

FOURTH MEETING OF THE ALLPIRG/ADVISORY GROUP**(Montreal, 6 – 8 February 2001)****Agenda item 2.3: Interregional coordination and harmonization mechanism – Other issues which have global ramifications****THE NEED FOR GLOBAL ACCESS TO MLS SPECTRUM****(Presented by the International Air Transport Association)****SUMMARY**

ICAO Special COM/OPS 95 Divisional meeting in its assessment of the three system alternatives to support approach landing and departure operations agreed that MLS should be implemented where operationally required and economically beneficial. The result is that in the various ICAO regional implementation plans MLS has been deleted as an alternative. Having access to these Regional Plans, Radio Administrations are debating whether they should continue to support the spectrum allocation for MLS. This paper stresses the need for aviation that at present there is still a need to ensure global access to MLS spectrum.

1. INTRODUCTION

1.1 The ICAO Special Com/OPS 95 Divisional in addressing the ILS/MLS global transition plan affirmed the importance of economic factors in assessing over-all implications of a transition from ILS to MLS in light of the potential of Differential GNSS to support approach, landing and departure operations.

1.2 The results from these discussions are reflected in Annex 10 as follows:

“Based on the considerations above and a need to consult aircraft operators and international organizations as appropriate, the global strategy is to:

- a) continue ILS operations to the highest level of service as long as operationally acceptable and economically beneficial;*
- b) implement MLS where operationally required and economically beneficial;*

- c) *promote the use of MMR or equivalent airborne capability to maintain aircraft interoperability;*
- d) *validate the use of GNSS, with such augmentations as required, to support approach and departure operations, including Category I operations, and implement GNSS for such operations as appropriate;*
- e) *complete feasibility studies for Category II and III operations, based on GNSS technology, with such augmentations as required. If feasible, implement GNSS for Category II and III operations where operationally acceptable and economically beneficial; and*
- f) *enable each region to develop an implementation strategy for future systems in line with the global strategy.”*

1.3 At the Divisional Meeting the assessment of the various strategies produced a negative Net Present Value for Air Traffic Control service provider for a transition. This resulted that most of the Regional Planning documents don't consider MLS services on International Airports. This lack of possible exploitation of MLS in Regional planning documents, provides Radio Regulators, having access to these plans, the opportunity to challenge the global MLS allocation.

1.4 This paper provides some considerations that it is still important for aviation to maintain global access to spectrum for MLS services.

2. **PRESENT MLS STATUS**

2.1 At present MLS services on International Airports are only considered within the European Region. As British Airways one of the main operators at Heathrow airport is expected to put MLS Cat III certified aircraft into service by 2002, it will provide MLS service in 2003. It is expected that Amsterdam (Schiphol), Paris (CDG), Zurich and Gatwick will be similarly equipped as simulations have shown that it will support 6 to 8 additional movements an hour in poor visibility. Whether the use of MLS will further expand is strongly dependent on outstanding issues regarding the introduction of GNSS based Cat II and Cat III and the financial risks to airports and operators of losing CAT II and III capabilities.

3. **OUTSTANDING ISSUES**

3.1 Whilst the future globally implemented approach landing and departure based on GNSS will be the most preferred service there are various risk factors which need to be resolved before this optimum could be realised, including the following:

- a) Institutional issues. Liability and reliance on foreign navigation services have up until present prevented airlines to take full benefits from available GNSS services and it is uncertain how these issues will be resolved.
- b) Sensitivity to interference. The low signal to noise margins of operations and the increasing spectrum pollution are increasingly demanding mitigation techniques to achieve the required integrity and availability.

- c) Spectrum allocation considerations. There is tendency to increase the level of interference to Radio Navigation Satellite Services to accommodate new non-safety services demanding access to spectrum.
- d) Whilst initially the service costs for GNSS were assumed to be free of charge, it can be expected that aeronautical recovery mechanisms will come into place similar to the Galileo proposal.
- e) At the time the Com/OPS Divisional meeting made its assessment, the MLS costs were well understood, however the GNSS service ground and airborne architecture were insufficiently defined to realistically assess the costs.

4. **RESUME**

4.1 At present there are too many uncertainties regarding the global implementation of GNSS to support Cat II and Cat III operations. Although GNSS Cat II and Cat III services might be the optimum future system solution, at present there are too many risk factors for regional plans to ignore possible MLS implementation. Not taking account of MLS in Regional implementation plans will put the access to MLS allocated spectrum at risk.

5. **ACTION BY THE MEETING**

5.1 The meeting is requested to take the following action:

- a) to note this working paper;
- b) to agree to provide the flexibility as per the Annex 10 agreed strategy in the Regional Implementation plans; and
- c) to support the need to protect the global MLS spectrum allocation.