



International Civil Aviation Organization

**The First Meeting of the APANPIRG ATM Sub-Group
(ATM /SG/1)**

Bangkok, Thailand, 20 – 24 May 2013

Agenda Item 4: ATM Systems (Modernisation, Seamless ATM, CNS, ATFM)

**THE PROCESS OF SURVEILLANCE CONTROL SERVICES IMPLEMENTATION IN AIR
TRAFFIC MANAGEMENT OF MONGOLIA**

(Presented by: CAA of MONGOLIA)

SUMMARY

This paper presents a report about the opportunity on flight safety enhancement in our airspace and more flexible development of air traffic flow planning, with more airspace capability and capacity, by implementing RADAR Control Services in the airspace of Mongolia.

The Implementation of Radar Systems is one of the biggest projects being conducted by CAA of Mongolia for enhancement of Air Navigation Services and Air Traffic Management.

This paper relates to:

- 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

This report concerns to the following Global Plan Initiatives by ICAO:

- GPI-1 Flexible use of airspace
- GPI-4 Alignment of upper airspace classifications
- GPI-5 RNAV and RNP (Performance-based navigation)
- GPI-7 Dynamic and flexible ATS route management

1. INTRODUCTION

1.1 CAA of Mongolia has commenced stepwise implementation of Radar Control Services in ATM and Services by using first systems, as a result of long-term preparation and researches concerned.

1.2 The Implementation of Radar Systems enables enhancement of capacity of ATS main pair routes connecting Asia and Europe, of capability for flights to be flown at their effective flight levels by reducing separation between aircraft, and more flexible traffic flow management.

2. DISCUSSION

Safety Assessment

2.1 CAA of Mongolia researched the implementation work of radar services in 2008, commenced the project process the following year, and has successfully implemented surveillance services through 35 percent of Mongolian airspace which is considered as it concerns ATS pair routes Northeast Asian and European big cities.

2.2 Prior to implementation of Radar Systems in the services, Safety Assessment was conducted with the cooperation of Aerothai Organization of Thailand, thus Decision of the Project Commencement was set on the basis of Safety Risk studied by above mentioned Safety Assessment, conclusion of workgroup of MCAA and other studies.

Upper Airspace Organization

2.3 Installation of Radar Systems enables surveillance control services to be provided to flights operated on ATS main overfly routes of Mongolia such as A308, A310, B339, R372, A575, M520 and B208.

2.4 Within the frame of Radar Control Services Implementation Process, Airspace Structure and Organization was modified that former 5 procedural control sectors turned into 4 surveillance control sectors and 2 procedural control sectors.

New ATS routes

2.5 For the purpose of ensuring safety, providing capability of overflights and reducing difficulties arisen by routes crossings, for flights operated within the highest congestion sector Ulaanbaatar and flights operating departure and landing at Chinggis Khan International Airport, A200 route was newly designed between BULAG reporting point and ANIKU reporting point.

2.6 G240 and G230 routes were newly designed on the basis of needs to improve Mongolia Upper Airspace Capacity, to reveal contingency routes, to implement offset tracking procedure, and requests of overflying airline companies.

2.7 Therefore, the Implementation of Radar Control Services enabled decrease in the number of en-route reporting points, previously used for Procedural Control Services, and straightening some domestic and international ATS routes.

Separation

2.8 Longitudinal Separation is currently maintained by 90 kilometers at ATS routes with Radar Control Services, and is now being planned to reduce up to 30 kilometers as stated in Civil Aviation Regulation within near future.

2.9 It is considered as possible to reduce up to 10 kilometers of Longitudinal Separation as stated in DOC4444 after conducting safety assessment and planning with the cooperation of neighboring countries and final amendment in domestic Civil Aviation Regulations concerned as 2 neighboring countries set their Separation Minima in Upper Airspace by 30 kilometers, and 20 kilometers.

Further Improvement Plan of Surveillance Systems

2.10 It is being planned that 4 radar systems will be installed in a stepwise way, and 2 of them are to be installed and implemented in the services in the 4th quarter of 2013. Incidentally, there will be 4 surveillance control sectors and 1 procedural control sector by changing upper airspace organization and structure.

2.11 Implementation of the above mentioned systems, it fully covers cross-polar G218 route and enables Radar control services in the upper airspace of Umnugobi province which is considered as high increase of domestic flights due to mineral industry.

2.12 Thus, international main loading ATS routes would be double covered by radar systems, and it is planned that surveillance control services should be implemented in the approach control services at 4 domestic airports located in Umnugobi province, a developing mining central area.

2.13 Within the Policy of Improvement in Air Navigation Services, CAA of Mongolia is projecting to install 5 ADS-B stations within the 3rd quarter of 2013 which should allow more reliable technical operation by enabling contingency coverage for previously installed radar systems coverage. Henceforth, ADS-B systems should be primary surveillance system for Mongolia, according to the Plan of Asia Pacific Area.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- Review and take into consideration the information provided in the paper, and discuss on related issues.

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