

SHORT (& MEDIUM) TERM MEASURES - EXECUTIVE SUMMARY

MEASURE SET	Airspace operations	
MEASURE TITLE	New service concepts	
MEASURE SUMMARY	This measure includes three alternative proposals to define how the prioritise the delivery of air traffic management services.	
MEASURE INVOLVES	<input checked="" type="checkbox"/> Behavioural Change <input type="checkbox"/> Infrastructure Change	<input type="checkbox"/> Regulatory Change
	<input checked="" type="checkbox"/> Operational Change <input type="checkbox"/> Technical Change	<input checked="" type="checkbox"/> Policy Change
WHAT DOES THIS ADDRESS?		
<p>Currently queues of aircraft are managed on a first-come, first-served basis but with some minor adjustments being made to optimise the sequence of aircraft using a runway, for example. This can result in behaviours detrimental to the performance of the system as a whole, e.g. in incentivising flights to be at the front of the queue, for example when the airport opens after the night period or after periods of disruption. This causes bunching and increased queue lengths. In addition, there is currently no link between air traffic management slots (allocated by Eurocontrol on the basis of tactical air traffic control capacity and flight plans) and airport slots (allocated according to strategic capacity declarations and managed through the schedule). Furthermore, there is no link between the allocation of slots at individual airports and the overall capacity of the airspace within which those airports operate.</p>		
WHAT WOULD BE DONE?		
<p>This measure would result in the application of the most appropriate method of queue management, selected from first-in, first-served as at present), on-time, first-served (where priority is given to flights that are on-time, where the definition of on-time could take into account specific conditions and not just be based on the schedule) or best-equipped, best-served (where priority would be given to the most capable aircraft). In addition, the management of airport and airspace slots would be linked, strategically in terms of capacity declaration but also tactically, as was applied to the London airport system during the London 2012 Olympic Games.</p>		
WHAT IS THE IMPACT?		
<p>This measure would result in the optimised use of capacity where the capacity of the overall system and its components would be in balance with demand.</p>		

MEASURE SET:	Airspace operations	Short Term	<input type="checkbox"/>
MEASURE TITLE:	New service concepts	Medium Term	<input checked="" type="checkbox"/>

MEASURE SUMMARY

Proposed by:	British Airways (007), LACC/AOC (043), NATS (053)		
Proposal:	All of these concepts would likely require international regulatory change and would face significant opposition from one or more stakeholders. They have, therefore, been viewed as medium-term. The measure contains four alternative proposals for prioritising air traffic management services:		
AsOP-NSC-1	• first-come, first-served		
AsOP-NSC-2	• on-time, first-served		
AsOP-NSC-3	• best-equipped, best-served		
AsOP-NSC-4	• linking airspace slot management to airport slots.		
Approach	The approach for each of the measures is as follows:		Stated Capital Cost: Not stated
	<ul style="list-style-type: none"> for first-come, first-served, the current situation, which is based on the first-in, first-out queuing principal and incentivises behaviours to be at the front of the queue when it forms 		Capacity (mppa): Not stated
	<ul style="list-style-type: none"> for on-time, first-served, where flights that comply with their scheduled time are given priority in any traffic sequence/queue as an incentive to comply with the plan 		Capacity (atm): Not stated
	<ul style="list-style-type: none"> for best-equipped, best-served, where aircraft that have the most advanced navigational capability are rewarded for their investment and contribution that they make to system optimisation. This might result in lower performance aircraft being excluded from certain airspace/airports either completely or at certain times. 		
	<ul style="list-style-type: none"> linking airspace slot management to airport slots. 		
Benefits	Each of the proposals has potential benefits and associated disbenefits:		
	<ul style="list-style-type: none"> first-come, first-served facilitates airline network operations from congested, oft-disrupted airports (e.g. does not penalise off-slot operations) at the risk of incentivising behaviours that result in traffic bunching at peak times, particularly in the early morning around the airport's opening time 		
	<ul style="list-style-type: none"> on-time, first-served incentivises on-time performance and would likely reduce bunching, and associated airborne holding, at peak times at busy airports but may reduce flexibility to recover from disruption unless safeguards are put in place 		
	<ul style="list-style-type: none"> best-equipped, best-served ensures that the fleet operating at an airport or in airspace is capable of delivering the benefits associated with enhanced performance when it is needed but at the penalty of excluding older generation aircraft from the airport/airspace and imposing a cost penalty on aircraft operators 		
	<ul style="list-style-type: none"> linking airspace slot management to airport slots would enable prioritisation of demand and deliver increased resilience by planned avoidance of spikes in demand with the penalty of delaying lower priority traffic. 		
Issues & Risks	A major airline is strongly opposed to any move away from the first-come, first-served principle on the basis that it does not recognise the complexity of network scheduling and would particularly disadvantage airlines that are based in airports that are often disrupted and have limited or no recovery capability due to capacity constraints. All of the proposals, except first-come, first served, would require regulatory change to enable NATS to prioritise traffic and to exclude non-compliant flights where/when needed which could raise safety risks. Current airspace structures, particularly the approach to aircraft holding in holding stacks, are not set up to support a move away from first-come, first served. 'On-time, first-served' may reduce flexibility of the operation i.e. optimal vortex landing order, and thereby potentially reduce landing rates.		
	The predictability of 'On-time, First-served' would enable NATS to provide a more efficient & resilient service. 'Best-equipped, Best-served' could be applied as sub-sets of both 'First-come, First-served' or 'On-time, First-served'. 'First-come, First-served' leads to a more flexible service than 'On-time, First-served', but at the expense of overall predictability and network resilience.		
Mitigations	None needed.		
Dependencies	The main dependencies for the measure are:		

MEASURE SET:	Airspace operations	Short Term	<input type="checkbox"/>
MEASURE TITLE:	New service concepts	Medium Term	<input checked="" type="checkbox"/>

	<ul style="list-style-type: none"> • agreement by the stakeholders, including airlines and Airport Coordination Limited • regulatory changes <p>Delivery of best-equipped, best-served is likely to be an enabler of other measures, particularly departure management.</p> <p>A move to 'On-time, First-Served' would be most effective if aircraft presented at the required point at the expected times (i.e. NATS could provide an effective 'First-Served' concept to those that arrive 'On-Time'). Operators would need to accept that those not presenting 'on time' would not receive an effective a service as that that do. This would need to be clearly understood within the industry to avoid misunderstandings of potential bias towards any particular operator/s.</p> <p>To mitigate potential reduction in flexibility of the arrival order there is a potential dependency for a refined scheduling process.</p>
--	---

ASSESSMENT SUMMARY

Strategic Fit	Not stated – depends on long-term options.
Economy	Potential cost savings through improved resilience and reduced delays, depending upon which of the prioritisation method is selected..
Surface Transport	There would be little or no impact on surface transport.
Environment	Potential reduction in GHG emissions due to reduced arrivals delays caused by bunching.
People	Little or no impact.
Cost	A change to 'On-time, First-served' may require capital expenditure to enhance existing or develop new Queue Management systems & applications to ensure that the net benefit of this prioritisation concept was realised. Use of existing Arrival Management applications within NATS could provide a basis to calculate revised arrival times (e.g. either time to a holding stack or reporting point close to the start of the approach phase).

MEASURE SET:	Airspace operations	Short Term	<input type="checkbox"/>
MEASURE TITLE:	New service concepts	Medium Term	<input checked="" type="checkbox"/>
Operational Viability	<p>Barriers to be overcome include:</p> <ul style="list-style-type: none"> reluctance by the airline community to accept any principle other than first-come, first-served regulatory hurdles to the application of other principles. <p>This can be considered in two aspects: departures and arrivals. Applying 'On-time, First-served' prioritisation would be more straightforward when managing departures, and aircraft ready for departure late would simply be held on the ground until a departure slot is available. Applying such a concept to arrivals is more complex and may lead to additional airborne holding. NATS feels that any change away from the current method of prioritisation for arrivals would require detailed analysis and potentially changes to existing ATM systems to deliver effective Queue Management to address those that are not 'on time'. There would be circumstances where traffic, despite best intents, is unable to present 'on time', such as en-route delays or weather re-routings. Further analysis would need to be undertaken to model various operational scenarios to see whether queues could be most effectively serviced via a 'First-come, First-served' or 'On-time, First-served' basis to the wide variety of situations that can effect traffic arrival punctuality.</p>		
Delivery	Delivery is dependent on agreement by stakeholders and, potentially on regulatory change.		