**THIRD MEETING OF THE ALLPIRG/ADVISORY GROUP**

**(Montreal, 6 – 8 April 1999)**

**Agenda Item 5: Interregional coordination and harmonization mechanism**

# METHODOLOGY FOR THE ASSESSMENT OF ENVIRONMENTAL BENEFITS ASSOCIATED WITH THE IMPLEMENTATION OF CNS/ATM SYSTEMS

(Presented by the Secretariat)

## 1. INTRODUCTION

1.1 At the second meeting of the ALLPIRG/Advisory Group (ALLPIRG/2), during the discussions under Agenda Item 2.1: Global plan for CNS/ATM systems and Agenda Item 3: Financing issues, it was noted that implementation of CNS/ATM systems could bring substantial environmental benefits to the global community due to a reduction in fuel burn. The meeting therefore agreed that information concerning the environmental benefits associated with implementation of CNS/ATM systems should be included in the global plan at the earliest opportunity (paragraph 2.1.7 of the ALLPIRG/2 Report refers).

1.2 During its 147th Session, the ANC (147-12 and 13), while reviewing the report of ALLPIRG/2, suggested that in accommodating these issues into the global plan care should be taken to reflect realistic benefit evaluations (C-WP/10861, paragraph 2.3.3 refers).

## 2. RECOMMENDATIONS FROM THE FOURTH MEETING OF THE COMMITTEE ON AVIATION ENVIRONMENTAL PROTECTION (CAEP/4) (MONTREAL, 6 TO 8 APRIL 1998)

2.1 Against a background of increasing concerns regarding the impact of aircraft engine emissions on the environment, CAEP has been considering what steps can be taken by the international aviation community to control emissions.

2.2 At its fourth meeting, in April 1998, the committee noted that the ICAO communications, navigation, and surveillance/air traffic management (CNS/ATM) systems, which were conceived to improve flight safety and reduce flying times and delays, could potentially reduce fuel consumption thereby reducing aircraft emissions. In order to increase awareness of the possibilities of reducing emissions in this way, CAEP/4 adopted Recommendation 1/1 — Environmental benefits of CNS/ATM, which was subsequently approved in an amended form by the Council. The Recommendation calls for the attention of Contracting States and relevant international organizations to be drawn to the environmental benefit, as one of the

benefits that would accrue from the early implementation of CNS/ATM systems (State letter AN 1/17-99/27 refers).

2.3 As a result of the delays experienced with the present systems limitations, aircraft are burning additional fuel and are thereby generating additional emissions. The early implementation of CNS/ATM systems offers an effective means of reducing fuel burn and avoiding unnecessary emissions, helping to minimize civil aviation's environmental impact.

2.4 CAEP also established a new work programme in the emissions field, taking into account the outcome of the third session of the Conference of the Parties to the United Framework Convention on Climate Change (Kyoto, Japan, December 1997), which recognized ICAO as the forum in which developed countries should pursue the limitation or reduction of greenhouse gas emissions from aviation bunker fuels. CAEP has established three working groups to consider:

a) the reduction of emissions at source;

b) emissions reduction derived from operational measures including studies to estimate savings expected from the implementation of the CNS/ATM systems; and

c) the market-based options for emissions reduction such as emissions-related levies (charges or taxes) and emissions trading;

and CAEP has agreed that an action plan on emissions should be prepared, and work on this is currently under way.

2.5 The Council noted CAEP/4 recommendation that representatives of CAEP be permitted to participate in regional meetings dealing with the implementation of CNS/ATM (Recommendation 1/2 — CAEP participation in CNS/ATM-related activities refers). It was indicated that CAEP representatives could follow the implementation of CNS/ATM systems in the regions by direct participation in their respective State's delegation.

2.6 CAEP/4 also discussed the need to address the environmental aspects of the implementation of CNS/ATM systems at the ICAO CNS/ATM Implementation Conference in Rio de Janeiro. The United States submitted to the conference an information paper on the impact of CNS/ATM improvements on aviation emissions that addressed the initial results of an Federal Aviation Administration (FAA) assessment of potential fuel savings and resulting benefits to the environment from reduced exhaust emissions, based on “free flight” capabilities to be provided by planned CNS/ATM improvements.

## 3. FURTHER DEVELOPMENTS

3.1 Since CAEP/4 the various working groups have been progressing their tasks and WG4 — Emissions — Operational Issues has been involved primarily in the quantification of the environmental benefits that accrue from the implementation of CNS/ATM systems.

3.2 During the discussions at the second meeting of WG4 (Seville, 2 to 4 March 1999) attention was brought to the need to establish a common methodology for assessing the environmental benefits of CNS/ATM system implementation worldwide, as a means to avoid the proliferation of different methodologies.

3.3 The meeting also addressed the importance of having the environmental aspects included among the relevant considerations to be taken into account while defining the implementation of CNS/ATM systems, i.e. in the business cases. To date, environmental considerations have been included in the Global Air Navigation Plan for CNS/ATM Systems only as an indirect benefit from the system implementation. It was also noted that the statement of ICAO policy on CNS/ATM systems implementation and operation do not include environmental issues within its precepts.

3.4 The WG4 Meeting agreed that those two points were of relevance and should be brought to the ALLPIRG/3 Meeting's attention.

## 4. BENEFIT ASSESSMENT METHODOLOGY

4.1 The development of a common methodology for the assessment of the environmental benefits of CNS/ATM implementation will be based on the methodology created by the Center for Advanced Aviation System Development of the MITRE Corporation that evaluates the potential of CNS and ATM procedural enhancements to reduce worldwide environmental emissions by reducing fuel burn.

4.2 The methodology is estimated to be presented at the fifth meeting of the CAEP for approval (last quarter of 2000 or first quarter of 2001).

4.3 As the need for incorporating the environmental aspects during the consideration of the regional business cases is more immediate steps could be taken to adopt a preliminary methodology while awaiting for its final approval at CAEP/5. Therefore an abbreviated process of developing a draft common methodology could be expressed taking due account of the committee's current priorities.

## 5. ACTION BY THE ALLPIRG

5.1 The ALLPIRG/3 Meeting is invited to:

a) note the importance of considering the environmental issues while defining the CNS/ATM system implementation strategies;

b) note the importance of establishing a common methodology for assessing environmental benefits of CNS/ATM system implementation, as a means to avoid a proliferation of different methodologies; and

c) note that there are ongoing efforts within CAEP's work programme towards such an approach.

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