

## SHORT (& MEDIUM) TERM MEASURES - EXECUTIVE SUMMARY

MEASURE SET	Airport operations	
MEASURE TITLE	Information management	
MEASURE SUMMARY	This measure includes multiple proposals to improve airport ground operations processes to deliver efficiency, noise and emissions benefits.	
MEASURE INVOLVES	<div><div><input checked="" type="checkbox"/> Behavioural Change</div><div><input checked="" type="checkbox"/> Operational Change</div><div><input checked="" type="checkbox"/> Technical Change</div><div><input checked="" type="checkbox"/> Infrastructure Change</div><div><input checked="" type="checkbox"/> Regulatory Change</div><div><input type="checkbox"/> Policy Change</div></div>	
WHAT DOES THIS ADDRESS?		
<p>This measure contains three main proposals</p> <ul style="list-style-type: none"><li>to improve the performance of major airports as nodes in the air traffic management network through provision of reliable departure planning information (DPI) to the European Air Traffic Management (ATM) Network Manager (Eurocontrol Central Flow Management Unit)</li><li>to link all other airfields to the air traffic management network for exchange of information</li><li>to establish capacity management cells at national and local airport level to assess and mitigate the impact of actual and forecast disruptions, e.g. bad weather, volcanic ash, accident or incident, etc.</li></ul>		
WHAT WOULD BE DONE?		
<p>In addition to the local implementation of airport collaborative decision making (A-CDM) as a platform to improve performance at individual airports (see proposal ApOP-GOI-1), the individual A-CDM systems would be linked to the European ATM network to provide timely, accurate and precise departure planning information to the Network Manager. This information would then be used by the Network Manager in the air traffic flow and capacity management (ATFCM) process to optimise network performance through the airspace/ATM slot process (distinct from airport slots). It is an objective of the Single European Sky and SESAR that all major European airports are linked to the network through A-CDM and Heathrow and Gatwick are already well-advanced in meeting this objective. Simpler interfaces for electronic data exchange between smaller airports and the ATM network would also be established to ensure that a complete as possible picture of current and near-term operations is available to network and air traffic managers for tactical planning.</p> <p>The creation of capacity management cells would require the establishment and agreement of formal processes and criteria for balanced multi-stakeholder decision-making to, for example, manage demand levels and prioritise access to airspace and airports, to minimise the immediate impact of and facilitate the rapid recovery from adverse conditions. This type of cell has already been established at Heathrow as HADACAB – the Heathrow Demand and Capacity Balancing Group. In practice, HADACAB balances demand levels against forecast capacity, typically a day in advance, by the selective cancellation of flights to ensure graceful rather than catastrophic degradation, to manage the performance (punctuality and delays) of flights that do operate and to facilitate post-event recovery. The proposal would extend this to other airports as well as to airspace.</p>		
WHAT IS THE IMPACT?		
<p>The network level implementation of A-CDM, integrating all major airports into the ATM network, would enable Network Manager to manage available capacity more efficiently. More efficient and effective use of airspace/ATM slots would result in reduced delays, improve predictability of events during a flight and optimise the use of resources at downstream (destination) airports. Linking smaller airports and airfields to the network through simpler interfaces would also improve the flow of information and facilitate airspace demand/capacity balancing.</p> <p>Capacity management cells would ensure structured, balanced and optimised plans are in place to pre-empt and minimise disruption due to adverse conditions. In simple terms, demand would be reduced through managed cancellations to introduce headroom into the system as an insurance against disruption. In this way, the impact of the disruption would be controlled enabling, for example, airports, airlines and passengers to make better informed decisions and to minimise the cost and inconvenience impacts. Demand could also be managed to optimise the balance of performance degradation (delays and diversions) against cancellations during the period of disruption. Specific flights could be prioritised as needed using agreed criteria.</p>		

MEASURE SET:	Airport operations	Short Term	<input checked="" type="checkbox"/>
MEASURE TITLE:	Ground operations improvements	Medium Term	<input type="checkbox"/>

## MEASURE SUMMARY

Proposed by:	Gatwick Airport (019), NATS (053), British Airways (007)		
Proposal:	<p>There are three proposals concerning information management in support of decision making. The proposals are:</p> <ul style="list-style-type: none"> <li>airport collaborative decision making (A-CDM) in the network context</li> <li>linking all airfields to air traffic management for information exchange</li> <li>national and local capacity management cells</li> </ul> <p>All of these proposals have the potential to be enacted in the short-term.</p>		
Approach	<p>The approach for each of the measures is as follows:</p> <ul style="list-style-type: none"> <li>A-CDM aims at improving airport and network operations via means of enhanced communication and information sharing between airport stakeholders. There are two levels of implementation of A-CDM: local and network; this proposal is concerned with the network implementation that comes after local implementation (see proposal ApOP-GOI-1 for the local implementation of A-CDM). The network implementation would feed accurate departure information (departure planning information – DPI) into network and airspace capacity tools in real-time</li> <li>simple interface equipment linking all airfields to the air traffic management/en route airspace environment would provide better accuracy and reliability in demand prediction to facilitate decision making and mitigation</li> <li>national and local capacity management cells would improve decision making concerning modifications to the schedule to mitigate the potential impacts of disruption and to facilitate recovery from disruption. This process is already implemented at Heathrow as HADACAB.</li> </ul>	<p>Stated Capital Cost: Cost associated with A-CDM and interface systems</p> <p>Capacity (mppa): None</p> <p>Capacity (atm): None</p>	
Benefits	<p>The principal benefits of the proposals are:</p> <ul style="list-style-type: none"> <li>improved airspace capacity and resilience arising from more complete and accurate pictures of short-term demand enabled by better linkages and interfaces between air traffic management and airport systems.</li> <li>improved airport resilience at busy airports from better management of capacity in advance of disruption.</li> <li>support for the more frequent delivery of airlines’ “user based trajectories” which offer reductions in delay, green house gases (GHG), and noise disturbance together with a better-quality passenger experience as a result of improved on-time performance.</li> <li>these technologies could allow for greater cognisance of airspace bottlenecks within airport scheduling processes resulting in a more resilient overall operation.</li> </ul>		
Issues & Risks	<p>The principal risks associated with these proposals are associated with the likely take-up of A-CDM/electronic data interchange/interface to air traffic management for other than the largest airports (these systems are already nearing operational status at Heathrow and Gatwick). The benefits of capacity management cells for airports other than the busiest is not confirmed and there are practical difficulties with the accuracy and reliability of data (particularly weather forecasts) used as the basis for capacity management decisions.</p>		
Mitigations	<p>A potential mitigation could be incentives and regulatory drivers for the implementation of data interchange capability.</p>		
Dependencies	<p>A-CDM development at the local level, followed by integration into the European air traffic management network under the umbrella of the SESAR programme.</p>		

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## ASSESSMENT SUMMARY

<b>Strategic Fit</b>	Not stated – depends on long-term options.
<b>Economy</b>	Overall, economic impacts are likely to be limited to: <ul style="list-style-type: none"> <li>increased airspace capacity and resilience arising from both A-CDM (large, busy airports) and information exchange (smaller airports)</li> <li>enhanced resilience (less disruption and better recovery) from capacity management cells (probably limited to large, busy airports).</li> </ul>
<b>Surface Transport</b>	There would be little or no impact on surface transport.
<b>Environment</b>	Potential noise and GHG benefits from reduced delay during periods of disruption, also potential benefits from better tactical management e.g. trade off of on-stand delay instead of runway holding point delay as a consequence of enhanced information/tactical understanding.
<b>People</b>	The positive impacts would be expected to be increased resilience against disruption and better information available to passengers to make informed decisions before travelling to the airport.
<b>Cost</b>	The costs associated with the proposals are: <ul style="list-style-type: none"> <li>A-CDM and information interface/exchange: system software development and integration costs, costs associated with process changes, which might be significant, to enable information exchange between the airports and ATM</li> <li>training costs, principally for airport and ATC staff to operate A-CDM and information exchange systems</li> <li>process change costs associated with creation of capacity management cells.</li> </ul>
<b>Operational Viability</b>	Risks and questions are: <ul style="list-style-type: none"> <li>the degree to which airports other than LHR and LGW are likely to implement sophisticated A-CDM systems</li> <li>the cost-benefit for airports of implementing electronic interfaces to the ATM system</li> <li>the need/benefit of local capacity management cells at less busy airports along with the institutional barriers that need to be overcome to facilitate their implementation</li> <li>the accuracy and reliability of predictive information to enable capacity management cells to function optimally</li> <li>the regulatory/legal competences to establish a national level capacity management cell.</li> </ul>
<b>Delivery</b>	The proposals might require regulatory levers or financial incentives for the implementation of electronic data interchange systems at smaller airports and airfields. There are also likely to be governance changes needed to establish capacity management cells: through local guidelines at individual airports (as already done at Heathrow) and through some regulatory changes at national level. A-CDM would provide the Air Traffic Control network with far more accurate data to base ATFCM decisions on which could benefit the overall operation. To maximise benefits, all towers would need to operate to common standards.