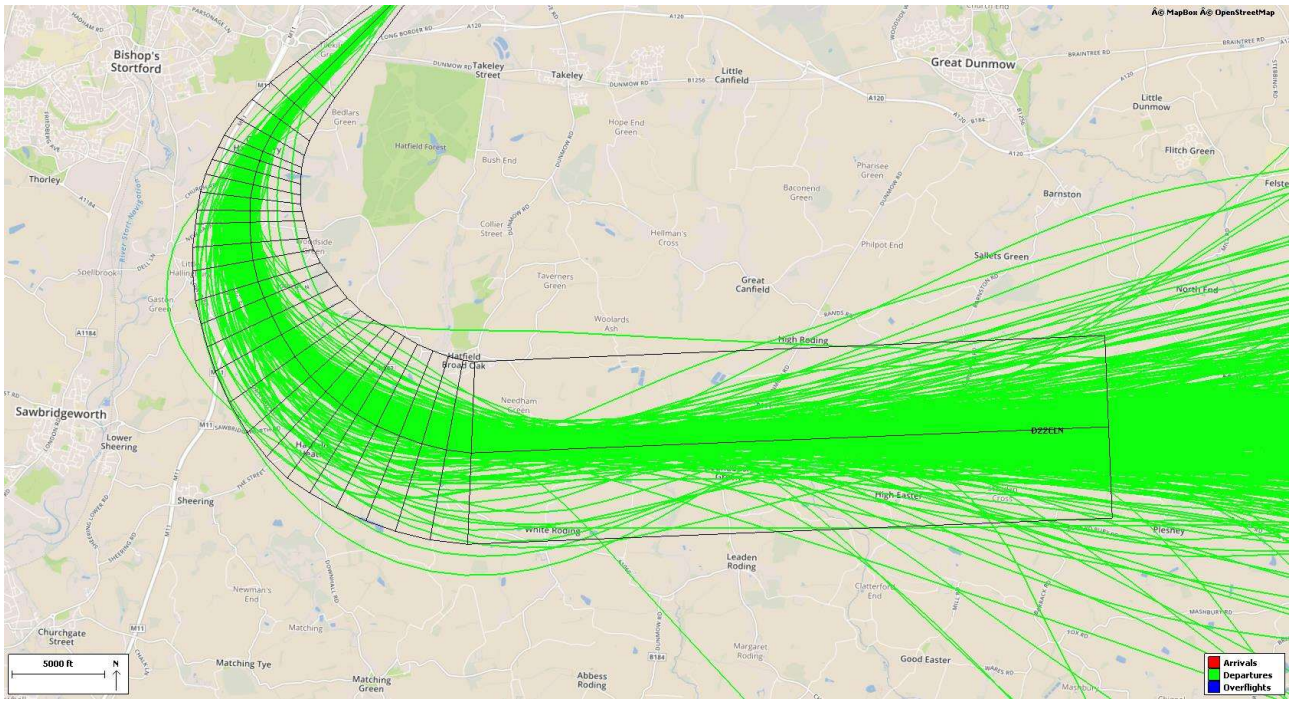
4. Track Diagrams for Runway 22 Clacton NPR

A full set of track diagrams are provided below. The images are generated on one weeks and a typical days departure tracks in October 2016 and October 2017 for direct comparison. The first image on each page is 2016 and the directly comparable image of 2017 is immediately below. The multicoloured images are formatted the same, with 2016 above 2017and coded into height bands.

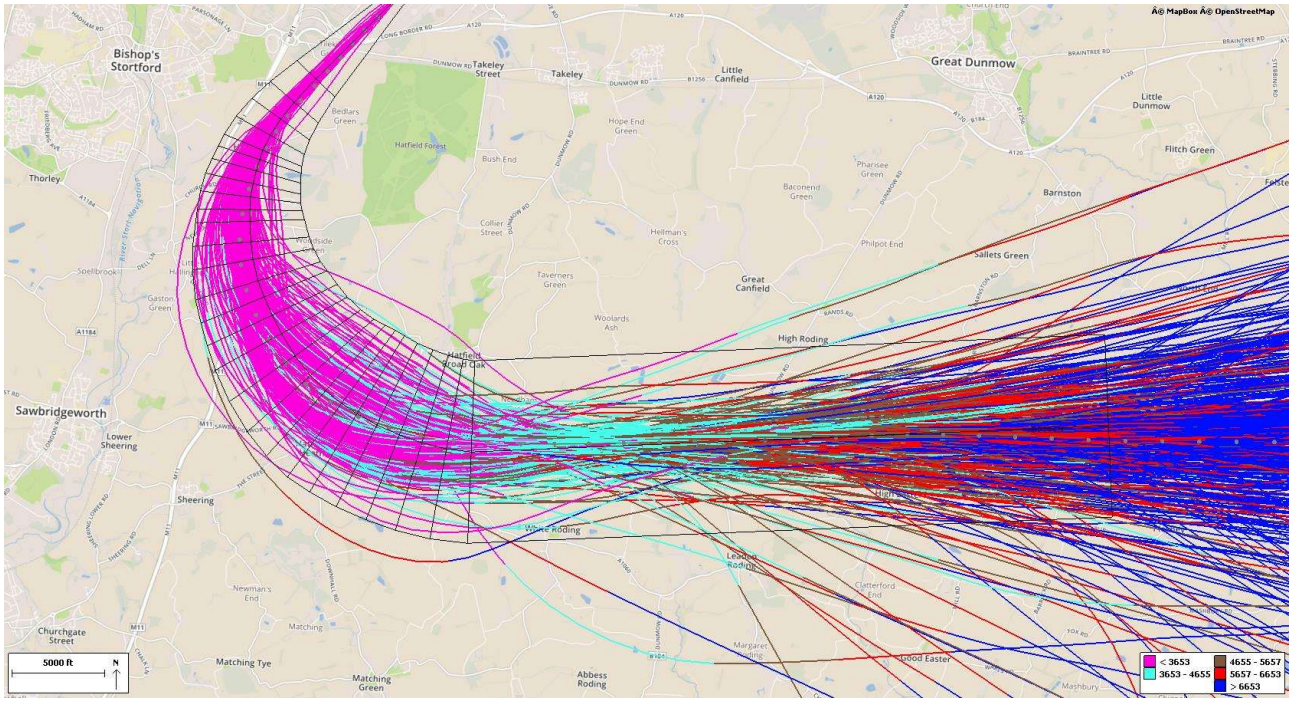
October 2016 all departures 1 week



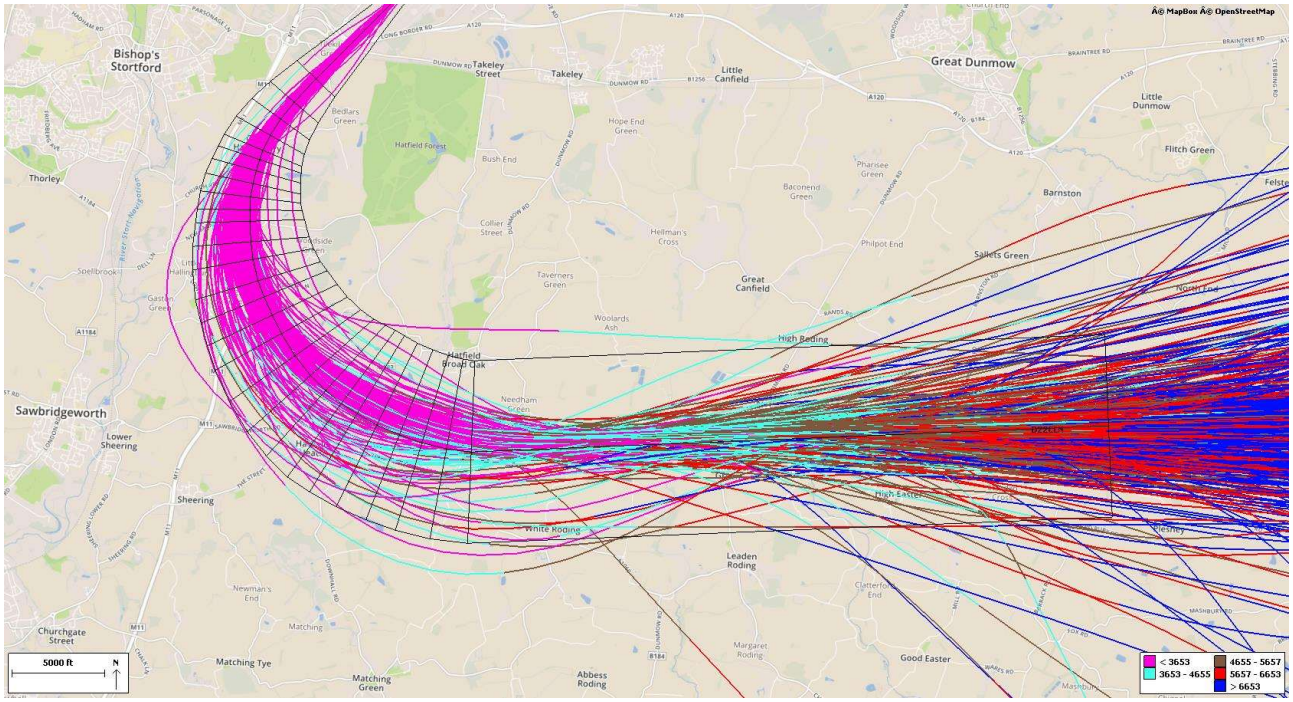
October 2017 all departures 1 week



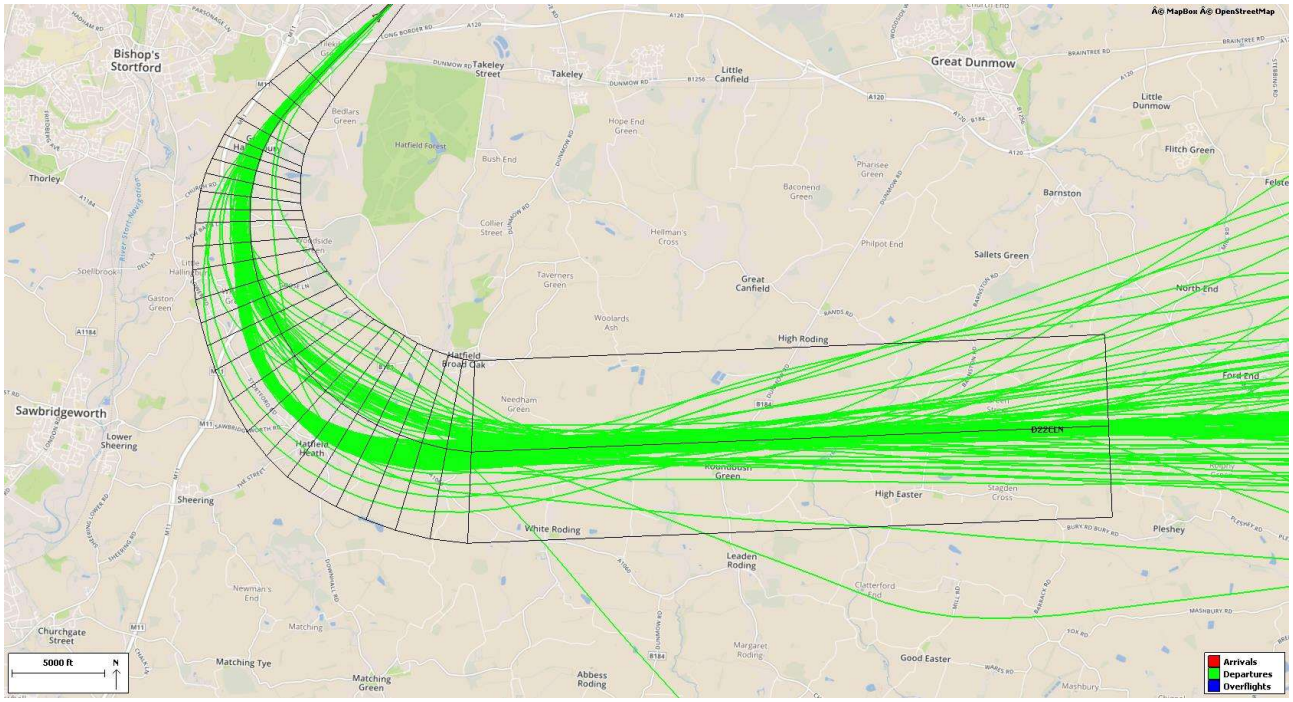
October 2016 all departures 1 week by height



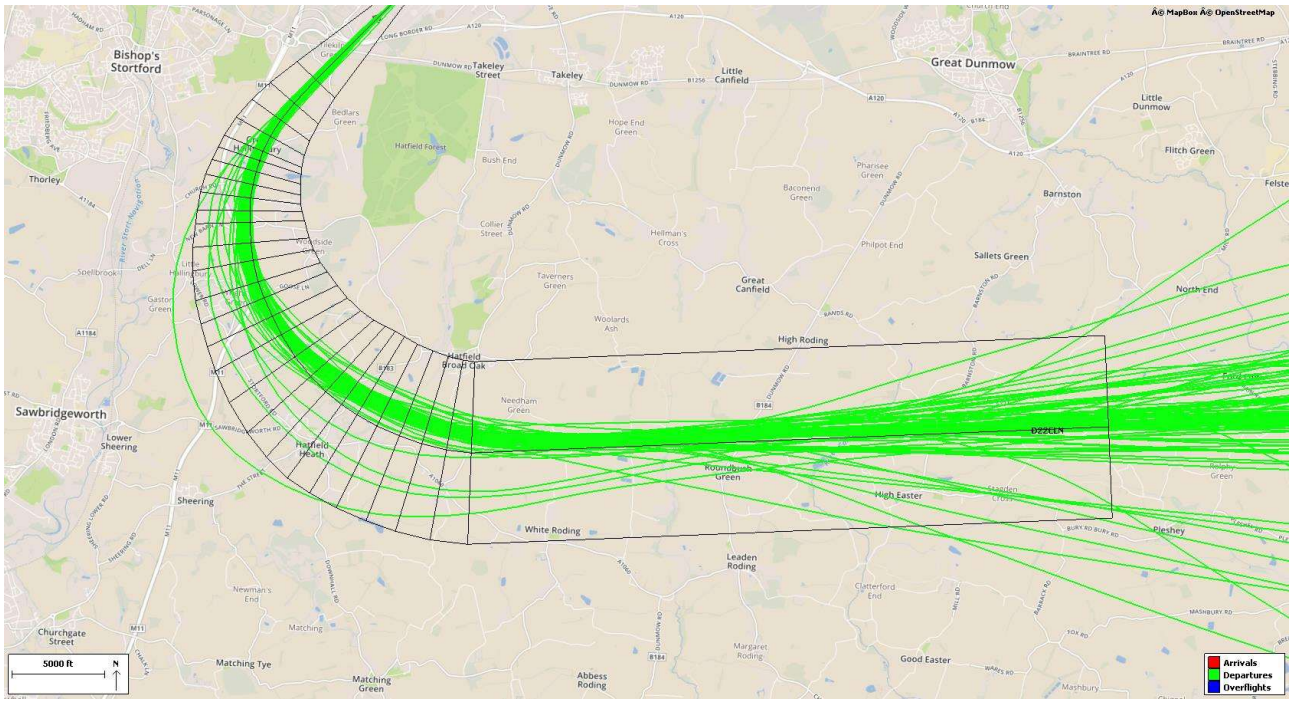
October 2017 all departures 1 week by height



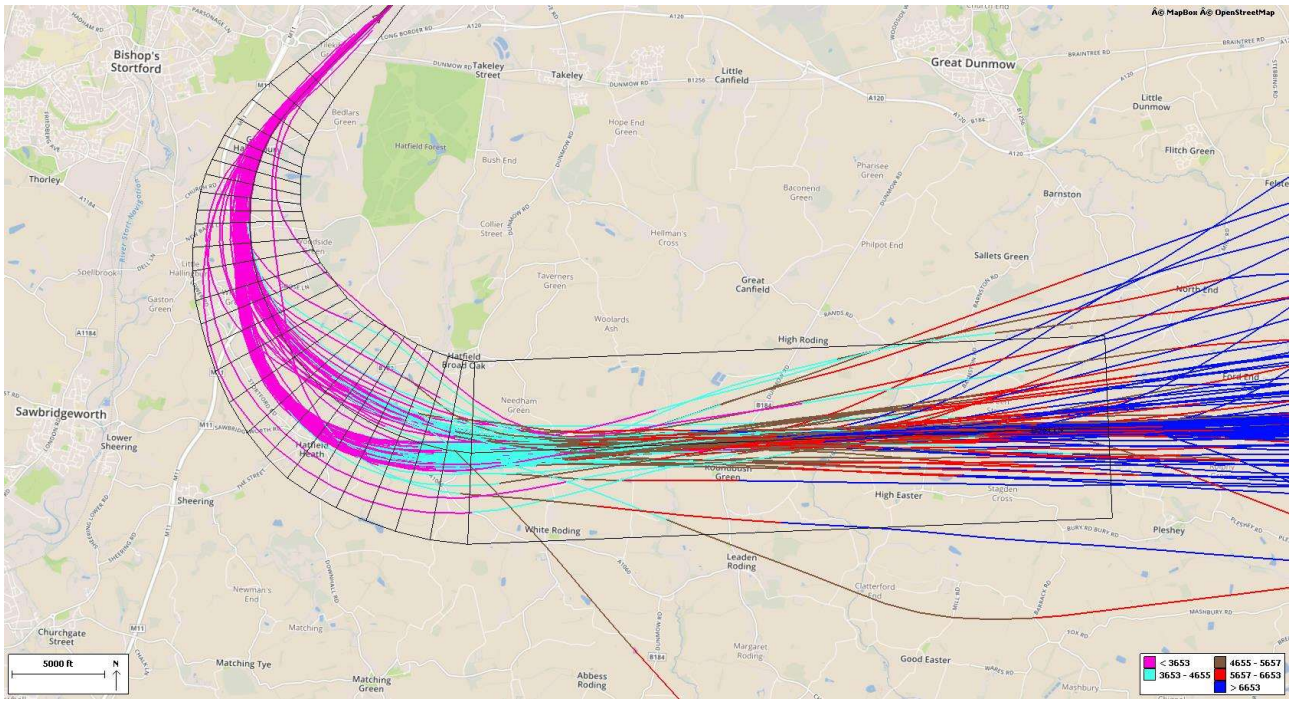
October 2016 all departures 1 day



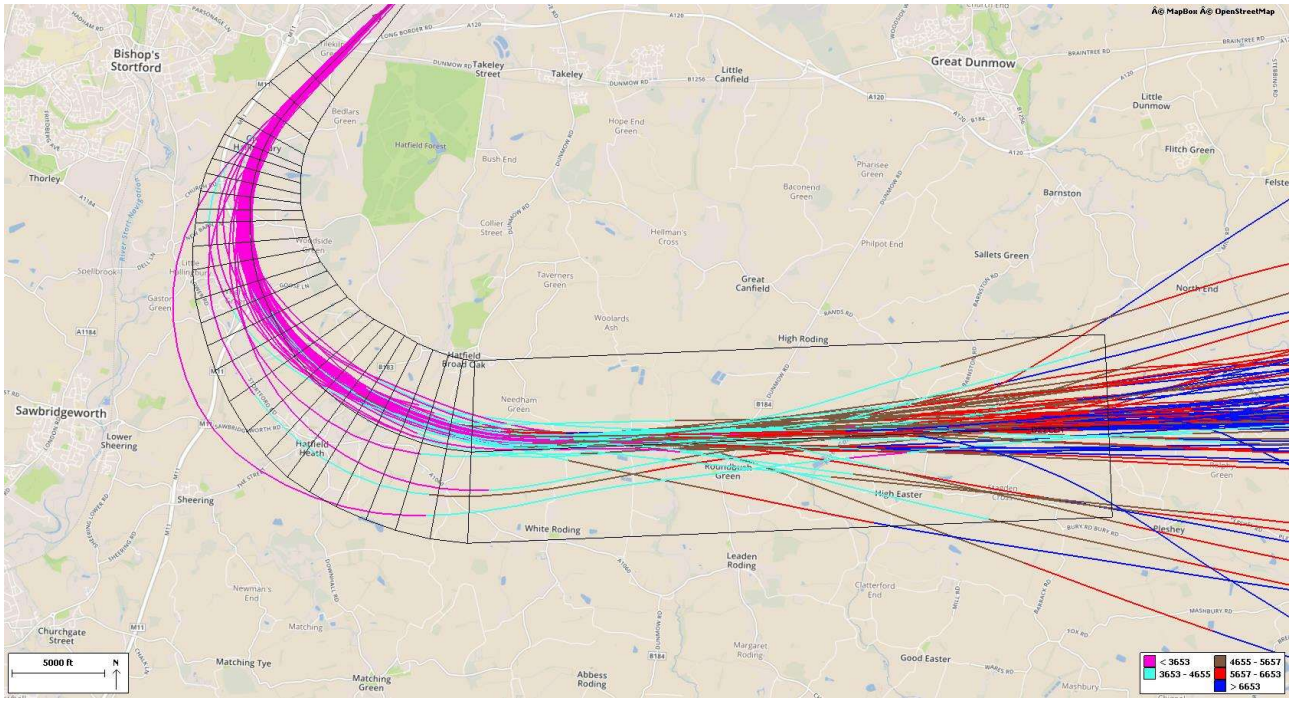
October 2017 all departures 1 day



October 2016 all departures 1 day by height

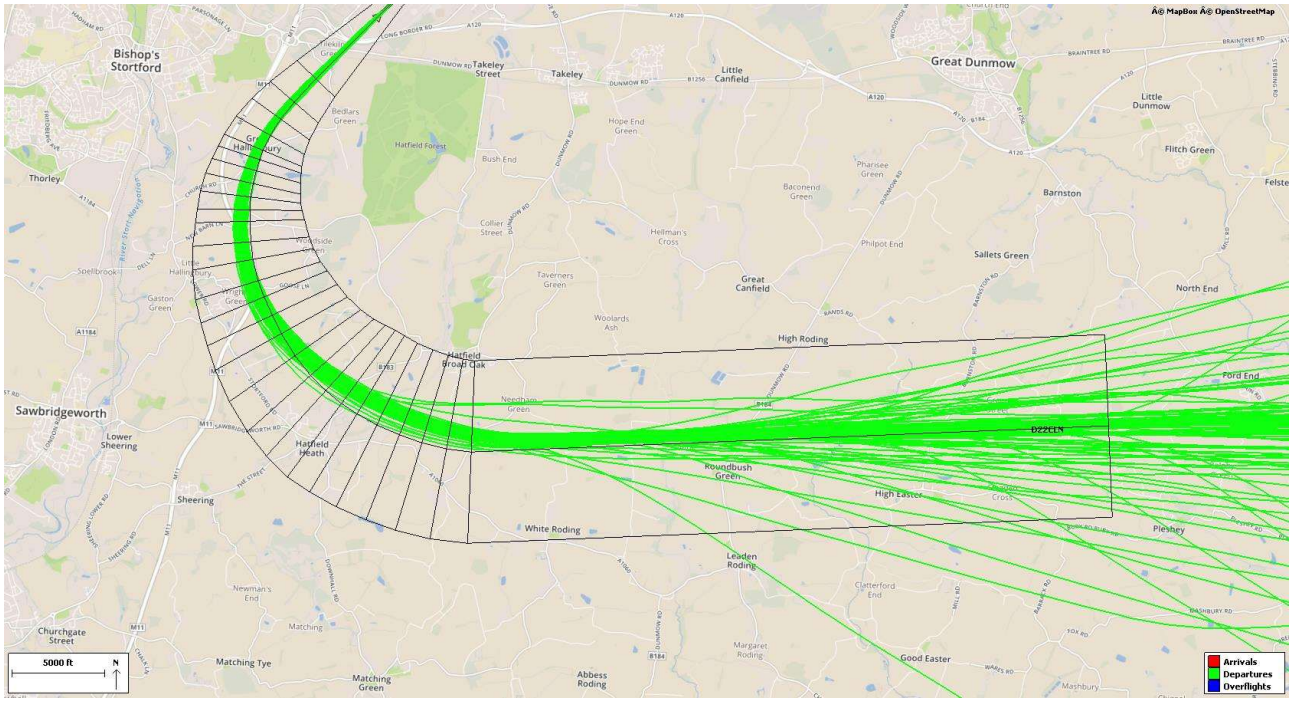


October 2017 all departures 1 day by height

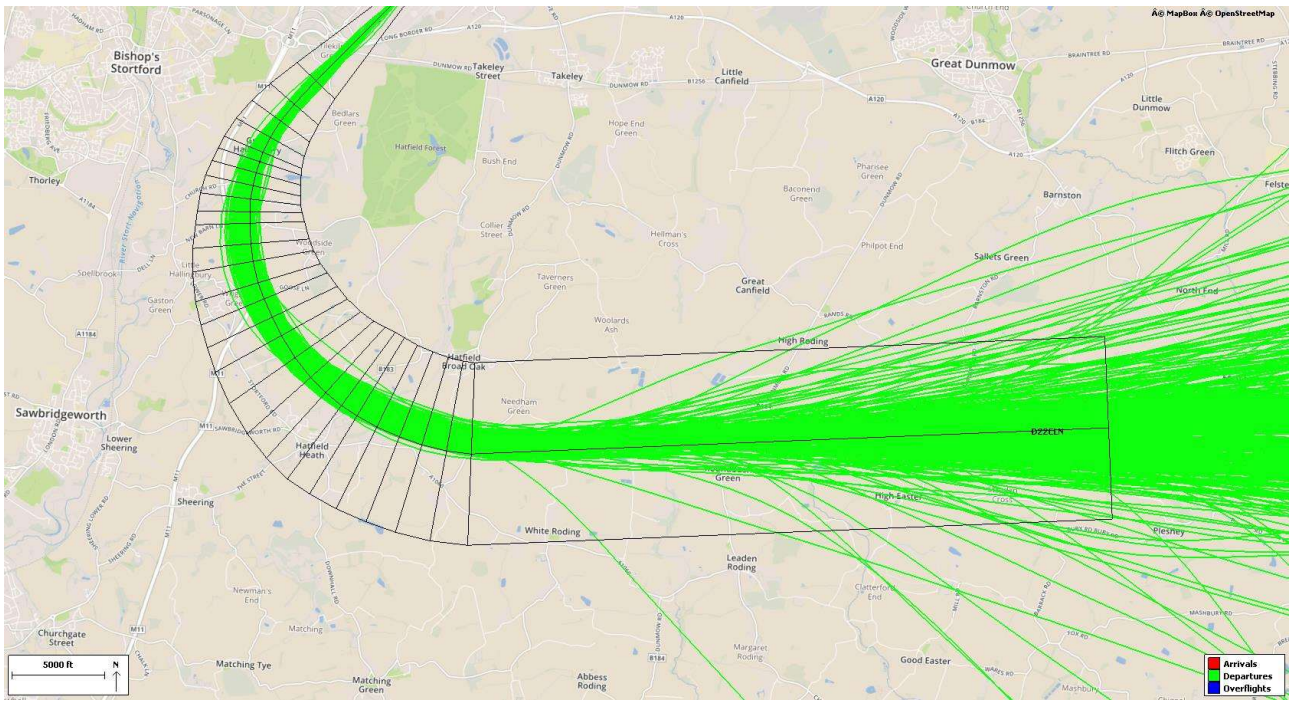


The following images are formatted identically to the previous images, but only show the RNP1 departures flying the CLN1E SID. The numbers of RNP1 departures by month are shown later in section 6 of this report.

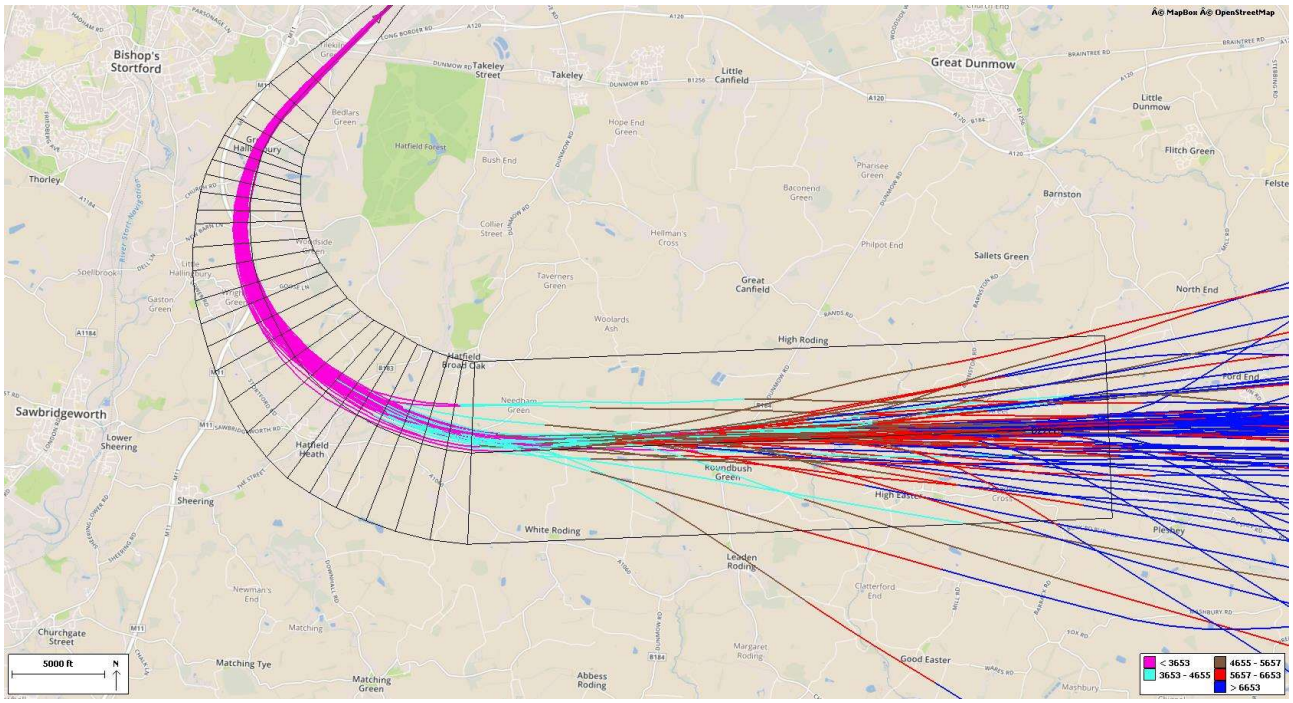
October 2016 RNP1 only 1 week



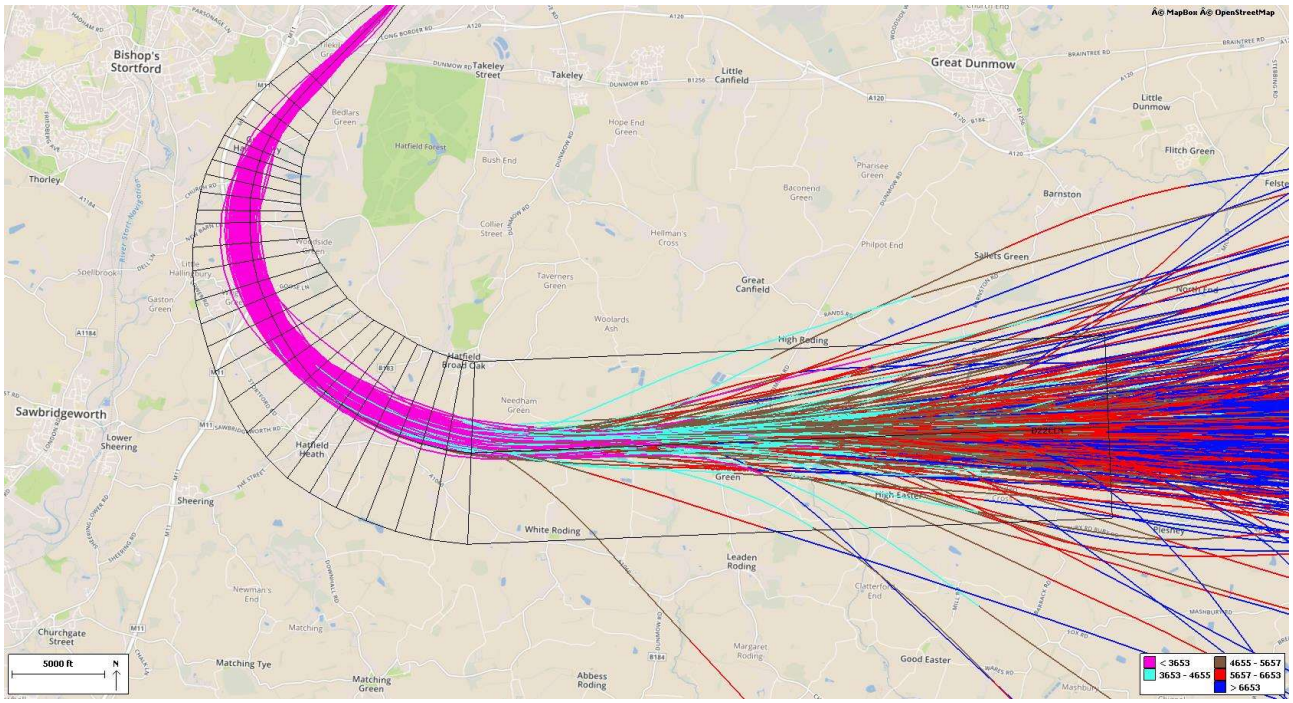
October 2017 RNP1 only 1 week



October 2016 RNP1 only by height 1 week

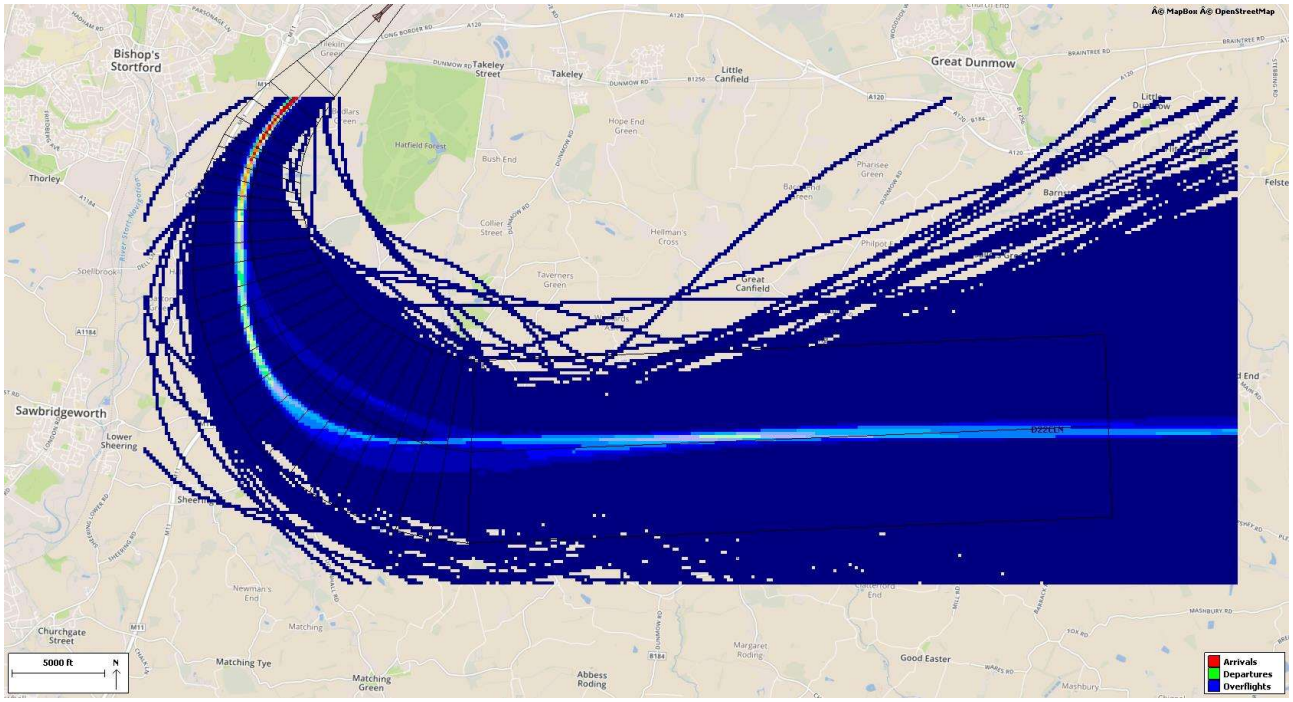


October 2017 RNP1 only by height 1week

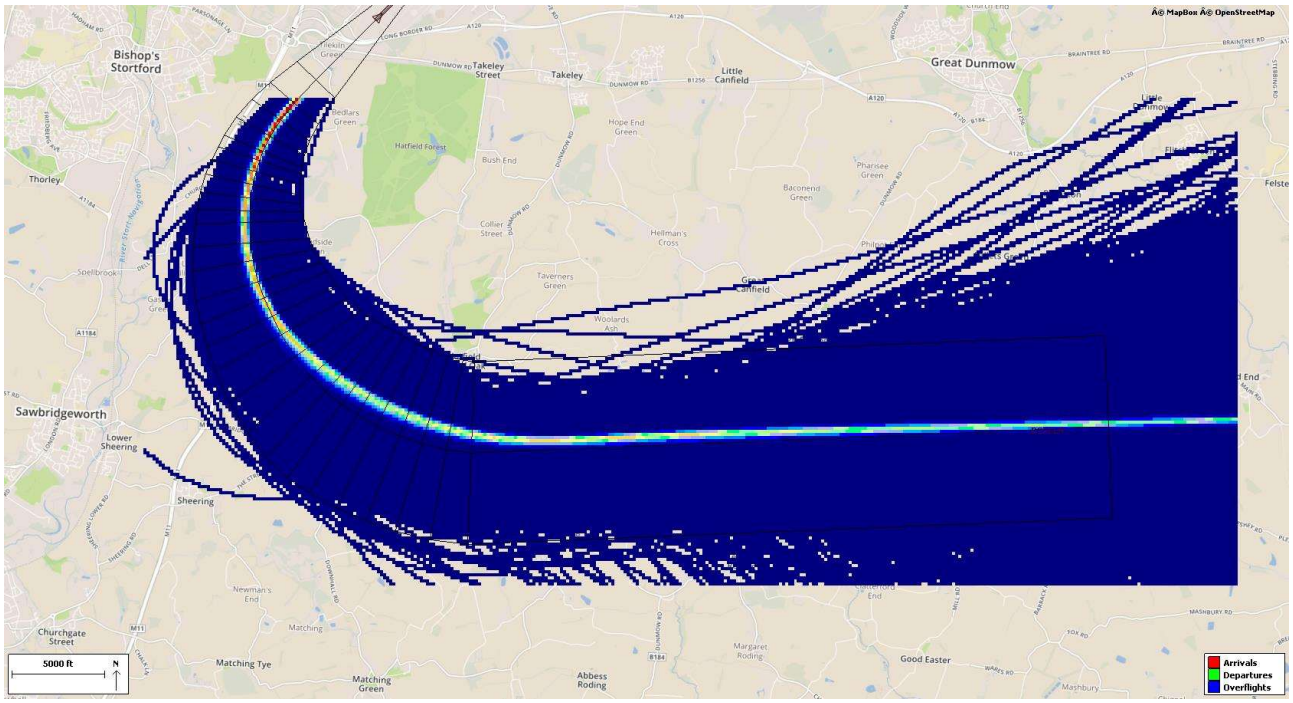


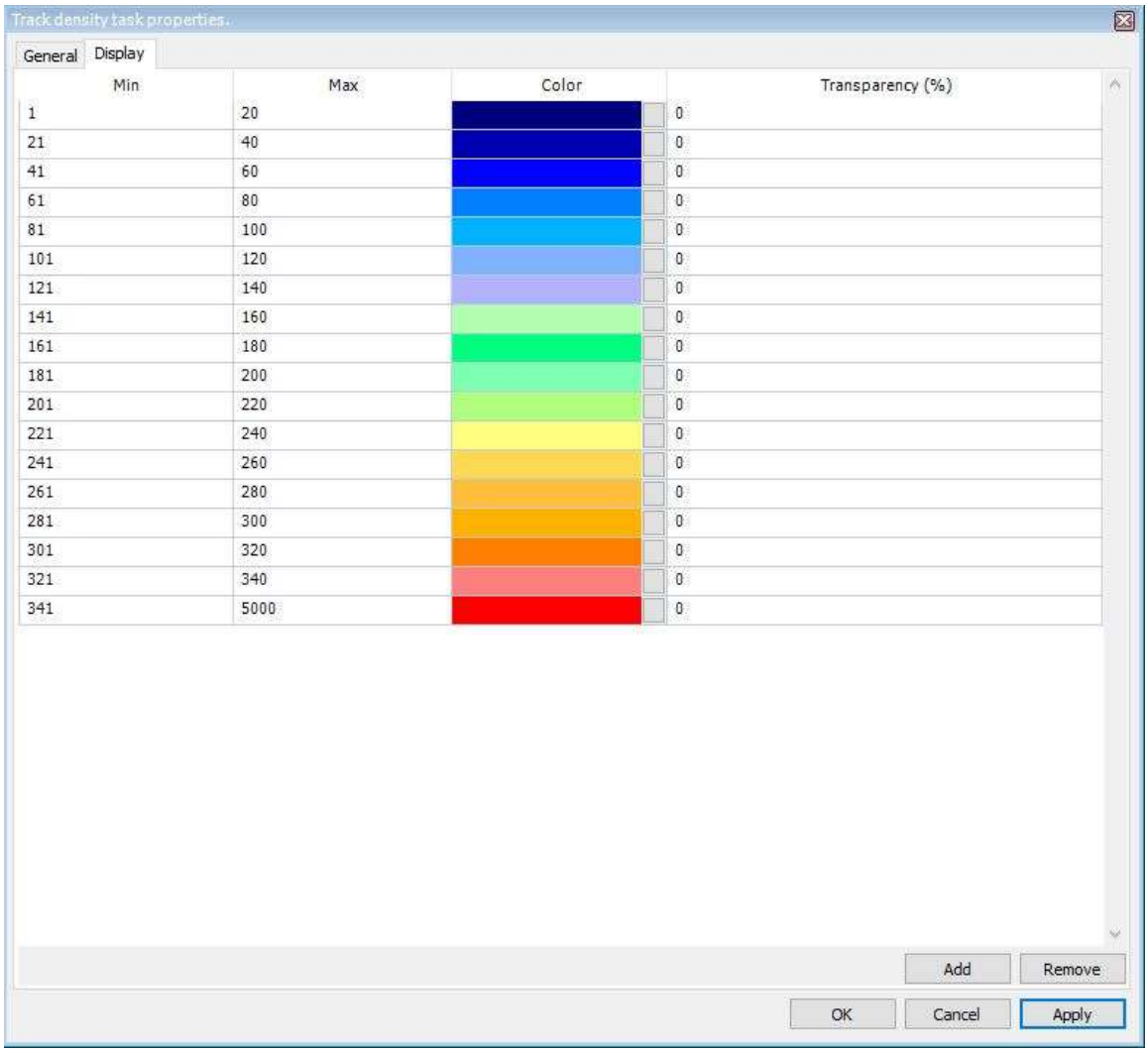
Additionally, there are tack density plots shown on the next page for a 3-month period, with a legend of the colour bands shown further below.

October – December 2016 all departures



October – December 2017 all departures

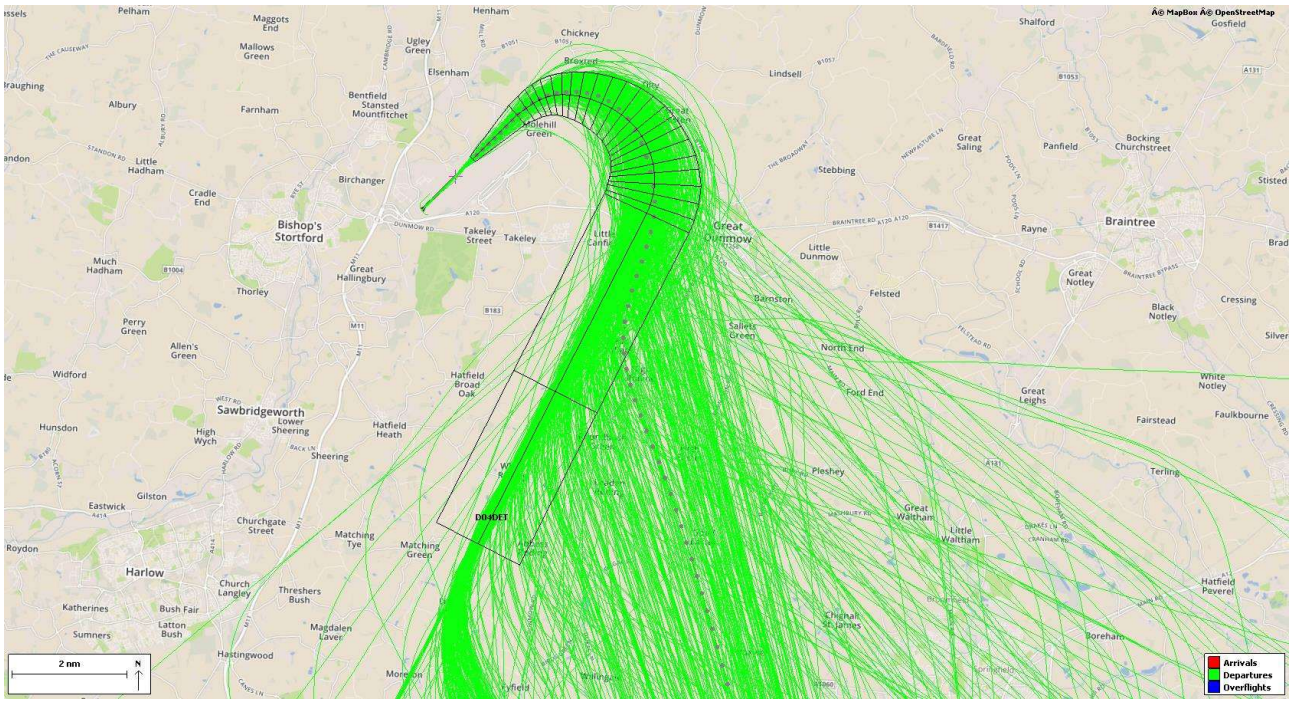




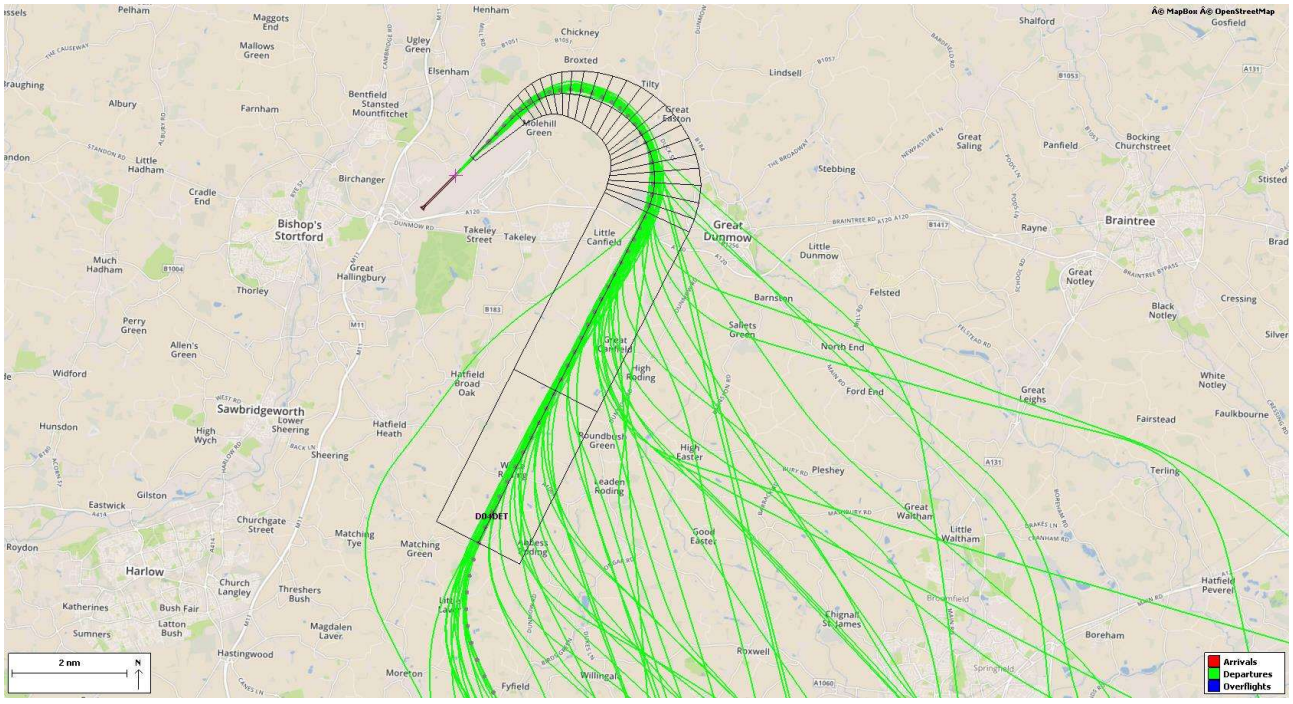
5. Track Diagrams for Runway 04 Detling NPR

Since the introduction of Lamp 1A in February 2016, the numbers of departures flying the 04 Detling SID are very few, as shown in section 6 of this report. The images below are based on 1 year's track data from October 2016 onwards. Note, the data is referred to as Detling NPR, which encompasses the 04 Detling, Lydd and Lambourne SID's.

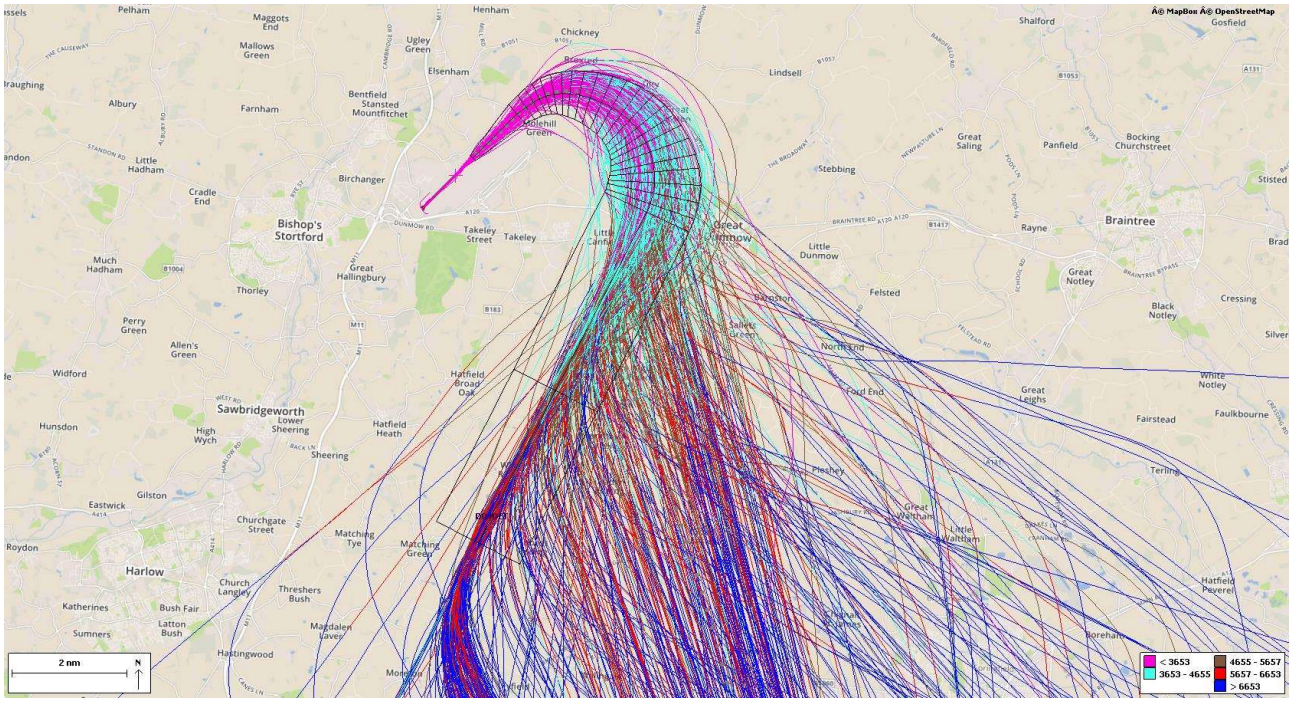
October 2016 – October 2017 all runway 04 Detling NPR Departures



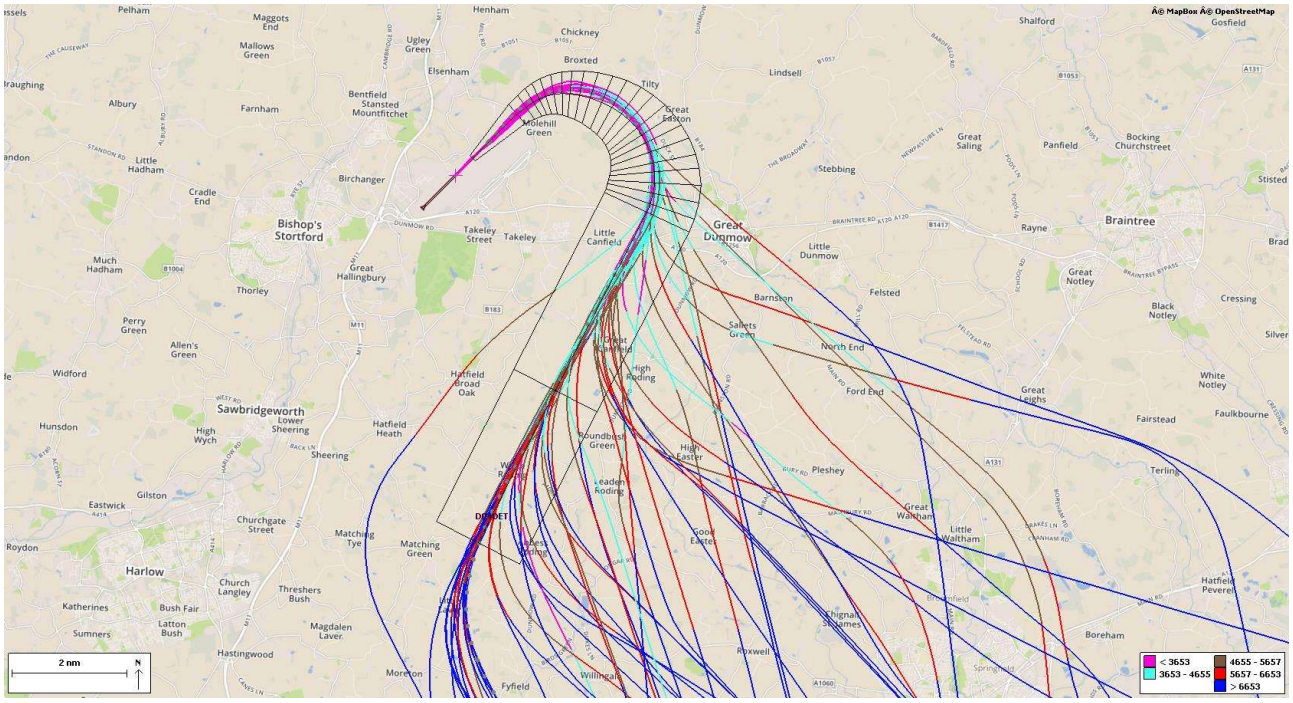
October 2016 – October 2017 all runway 04 Detling NPR Departures RNP1 SID



October 2016 – October 2017 all runway 04 Detling NPR Departures by height



October 2016 – October 2017 all runway 04 Detling NPR Departures RNP1 SID by height



I have not included a Track Density plot for this NPR due to the very low numbers of aircraft.

6. Usage of RNP1 vs Conventional SIDs

A full set of data showing the utilisation of the RNP1 SIDs is shown below. 04 Detling has not been flown as much since the February 2016 Lamp 1A changes.

Additionally, the RNP1 replication is of the 04 Detling SID only, not the 04 Lydd, which many aircraft fly to Northern Europe. All our reporting is through the Noise Preferential route, some of which contain multiple SIDs, such as in this case of the 04 Detling NPR containing the 04 Detling, Lydd and Lambourne SIDs.

SID/NPR	04 Detling			22 Clacton		
Month	Total Departures	RNP1 Departures	% RNP1 Departure	Total Departures	RNP1 Departures	% RNP1 Departure
October 2016	85	2	2.3	1537	246	16.0
November 2016	62	2	3.2	1876	237	12.6
December 2016	18	1	5.6	3185	336	10.5
January 2017	34	4	11.8	2713	266	9.8
February 2017	23	2	8.7	2514	298	11.9
March 2017	23	0	0.0	3119	344	11.0
April 2017	38	0	0.0	2775	292	10.5
May 2017	63	1	1.6	2481	308	12.4
June 2017	17	4	23.5	3678	487	13.2
July 2017	48	1	2.0	3368	456	13.5
August 2017	31	2	6.5	3886	1734	44.6
September 2017	38	6	15.8	3524	2756	78.2
October 2017	19	4	21.1	4082	3737	91.5
November 2017	46	16	34.8	3335	3073	92.1
December 2017	39	13	33.7	3179	2892	91.0

7. Ongoing Reporting

London Stansted, in partnership with our Noise and Track Keeping Working Group (NTKWG) and the Environmental Interest Group (EIG) of the Airport Consultative Committee, has developed additional reporting of RNP1 SID compliance. This data is reported quarterly to the NTKWG and published on the airport website. It contains data relating to a narrower +/-500m swathe and can be found at http://www.stanstedairport.com/community/local-environmental-impacts/noise/who-does-what/ under the NTKWG section.

Since the uplift in RNP1 operations in August 2017, London Stansted has delivered an information leaflet to 500 homes in the Hatfield Heath and Hatfield Broad Oak areas.

There has been no adverse community feedback since the leaflet drop or the uplift in RNP1 departures in August 2017.