

THIRD MEETING OF THE ALLPIRG/ADVISORY GROUP

(Montreal, 6 – 8 April 1999)

Agenda Item 5: Interregional coordination and harmonization mechanism

**DOCUMENTING THE ENVIRONMENTAL BENEFITS
OF CNS/ATM IMPLEMENTATION**

(Presented by the United States)

SUMMARY

The environmental benefits of the new communication, navigation, surveillance/air traffic management (CNS/ATM) systems include decreased fuel consumption and engine exhaust emissions. CNS/ATM addresses growing congestion and delays by offering a more efficient air traffic system worldwide. The expected global and local environmental benefits represent an important justification for early CNS/ATM implementation, and the International Civil Aviation Organization (ICAO) regional planning groups must consider and assess those benefits in their planning for the new CNS/ATM systems. This paper proposes that ICAO expand the discussion of the environmental benefits in the Global Plan and include guidance in that plan for the regional planning groups to use in developing their own environmental assessments.

1. BACKGROUND

1.1 The ICAO Committee on Aviation Environmental Protection (CAEP) is charged with the development of international standards and recommended practices for measuring and controlling aircraft noise and engine emissions. The resulting engine emissions standards and recommended practices are contained in ICAO Annex 16, Volume II. The United States actively supports the CAEP process to foster emission standards that are technically feasible, economically reasonable, and environmentally beneficial.

1.2 Historically, CAEP activities have been directed at improvements in methods for measuring gaseous emissions and at considering increases in stringency of the standards. More recently, CAEP's Working Group 4, Emissions and Operational Procedures, has begun to consider operational measures that have the potential to reduce aviation emissions, including CNS/ATM implementation.

1.3 At the second meeting of the CAEP Steering Group in January 1998, it was agreed that ICAO draw the attention of all States to the environmental benefits of introducing CNS/ATM as quickly as

possible. CAEP WG4 has determined that the appropriate vehicle for doing this would be through ICAO's regional planning groups where CNS/ATM implementation is being planned.

1.4 WG4 is developing a methodology to measure the global benefits of CNS/ATM implementation. However, each ICAO region will implement CNS/ATM in its own way based on regional needs, capabilities and resources. It is therefore important for each region to assess the environmental impact of its specific implementation plan, and to promote those benefits to the government policy makers faced with making the necessary commitments to CNS/ATM implementation.

2. INITIAL US STUDY OF BENEFITS

2.1 The United States Federal Aviation Administration (FAA) has completed a preliminary assessment of potential fuel savings, and resulting benefits to the environment from reduced exhaust emissions, based on capabilities to be provided by CNS/ATM improvements. New technologies and systems include datalink, digital communications, automatic dependent surveillance, satellite-based navigation and landing, and decision support tools. New capabilities to be provided by these technologies include reduced vertical separation, optimal climb and descent, wind-optimizing direct routes, improved arrival and departure procedures, and more efficient traffic management practices. Estimates were developed for a projected fleet mix and projected traffic increases by phase of flight in the continental US, to the year 2015.

2.2 Results indicate potential annual savings of over 10 billion pounds of fuel, over 200 million pounds of both NO_x and CO, and 60 million pounds of HC compared to what would have resulted without the CNS/ATM improvements.

3. THE GLOBAL AIR NAVIGATION PLAN

3.1 ICAO's *Global Air Navigation Plan for CNS/ATM Systems* only makes passing reference to the environmental benefits of CNS/ATM. The Kyoto Protocol to the United Nations Convention on Climate Change has highlighted aviation's potential impact on global warming. Also, aviation's impact on local air quality is a growing concern. It is important that the aviation community demonstrate its competency and credibility in these areas. ICAO must develop and document the benefits of CNS/ATM starting with expanded guidance in Volume I of the Global Air Navigation Plan for use by the regions in doing regional assessments.

4. ACTION BY THE ALLPIRG

4.1 The ALLPIRG is invited to recommend that the Secretariat:

- a) develop a new chapter in Volume I of the Global Air Navigation Plan on the environmental benefits of CNS/ATM;
- b) provide guidance in Volume I of the Global Air Navigation Plan for ICAO regional planning groups to use in developing their own environmental assessments; and
- c) provide the results of the work of CAEP Working Group 4 on a global assessment methodology to the regional planning groups as it is developed.