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# AIR GROUND DATA LINK IN SOUTH ATLANTIC REGION

## NAM/ CAR/ SAM ATS DATALINK IMPLEMENTATION WORKSHOP

(Philisburg, Sint Maarten, 18-21 April 2016)



➤ **BACKGROUND**

➤ **SAT FANS 1/A INTEROPERABILITY TEAM**

➤ **FANS SERVICES PERFORMANCE SOUTH ATLANTIC**



- 1988: ICAO **ENCOURAGED TO** CREATE THE SOUTH ATLANTIC GROUP (SAT) TO ENHANCE AIR TRAFFIC CONTROL SERVICES PROVIDED IN THAT **AIRSPACE**.
- THE SAT IS COMPOSED BY TWO WORKING **GROUPS** :
  - ATM WG
  - CNS WG
- SAT MEETS ONCE A YEAR **AND** TO DATE HAS HELD **20** MEETINGS. THE MEETINGS ARE HELD ALTERNATELY BETWEEN THE AFI , SAM AND EUR REGIONS. THE SAT MEMBERS STATES ARE:
  - AFI REGION : ANGOLA, CAPE VERDE, **ASECNA (COTE D'IVOIRE , SENEGAL, MAURITANIA)** GHANA , **ROBERTS FIR (GUINEA,LIBERIA, SIERRA LEONE)** ,SOUTH AFRICA , NAMIBIA,;
  - SAM REGION ARGENTINA ,BRAZIL, FRENCH GUYANA AND URUGUAY
  - EUR REGION : **MOROCCO**, PORTUGAL AND SPAIN
  - CAR REGION;: TRINIDAD TOBAGO
- 1998: **THE AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP (APIRG) AGREED TO ASSIGN TO SAT THE IMPLEMENTATION OF NEW AIR NAVIGATION TECHNOLOGIES, AND CNS/ATM SYSTEMS TO BE INTRODUCED BETWEEN THE EUROPE AND SOUTH-AMERICA (EUR/SAM) CORRIDOR (AFI ROUTING AREA AR1)**
- 2000: THE SAT/8 ESTABLISHED THE TASKS TO BE PERFORMED BY THE SOUTH ATLANTIC REGIONAL MONITORING AGENCY (**SATMA**). THE SPANISH AIC 4/01 (JANUARY 2001) INFORMED ABOUT **SATMA** CREATION AND RESPONSIBILITIES (2001)
- 2005 **SAT FANS 1/A INTEROPERABILITY TEAM (SAT/FIT) WAS ESTABLISHED . THE SAT/FIT MEETS ONCE A YEAR TO DATE HAS HELD 10 MEETINGS . THE SAT FIT REPORTED TO THE SAT MEETING**



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## SAT FANS 1/A INTEROPERABILITY TEAM

- THE SAT FANS 1/A INTEROPERABILITY TEAM (SAT/FIT) HAS BEEN ESTABLISHED **TO OVERSEE FANS 1/A SYSTEM PERFORMANCE MONITORING** TO ENSURE THAT THE SYSTEM CONTINUES TO MEET SAFETY AND INTEROPERABILITY REQUIREMENTS AND THAT OPERATIONS AND PROCEDURES ARE WORKING AS SPECIFIED.
- THE SAT FANS-1/A INTEROPERABILITY TEAM (FIT) IS OF **MULTI-DISCIPLINARY NATURE** SHALL AND COMPRISE OF EXPERTS FROM STATES RESPONSIBLE OF FIRS IN AFI AND SAM ROUTING **AREAS AR1/AH2 AND AR2/AH8** AS DEFINED IN THE GLOBAL AIR NAVIGATION PLAN (ICAO DOC 9750), AND EXPERTS FROM ADJACENT FIRS AND INTERNATIONAL ORGANIZATIONS.

**TASKS OF SAT FIT**

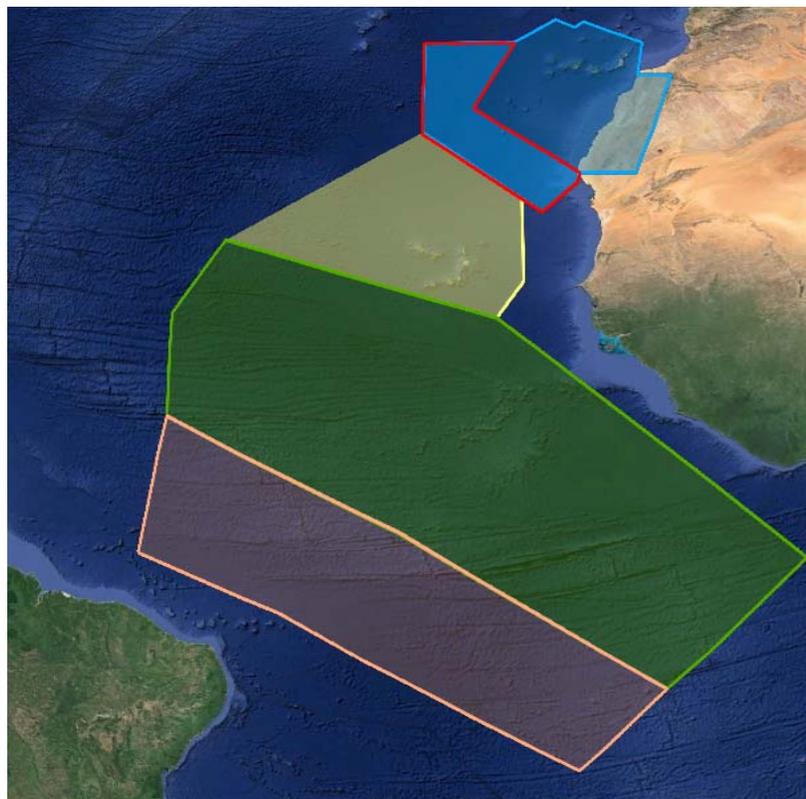
<b>WORK PROGRAMME</b>		
<b>TASK No.</b>	<b>SUBJECT</b>	<b>TARGET DATE</b>
1.	Oversee FANS 1/A system performance monitoring to ensure that the system continues to meet safety and interoperability requirements and that operations and procedures are working as specified.	Continuous
2.	Carry out studies on the establishment of a sustainable central reporting agency (CRA) and related institutional issues	Completed
3.	Harmonize ADS/CPDLC programmes developed by SAT States/FIRs.	Continuous
4.	Assist member States with cost-benefit aspects related to their implementation of ADS/CPDLC programmes.	Continuous
5.	Maintain ADS/CPDLC operational guidance material updated.	Continuous
6.	Conduct studies related to the implementation of the Global ATM Operational Concept and other enabling concepts within the SAT area in the fields of Communication and Surveillance.	Continuous
7.	Monitor and Coordinate the harmonization of operations AIDC and OLDI systems in the SAT area.	New



## EUR SAM AREA

THE SATMA REPORT FANS SERVICES PERFORMANCE AND USE FOR FLIGHTS OF THE EUR/SAM CORRIDOR WAS MADE WITH THE CONTRIBUTION OF DATA SUPPLIED FOR THE FIR OF THE EUR SAM AREA:

- FIR/UIR Recife (Atlantico) Brazil)
- SAL Oceanic UIR (Cabo Verde)
- CANARIAS Oceanic UIR (Spain)
- DAKAR Oceanic UIR (Senegal)





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# FANS SERVICES PERFORMANCE SOUTH ATLANTIC

	NUMBER OF FLIGHTS						
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	TOTAL
EUR/SAM	2788	2475	2910	2594	2639	2613	16019
Random / Transversal	2316	2106	2210	2378	2437	2703	14150
TOTAL	5104	4581	5120	4972	5076	5316	30169

## GLOBAL FIGURES OF FLIGHTS – EUR/SAM AREA JANUARY JUNE 2014

	FLEET CAPABILITIES					
	FANS 1A	%	RNP4	%	RNP4 + FANS	%
EUR/SAM	10257	64.0%	9127	57.0%	7690	48.0%
Random / Transversal	5216	36.9%	2477	17.5%	2349	16.6%
TOTAL	15473	51.3%	11604	38.5%	10039	33.3%

## GLOBAL FIGURES OF FLEET CAPABILITIES IN THE EUR/SAM AREA (JANUARY JUNE 2014)



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## FANS SERVICES PERFORMANCE SOUTH ATLANTIC

AIRLINE	FLIGHTS	%	% EUR/SAM	% FANS	% RNP4
TAP	4211	14.0%	96%	72%	98%
AFR	2177	7.2%	71%	98%	97%
IBE	2085	6.9%	60%	80%	0%
TAM	1922	6.4%	84%	94%	98%
DLH	1401	4.6%	43%	96%	95%
SAA	1261	4.2%	0%	0%	0%
DAL	1117	3.7%	3%	0%	0%
AEA	1097	3.6%	44%	90%	0%
BAW	1049	3.5%	53%	97%	0%
AZA	1025	3.4%	1%	94%	0%
UAE	868	2.9%	0%	0%	0%
ARG	868	2.9%	51%	0%	0%
KLM	759	2.5%	55%	79%	79%
TCV	736	2.4%	83%	0%	0%
DTA	561	1.9%	0%	0%	0%
-	9032	29.9%	49%	21%	17%

GLOBAL FIGURES PER AIRLINE (JANUARY –JUNE 2014)



# FANS SERVICES PERFORMANCE SOUTH ATLANTIC

## TRAFFIC DATA SUMMARY YEAR 2014 EUR SAM CORRIDOR FIR CANARIA

TRAFFIC DATA SUMMARY	2014 MEAN VALUE	MAX VALUE	MIN VALUE
Number of connected flights (Monthly average)	1284	1439 [Oct]	1115 [Nov]
Percentage referred to total number of flights in the EUR/SAM Corridor	56,10%	61,38% [Sep]	51,99% [Dec]
Percentage referred to flights in the EUR/SAM Corridor indicating data link and ADS capacity in the Flight Plan	95,92%	>100% [Nov]	93,44% [May]
Number of flights with CPDLC connection (Monthly Average)	1219	1363 [Aug]	1051 [Nov]
Number of different aircraft (aircraft registration) connecting to SACCAN (Monthly average)	280	315 [Jul]	234 [Jan]



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# FANS SERVICES PERFORMANCE SOUTH ATLANTIC

## MOST FREQUENT CPDLC MESSAGE ELEMENTS

Type	Message elements	Percentage referred to total		
		2014 Mean Value	Max Value	Min Value
<b>Up link</b>	NEXT DATA AUTHORITY [icaofacilitydesignation]	20,61%	24,05% [Feb]	16,64% [DEC]
	CONTACT [icaounitname] [frequency]	19,59%	21,41% [Feb]	17,61% [Dec]
	[freetext]	19,25%	24,86% [Dec]	14,39% [Feb]
	End of services	15,64%	18,73% [Feb]	12,53% [Oct]
	SQUAWK [beaconcode]	11,39%	14,07% [Dec]	9,78% [Jul]
<b>Down link</b>	Wilco	45,80%	49,40% [Jul]	43,20 [Jan]
	Roger	20,83%	23,89% [Aug]	16,34% [Feb]
	POSITION REPORT [positionreport]	9,99%	12,28% [Feb]	7,70% [Aug]
	[freetext]	6,51%	8,03% [Jan]	5,31% [Aug]
	DEVIATING [distanceoffset] [direction] OF ROUTE	4,78%	6,64% [Jan]	4,74% [Dec]



# FANS SERVICES PERFORMANCE SOUTH ATLANTIC

## PERCENTAGE OF DATA LINK UTILIZATION IN 2014

Month	Percentage of utilization of data link media		
	Satellite Link	VHF Link	HF Link
Jan 2014	67,69%	32,29%	0,03%
Feb 2014	68,58%	31,36%	0,06%
Mar 2014	66,25%	33,68%	0,07%
Apr 2014	64,37%	35,55%	0,08%
May 2014	62,24%	37,66%	0,09%
Jun 2014	60,08%	39,88%	0,04%
Jul 2014	59,00%	40,95%	0,05%
Aug 2014	59,92%	40,03%	0,05%
Sep 2014	62,90%	37,05%	0,05%
Oct 2014	64,76%	35,18%	0,06%
Nov 2014	65,23%	34,71%	0,05%
Dec 2014	62,46%	37,52%	0,03%
<b>Total Average</b>	<b>63,53%</b>	<b>36,41%</b>	<b>0,06%</b>



## POTENTIAL PROBLEM IDENTIFIED

- LOG-ON RECEIVED FROM AIRCRAFT THAT ARE NOT FLYING TOWARDS CANARIAS AIRSPACE OR WHEN AIRCRAFT ARE FLYING FAR AWAY FROM CANARIAS AIRSPACE
- LOG-ON WITH INCORRECT IDENTIFICATION
- AIRCRAFT NOT DECLARING ADS CAPACITY
- SOME AIRCRAFT REMAIN ADS CONNECTED AFTER EXITING CANARIAS AIRSPACE AND SOME OF THEM EVEN AFTER LANDING (OUT OF CANARIAS FIR), STILL SENDING REPORTS WHEN ON GROUND. FLIGHTS WITHOUT CPDLC CAPABILITY IN THE FLIGHT PLAN HAVE ESTABLISHED A CPDLC CONNECTIONUPLINK
- CPDLC CONNECT REQUESTS REPLIED BY AIRCRAFT WITH A CPDLC DISCONNECT REQUEST MESSAGE NOTIFYING THE AIRCRAFT IS CPDLC CONNECTED TO ANOTHER ATS AUTHORITY
- SENDING OF ACARS FREE TEXT MESSAGES BY CONTROLLERS



## DEVIATION MONITOR REPORT SATMA

**SATMA DEVIATIONS MONITORING REPORT**

**AREA CONCERNED:** EUR/SAM CORRIDOR

**ALTITUDE:** From FL 290 up TO FL 410 both included

**ACC/AO:**

**MONTH:**                      **YEAR:**

(Number) Deviation Report Form attached (including TCAS RA and Airproxes)

NO Deviations reported (mark with an X)

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The ACC/AO Responsible

**Name:**

**Phone/E-mail:**

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Send to

SATMA - E-mail : [satma@aena.es](mailto:satma@aena.es)

Fax: + 34 928 57 70 52

SATMA Deviations Monitoring Report

NAVIGATION DEVIATION INVESTIGATION FORM				
Date/Time (UTC):		Reporting Unit:		
Type of Report: <input type="checkbox"/> PILOT – Flight <input type="checkbox"/> CONTROLLER –		Conflict Alert Systems:		
ATC Unit		Causes: <input type="checkbox"/> WEATHER <input type="checkbox"/> OTHERS		
Type of Deviation: <input type="checkbox"/> LATERAL <input type="checkbox"/> Type (A to G)		(Specify)		
Type (1 to 7) <input type="checkbox"/> VERTICAL <input type="checkbox"/>				
DETAILS OF AIRCRAFT		First Aircraft	Second Aircraft (for vertical)	
Aircraft Identification:				
Name of Owner/Operator:				
Aircraft Type:				
Departure Point:				
Destination:				
Route Segment:				
Flight Level:	Cleared	Actual	Cleared	Actual
Cleared Track:				
Extent of deviation - magnitude and direction: (NM for lateral; feet for vertical)				
Amount of time at incorrect Flight Level/Track:				
Position where deviation was observed: (BRG/DIST from fixed point or LAT/LONG)				
WAS ATC Clearance obtained: <input type="checkbox"/> YES <input type="checkbox"/> NO	If ATC clearance NOT obtained WERE Contingency procedures Followed: <input type="checkbox"/> YES <input type="checkbox"/> NO			
Action Taken by ATC/Pilot:				
Crew comments, if any, when notified:				
Remarks:				

Deviation report form



# FANS SERVICES PERFORMANCE SOUTH ATLANTIC

## DEVIATION MONITOR REPORT SATMA

### EUR/SAM CORRIDOR POST IMPLEMENTATION SAFETY ASSESMENT FORM FOR TRAFFIC SAMPLE

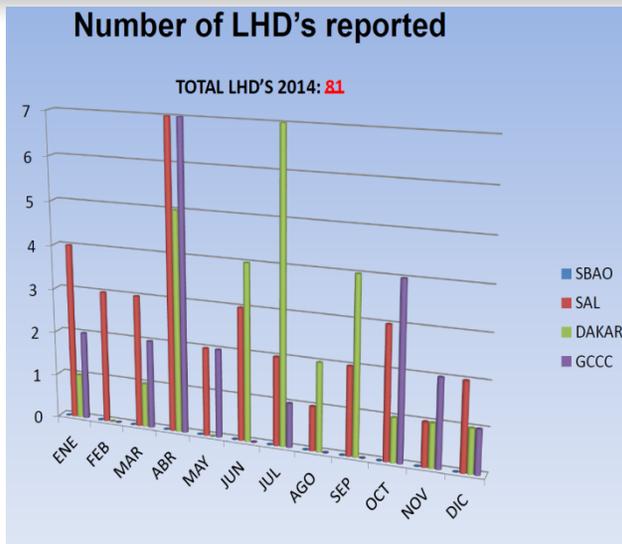
FIR IDENTIFICATION:

DATE	ROUTE	ACFT. CALL SIGN	ACFT TYPE	DEPART. AD	DEST. AD	PROGRESSION IN RVSM AIRSPACE (FIX, TIME and FLIGHT LEVEL)													
						ENTRY FIX	TIME AT ENTRY FIX	FL AT ENTRY FIX	FIX 1	TIME AT FIX 1	FL AT FIX 1	FIX 2	TIME AT FIX 2	FL AT FIX 2	CONTINUE AS NECESSARY	EXIT FIX	TIME AT EXIT FIX	FL AT EXIT FIX	

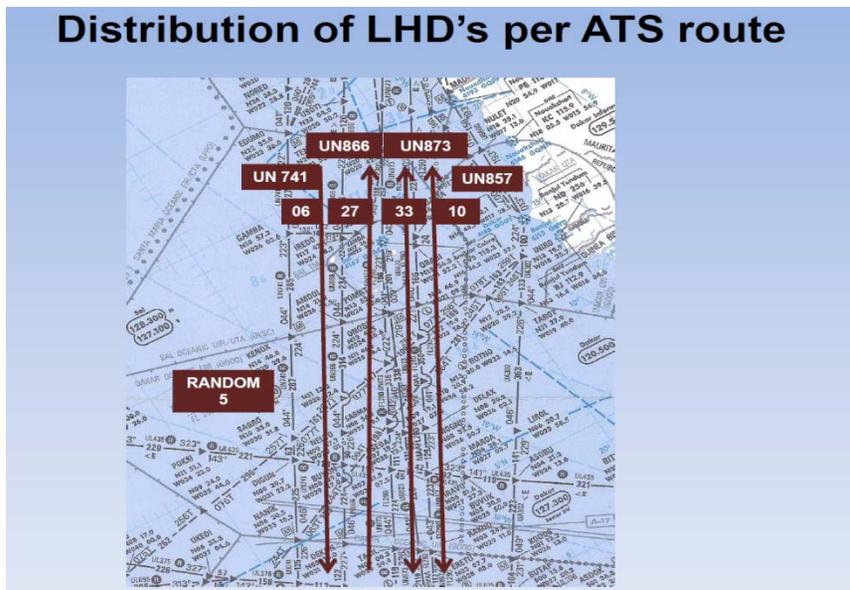
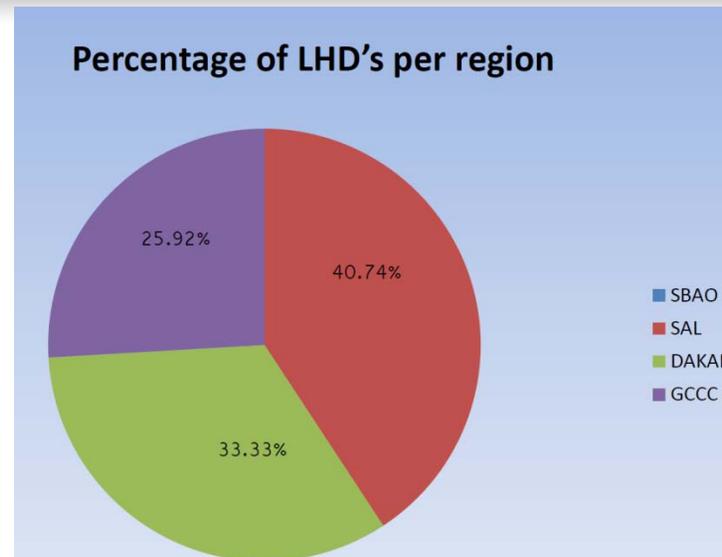
FORM FOR TRAFFIC SAMPLE



# FANS SERVICES PERFORMANCE SOUTH ATLANTIC

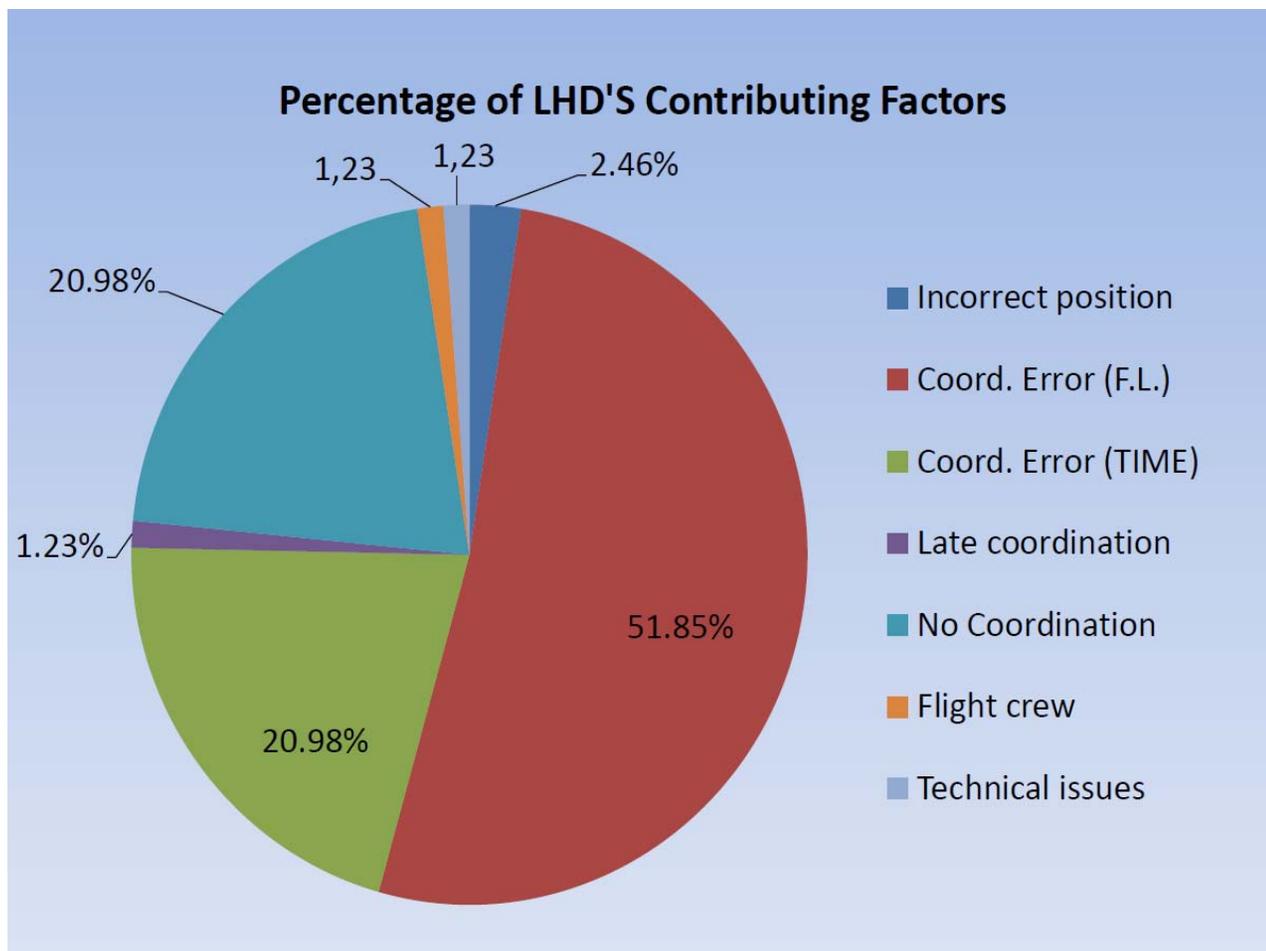


## DEVIATION MONITOR REPORT SATMA





## DEVIATION MONITOR REPORT





North American Central American and Caribbean (NACC) Office MexicoCity	South American (SAM) Office Lima	<b>ICAO Headquarters Montreal</b>	Western and Central African (WACAF) Office Dakar	European and North Atlantic (EUR/NAT) Office Paris	Middle East (MID) Office Cairo	Eastern and Southern African (ESAF) Office Nairobi	Asia and Pacific (APAC) Office Bangkok
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**Thank You**