



**FIFTH MEETING OF THE FANS 1/A IMPLEMENTATION TEAM (FIT-EURSAM) OVER  
THE SOUTH ATLANTIC**

**(Lisbon, Portugal, May 17-18, 2010)**

**Agenda Item 6: Any Other Business**

**OPTIMI**

(Presented by Spain)

**SUMMARY**

This information paper contains an introduction to the OPTIMI (Oceanic Position Tracking Improvement & Monitoring) project.

**1. INTRODUCTION**

Oceanic Position Tracking Improvement & Monitoring (OPTIMI) is a project launched by the SESAR Joint Undertaking (SJU) after the tragic accident of Air France Flight 447 occurred over the South Atlantic in June 2009 had shown that improvements were needed in the monitoring of air traffic in oceanic and remote low density airspace and in the coordination between ATS and Search and Rescue (SAR) services in these oceanic areas.

**2. OBJECTIVES AND KEY ISSUES**

The aim of the OPTIMI project is to assess and trial the feasibility of implementing oceanic flight tracking services in the Atlantic (NAT, EUR and AFI regions) in order to improve the accuracy with which aircraft position is known, allowing better coordination and ATS service provision in normal operations and also in cases in which an unusual event occurs.

Conclusions of the project shall translate (by the end of 2010) into final recommendations for procedures and systems that can be implemented as of 2011.

Key issues for the project are the following ones:

- a) The solution should be based on existing technology and be economically viable.

- The OPTIMI project will identify and test the possibility of implementing oceanic flight tracking based on existing ADS-C and CPDLC technology.
  - The use of AOC datalink for these purposes (i.e. ACARS) and the possibility of down-linking Flight Data Recorder (FDR) and Cockpit Voice Recorder (CVR) data in the moments following an unexpected or unusual event will also be examined.
- b) Not only technical issues are to be examined, but also economic, social and regulatory and certification aspects.
- c) Search & Rescue (SAR) coordination procedures are key to the project. One of the main objectives is to examine how enhanced provision of event reporting and position tracking, and the use of appropriate procedures, could improve SAR reaction times.
- d) Another of the purposes of the project is to examine means by which recorder data can be downlinked to ground stations in order to speed up accident analysis and diagnosis, mitigating against the effect of failing to recover the FDR and CVR from an aircraft.

### 3. PARTICIPANTS

#### 3.1 CEDAR CONSORTIUM

The *Critical Event Detection And Reporting* (CEDAR) consortium was awarded with the contract for the performance of the project. This consortium consists of a wide range of respected and highly-experienced companies, each of whom plays a key role in the provision of aviation services in oceanic airspace, which are:

- 5 ANSPs (NATS, AENA, NAV Portugal, DSN and ISAVIA)
- 2 major airlines, (Air Europa Líneas Aéreas S.A.U. and Air France )
- 1 Aircraft Manufacturer (AIRBUS)
- 1 Specialist Datalink Avionics Company (FLYHT)
- 1 Communications Service Provider (SITA)
- 1 Specialist Aviation Consultancy (INECO)
- 2 Ground Systems Manufacturers (INDRA and ADACEL)



The roles and responsibilities of the consortium members differ between each lot in order to ensure the most appropriate technical expertise for the specific objectives of each lot.

### 3.1 OPTIMI SUPERVISORY COMMITTEE (OSCO)

The first meeting of the OSCO took place in March 2010 and NSAs from European, American and African countries with an interest in oceanic airspace were invited by the SJU, although not all of them could attend the meeting.

The role of OSCO is:

- a) To perform a continuous supervision of OPTIMI deliverables to ensure the incorporation of the Authority input to the project.
- b) To discuss, assess and make recommendations of the potential future expansion of OPTIMI to the African & American regions of Atlantic airspace (OPTIMI II).

Participation of all NSAs, SATCOM providers and Space industry, Military Authorities and EASA into OSCO would be desirable.

Tentative date for OSCO 2 meeting is May 26th, 2010 in Rio de Janeiro.

## 4. PROJECT BREAKDOWN

The project has been broken down into five lots, as follows:

### 4.1. LOT 1: ANALYSIS OF THE CURRENT SITUATION

All necessary analysis to document current situation throughout the NAT, EUR and AFI regions and expected evolution of equipment, procedures and services associated to the initiative are to be performed in this lot, which is divided into the following Work Packages:

- a) **WP 1: Analysis of the Baseline:** This work package consists of 3 tasks.
  - Technical and operational analysis of the current situation: It will include an assessment of current and planned communications and surveillance technologies and procedures, a description of the relevant system architectures and an assessment of the equipage and usage levels in the relevant airspace.
  - Economical and social analysis, including an assessment of the cost of current communications and datalink services and the analysis of data protection issues.
  - Assessment of the current applicable regulatory and standards framework, as well as an assessment of the regulatory approval mechanisms.
- b) **WP 2: Feasibility Analysis of Implementation of a Flight Tracking Service:** This work package consists of 3 tasks.
  - Technical and operational analysis of potential flight tracking services, CPDLC services and FDR and CVR data downlinking. This will include an assessment of the impact of these

services on ATC procedures, aircraft operations and procedural connections between ATS services and SAR services.

- Analysis of the economic impact of the potential solutions and assessment of new business models for the provision of the required satellite communications functions.
- Assessment of the regulatory and standards framework required to support the introduction of flight tracking services and the downlinking of FDR and CVR data, as well as an assessment of the regulatory approval mechanisms.

#### 4.2. LOTS 2, 3 AND 4: DEMONSTRATIONS

Lots 2, 3 and 4 are three sets of in-flight demonstrations to be conducted on commercial flights, which are planned for summer 2010 in three different Atlantic oceanic regions: North Atlantic (NAT), European (EUR) and African (AFI).

The objective of these demonstrations is to assess added value of ADS-C based flight tracking service and CPDLC, testing new coordination procedures, including SAR, and to support the safety and economic assessments.

Flight trials for Lot 2 will be performed by NAV Portugal, Air France and ADACEL in Santa Maria FIR, whilst trials for Lot 3 will be performed in Lisbon FIR by NAV Portugal, Air Europa, Airbus and ADACEL. Regarding flight trials for Lot 4, they will be performed by AENA, Air Europa and INDRA in the oceanic airspace of Canarias FIR/UIR. SITA will also participate in the three lots as CSP.

#### 4.3. LOT 5: ELABORATION OF INITIAL BUSINESS CASE

The objective of this lot is to compile the findings coming from the previous lots into an initial business case that will help the future decision making process towards the eventual undertaking of the analysed technologies and practices. Three tasks or Work Packages are considered within this lot:

- a) **WP 1: Initial Business Case elaboration.** It includes the elaboration of a safety assessment of new procedures or systems identified during the project, an economic assessment, carrying out a Cost Benefit Assessment, and an analysis of the way forward for the development of a final complete Business Case in future initiatives.
- b) **WP 2: Support to SJU Regulatory Review.** This work package will prepare the necessary documentation to allow the SJU to obtain the regulatory opinion from NSAs.
- c) **WP 3: Support to SJU recommendation.** This work package will prepare the necessary documentation to allow SJU to present a recommendation on early implementation of oceanic flight tracking service based on ADS-C.

#### 4.4. DISSEMINATION ACTIVITIES

Several Workshops will be organized along the year to present the work carried out in the different lots. Specialist reviewers (Expert Focus Group) will be invited to these Workshops in order to provide an even

broader review of reports and recommendations, ensuring that the opinion of all relevant stakeholders has been identified.

This Expert Focus Group will include, but will not be limited to, ANSPs, Airlines, Industry, Communications Service Providers, CAAs, SAR agencies and Standardisation Organisations.

## 5. **ACTION BY THE MEETING**

The SAT/FIT/5 Meeting is invited to:

- a) Take note of the contents of this information paper.
- b) Notice the convenience of SAT affected organizations being represented at the OSCO meetings.