

# FANS 1/A (ADS&CPDLC) OPERATIONAL IMPLEMENTATION WORKSHOP

Las Palmas-Spain, 26 to 27 April 2005

## REPORT



## 1. INTRODUCTION

1.1 The FANS 1/A (ADS&CPDLC) Operational Implementation Workshop was held at Las Palmas, Spain on 26<sup>th</sup> and 27<sup>th</sup> April 2005.

1.2 Mr. Juan Janda, CANARIAS Air Navigation Regional Director opened the Workshop and welcomed participants. Mr. Antonio Coronado, Head of the ATM Design, Development and Implementation Division of Aena chaired and moderated the presentation sessions and the final discussion and summary. Ms. Elena Torrijos, from the International Management Division of Aena provided administrative support and Mr. Antonio Arias, Responsible for Data Processing Applications at Canarias, coordinated all technical issues.

1.3 50 participants from seven States, four Airlines and two International Organizations attended the meeting. A list of participants is at **Appendix A**.

1.4 The overall objective of the Workshop was to obtain feedback from States, Organizations, Service Providers and Airlines involved in FANS 1/A (ADS/CPDLC) operational implementation.

1.5 Have a clear picture of current and planned implementation in the AFI and SAM regions, and specially in the EUR/SAM corridor, was a most important goal of the Workshop.

1.6 The Workshop was the first occasion for Aena to present results of the “FANS 1/A ADS/CPDLC Operational Evaluation Trials being carried out in the Canarias FIR/UIR”.

1.7 Guided visits to the Canarias ACC Operations Room were organised in groups to see SACCAN (System Ads Cpdlc CANarias).

1.8 The Workshop was also being held in response to Aena’s recognition that only regional implementation together with a high proportion of aircraft equipage can provide full benefits. It was hoped that presentations to be made at the Workshop would contribute to promote ground equipage and aircraft equipage at regional level.

1.9 The Workshop also provided a platform for working level expert discussion to:

- Establish cooperation agreements in order to share experience, documentation and information related to FANS 1/A (ADS/CPDLC) operational implementation; and
- Agree on regional coordination with the purpose of **harmonising** operational evaluation and implementation.

## 2. WORKSHOP AGENDA

2.1 The Agenda of the Workshop is at **Appendix B**

### **3. PRESENTATIONS**

**3.1** Presentation sessions were chaired and moderated by Mr. Coronado who was assisted by Mr. Janda.

**3.2** A total of twenty presentations were made during the two days of the Workshop in the following order:

**3.3** Mr. David Diez, Head of the ATM Projects Department of the ATM Design, Development and Implementation Engineering Division of Aena and Responsible for the “ADS&CPDLC Operational Programme”, made a presentation on **SACCAN** (**S**ystem **A**ds **C**pdlc **CAN**arias).

**3.4** Mr. Orlando Monagas, from INDRA Technical Assistance to Aena, made a presentation on **SIMAC**, a simulation ADS & CPDLC system with multi-pilot and controller positions being used by Aena for training controllers and for operational evaluation of SACCAN with simulated traffic.

**3.5** Mr. David Diez took the floor again to present Aena’s ADS&CPDLC Operational Evaluation and Implementation Plan for the Canaries.

**3.6** Mr. Santiago Gubern, Coordinator of the ADS&CPDLC Operational Evaluation Trials and Chairman of GEOACAN (Canarias ADS&CPDLC Operational Evaluation and Implementation Group), made a general presentation on the Operational Evaluation Trials with Aircraft and a detailed one on the ADS part.

**3.7** Mr. Félix Travieso, member of GEOACAN, made a detailed presentation on the CPDLC part of the Operational Evaluation Trials with Aircraft.

**3.8** Mr. Luis Vergara, at the ATM Design, Development and Implementation Engineering Division of Aena working within the “ADS&CPDLC Operational Programme”, made a presentation related to the Evaluation Data Base and Results of the Operational Evaluation Trials with Aircraft.

**3.9** Miss Agnes Roegel, Customer Support Account Manager for SITA AIRCOM Europe and Africa, made a presentation on “FANS 1/A Canarias Trials AIRCOM Traffic & Performance” and another one on “Global SITA FANS Service Performance”. After her presentations there is no doubt data link performance is quite good.

**3.10** Mr. José Luis Rodríguez, Head of the Development and Installation Department of the Automation Division of Aena, made a presentation on the integration of the SACCAN functionalities into the current operational system SACTA (Air Traffic Control Automated System).

**3.11** Mr. Enrique Leon and Mr. Juan Pereira, both from the Canarias Operations Division and both members of GEOACAN, made a joint presentation first part related to the Operational Benefits expected from FANS 1/A (ADS&CPDLC) implementation and a second part related a New Airspace

Design & Optimisation devised to better achieve the benefits described in the first part.

**3.12** Mr. Dave Lacey, Manager Scottish Systems – UK NATS, made a presentation on the use of FANS – 1/A ADS & CPDLC in the North Atlantic.

**3.13** Mr. Dietrich Berger, former Captain of B 747 – 400 currently in charge of FANS 1/A operational implementation at LUFTHANSA, made a presentation on FANS Operational Trials and Lessons Learned from NAT Operation. A very good picture of the airborne side indeed !

**3.14** Mr. Akhil Sharma, Director of CNS Services – SITA UK, made a presentation on Regional Coordination and Implementation Bodies (FIT & CRA) existing in the Pacific and North Atlantic. No doubt very useful to help follow a similar path for the South Atlantic.

**3.15** Mr. Christian Staiger, Captain A320 and Manager of the Lan Chile FANS & RNP/RNAV Program, made the presentation “FANS, an Airline Perspective”. It gave a touch of humanity and humour to FANS 1/A.

**3.16** Mr. Jose Roca, CASCADE Deputy Programme Manager of EUROCONTROL, made a presentation on “CPDLC European Continental Operations: Present and Future of FANS – 1/A and ATN in Continental Europe”. After his presentation is now more clear that CPDLC is more than oceanic only.

**3.17** Miss Adriana Mattos, CNS AIRCOM Manager – SITA Brazil, presented an Overview of the SITA AIRCOM Data Link Infrastructure and Processes.

**3.18** Mr. Carlos Cirilo, CNS/ATM Transition Manager – Dep. of Air Space Control of Brazil, made a presentation on ADS/CPDLC Implementation in Brazilian Oceanic Control Center. Very promising and ambitious project indeed.

**3.19** Mr. Lisardo Rodriguez, at the Aena’s Satellite Navigation Division as consultant in charge of EGNOS simulation activities and engineering leading to the validation of EGNOS performances, made a presentation titled “GPS and EGNOS in the EUR-SAM Corridor” confirming a quite good availability of GPS satellites in the Corridor . Good news since we must not forget that GPS is most used to feed ADS.

**3.20** Mr. Pedro Rastrilla, ADS Programme Manager within the Navigation & Surveillance Division of Aena, made a presentation titled “SACCAN Upgrade & Initial Validation Tests” dealing with upgrades to be done to SACCAN to correct inefficiencies and bugs detected during operational

evaluation and also dealing with validation tests carried out previously to operational evaluation.

**3.21** Mr. José Rodrigues, Air Navigation Administrator of ASA Cape Verde, made a presentation on the new ATC System in Cape Verde that includes ADS and CPDLC.

**3.22** Mr. Samir Arroudj, Development Director of ENNA Algeria, made a presentation on ADS/CPDLC Implementation in Algiers FIR also describing trials being carried out with aircraft.

#### **4. WORKSHOP DISCUSSION**

**4.1** At the end of the second day a discussion session was moderated by Mr. Antonio Coronado.

**4.2** Discussion focussed on FANS 1/A implementation in the EUR-SAM corridor and South Pacific

**4.3** Taking into account the different stages (phases) of **FANS 1/A** implementation in the different countries of the EUR-SAM corridor and South Pacific in general, it was stressed the need for trying to harmonise guidance material (operational manual) in order to minimize the need for pilots to use different procedures and a different “set of messages supported” each time they cross an FIR.

**4.4** Discussion focussed also in clarifying the following decisions extracted from SAT/12 report:

##### **Conclusion SAT/12/17: Adoption of FANS 1/A operational manual**

That in order to ensure harmonization of ADS/CPDLC procedures/systems with other regions:

a) SAT States adopt the FANS 1/A operational manual (FOM) developed for the Pacific Ocean, Indian ocean, Bay of Bengale;

b) South Africa (ATNS), in coordination with the Secretariat and States in charge of the development of the FOM, carry out co-ordinations in order to include SAT FIRs into the manual and keep the manual updated.

*Note: The Secretariat will take action in coordination with South Africa (ATNS) in order to have the FANS 1/A operational manual posted on the ICAO public website.*

##### **Conclusion SAT/12/18: Creation of a FANS 1/A interoperability team (FIT)**

That a SAT FANS 1/A interoperability team (FIT) be created to oversee the monitoring of FANS 1/A system performance to ensure that it continues to meet its performance, safety and interoperability requirements and

that operations and procedures are working as specified. The FIT main objectives are to:

- a) follow the ADS/CPDLC tests that are being carried out by SAT States and adjacent States;
- b) review identified problem reports and determine appropriate resolution;

- c) develop interim operational procedures to mitigate the effects of problems until such time as they are resolved;
- d) monitor the progress of problem resolution;
- e) prepare summaries of problems encountered and their operational implications;
- f) assess system performance based on information in CRA periodic reports; and
- g) authorize and co-ordinate system testing.

*Note: The Secretariat should contact all parties involved: ATS provider States and Organizations, users, industry (Airbus, Boeing, ARINC, SITA), etc.*

**4.5** Some participants considered inappropriate the decision taken to adopt the FANS 1/A operational manual (FOM) developed for the Pacific Ocean. The reason being that it would only be possible if all countries (ANSPs) in the SAT region were currently at the same stage of implementation of the countries in the Pacific region that started FANS implementation many years ago in a phase by phase manner. Furthermore, air space and traffic characteristics, procedures being used and messages most frequently exchanged might be different.

**4.6** Some participants considered that the terms of reference of FIT would need to be updated to include tasks such as identification of FANS 1/A equipped aircraft . Having a common data base on aircraft equipped would facilitate coordination with airlines in order to invite them to participate in operational evaluation trials and operational implementation.

**4.7** Agree, such as they did in the North Atlantic on a common set of CPDLC messages to be supported for each implementation phase should be another task of FIT in opinion of some. In the NAT region they are currently using what they call the “Phase 3 FANS 1/A CPDLC Message Set” and just agreed on a new message set that would be applicable for Phase 4, when all ANSPs should be equally CPDLC capable (see NAT ATMG/25 Report).

## **5. WORKSHOP CONCLUSIONS AND DECISIONS**

**5.1** On the basis of the Presentations made at the Workshop the following can be concluded:

- No doubt **FANS 1/A** can provide significant benefits in the South Atlantic and EUR-SAM Corridor;
- Only regional implementation can provide full benefits; and
- Regional harmonisation is required in order to minimize for the same flight changes in procedures, different sets of CPDLC messages, etc.

**5.2** During the Workshop discussion the following was generally agreed:

- That the recently created **FIT** was the right body where to discuss and agree on regional harmonisation and all other issues dealt during discussion;
- That the first meeting of **FIT** should be convene as soon as possible; and
- That SAT States participating in the Workshop should send a letter to the appropriate ICAO office requesting that the first meeting of **FIT** should be convene in conjunction with next SAT meeting.

## **6. WORKSHOP CLOSURE**

**6.1** The Workshop was closed with a few words from Mr. Antonio Coronado and Mr. Juan Janda who thanked everybody's participation.



Las Palmas de Gran Canaria - SPAIN  
26<sup>th</sup> - 27<sup>th</sup> April 2005



## FANS 1/A (ADS & CPDLC) OPERATIONAL IMPLEMENTATION WORKSHOP

*Las Palmas de Gran Canaria - SPAIN, 26 - 27 April 2005*

### List of Participants

(Date of issue: 27-Abr-05)

#### → Aena / Spain

Marcial ALFONSO  
Antonio ARIAS  
Adolfo BENTO  
Antonio CORONADO  
Juan José DE LEÓN  
Carlos DELGADO  
David DíEZ  
Rosa GONZÁLEZ  
Santiago GUBERN  
Antonio GUTIÉRREZ  
Juan Manuel JANDA  
Enrique LEÓN  
Miguel LIÑÁN  
Anselmo MARTÍNEZ

#### → Aena / Spain

Rosa MOLINA  
Orlando MONAGAS  
Juan de Mata MORALES  
Juan PEREIRA  
Pedro RASTRILLA  
José Luis RODRÍGUEZ  
Lisardo RODRÍGUEZ  
Carlos SOSA  
M<sup>a</sup> Teresa SOSA  
Miguel TORRENS  
Elena TORRIJOS  
Félix TRAVIESO  
Luis VERGARA  
Tomás VIDRIALES

#### → ASA / Cape Verde

José RODRIGUES  
Carlos BRITO  
José Carlos FERNANDES

#### → Civil Aviation / Kingdom, Saudi Arabia

Hazim A. ABUDAOWD

#### → DECEA / Brazil

Carlos Alberto Cirilo RAMOS

#### → ENNA / Algeria

Smail ALILI  
Samir ARROUDJ  
Mohamed BELAL



→ **EUROCONTROL**

Jan BERENDS  
José ROCA

→ **INDRA / Spain**

Pedro MERINO

→ **LAN CHILE**

Christian STAIGER

→ **NATS / United Kingdom**

David LACEY

→ **SITA**

Adriana MATTOS (Brazil)  
Agnes ROEGEL (France)  
Akhil SHARMA (United Kingdom)

→ **IBERIA / Spain**

Juan Manuel PÁRRAGA

→ **INECO / Spain**

Tatiana SARANDESES

→ **Lufthansa / Germany**

Dietrich BERGER

→ **NAV Portugal**

Luis RODRÍGUES

→ **TAM / Brazil**

Gleiber MORATO  
Miguel VIEIRA



Las Palmas de Gran Canaria - SPAIN  
26<sup>th</sup> - 27<sup>th</sup> April 2005



## FANS 1/A (ADS&CPDLC) OPERATIONAL IMPLEMENTATION WORKSHOP

*Las Palmas de Gran Canaria - SPAIN, 26 - 27 April 2005*

TIME	TOPIC	SPEAKER/ORGANISATION
<b>DAY 1 – 26 April 2005</b>		
09:00	<b>Registration &amp; Coffee</b>	
<b>Session 1: Opening</b>		
09:30	Welcome	<b>Juan M. Janda</b> Canarias Air Navigation Regional Director
09:45	Logistics	<b>Elena Torrijos</b> International Management Division – Aena
10:00	Objectives, Contents and Organization of the Workshop	<b>Antonio Coronado</b> Head of ATM Design, Development and Implementation Division – Aena
<b>Session 2: FANS 1/A Operational Implementation in the Canary Islands</b>		
10:15	Introduction Session	<b>Antonio Coronado</b> – Aena
10:20	SACCAN ( <u>S</u> istema <u>A</u> ds <u>C</u> pdlc <u>CAN</u> arias)	<b>David Diez</b> – Aena
11:20	SIMAC	<b>Orlando Monagas</b> – Indra/Aena
11:50	ADS&CPDLC Operational Evaluation and Implementation Plan	<b>David Diez</b> – Aena
12:20	Guided Visits to the Operations Room	
13:00	<b>Lunch</b>	
13:45	Operational Evaluation with Aircraft: <ul style="list-style-type: none"> <li>- Introduction and Preparatory Activities</li> <li>- ADS Trials Description</li> </ul>	<b>Santiago Gubern</b> – Aena

TIME	TOPIC	SPEAKER/ORGANISATION
<b>DAY 1 – 26 April 2005</b>		
14:30	Operational Evaluation with Aircraft: - CPDLC Trials Description	<b>Félix Travieso</b> – Aena
15:00	<b>Coffee</b>	
15:30	Operational Evaluation with Aircraft: - Data Base & Results	<b>Luis Vergara</b> – Aena
16:00	FANS 1/A Canarias Trials AIRCOM Traffic & Performance  Global SITA FANS Service Performance	<b>Agnes Roegel</b> – SITA
16:30	SACCAN Integration into SACTA	<b>José Luis Rodríguez</b> – Aena
17:00	Operational Benefits and New Airspace Design & Optimisation	<b>Juan Pereira &amp; Enrique León</b> – Aena
17:30	Questions and Answers	Moderated by <b>Antonio Coronado</b> – Aena
18:00	<b>Closure – Session 2 &amp; Day 1</b>	
21:00	<b>Reception (Dinner)</b>	

<b>TIME</b>	<b>TOPIC</b>	<b>SPEAKER/ORGANISATION</b>
<b>DAY 2 – 27 April 2005</b>		
<b>Session 3: FANS - 1/A Operation in the North Atlantic and Pacific</b>		
09:00	Introduction Session	<b>Antonio Coronado – Aena</b>
09:05	Use of FANS – 1/A ADS&CPDLC in the North Atlantic	<b>Dave Lacey – NATS</b>
09:35	FANS Operational Trial and Lessons Learned from NAT Operation	<b>Dietrich Berger – Lufthansa</b>
10:05	Regional Coordination & Implementation Bodies (FIT & CRA)	<b>Akhil Sharma – SITA</b>
10:35	<b>Closure – Session 3</b>	
10:40	<b>Coffee</b>	
<b>Session 4: FANS - 1/A Miscellaneous</b>		
11:10	Introduction Session	<b>Antonio Coronado – Aena</b>
11:15	FANS, an Airline Perspective	<b>Christian Staiger – Lan Chile</b>
11:45	CPDLC European Continental Operations: Present and Future of FANS -1/A and ATN in Continental Europe	<b>José Roca – EUROCONTROL</b>
12:15	Overview of the AIRCOM Data Link Infrastructure and Processes	<b>Adriana Mattos – SITA</b>
12:45	<b>Closure – Session 4</b>	
12:50	<b>Lunch</b>	

<b>TIME</b>	<b>TOPIC</b>	<b>SPEAKER/ORGANISATION</b>
<b>DAY 2 – 27 April 2005</b>		
<b>Session 5: FANS - 1/A Implementation in the EUR-SAM Corridor and South Atlantic</b>		
13:50	Introduction	<b>Antonio Coronado</b> – Aena
13:55	ADS/CPDLC Implementation in Brazilian Oceanic Control Center	<b>Carlos Alberto Cirilo Ramos Junior</b> – Dep. of Air Space Control, Brazil
14:25	GPS and EGNOS in the EUR-SAM Corridor	<b>Lisardo Rodriguez</b> – Aena
14:55	SACCAN Upgrade & Initial Validation Tests	<b>Pedro Rastrilla</b> – Aena
15:25	The new ATC System in Cape Verde	<b>Jose Rodriguez</b> – ASA, Cape Verde
15:55	ADS/CPDLC Implementation in Algiers FIR	<b>Samir Arroudj</b> - ENNA
16:25	<b>Coffee</b>	
16:55	Discussion and Summary (*)	Moderated by <b>Antonio Coronado</b> – Aena
18:00	<b>Closure</b>	

(\*) Discussion will mainly focus on FANS 1/A implementation in the EUR-SAM corridor and in the South Pacific. Food for thought: Decisions in SAT/12 report related to FANS 1/A, need for South Atlantic harmonisation, need of a FANS Implementation Group and its terms of reference, common set of CPDLC messages, etc.