

To illustrate the concept and its potential benefits and to make it known to a wide ATM audience, a PC based demonstrator has been developed.

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The Time Based
Separations Project

How far have we got?



European Organisation for the Safety of Air Navigation

The Time Based Separations Project – How far have we got?

An important factor limiting today's airport capacity is the phenomenon of wake vortices generated by aircraft in flight. To avoid aircraft entering the zone of turbulence of another aircraft, minimum separation criteria between aircraft were published in the 1970's. These separations are expressed in terms of longitudinal distances and have since served to provide acceptable safe separations between aircraft at all major airports through the use of radar.

Today, in conditions of strong headwinds on final approach, the runway arrival capacity reduces as the ground speed decreases if no compensating increase in airspeed is made by the pilot. This is directly due to the application of standard distance separations which take longer to run with the reduced groundspeeds.



To counteract this phenomenon, the time based project investigates the proposal to replace these distance separations between successive arriving aircraft by suitable time intervals chosen, nevertheless, to maintain the required level of safety. It would appear that if time separations were to be applied instead of dis-

tance separations then, in conjunction with the use of appropriate controller working methods and procedures and suitable support systems, the potential loss of runway arrival capacity could, at least partially, be recovered.

We started the project last year with a "proof of concept" phase to calculate as far as possible what sort of capacity recovery could be expected at a typical large European air-



port. Traffic and meteo data were obtained from Roissy Charles de Gaulle airport and three documents have been produced detailing the findings so far (Time Based Note 1 – Runway Capacity Calculation under no or calm wind conditions, Time Based Note 2 – Runway Capacity Computation under a given Wind Scenario and Time Based – A way to proceed). Following positive indications, the next phases of the project are being planned. These include an initial hazard assessment and runs with the Rapid Prototyping facility here at Bretigny to obtain more accurate figures for the expected gains as well as first impressions of the envisaged controller working methods and procedures and support tools "in action". If all goes well, we expect eventually to go all the way up to ICAO to make proposals to change the way aircraft are separated from each other as part of our never ending quest for increased capacity – or, in this case, at least clawing back some of the losses!