Establishment of a Runway Capacity Index via Traffic Load Movements

**Objective:**
To study the robustness of a methodology in determining the maximum runway capacity using AirTOp to model airports.

**Approach**
Airports of London Heathrow Airport and Bangkok Suvarnabhumi Airport were modelled using AirTOp. A runway capacity index was then used and compared with real-life data to assess the current utilisation of the runway capacity.

**Results and Discussion**
- During the peak hour movements, London Heathrow’s runway usage efficiency is at 98% while Bangkok Suvarnabhumi’s is at 72%.
- Comparing the two airports, the real data falls within the calculated maximum capacity.
- In relation to the two airports’ annual traffic numbers, London Heathrow has the higher aircraft movements and is very close to the calculated maximum capacity. On the other hand, Bangkok Suvarnabhumi is below in proportionality.
- Therefore, the methodology to create the runway capacity index is robust and adaptable to different airports in which good comparisons can be drawn from the results.

**Conclusion:**
- This index could be used to evaluate the runway efficiency of airports worldwide.
- An international ranking system based on this index could be established.
- This would provide airports with the necessary indications on areas for improvement thus allowing for better maximisation of their runway capacity.