



## Agenda Item 6: Airspace Improvement Programmes

### AIR ROUTE NETWORK AND AIRSPACE PLANNING IMPROVEMENT ACTIVITIES

(Presented by Mongolia)

#### SUMMARY

This paper presents ongoing activities of airspace management, planning in Mongolia within scope of implementing seamless airspace concept of Asia Pacific region.

The Civil Aviation Authority of Mongolia is implementing several projects, such as PBN, radar and ADS-B installation in order to improve the safety, efficiency of flights over Mongolian airspace.

To harmonize airspace management activities of neighboring countries is important for the improvement of the efficiency and safety of flights increasing rapidly every year.

This paper relates to –

#### Strategic Objectives:

A: *Safety – Enhance global civil aviation safety*

C: *Environmental Protection and Sustainable Development of Air Transport – Foster harmonized and economically viable development of international civil aviation that does not unduly harm the environment*

#### Global Plan Initiatives:

GPI-6 Air traffic flow management

GPI-7 Dynamic and flexible ATS route management

GPI-8 Collaborative airspace design and management

## 1. INTRODUCTION

1.1 From 2000 to 2012, the amount of the international flight in Mongolia was increased by 12,4 percent in average. The rapid growth of economy influenced by the mining industry was key factor for the increase of number of the domestic flight and its passengers. The number of passengers in domestic flight in 2011 was increased by 30% compared to the 2012. These statistics show that there is paramount need of stable airspace improvement plan.

## 2. DISCUSSION

### Air route improvement

2.1 Improvement program of the air route structure is going continuously by orders of Director General of Civil Aviation Authority of Mongolia to allow international air carriers opportunity to fly more direct route and short cuts over Mongolian airspace and reduce the fuel consumption and air pollution.

2.2 Main aim of the air route improvement is to allow over flight traffic to avoid congested area around Chinggis khaan international airport. For instance, route A308 was created from point BULAG to point ANIKU. Also, route B928 from point NIGOR to point KATVA and G230 from the point NOPUS to point UGOBI were established in 2012. These routes are the backup routes and enhance the cross flight over Mongolian airspace. These routes are 5-20 km shorter than the previous routes.

#### Horizontal separation

2.3 The reduction of horizontal separation in air route has begun since the surveillance system implementation in Mongolia. The longitudinal separation in main routes A575, M520, B339, has been reduced from 150km to 90 km in 2012. After survey, safety assessment, and ATC training CAAM is planning to decrease the enroute horizontal separation down to 40 km . In the near future, ADS-B implementation will give the opportunity to reach ICAO 5NM horizontal separation minima.

#### Upper airspace structure

2.4 Mongolia upgraded the upper airspace structure, and moved into new structure with 4 sectors of radar surveillance control and 2 sectors of procedure control in 2012. In November 2013, CAAM is going to change upper airspace to 5 sectors due to operation of additional new surveillance systems which brings more equal ATC workload in all sectors.

#### Harmonization of airspace planning

2.5 When planning the activities of improving air route network and airspace CAAM considers air route structure of the neighboring countries and tries to integrate with it. Rapidly increasing air traffic flow demands neighboring countries to harmonize their airspace planning activities.

2.6 Difference in airspace planning and policy raises difficulties to have stable and continuous airspace plan. For instance, Russian Federation is implementing one direction parallel air route structure in border points between Mongolia and Russian Federation. People's Republic of China is planning the traffic based in destination in border points between Mongolia and People's Republic of China. Therefore, Mongolia realizes the demand of improving cooperation and harmonization of airspace and air route planning.

#### New border point/ air gate

2.7 Mongolia has 9 border points with Russian Federation which 5 of them are located in main routes and 6 border points with People's Republic of China which 3 of these 6 border points are located in main routes. The flights including flights from North Pole (SULOK) use 6 border points between Russian Federation and Mongolia, only 3 border points between People's Republic of China and Mongolia. When number of flights increases, the problem is arising such as inefficient flight level, and difficulty to plan and manage overcrowded intersection of air routes.

2.8 There are two solutions to solve this problem, first is to reduce en route longitudinal separation and second is to increase the number of border points with neighboring countries. CAAM is planning to reduce vertical separation to 40 km in 2014.

2.9 During several meetings of the delegates from Civil Aviation Authority of Mongolia and Air Traffic Management Bureau, CAAC between 2011 and 2013, the one of the important issues was to open a new border point. CAAM requested a new border point located between NIXAL and MORIT on the basis of the conclusion of flight flow management, airspace research and request by IATA and some airlines.

2.10 To opening new border point near NIXAL will improve the safety and efficiency of flights. As mentioned before, it will reduce the inefficient flight level assignment and issues from intersecting air routes. The volume of the flight from China, Hong Kong, and Southeast Asian countries to European countries are increasing each year rapidly. The new border point will let these flights to avoid and bypass the congested areas of the busy airports such as Beijing city, Tianjin city, Chiachuang city, Jinan city and as well Ulaanbaatar city. The flights from domestic airports in Mongolia (Dalanzadgad, Ovoot, Khanbumbat, and Tavantolgoi) to hub airports People's Republic of China will gain short and direct routes.

### **3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) To note the information contained in this paper
- b) To discuss importance of harmonization of airspace planning between neighboring states
- c) discuss any relevant matters as appropriate.

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