Oceanic Position Tracking Improvement & Monitoring (OPTIMI)

OPTIMI Objective

- OPTIMI is a project launched by the SJU after Air France 447 accident.
- Objective:
  - 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 un unusual event occurs.

Key issues

- Conclusions shall translate (by the end of 2010) into final recommendations for procedures and systems that can be implemented as of 2011.
- The solution should be based on existing technology and be economically viable.
  - Analysis of the possibility of implementing oceanic flight tracking based on existing ADS-C and CPDLC technology.
  - Use of AOC datalink (i.e. ACARS) and down-linking of Flight Data Recorder (FDR) and Cockpit Voice Recorder (CVR) data also examined.
- Not only technical issues are to be examined, but also economic, social and regulatory and certification aspects.
- Search & Rescue (SAR) coordination procedures are key to the project.
- Means to downlink recorder data to speed up accident analysis, mitigating against the effect of failing to recover FDR and CVR from an aircraft, must be addressed.

Participants

- CEDAR Consortium awarded with the contract for the performance of the project:

  - 5 ANSPs (AENA, DSNA, ISAVIA, NATS, NAV Portugal)
  - 2 major airlines (Air Europa, Air France)
  - 1 aircraft manufacturer (AIRBUS)
  - 1 communications service provider (SITA)
  - 1 specialist data link avionics company (FLYHT)
  - 1 specialist aviation consultancy (INECO)
  - 2 ground systems manufacturers (ADACEL, INDRA)

Participants (II)

- OPTIMI Supervisory Committee (OSCO)
  - It gathers NSAs from European, American and African countries with an interest in oceanic airspace.
  - Role:
    - To perform a continuous supervision of OPTIMI deliverables to ensure incorporation of Authority input to the project.
    - 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 would be desirable.
  - Tentative date for OSCO 2 meeting: May 26th 2010, Rio de Janeiro

Work Breakdown

The project has been divided into 5 lots:

- Lot 1: Analysis of the current situation, which consists of 2 Work Packages
  - WP 1: Analysis of the Baseline:
    - Technical and operational analysis of the current situation in NAT, EUR and AFI regions, economical (current communications and data link services cost) and social analysis, assessment of the current applicable regulatory and standards framework and regulatory approval mechanisms.
  - WP 2: Feasibility Analysis of Implementation of a Flight Tracking Service.
    - Technical and operational analysis of potential flight tracking services, CPDLC services and FDR and CVR data downlinking, analysis of their economic impact and new business models, assessment of the regulatory and standards framework required to support the introduction of the potential solutions and assessment of the regulatory approval mechanisms.

Work Breakdown (II)

- Lots 2, 3 and 4: Demonstrations
  - Three sets of in-flight demonstrations planned for summer 2010
    - Conducted on commercial flights
    - In 3 different Atlantic oceanic regions (NAT, EUR and AFI)
      - Lot 2: Santa Maria FIR (performed by NAV Portugal, Air France, Adacel and SITA)
      - Lot 3: Lisbon FIR (performed by NAV Portugal, Air Europa, Airbus, Adacel and SITA)
      - Lot 4: Canarias FIR (performed by AENA, Air Europa, Indra and SITA)
  - Objective: 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.

Work Breakdown (III)

- Lot 5: Elaboration of an initial business case, which consists of three tasks:
  - WP 1: Initial Business Case elaboration
    - Safety assessment of new procedures or systems
    - Economic assessment (Cost-Benefit analysis)
    - Analysis of the way forward for development of final complete Business Case
  - WP 2: Support to SJU Regulatory Review
    - Preparation of necessary documentation to allow SJU to obtain regulatory opinion from NSAs.
  - WP 3: Support to SJU recommendation.
    - Preparation of the necessary documentation to allow SJU to present a recommendation on early implementation of oceanic flight tracking service based on ADS-C.

Work Breakdown (IV)

- Dissemination activities:
  - Several Workshops will be organized to present the work carried out in the different lots.
  - Specialist reviewers (Expert Focus Group) will be invited to provide a broader review of reports and reccomendations.
    - ANSPs, Airlines, Industry, Communication Service Providers, CAAs, SAR agencies, etc.