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CONFERENCE ON THE ECONOMICS OF AIRPORTS AND AIR NAVIGATION SERVICES

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Agenda Item 5: ICAO policy
Agenda Item 5.2: Elements for consideration with regard to ICAO policy

ECONOMIC INCENTIVES FOR A SOUND REGIONAL ATM SYSTEM

(Presented by the European Commission)

INFORMATION PAPER

1. Introduction

1.1 The regional approach to the implementation of Air Traffic Management (ATM) systems requires arbitrating between different and even diverging national needs and ensuring that commonly agreed objectives are met on time and according to plans. Some limitations are inherent in this collective decision-making process, particularly when decisions have to be supported by financial commitments, thereby infringing upon the subsidiary role of different actors in defining their own investment policy.

1.2 A regional system, such as the trans-European ATM network, is a compound of national networks. Its performance in a seamless fashion is strongly influenced by adequate planning and implementation of its components according to regional requirements. Bottlenecks in a regional system are often caused by deficiencies in the local infrastructure, which does not adequately support regional requirements. In the European case, most bottlenecks are located in sectors adjacent to national borders confirming the existence of gaps in the capacity of neighbouring States. The sizing of national components often requires higher investments to respond to regional rather than local needs and national actors may have difficulty in adapting their investment policy to the regional perspective.

1.3 A significant increase of capacity in the European airspace would depend on the implementation of the next generation systems (CNS/ATM, Communication-Navigation-Surveillance/Air Traffic Management). These calls for the establishment of phased funding programmes both at regional and national level. Airspace users are the ultimate payers of such investments and because they operate in a highly cost sensitive market, they are not be prepared to invest heavily without clear indications of financial and economic risks. Under the present conditions of allocation of ATM costs among airspace users, consideration of business cases purely driven by return upon investment to the investor do not facilitate the introduction of next generation systems.

2. Reasons for incentives

2.1 The application of common rules usually relies on regulatory mechanisms. Regulation allows to mandate and enforce decisions by creating obligations on individuals and undertakings, which may have financial consequences. However this option is not always acceptable and practicable. At the Community level, the increased importance given to the market place suggest to give priority to individual behaviour and motivation before initiating any regulatory process resulting in binding commitments. Soft economic means to facilitate the implementation of decisions may therefore represent an alternative way to ensure commitment in parallel to regulatory tools, particularly when no essential requirements in terms of safety, performance and interoperability exist.

2.2 Increasing corporatisation and commmercialisation in the ATM sector are modifying managerial practices of Air Traffic Control service (ATC) providers. More emphasis is put on financial results of the services delivered to airspace users. Under these circumstances, the feasibility of new projects is mainly reviewed under purely financial terms rather than economic terms, embracing externalities and opportunity costs. This approach may penalise investment having good economic viability, particularly from a regional perspective, but a weak financial profitability. Incentives may therefore be useful to bridge the gap between the financial and economic values of projects to convince promoters and investors to undertake investments otherwise not profitable and reconcile diverging findings of regional and individual business cases.

2.3 Decisions on the introduction of new systems often raise lively debates between interested parties regarding pros and cons of various solutions. Airspace users always stress the need for short-term gains and reduced pay back periods. However, many systems, principally referring to CNS/ATM technologies, would not deliver full benefits until they will reach full implementation often in a system-wide context, thus coupled with the implementation of other complementary enablers. The phase of transition, during which old systems are retained to ensure the necessary redundancy, represent a critical stage where costs may indeed increase and offset benefits. This situation may occur when financial actions are required by a plurality of actors (airspace users and ATC service providers) and a critical mass has to be reached before concrete benefits are delivered. Suitable economic incentives may be introduced to overcome financial difficulties during the phase of transition towards CNS/ATM systems.

2.4 The process of modernisation in ATM has always suffered from the length of the decision-making process and related implementation actions. Technical systems are being gradually developed and it is not possible to change them too rapidly. Decisions on new investment tend to privilege plans of replacement of old systems, at the end of their life, by means of off-the-shelf technology. Consequently short term and local needs are often distracting from medium long term and regional needs, which always suffer from insufficient contributions from national budgets. An efficient implementation of next generation systems at regional level could benefit of adequate financial incentives, particularly during the phase of development and validation where scarce resources are usually allocated from economic actors. This would also help to reduce the lag between the conception and the deployment phases.

3. Options for incentives

3.1 Collective funding mechanisms are suitable financial tools to sustain the implementation of regional objectives. The trans-European transport network is an example of such mechanisms. They can be beneficial to help finance investments with low financial return but high economic profitability for the whole system. Firstly they can address the removal of black spots in a regional network where these are caused by delay and financial difficulties at national level because national benefits do not balance national costs. Secondly, the disposal of such solidarity funds may trigger regional co-operation and the launch of regional

projects. This last aspect is crucial in the case of CNS/ATM systems usually having a cross border nature and impact, which have to be urgently implemented to solve the existing problems of congestion.

3.2 The current arrangements for the allocation of ATM costs to airspace users do not necessarily promote the efficient provision of adequate infrastructure; there are no signals to the providers of services that more capacity is needed, or incentives to provide that capacity. The present flat-rate method is not representative of the true economics of ATM services as this industry moves towards free routing/flight, satellite navigation and increased automation. Alternative way of charging should reflect the level of use of various services at the point of use, taking into account that the implementation of next generation technologies will favour their unbundling both at operational (by type of application) and organisational level (national vs. regional). Different services of communication, navigation and control will coexist. This in turn will increase transparency on the cost of such services creating the conditions for a competitive market. By reviewing the definition of ATM charges in relation to the various services provided, it will be possible to allocate costs according to the different degrees of use of capital and human resources, therefore favouring the transition towards improved operation and automation.

3.3 Major financial constraints to the implementation of next generation systems are associated with the cost of fitting in aircraft with suitable avionics. However, under the present situation of airspace congestion, no reward is given to those operators who use the least airspace having made significant investment to enhance the CNS capabilities of their fleet. Advanced CNS technology not only allows to reduce the size of the "bubble" of airspace engaged by an aircraft to fly under safe conditions but also increase the flexible use of airspace by rendering aircraft more autonomous. Higher aircraft capabilities must be properly rewarded since they reduce the use of congested airspace and limit the dependency on manned operations on the ground. The formulation of route charges should be modified to reflect this, therefore giving the due incentives to airspace users who are prepared to invest in advanced avionics without infringing upon equity principles.

4. Conclusions

4.1 The European Commission believes that the implementation of sound regional ATM systems might be facilitated by the availability of proper economic incentives. This would require policy measures based on the principles of regional co-operation and integration, including:

— the establishment of collective funding mechanisms, on a regional basis, for financing common projects essential for the performance of regional networks;

— the revision of charging principles according to a service oriented structure to allow the emergence of services of cross-border nature relating to the implementation of advanced technologies;

— the introduction of economic incentives to reward aircraft capabilities in using efficiently scarce resources thereby facilitating and speeding up the implementation of sound regional ATM networks.

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