

Case Study 2 - Airport

Problem Statement:

One of the world's largest airports (Heathrow) wanted to optimise fuel and travel time costs between Heathrow airport and Schiphol.



Solution:

Using a multi objective optimisation algorithm to take into consideration many operational constraints to reduce fuel and travel times costs.

Output:

The algorithm found the optimal routes between Heathrow to Schiphol, creating cost savings off.

a. Case 1:

- i. Minimise fuel consumption when climbing: 12% from base line { $(1250 - 1100) / 1250 = 12\%$ }
- ii. Minimise travel time when climbing: 16% from base line { $(860 - 720) / 860 = 16\%$ }

b. Case 2:

- iii. Minimise endurance: 2% { $(47.05 - 45.92) / 47.05$ }
- iv. Minimise fuel consumption: 8.8% { $(1928.86 - 1757.7) / 1928.86$ }
- v. Minimise NOx: 4.3% { $(49.38 - 47.22) / 49.38$ }

