



***THE IMPLEMENTATION STATUS OF
ADS/CPDLC IN CANARIES FIR/UIR***



BACKGROUND

THE SPANISH AIR NAVIGATION SERVICE PROVIDER, AENA, HAS CARRIED OUT ADS/CPDLC SACCAN FANS 1/A OPERATIONAL EVALUATION TRIALS BETWEEN THE YEARS 2002 AND 2006.

FROM 5 JULY 2006, A NEW PRE-OPERATIONAL PHASE WAS INITIATED WHICH WILL LAST UNTIL **27 AUGUST 2009** WITH THE COMPLETE COMING INTO SERVICE OF SACCAN AND THE PROVISION OF ADS/CPDLC SERVICES, IN CANARIAS FIR/UIR.

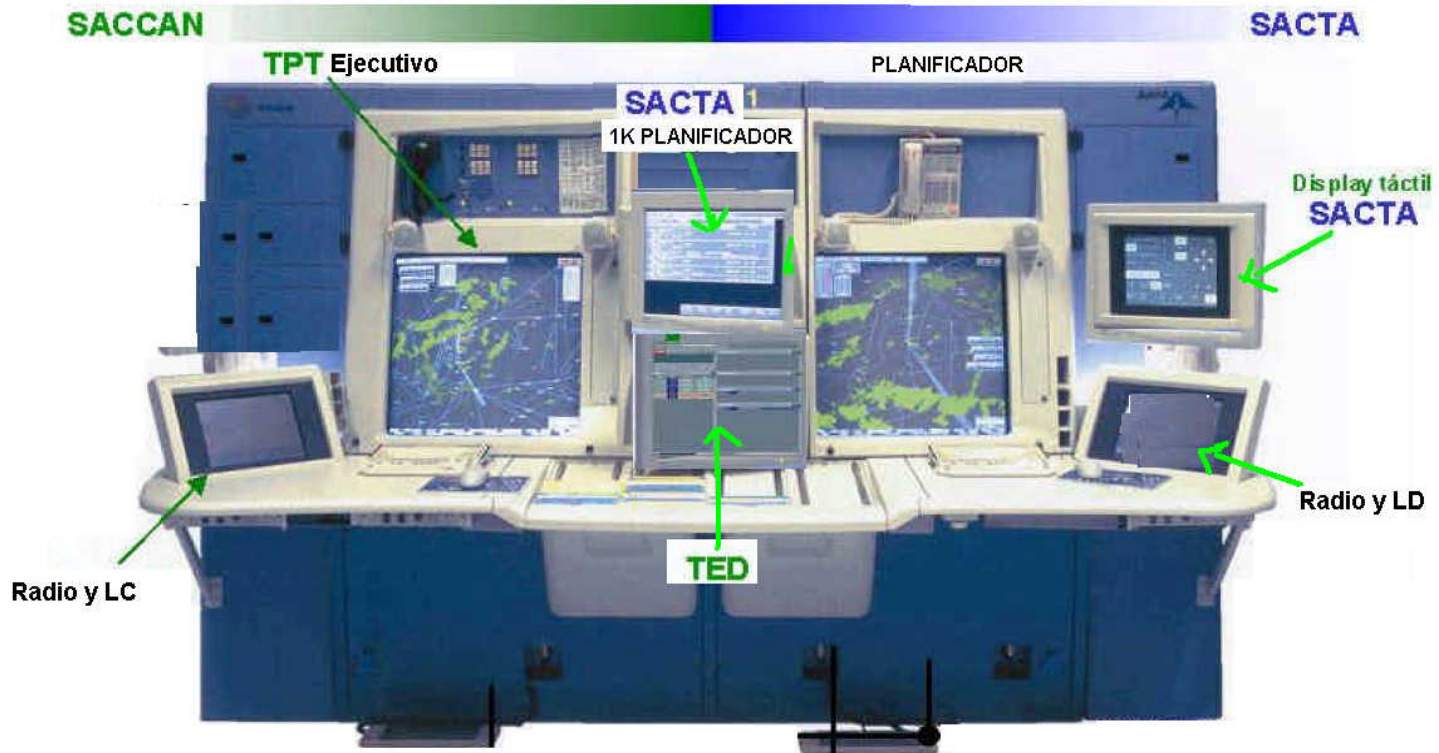


CURRENT STATUS – SACCAN

THE SACCAN SYSTEM, WHICH IS THE ADS/CPDLC SYSTEM INSTALLED IN THE CANARIAS ATC CENTRE, IS A HIGHLY MODULAR AIR TRAFFIC CONTROL SYSTEM THAT ADDS FULL FANS 1/A COMPATIBLE ADS/CPDLC FEATURES TO THE CURRENT OPERATIONAL AUTOMATED ATS SYSTEM (SACTA) INSTALLED IN THIS FACILITY.



CURRENT STATUS – SACCAN (II)





CURRENT STATUS – SACCAN (III)

THE FOLLOWING MAIN FUNCTIONS ARE AVAILABLE WITHIN SACCAN:

- ADS TRACKING;
 - ADS-SSR INTEGRATION TRACKING;
 - SHORT TERM CONFLICT ALERT (STCA) AND MINIMUM SAFE ALTITUDE WARNING (MSAW) BASED ON EITHER ADS STAND ALONE, SSR STAND ALONE, OR ADS-SSR INTEGRATION;
 - DETECTION OF INCORRECT WAYPOINT INSERTION.
 - CONFORMANCE MONITORING.
 - NAVIGATION INTEGRITY MONITORING.
 - AUTOMATIC MANAGEMENT OF ADS CONTRACTS WHICH MINIMIZES THE AIR-TRAFFIC CONTROLLER WORKLOAD REQUIRED TO OPERATE THE SYSTEM;
- AND
- CPDLC EFFICIENT MANAGEMENT BY EXTENSIVE USE OF WINDOWS AND MOUSE CLICKS.



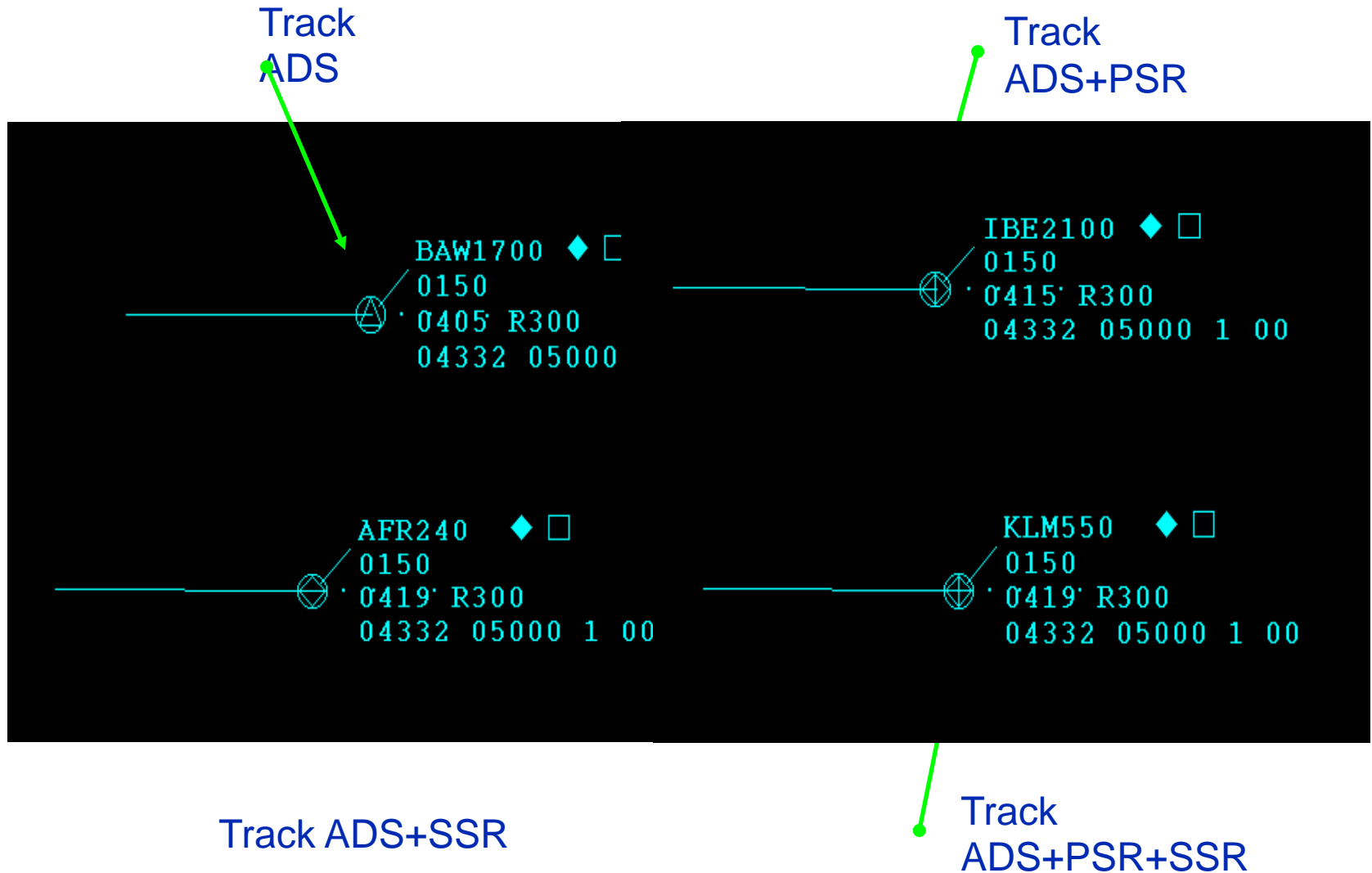
CURRENT STATUS – SACCAN (IV)

WITH THE COMING INTO OPERATION OF THE SACCAN SYSTEM THE FOLLOWING IMPROVEMENTS ARE EXPECTED:

- **MORE DIRECT FLIGHT PATHS;**
- **MORE OPTIMAL CLIMB AND DESCENT PROFILES;**
- **INCREASED ACCESS TO CRUISE ALTITUDES CLOSER TO OPTIMAL;**
- **REDUCED AIR-TRAFFIC CONTROLLERS AND PILOTS WORKLOAD;**
- **AND**
- **INCREASED LEVEL OF SAFETY.**

FURTHERMORE, A PROJECT OF THE SAT GROUP (SOUTH ATLANTIC GROUP) FOR THE EXTENSION OF ADS ALONG THE EUR/SAM CORRIDOR IS EXPECTED TO ADD SIGNIFICANT SAFETY AND ECONOMIC BENEFITS TO THE AIR TRAFFIC FLOW BETWEEN EUROPE AND SOUTH AMERICA.

CURRENT STATUS – SACCAN (VI)





CURRENT STATUS – SACCAN (VII)

13:28:36 03 Mar 1988 DATALINK DISPLAY POSITION 12:31:12 IBE500 Sent out: UP UK
12:31:18 IBER200 Sent out: CP UK

TAP3800 Urg 0 0

Received Downlink

New Edit Copy Prev Next Ack Answer
Con Discon Transf SUP ADS

Flights Trans Cpdlc Ads B Urg 0 0

TRANS	ACID	CPDLC	ADS
	AYC5100	NON_CONNECT	NON_CONNECT
	AYC8200	INITIATING	NON_CONNECT
	BAW1500	NON_CONNECT	NON_CONNECT
	GRA1500	INITIATING	NON_CONNECT
	10319	CONNECT	NON_CONNECT
	IBE2700	NON_CONNECT	NON_CONNECT
	TAP3000	NON_CONNECT	NON_CONNECT
	TWA6200	NON_CONNECT	NON_CONNECT

Pending Downlink

Pending Uplink

CPDLC History

11:41:02 10319 ↑↑ 10319 12:12 TRACK1 12N 125W TRACK

09:23:34 10319 ↑↑ RESUME NORMAL SPEED

ADS CONTRACTS MODIFICATION

10319 ADS Contracts NON_CONNECT

Reset All Default All Cancel All Send All Exit

Periodic Contract Demand

REPORTING INTERVAL 221 secs (3m 41s)

Flight ID

Predicted Route 11

Earth Reference 1

Meteorological

Airframe ID 13

Air Reference

Aircraft Intent min

Reset Default Clear Cancel Send

Event Contract

Waypoint Change

Vertical Rate Change 214 FT/MIN

Lateral Deviation 5 NM

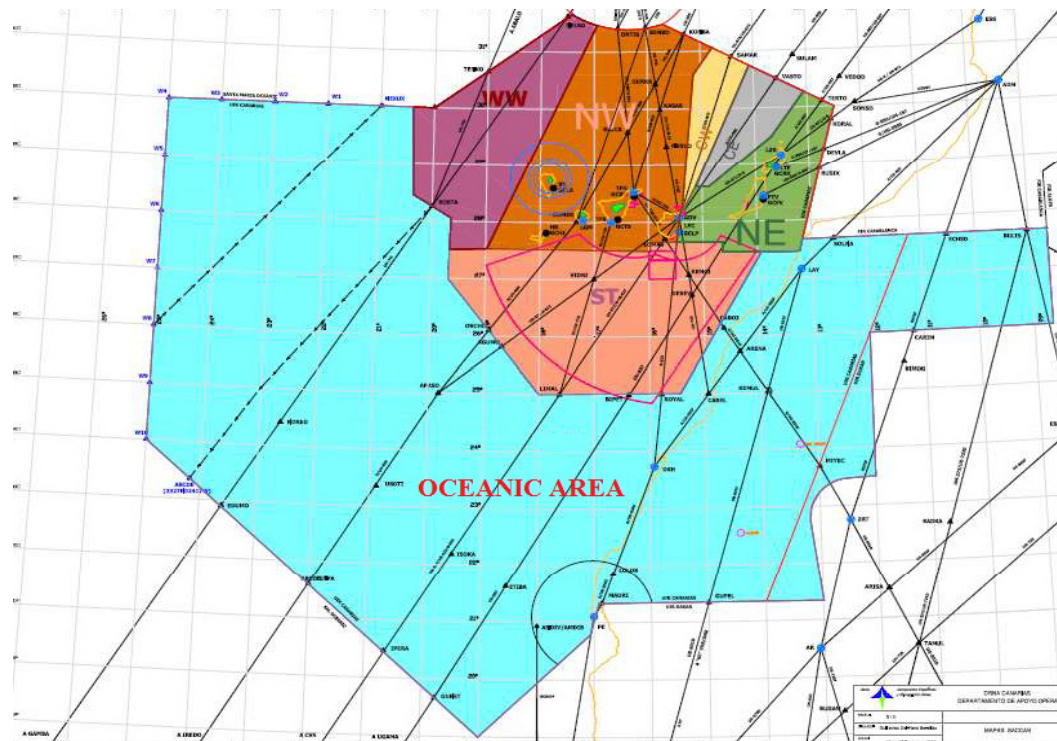
Altitude Range FT FT

Reset Default Clear Cancel Send



CURRENT STATUS – SACCAN (IX)

THE FOLLOWING FIGURE SHOWS THE MAIN AREA OF APPLICATION OF ADS/CPDLC - SACCAN:





CURRENT STATUS – SACCAN (X)

FINALLY, THE FOLLOWING TABLES INTRODUCE THE EVOLUTION OF THE FANS 1/A CONNECTIONS FROM SEPTEMBER 2009 TO JANUARY 2010 ON SACCAN IN RELATION TO THE NUMBER OF AIRCRAFT FLYING IN THE OCEANIC AREA AND THOSE ONES THAT, IN ITS FLIGHT PLAN, REPORTED ADS AND DATA LINK CAPABILITIES (CALLED IN TABLE 1 “FANS 1/A EQUIPPED FLIGHTS”).

General information	Jan. 2010	Dec. 2009	Nov. 2009	Oct. 2009	Sep. 2009
N° connected flights	1233	1210	1165	1049	947
% with respect to total flights (Oceanic area)	32.67 %	33.16 %	32.70 %	28.40 %	27.59 %
% with respect to FANS 1/A equipped flights (Oceanic area)	73.39 %	81.59 %	77.31 %	66.60 %	65.36 %
N° of flights with CPDLC exchange	1127	1065	1001	901	839



CURRENT STATUS – SACCAN (XI)

Airline information (Percentage of total connected flights)						
Airline	Jan. 2010	Dec. 2009	Nov. 2009	Oct. 2009	Sep. 2009	Type of airplane [Ⓜ]
TAM Brazil	22.71%	24.05%	26.35%	24.79%	26.40%	59.83% A330 26.59% B777 13.58% A340
Iberia	19.63%	20.41%	20.17%	20.21%	16.90%	100% A340
TAP Portugal	17.68%	14.96%	14.08%	9.34%	7.18%	100% A330
Air France	17.60%	17.11%	18.03%	21.26%	24.29%	48.90% B777 27.15% A330 21.56% B747 2.39% A340
Lufthansa	6.57%	6.36%	6.35%	7.34%	7.92%	71,44% B747 28.56% A340
Air Europa	5.19%	5.87%	5.24%	4.96%	5.70%	100% A340

[Ⓜ] Estimated mean in the five studied months.