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ASSEMBLY — 37TH SESSION

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Agenda Item 54: Other issues to be considered by the Economic Commission

**ACHIEVING ECONOMIC EFFICIENCY OF THE AVIATION SECTOR THROUGH STATE
AVIATION PLANNING**

(Presented by Malaysia)

EXECUTIVE SUMMARY

This paper presents a proposal for the introduction of a State aviation planning towards eliminating wastage of resources and achieving economic efficiency of the aviation sector of the air transport industry.

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objective D — Efficiency — Enhance the efficiency of aviation operations.
<i>Financial implications:</i>	Not applicable.
<i>References:</i>	

1. INTRODUCTION

1.1 The air transport industry includes those activities that are directly dependent on transporting people and goods by air. These include:

- a) the aviation sector – airports, airlines, general aviation (GA), air navigation services providers (ANSPs), and those activities directly serving passengers or providing airfreight services; and
- b) the civil aerospace sector, which comprises the manufacture and maintenance of aircraft systems, frames and engines.

1.2 This paper limits the discussion on the importance of advanced planning system of the aviation sector of air transport industry towards eliminating wastage of resources and achieving economic efficiency.

1.3 The aviation sector has been looked as an industry with many players – airports, airlines, and ANSPs as major players – acting independently to maximize their own interests, a scenario that is synonym to the classic example of Prisoner’s Dilemma in Game Theory. Players acting independently do not contribute to the economic efficiency of the total aviation system; instead, they contribute to the wastage of resources.

1.4 In order to achieve economic efficiency of the total aviation system and thus eliminating wastage of resources, the aviation sector must be looked as a public system of cooperation among aviation players. Players act in collective rationality in achieving total economic efficiency of the aviation sector.

1.5 A sound approach to encourage cooperation and synergy among aviation players is by creating and strengthening laws. State aviation authorities must take a leading role in the planning and development of an economically efficient aviation sector.

2. OVERVIEW

2.1 Article 44 of the Chicago Convention stipulates that the aims and objectives of the International Civil Aviation Organization (ICAO) are to develop the principles and techniques of international air navigation and to foster the planning and development of international air transport so as to, among others, prevent economic waste caused by unreasonable competition.

2.2 Presently, the cooperation among aviation system players exists at the airport level. The Total Airport Management (TAM) creates an environment that enables aviation players at an airport to maintain a joint plan, thus working towards dynamically agreed goals in order to achieve general improved efficiency in airport management. The TAM ensures the right players get accurate data at the right time in the right place, thus improving shared information as well as the quality of subsequent decisions resulting from improved data.

2.3 Figure 1 depicts the flow of data supplied by individual aviation players to the APOC of the TAM system. These data are based on individual players' planning taking into account the objectives to be achieved in maximizing their own interests that, in most cases, are in conflict with others. These data are useful to align a player's operations with other players' available resources. In the end, economic efficiency of the total aviation system may not be achieved.



Figure 1: The flow of data in TAM

2.4 As a simple illustration, data revealed by an ANSP indicate that its runway capacity can only handle 40 aircraft per hour; airline A has a peak-hour schedule of 30 take-offs and landings per hour; airline B has a peak-hour schedule of 20 take-offs and landings per hour; airport can cater for 50 parking bays; and 20 refuelling can be done per hour. This scenario results in delays that constitute high delay costs and wastage of resources, thus making the whole aviation activities at the airport economically inefficient.

3. STATE AVIATION PLANNING

3.1 An economically efficient aviation sector requires planning interventions by States. Aviation players – airports, airlines and ANSPs as the major ones – could not achieve economic efficiency as they act on maximizing their own interests. States dictate the planning and development of the aviation sector as planning guidance of players.



Figure 2: The flow of data in TAM guided by State Aviation Planning

3.2 Figure 2 depicts the flow of data supplied by individual aviation players to the APOC of the TAM system with guidance from State planning. The aviation authority based on credible data and forecasting techniques, does state aviation planning; aviation players use the plan as guidance in their own planning.

3.3 In a simple illustration, the aviation authority forecasts the outlook of the aviation sector for a five-year period and provides execution plans of airport and airspace capacities to be made. Based on the sector outlook, aviation players do their own planning within tolerance. Cooperation and collaboration among players in disclosing pertinent data and information to APOC must be strengthened by laws.

4. **CONCLUSION**

4.1 The introduction of State aviation planning, spearheaded by aviation authorities, is believed to be effective in achieving an economically efficient aviation sector and eliminating wastage of resources.

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