



WORKING PAPER

TWELFTH AIR NAVIGATION CONFERENCE

Montréal, 19 to 30 November 2012

Agenda Item 6: Future direction

6.1: Implementation plans and methodologies

A NEW APPROACH TO ICAO GUIDELINES ON SERVICE PRIORITY

(Presented by the Civil Air Navigation Services Organisation)

SUMMARY

The goal of any ANSP must always be to maximize overall system efficiency, and improve safety levels, without unduly penalizing operators and minimize the delay impact on the entire system. Other than for reasons of emergency or security, priority handling of air traffic has long been based on the notion of “first come, first-served”. For the terminal area, this prioritization for overall system efficiency is supported by the ICAO PANS-ATM (Doc 4444). However, it is not always desirable, nor possible, to strictly observe this notion of service prioritization. As the technological basis of ATM service delivery evolves, ANSPs will be challenged to safely control aircraft with varying technology capabilities. Future efficient and safe ATM services may require operational paradigms that apply criteria other than “first come, first served.” This could have significant implications. Consequently, CANSO recommends that studies be commenced to find alternative guidelines that encourage equipage upgrades, enhance safety and improve service levels, while maximizing overall system efficiency.

Action: The Conference is invited to agree on the recommendation contained in paragraph 4.2.

1. BACKGROUND

1.1 To safely and efficiently accommodate the increase in air traffic demand, as well as respond to the diverse global needs of operators and the environment, economic and other social demands, it is necessary to modernize air traffic management (ATM) systems to provide the greatest operational and performance benefits.

1.2 Inevitably, as ATM modernization programmes go forward, airspace users will be at various stages in their equipment upgrade programmes and in their deployment of new systems. Some will demand the realization of benefits from onboard technology that comes with modern aircraft, which can only be attained once the necessary procedures and ground equipment are in place. Others are just as happy to be the last to equip, as they will benefit from both technology improvements and lower unit cost – the last mover advantage.

1.3 Delivery of benefits to equipped aircraft is of a high priority for both air navigation service provider (ANSP) and airspace user, but this will create issues of service prioritization for controllers. Dealing

¹Arabic, Chinese, English, French, Spanish and Russian versions provided by CANSO.

with a mixed fleet, especially in the terminal area where aircraft would have to be re-sequenced so that better equipped and capable aircraft would have landing priority poses a lot of practical difficulties.

1.4 Nevertheless, as the global ATM industry moves forward in its modernization, the principle of “first come, first served” needs to be revisited as it can produce unsafe and inefficient outcomes, by slowing the up-take of new, improved and more efficient technologies and procedures. Application of an alternative principle such as “best equipped, best served” can equally produce unsafe and inefficient outcomes, by requiring significant intervention by controllers, and by requiring dual procedures to be deployed by both operators and controllers.

2. THE CURRENT APPROACH

2.1 Air traffic prioritization on the basis of the “first come, first-served” principle has its basis in the ICAO *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM, Doc 4444). However, its short-comings have been recognized by a number of ICAO guidance material, including the *Manual on Air Traffic Management System Requirements* (Doc 9882) and the *Manual on Global Performance of the Air Navigation System* (Doc 9883), which provide a comprehensive understanding of the ATM system envisioned in the *Global Air Traffic Management Operational Concept* (Doc 9854), as endorsed by the Eleventh Air Navigation Conference (AN-Conf/11) in 2003. Furthermore, the work being done in both the SESAR Joint Undertaking in Europe and the NextGen Joint Planning and Development Office in the United States are based on an assumption that the “first come, first served” principle will be revised.

2.2 A rigorous application of the current rule produces inefficient outcomes. For example, notwithstanding some aircraft being equipped for RNP approaches at certain airports in the United States, air traffic controllers cannot deliver them because it is operationally impossible to do so in an environment that must also allow non-RNP approaches during the same time period. This is an active disincentive for airlines to equip their aircraft. This example shows that it is also inefficient and environmentally harmful, increasing flying hours and emissions. Providing service priority in a mixed fleet situation requires additional levels of complication, including an assessment of the equipment carried by particular airspace users, which increases risks.

2.3 Nevertheless, qualified aircraft with, for example, RNP, ADS-B, and data link could be identified as such on their flight plans, and so be easily recognized by controllers, and be allowed to fly their preferred altitude or be allowed to go to the head of the departure queue at an airport, thus providing a very real competitive advantage for those that are equipped. However, such an approach could be opposed by non-equipped aircraft operators.

2.4 Introducing financial incentives to equip may also be an option. The ICAO *Policies on Charges for Airports and Air Navigation Services* (Doc 9082) allow for differential charges such as preferential charges, rebates, volume discounts or other reductions in the charges normally payable for the use of air navigation services and facilities, as long as these are cost-based, are introduced in a transparent and non-discriminatory manner, and are offered on a temporary basis. However, whether such differential charges would provide sufficient incentive for operators to equip is not always ascertainable and needs study and further consideration.

3. TOWARD A NEW APPROACH

3.1 As the modernization of ATM proceeds, the issue of dealing with mixed aircraft equipage will increase. The only way forward to maximize benefits to the overall system is to encourage equipage and deployment as rapidly as possible, while catering to the variety of needs. In that context, it is appropriate to revisit the current “first come, first served” principle to assess whether it remains a suitable principle.

3.2 That will require study of various options. It is much too early to suggest what, if anything, should replace the “first come, first-served” principle. Nevertheless, it should be noted that both SESAR and NextGen are proceeding on the assumption that there is a certain amount of flexibility in the application of the current guidelines. Furthermore, AN-Conf/11 in 2003 also discussed and acknowledged the need for further consideration of the “first come, first served” principle (Doc 9828 refers).

3.3 Studies will need to consider a number of issues relevant to the different air traffic planning phases:

- a) strategic planning;
- b) pre-tactical planning; and
- c) tactical operations.

3.4 In all cases, such studies will need to focus on the best possible solution, the implications and the steps required to bring any changes into effect.

4. CONCLUSION

4.1 The Conference is invited to take note the commissioning of an industry-wide study group under the auspices of ICAO to look into the implications of continuing with “first come, first served” and to consider possible alternative approaches. This study group is to report on possible principles and policies to be considered during the 6th Air Transport Conference in March 2013 and deliver to ICAO suitable guidance material on what practical steps can be taken to modify the current guidelines.

4.2 The Conference is invited to agree on the following recommendation:

Recommendation 6/xx – Review and consideration of “first come, first served”

That ICAO:

- a) support an industry-wide study group to consider the implications and ramifications of continuing with “first come, first served”;
- b) request that this study group draft guidance material proposing alternative formulations if it thinks it appropriate, taking into account the issues raised in paragraphs 2 and 3; and
- c) require the study group to investigate areas for further consideration as it might identify.