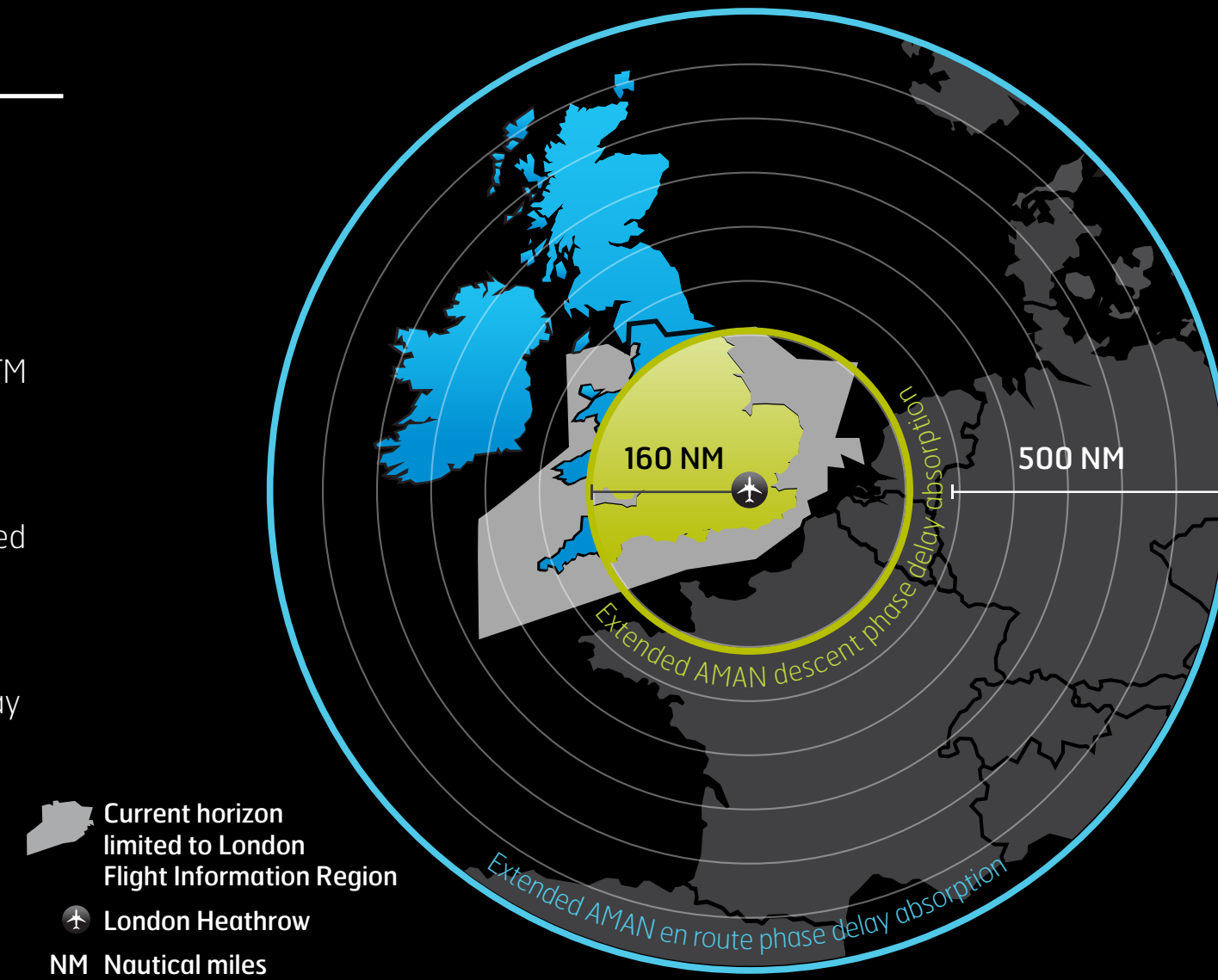


Reducing holding at Heathrow

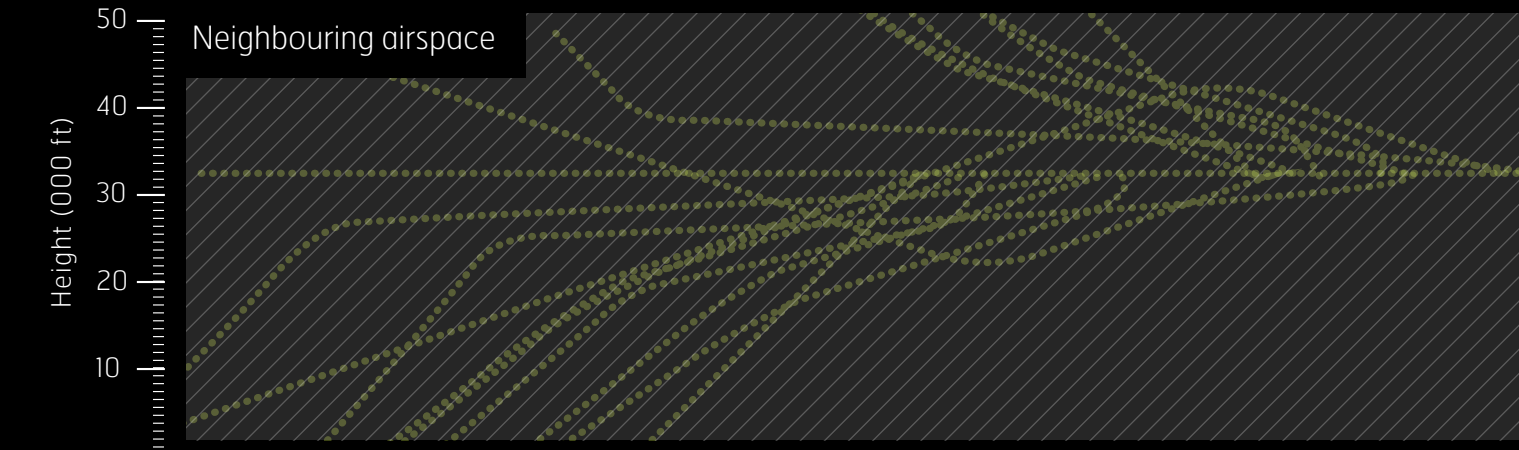
NATS is an active participant in the Single European Sky ATM Research Programme (SESAR) and has been carrying out work looking at how we can reduce fuel burn and smooth the arrival process into major airports as part of this. Arrival management aims to transfer delay out of congested terminal areas near major airports such as Heathrow by slowing aircraft in the cruise and descent phase. To do this, the horizon of the arrival manager (AMAN) tool must be significantly extended beyond NATS airspace, allowing delay to be calculated and passed to neighbouring air traffic agencies who slow inbound aircraft when delay is predicted. This helps to reduce congestion around major airports, saving fuel and reducing emissions.

Scroll right >



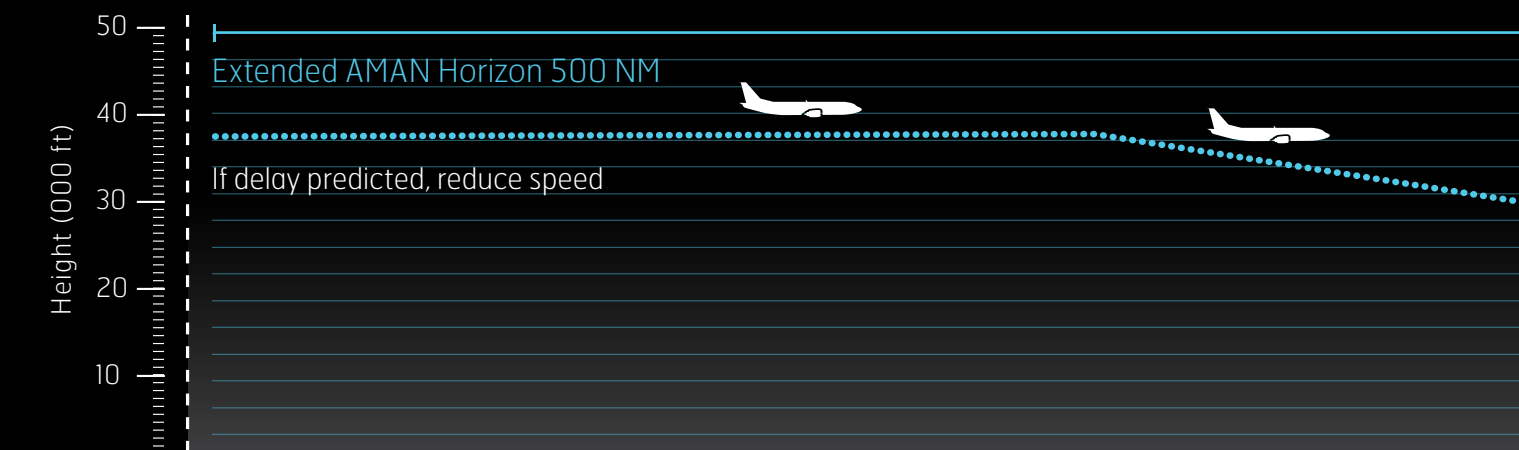
Current AMAN

A major proportion of aircraft fly into London from Europe. Until recently, the AMAN tool couldn't include these aircraft in delay predictions until the aircraft entered UK radar coverage over the English Channel. This meant delays only became apparent too late to meaningfully slow and realise the fuel savings available if the aircraft is able to alter its speed further out.



Proposed AMAN

AMAN horizon extended to a 500 NM symmetrical horizon, which improves delay prediction and is early enough to slow aircraft. Where delay is above the planned amount, delay is passed to neighbours to slow aircraft en route and to NATS controllers to delay aircraft during descent, reducing fuel burn and decreasing emissions.



Air Traffic Control activity



Pre-sequencing

To instruct aircraft to adjust their speed during the cruise phase when the AMAN tool predicts delay.

Sequencing

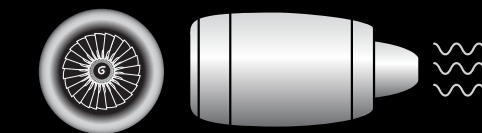
To deliver pre-sequenced and smoothed traffic to the Terminal Manoeuvring Area.

Spacing

To optimise the sequence approaching the runway.

Benefits

- > Fuel savings in the region of 100-200kgs per flight.
- > Equivalent annual estimated savings for flights to Heathrow of 20-25,000 tonnes of fuel.
- > Equivalent to over 60,000 tonnes of CO₂ or nearly 300 flights from London to New York.
- > Generating estimated potential savings of £13 million to airlines.
- > Absorbing up to 2 minutes delay in descent phase plus up to 3 minutes in en route.
- > Equivalent to a potential 25% reduction in time spent in the Heathrow holding stack.



Find out more about NATS at nats.co.uk and nats.co.uk/blog