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ASSEMBLY — 36TH SESSION

TECHNICAL COMMISSION

Agenda Item 37: Other air navigation matters

NEW APPROACH RADARS FOR IRANIAN AIRPORTS (ARIA SYSTEMS)

(Presented by the Islamic Republic of Iran)

EXECUTIVE SUMMARY

This paper presents some useful information regarding improved airspace surveillance of five main Iranian airports by PSR, SSR, and related automation systems, which are manufactured and installed by THALES Company.

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objectives A, C, D and E.
<i>Financial implications:</i>	Not applicable
<i>References:</i>	Doc 9750, <i>Global Air Navigation Plan for CNS/ATM Systems</i>

¹ English version provided by Iran (Islamic Republic of).

1. INTRODUCTION

1.1 Due to enhancement of safety for the flights operating in some main airports within the Islamic Republic of Iran airspace, five modern PSR and SSR radars installed and came into operation at Mashhad, Tehran/Imam Khomeini, Isfahan, Kish Island and Bandar Abbas international airports.

1.2 The software for automation systems, which are equipped and installed at the aforesaid airports, is called EUROCAT C.

2. THE OVERVIEW OF THE SYSTEM

2.1 The Purpose of the System

2.1.1 To allow the operational control to be performed by using radar data, flight data and a display system; and

2.1.2 To perform simulated traffic control and using simulator for training.

2.2 The Functional Capabilities of the System

2.2.1 The EUROCAT C system, integrated with other ATC-related systems (radars, AFTN Message Switching System, External Time Source), provides the equipment and facilities for air traffic management.

2.2.2 More particularly, the EUROCAT C System will provide the following operational functions:

- a) acquisition and processing of primary, secondary and combined track and plot information from several radar inputs;
- b) ability to receive and process a number of different radar data formats;
- c) display of mono-radar weather data;
- d) automatic collection and processing of flight plans via an AFTN interface;
- e) automatic transmission of flight plan related messages to an AFTN system;
- f) receipt of meteorological data messages, NOTAMS and service messages via an AFTN interface;
- g) automatic allocation of secondary surveillance radar (SSR) codes;
- h) presentation of tracks associated with or without their flight plan information;
- i) presentation of electronic strips;
- j) detection of short term conflicts;

- k) minimum safe altitude warnings;
- l) danger area infringement warnings;
- m) monitoring and control of radar inputs;
- n) overall system monitoring and control;
- o) time synchronization via external time source clock;
- p) recording and air situation data playback;
- q) flight strip printing; and
- r) simulation.

2.3 **External Interface**

2.3.1 The EUROCAT C System segment has the following external interfaces:

- a) Radars;
- b) External Time Source;
- c) AFTN; and
- d) Metrological Office.

2.4 **Radars**

2.4.1 The EUROCAT C System has point-to-point links with radar stations. Depending on the radar sensor type, the types of data capable of being received and processed are plots, tracks, weather data, radar status and processed videos. The system has also the ability to receive and process a number of common radar formats.

2.4.2 In order to improve radar data delivery for point-to-point links with radar stations, VSAT and other existing options are being evaluated.

2.5 **External Time Source**

2.5.1 The whole system can be synchronized to an external time source signal.

2.6 **AFTN**

2.6.1 Connection to an AFTN Switching Centre (ASC) is provided.

2.7 **Meteorological Office**

2.7.1 The EUROCAT C System receives meteorological data from the Met Office.

3. **THE FUNCTIONS OF THE SYSTEM**

3.1 The EUROCAT C System segment has the following major functions:

- a) Air Traffic Control;
- b) Customization;
- c) Data Collection; and
- d) Training and Simulation.

3.2 **Air Traffic Control**

3.2.1 The Air Traffic Control capability comprises the Radar Data Function, Flight Data Function, Human Machine Interface Function and the Monitoring and Control System Function.

3.3 **Customization**

3.3.1 Customization is the process of preparing an ATC environment, adapted to a particular operational need of the customer.

3.3.2 The Customization capability comprises the System Parameters Management Function.

3.4 **Data Collection**

3.4.1 The Data Collection capability comprises the Recording and Replay Function.

3.5 **Training and Simulation**

3.5.1 The Training and Simulation Capability comprises the Simulation Function.

4. **CONCLUSION**

4.1 Increasing airspace capacity, reduction of separation, providing radar services and information and finally the enhancement of safety could be considered as the benefits of these five new MSSR radars. They are also matched with the radars in Tehran Area Control Centre and can be expanded in the future by a suitable planning of Iranian ATM in order to provide full radar coverage for the whole of Tehran Flight Information Region.