

CONFERENCE ON THE ECONOMICS OF AIRPORTS AND AIR NAVIGATION SERVICES

(Montreal, 19 - 28 June 2000)

Agenda Item 4: Determinants of the economic regulation of airports and air navigation services
Agenda Item 5.2.2: Air navigation services charging principles

ECONOMIC ASPECTS OF CNS/ATM SYSTEMS IMPLEMENTATION

(Presented by the Secretariat)

SUMMARY

This paper focuses on economic aspects of CNS/ATM system implementation; and refers to ICAO guidance in this area. Suggested action by the Conference is at paragraph 5.1.

1. Background

1.1 A fundamental characteristic of CNS/ATM systems (except for airborne equipment) is that they are provided as part of the air navigation facilities and services, and hence the same basic economic principles apply to them as to other such facilities and services. What sets CNS/ATM systems apart technically from most other air navigation facilities and services is the improved technology and the extension of capacity they offer, but that is a difference in degree not in substance. Consequently, policy as well as supplementary practical guidance developed by ICAO on organizational and cost recovery aspects of air navigation services applies to CNS/ATM systems.

2. ICAO guidance and its dissemination

2.1 The *Statement of ICAO Policy on CNS/ATM Systems Implementation and Operation*, adopted by the Council in March 1994, specifically addresses CNS/ATM systems cost recovery policy stating that such cost recovery must be in conformity with Article 15 of the Chicago Convention and the

Statements by the Council to Contracting States on Charges for Airports and Air Navigation Services * (Doc 9082/5).

. More detailed supplementary guidance is contained in three documents addressing economic issues of particular relevance to implementation and operation of CNS/ATM systems (described in detail in ANSCConf-WP/23 – ICAO activities in the field of economics of airports and air navigation services). The documents are: the *Manual on Air Navigation Services Economics* (Doc 9161/3) which provides guidance on various organizational aspects; and financial aspects including financial control, cost recovery, and financing of air navigation services infrastructure. Aspects of these subject matters which are of special relevance to CNS/ATM systems provision are identified and addressed throughout the Manual.

2.3 Another document is the Air Navigation Services Economics Panel's *Report on Financial and Related Organizational and Managerial Aspects of Global Navigation Satellite Systems (GNSS) Provision and Operation* (Doc 9660). The report focusses on organizational aspects of GNSS provision, including multinational aspects, ownership and control; and financial aspects, including funding sources, cost identification and cost recovery.

2.4 The third document is the *Economics of Satellite-based Air Navigation Services - Guidelines for cost/benefit analysis of communications, navigation and surveillance/air traffic management (CNS/ATM) systems* (Circular 257-AT/106) which contains guidance material to assist States to carry out studies of CNS/ATM systems implementation.

2.5 Also of relevance is the *Global Air Navigation Plan for CNS/ATM Systems*, which addresses operational concepts and general planning principles relevant to CNS/ATM systems implementation and operations. While primarily technical in scope the plan also addresses in separate chapters such issues as organizational and international co-operative aspects; cost/benefit and economic impacts; and financial aspects.

2.6 While not targeting CNS/ATM issues specifically the ICAO regional workshops on airport and route facility management which address organizational and financial managerial aspects of airport and air navigation services infrastructure, pay specific attention to these subjects in the context of CNS/ATM systems operation. Similarly, the workshops on forecasting and economic planning address, *inter alia*, cost/benefit analysis of CNS/ATM system implementation and related traffic forecasting requirements. Both types of workshops are held at the rate of three every two years. (See also ANSCConf-WP/23 referred to in paragraph 2.2 above).

3. Discussion

3.1 It has been repeatedly stated that the technical obstacles to CNS/ATM systems implementation have been overcome and that the main challenges being faced by States are currently of an organizational and financial nature. Policy guidance in these two areas is largely in place. Moreover, most of the basic practical guidance required relating to organizational options, cost/benefit analysis, financial control, cost recovery and financing has been developed, but will need to be reviewed and expanded as required; also guidance material on business cases is being developed. It is clear therefore that more effort needs to be made by ICAO to assist a large number of States in implementing available guidance. This is because inadequate organization of air navigation services operation and lack of sound financial management procedures are undermining the confidence of the financial community to provide these States with the financing required to implement CNS/ATM systems components.

*Proposed by the Secretariat in ANSCConf-WP/4 to be restructured and retitled *ICAO Policies on Charges for Airports and Air Navigation Services*.

3.2 A sound financial management system which is essential for successful cost recovery and obtaining financing for CNS/ATM systems as well as air navigation services in general requires:

- recognition and awareness of international cost recovery policy for air navigation services;
- establishment and maintenance of an effective cost and revenue accounting system;
- a sound methodology for determining the cost basis for charges;
- an effective mechanism for the collection of the charges;
- preparing cost/benefit analyses, business cases and economic impact studies; and
- developing a sound and detailed financing plan.

Various aspects of financing airports and air navigation services infrastructure are addressed in ANSCConf-WP/8 – Funding issues.

3.3 The implementation and operation of major CNS/ATM systems components require, with rare exceptions, international co-operation because of the magnitude of investments involved and the capacity that will be provided. Assistance is, however, required in many regions to establish such co-operative ventures as well as other cooperative or joint ventures which can greatly benefit States. That subject and ICAO's role therein is addressed in ANSCConf-WP/5 – International Cooperative Ventures.

4. Conclusions

4.1 The process of CNS/ATM systems implementation has reached a certain level of maturity. In the future increasing emphasis will be placed, from the economic and organizational perspective, on viewing CNS/ATM systems as parts or components of the overall air navigation services infrastructure. This is reflected in the ICAO work programme where pursuant *inter alia* to recommendations of the World-wide CNS/ATM Systems Implementation Conference (1998, Rio de Janeiro) more emphasis is being placed on assisting States with regard to the organizational and financial aspects of CNS/ATM systems implementation. That calls for more attention being given to practical issues and the implementation or application of existing guidance rather than development of new guidance. More specifically, there is a strong demand from States for guidance and assistance in such areas as cost/benefit analysis, development of business cases, financing and cost recovery. Of unknown dimensions but with the prospects of becoming quite important is such assistance in establishing joint cooperative ventures as ICAO may be called upon to provide because of the experience it possesses and the impartial advice it can provide in this area.

5. Action by the Conference

5.1 The Conference is invited to note this paper and comment on its contents, in particular the conclusions in paragraph 4.1.

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