

ELEVENTH AIR NAVIGATION CONFERENCE

Montreal, 22 September to 3 October 2003

Agenda Item 6 Aeronautical navigation : issues

KEY ISSUE ON CNS/ATM IMPLEMENTATION IN INDONESIA

(Presented by Indonesia)

SUMMARY

This paper summarizes activities in Indonesia to support ICAO CNS/ATM Programme.

1. INTRODUCTION

1.1 This paper gives an overview of the CNS/ATM planning and implementation in Indonesia since February 1995 with reference to the ATC Master Plan Study, developed by Indonesia DGAC.

1.2 ADS-B equipment has been installed for trials near the airport of Soekarno Hatta in May 1998 with the technology provided by DASA from Germany.

2. DISCUSSION

2.1 Communication

Ground-to-ground

2.1.1 The installation of 54 VSAT ground stations to support ground-to-ground communications is spread amongst major airports in Indonesia archipelago.

Air-to-ground

2.1.2 Due to terrain conditions the infrastructure air-to-ground communications using VHF is unable to cover all 4 FIRs within Indonesia Airspace. For enhanced safety, DGAC decided to install VHF extended range with 25 KHz channel spacing. Because of potential frequency congestion in the near future the ground equipment is prepared to be upgradeable to 8.33 KHz channel spacing. VHF data link was already installed in 1999 to support trial operation for CPDLC. On November 2001 this service was published through AIP supplement, especially for surveillance of aircraft over Indian ocean.

2.2 Navigation***Implementation WGS-84 route***

2.2.1 The implementation of WGS-84 at 55 international and 66 domestic routes, including 9 International RNP-10 routes, has been done gradually since November 1999.

GNSS non-precision approach

2.2.2 The “GPS overlay” non-precision approach has been implemented at 45 major and medium airports of total 187 commercial airports in Indonesia.

DGPS SCAT I

2.2.3 DGPS SCAT I was commissioned for trial operation in 1997 at Halim Perdana Kusumah Jakarta International Airport.

2.3 Surveillance***ADS-A — ADS-C***

2.3.1 ADS-A based on ARINC 611 standard was commissioned for trial operation since 1996 within Jakarta FIR for services in the Western part of Indonesia. On the November 2000 the development of software has been prepared for ADS/CPDLC purposes. This equipment is working stand alone and in the future this system will be integrated into Jakarta advance ATS system.

ADS-B

2.3.2 VDL Mode 4 basic operation for ADS-B was commissioned on July 1998 and operated successfully without interference to other radio equipment on board B-200 King Air PK-CAK. The feasibility study of the ADS-B Mode S 1 090 MHz extended squitter is on-going for supporting air traffic services up to FL 245 and later above FL 245. The data will be used for international flights and integrated into area control centre. Phase one installation for three ground station in the eastern part of Indonesia to cover area beyond radar coverage is under way. The installation is expected to be completed by the end of 2005.

2.4 ATM

Jakarta advance ATS system

2.4.1 The new ATM system was commissioned on December 1999 at the Jakarta Soekarno Hatta International Airport. Functionality includes RDPS, FDP, conflict probe, electronic strips, air situation display, etc.

Ujung Pandang advance ATS system

2.4.2 The Eurocat 2000X new ATM system will be in operational services in March 2005 at the Ujung Pandang Hasanuddin International Airport. Functionality includes RDPS, FDP, ADS A/C, ADS-B, Conflict Probe, Electronic strips, Air Situation Display, etc.

RNP implementation

2.4.3 RNP 10 was implemented in November 2000 on EMARSSH route within Jakarta and Bali FIR, and RNP 10 will be implemented gradually within Indonesia Airspace. In the near future, Indonesia will be implementing RNP 4.

RVSM implementation

2.4.4 RVSM route has been implemented since September 2001 between FL 350 until FL 390; the RVSM within airspace in Indonesia will be implemented on 27 November 2003 from FL 310 until FL 410, except on the EMARSSH route between FL 290 until FL 410.

Restructure route and airspace

2.4.5 Indonesia Airspace divided into 4 FIRs, Jakarta, Bali, Ujung Pandang and Biak FIRs. After March 2005 the FIRs will be restructured into 2 FIRs: Jakarta FIR for western part of Indonesia and the Ujung Pandang FIRs for eastern part of Indonesia. Consequently most of location indicators will be revised. The detail information regarding to restructuring route, airspace and location indicators will be published on AIRAC system publication 27 November 2003.

3. ACTION BY THE CONFERENCE

3.1 The conference is invited to note the contents of this paper.