

TEL : 00 213 21 65 63 65 FAX : 00 213 21 67 96 46 ADRESSE TELEGRAPHIQUE AFTN : DAAAYNYX COM : NOF ALGER	الجمهورية الجزائرية الديمقراطية الشعبية REPUBLIC ALGERIENNE DEMOCRATIQUE ET POPULAIRE DIRECTION D'EXPLOITATION DE LA NAVIGATION AERIEENNE SERVICE DE L'INFORMATION AERONAUTIQUE ROUTE DE CHERARBA OUED SMAR – ALGER BP 70D DAR EL BEIDA ALGER – ALGERIE -	AIC NR 01 23 AOUT 2004
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## ALGERIA

### AERONAUTICAL INFORMATION CIRCULAR

#### SERIE A NR 01 OF 23<sup>rd</sup> OF AUGUST 2004

This Aeronautical Information Circular (AIC) is issued to give advance notice of the conduction of ADS/CPDLC trials in Algeria airspace with FANS1/A equipped aircraft, starting from the 23 of August 2004. At the long term, the Algerian air traffic service provider, ENNA aim to implement ATS Data Link Services in that airspace.

#### ADS IN GENERAL

ADS is a surveillance technique for use by air traffic services in which aircraft automatically provide, via a data link, data derived from on-board navigation and position-fixing systems. The data transmitted, include as a minimum, aircraft identification and four dimensional position.

Additional data may be provided, as meteorological and flight data, obtained from avionics equipment.

ADS data is processed into reports then transmitted via data link. Reports are generated in response to commands called contract requests issued by the ground ATC system.

Three type of reporting have been identified:

- Periodic contract;
- Event contract;
- On-demand reports.

Downlink ADS messages always include as a minimum a basic ADS group made of latitude, longitude, altitude, time stamp and figure of merit to indicate the accuracy of the position determination. A flight identification group, an earth reference group, an air reference group, a meteorological group, a predicted route group (next two waypoints) and aircraft intent groups can also be sent on specific request.

ADS is recommended by ICAO in oceanic airspaces and area where radar coverage is not possible or not satisfactory. It is also envisaged to provide benefits in en-route continental, terminal areas and in the airport surface. In the case of Algiers FIR, Radar coverage is provided only in the north sectors. The south sectors are still non-radar area and in these particular region ADS will be very valuable.

ADS is automatic and does not require pilot intervention unless for an “ADS emergency mode operation” that can be triggered by the pilot.

#### CPDLC IN GENERAL

CPDLC is Controller Pilot Data Link Communications.

CPDLC is a data link application that allows for the direct exchange of text-based messages between a controller and a pilot, instead of voice for ATC communications.

CPDLC greatly improves communication capabilities for en-route operations in areas where the use of voice communications is considered not efficient, such as oceanic areas, and especially in those situations where controllers and pilots have to rely on a third party HF communications relay. It also remedies voice channel communication, misunderstanding or misinterpretation due to bad voice quality or interference.

Apart from the direct link, CPDLC adds a number of other benefits to the ATS system, such as:

Allowing the flight crew to print messages.

Allowing the auto load of specific uplink messages into the Flight Management System (FMS). This will reduce crew-input errors.

Allowing the crew to downlink a complex route clearance request, which the controller can re-send when approved without having to type a long string of coordinates.

Specific uplink messages arm the FMS to automatically downlink a report when an event, such as crossing a waypoint, occurs. This automation assists with workload management for the flight crew and the controller.

Specific downlink messages, and the response to some uplink messages will automatically update the Flight Data Record in some ground systems.

Sending a message by CPDLC consist of selecting the addressee, selecting the appropriate message from a displayed menu and executing the transmission. Receiving the message takes place by display and/or printing of the message.

## **1. AREA OF APPLICATION**

All Algiers FIR.

## **2. FANS 1/A OPERATIONAL EVALUATION TRIALS**

### **2.1 Trials Period**

The Algerian Air Navigation Service provider, ENNA, is ready to start the FANS 1/A ADS/CPDLC operational evaluation trials with the interested aircraft operators in the Algiers FIR.

The first phase of the FANS 1/A operational evaluation trials, starts on 23 of August 2004, for a period at least of three months. Any changes of the period will be notified by a notam or AIC. Pilots from participating aircraft, 10 minutes after leaving Algiers FIR, will have to:

- a) log-off ("disconnect/select off" ATC COMM) the Algerian SAACTA system, or;
- b) "Select off/set off" ADS.

This is to make sure that ADS reporting is terminated in due time, in case that due to a malfunction some ADS contracts may not be cancelled automatically by the SAACTA system as they normally are Changeovers, extensions or altered circumstances will be published by a new AIC.

The pre-operational SAACTA system will allow ATC to establish periodic, event and demand ADS contracts with aircraft FANS 1 and FANS A equipped.

CPDLC operational evaluation trials will be supported also.

A comprehensive document entitled "**MANUEL DE LA LIAISON DE DONNEES FANS 1/A DES SERVICES ATS EXPERIMENTATION ADS-C/CPDLC**", provides requirements and procedures to participate in the operational evaluation trials.

### **2.2 Registration and Options of Participation**

All airline operators with FANS 1/A equipped aircraft wishing to participate in the ADS and CPDLC operational evaluation trials are kindly requested to submit a **Participation Form** to the **Direction de Developpement de la Navigation Aérienne (DDNA)**, which address is shown in section 3.9. A copy of the **Participation Form** is attached in Annex 1 to this AIC.

Interested aircraft operators may opt between participating in ADS operational evaluation trials only, or in both ADS and CPDLC. This is to take into account that FANS 1/A aircraft crews are not all trained for CPDLC procedures.

### **2.3 Flight Plan notification**

A participation form has been requested to interested aircraft operators to both know their willing to participate in the trials and get certain aircraft information. Nevertheless, all operators, in order to adhere to the prescribed formats and manner of specifying data in the ICAO flight plan form, should insert the following:

- a) Item 10 - The letter "J" to indicate data link available and serviceable;
- b) Item 10 - The letter "G" to indicate GNSS available and serviceable;
- c) Item 10 - The letter "D" in the Surveillance field to indicate ADS serviceable;
- d) Item 18 - DAT/ followed by one or more letters as appropriate to indicate the type of data link capability when letter "J" is entered in Item 10.
- e) Item 18 - RMK/ followed by Algiers FANS1 or Algiers FANS A (specifically requested by Algiers ACC to FANS 1/A participating aircraft).

Example:

Item 10: ....J..... / ...D

Item 18: DAT/SV..RMK/Algiers FANS 1 (for a satellite and VHF data link equipped aircraft, FANS 1 equipped, and participating in the Algiers FANS 1/A operational evaluation trials).

<b>Letter following DAT</b>	<b>Type of DATA LINK</b>
S	Satellite Data link
H	HF data link
V	VHF data link
M	SSR mode S data link

**NOTE:** The above requirements are for an end-state system. If an operator's flight planning system does not have the capability to enter any of the data as indicated, this will not restrict participation in the Algiers FANS 1/A operational evaluation trials.

### **2.4 Log-on**

Aircraft participating in operational evaluation trials are kindly requested to log-on to SAACTA system using the 4 character ICAO code of the Algiers ATS unit "DAAA", between 15 and 45 minutes prior of its entrance to the Algiers FIR airspace.

In order to avoid log-on rejecting, the flight identification used for log-on must be exactly the same as the filed in the ATS flight plan.

### **2.5 ADS procedures**

Immediately after log-on the SAACTA system will automatically establish an initial **15 minutes** periodic reporting rate contract with the aircraft.

Only one periodic contract will be established between the ATC unit and a particular aircraft at any one time. Whenever a new periodic contract is established, the previous periodic contract is replaced.

The periodic contract will remain in effect until it is modified or cancelled.

During the aircraft transit through Algiers FIR airspace different periodic contract reporting rates and message contents will be tested.

In order to minimize the cost of data communications the use of high reporting rates (the highest is 64 seconds due to the limitations of FANS 1/A avionics) and in general the amount of data exchanged will be kept to the minimum required.

ADS contracts and connection should be terminated during the trials by the ground system: automatically when the aircraft has crossed outbound the Algiers FIR boundary;

b) automatically when the aircraft's flight plan has been cancelled or has finished; or

c) manually by the controller at any time considered appropriate (The aircraft has landed within the Algiers FIR, operational evolution is discontinued, etc.)

During the operational evaluation trials phase it is not expected to execute any transfer since no adjacent ATS unit FANS 1/A equipped is yet available.

## **2.6 CPDLC procedures**

The pre-operational system to be evaluated also allows the exchange of CPDLC messages between aircraft and the Algiers ATS unit.

Participating FANS-1/A equipped aircraft wanting/able to participate on top of ADS, also in CPDLC operational evaluation trials, should follow the operational procedures within the already mentioned document " **MANUEL DE LA LIAISON DE DONNEES FANS 1/A DES SERVICES ATS EXPERIMENTATION ADS-C/CPDLC** "

where a set of CPDLC tests to be evaluated is also contained.

## **2.7 Log-off**

Log-off should normally take place 5 minutes after leaving Algiers FIR unless something different is agreed in real time between pilot and controller via voice communications.

## **2.8 ATS Safety Considerations**

During this first phase of the SAACTA FANS 1/A operational evaluation trials, the voice communication procedures will remain as the primary mean of ATS operational communications, either on VHF or HF coverage. Under no circumstances, aircraft participation in these trials will imply a change of the voice communications operational procedures. The CPDLC data link messages exchanged during this first phase of operational evaluation trials, are only for trials, and therefore are not operationally valid. The only operationally valid exchange between pilot and controller shall be through voice communications.

During the ADS operational evaluation trials, ADS data will never be used for operational purposes such as the application of ADS separations between aircraft, between aircraft and the terrain or any kind of ADS service.

## **2.9 Additional Information**

Participation Forms (Annex A), and any other requirement, concern or comment, should be submitted to the following reporting address:

Complexe de la Navigation Aérienne

Direction de Développement de la Navigation Aérienne

Route de Cheraraba – Eucalyptus

BP 70 Dar El Beida 16100 Alger

Tel: + 213 21 53 33 68  
Fax: + 213 21 53 33 68  
E-mail: [ddna@enna.dz](mailto:ddna@enna.dz)  
Web site: [www.enna.dz](http://www.enna.dz)

As already indicated, details about the SAACTA system and necessary detailed procedures to participate in the trials can be found in the document titled " **MANUEL DE LA LIAISON DE DONNEES FANS 1/A DES SERVICES ATS EXPERIMENTATION ADS-C/CPDLC** " that can be requested to **ENNA** or directly downloaded from its web site: **[www.enna.dz](http://www.enna.dz)**

**FIN.**