



**TWENTYETH MEETING ON THE IMPROVEMENT OF AIR TRAFFIC SERVICES
OVER THE SOUTH ATLANTIC (SAT21)**

(Lisboa, Portugal, 8 to 10 June, 2016)

Agenda Item 02: Air traffic management (ATM)

“EUR/SAM Corridor Risk Assessments and reported 2015 LHD analysis”

(Presented by SATMA)

SUMMARY

This paper presents the reports scheduled for 2014/2015 RVSM/RNP10 safety assessments in EURSAM corridor and the 2015 LHD reported analysis

1. BACKGROUND

SATMA, as monitoring Agency, was committed by SAT group to conduct studies and required Assessments to analyse the conditions for the Safety application of RVSM-and RNP10 in EUR/SAM Corridor. The EUR/SAM corridor became an RVSM-RNP10 area in January 2002 after an initial Safety Assessment.

It became mandatory to perform and present periodically an RVSM RNP-10 Post-implementation Analysis about the situation in the EUR/SAM Corridor in order to ensure that critical parameters stay between safe figures and that required Target Level of Safety keeps below allowed figures.

Following RMA functions established by ICAO, SATMA has been performing required periodical Risk Assessment for the Region since RVSM/RNP10 was emplaced in EUR/SAM corridor.

As a matter of interest, a new recommendation has been emplaced by RMAs group in order to initiate surveys to pursue any aircraft that might fly RVSM space without the given certification



2. 2014 SAFETY ASSESSMENT

2014 EUR/SAM Corridor Safety assessment is available in www.satmasat.com.

The LHD default time, value to be applied when real data is not available, has to be revised accordingly, as it has not been updated since 2002. New systems, aircraft capabilities, coverage and procedures (OLDI, ADS, Satellite) have improved ATC provision in the corridor and, in that sense, a simulation has been performed through 2014 CRM to adequate this parameter for future calculations.

ANNEX A presents both figures of 2014 and simulation results.

3. 2015 SAFETY ASSESSMENT

Annex B presents the results of LHD report, about deviations received by SATMA through 2015. 2015 Safety Assessment is under processing and will be delivered and published in SATMA website along 2016.

4. LHD MONITORING TEAM

Lack of information is the worst enemy for Collision Risk Model, the model adopted by ICAO for EUR/SAM RVSM/RNP10 Safety Assessments. When no data is available for input parameters, the values for hypothesis must be taken from the most conservative figures and this, of course, penalizes the results and conclusions. This is especially important for Oceanic Areas, as data estimations must be applied to large distances.

Up today, almost all medium/long term projects leaded by SAT group are targeting any kind of reduction between aircraft distances, looking for an optimal use of Flight levels and longitudinal separations in the corridor. Under this point of view, it becomes essential to reinforce LHD investigations in order to minimize those conservative values.

Anyway, this is not a new issue for SAT group, as a “LHD Monitoring Team” was created in SAT 14, with some concrete and defined Terms of reference (ANNEX B)

EUR/SAM airspace new concept introduces new challenges for the next years, not only in operations and procedures, but also in assessment. So a further step must be applied for the observance of LHDs/LD, as just deliver LHD reports to SATMA (before 5th of month) appears not to be enough. It is essential that each State, naming/confirming a LHD Monitoring team



Responsible, sends LHD reports with all fields fulfilled and detailed and, if any data is not available, investigates the deviation within the collateral or involved company.

5. GENERAL DATA SET REQUIREMENTS

In last SAT 20 it was concluded that:

Conclusion 20/02: Improvement in quality and reliability of data

That, EUR/SAM States/ANSPs are urged to improve the quality and reliability of the data they submit to SATMA by providing additional data on fleet capabilities including ADS-C/CPDLC connection and registration number.

Decision 20/03: Provision of Correct Addresses

That, SAT Member States and SATMA provide correct addresses and update the contact information regularly to ensure timely submission of data and statistical analysis.

Conclusion 20/05: Provision of LHD information and causes

That, To ensure that the outcome of Safety Assessment that are based on the Collision Risk Model conducted for the EUR/SAM region is more representative of the prevalent risks, EUR/SAM States/ANSPs are urged to provide all available information related to Large Height Deviations including their duration and causes to SATMA.

6. 2016 DATA SET REQUIREMENTS

In March 15th 2016 an email was sent to focal points to remind that

“2016 EUR/SAM Corridor Safety Assessment will include traffic data regarding JANUARY TO JUNE 2016, and all year LHD.

Please send traffic data as soon as you have them available. It is important to receive them before end of JULY 2016



7. **ACTION BY THE MEETING**

The Meeting is invited to:

- Name/Confirm the Focal Points for LHD Monitoring Team.
- Each State to ensure that LHD reports are entirely and correctly fulfilled.
- Take note of the data delivery schedule for Safety Assessments in EURSAM Corridor.
- Remember that DATA models to be sent are included in the document “DATA NEEDED FOR EUR/SAM MONITORING AND ASESSEMENTS” published in SATMA website.

ANNEX A

2014 SAFETY ASSESSMENT RESULTS – DEFAULT TIME DEVIATION REVISION

Tables 1 and 2 represents 2014 vertical operational risk comparing two different times for deviation time default.

Vertical collision operational Risk	Vertical collision operational Risk 2014					
	Canarias	SAL1	SAL2	Dakar1	Dakar2	Recife
10 mts	0.5068×10^{-6}	0.6960×10^{-6}	0.5452×10^{-6}	0.4574×10^{-6}	0.5268×10^{-6}	0.0361×10^{-6}
5 mts	0.3218×10^{-6}	0.5187×10^{-6}	0.4064×10^{-6}	0.2343×10^{-6}	0.2595×10^{-6}	0.0180×10^{-6}
Risk reduction	36.5%	25.5%		48.8%		50.0%

Tabla 1.

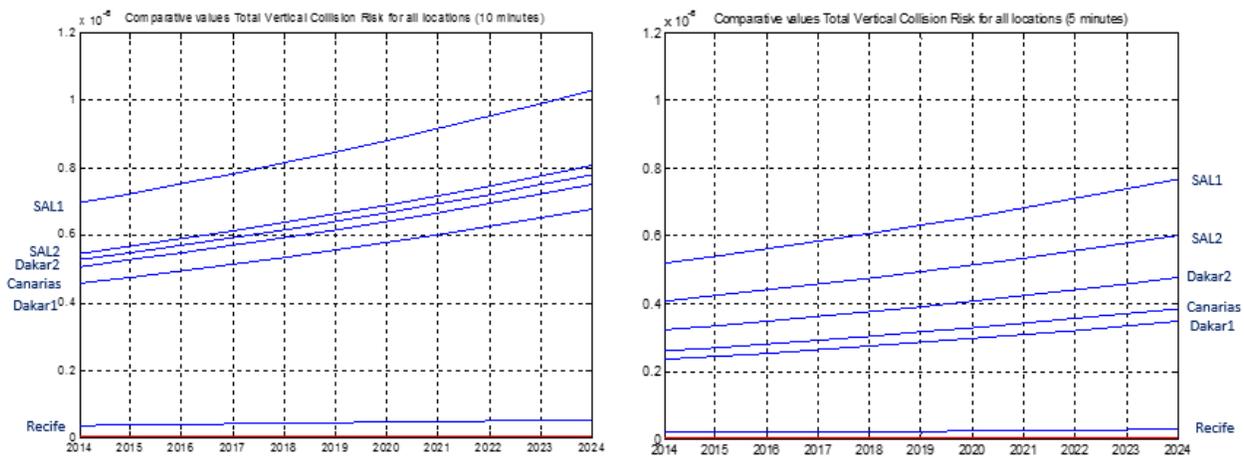


Figura 1.

Vertical collision operational Risk for period **2014-2024**.

If CRM assumes that the standard time for deviation (when no data available) is 5 minutes instead of 10 minutes, the vertical operational risk is reduced between 25% and 50%, depending of considered FIR/UIR.

Further considerations are under study about CRM hypothesis. As a high percentage of LHD occur in coordination between collaterals, 5 minutes could be even reduced, giving a different treatment to LHD reported in oceanic areas and those notified close to FIR boundaries.



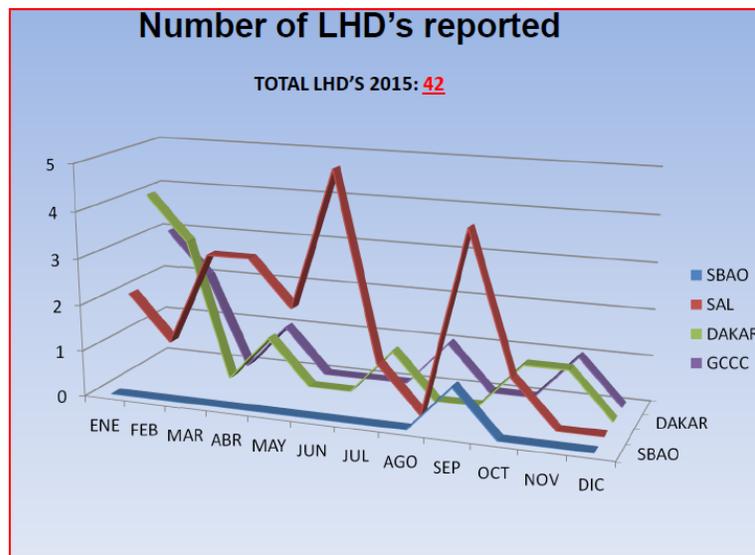
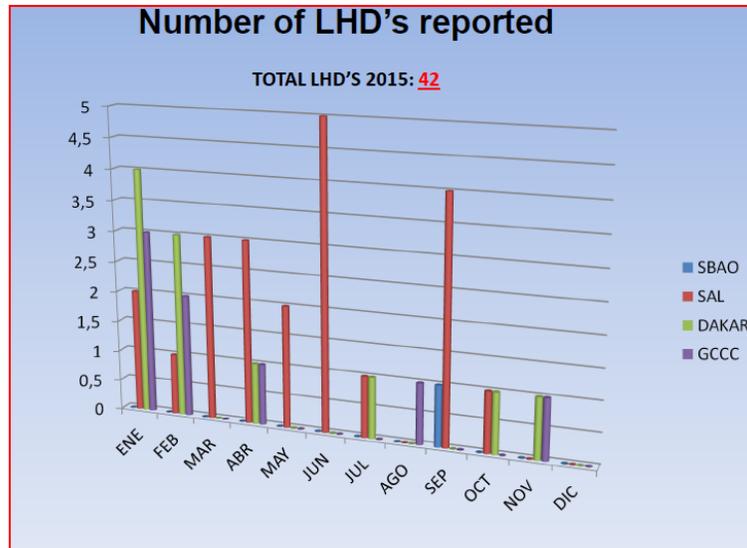
ANNEX B

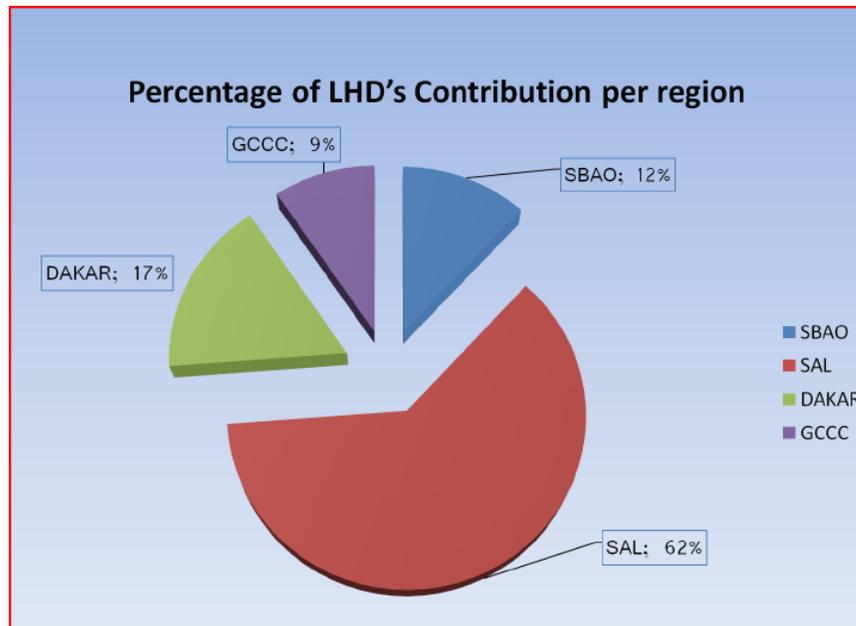
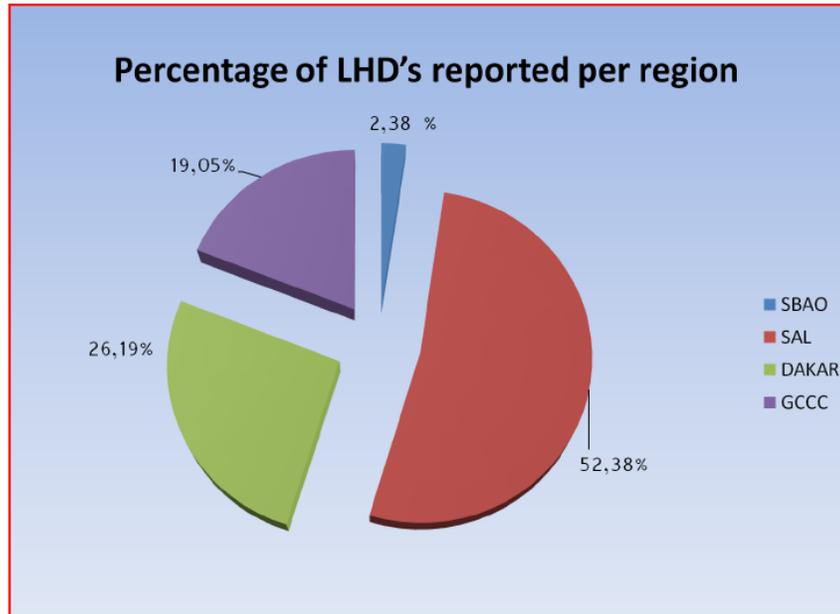
TERMS OF REFERENCE FOR LHD MONITORING TEAM

- a) Be responsible for sending, with the defined format, before day 15th of each month, a monthly report to SATMA about all LHD detected in the respective ACC during the month, even if no LHD is reported. In case that a specific ACC of the Corridor repetitively omit this LHD monthly report, SATMA could advise ICAO about this repetitive omission.
- b) On SATMA request, be responsible to send to SATMA the conclusions of possible LHD investigation.
- c) Initiate proposals about new operational coordination procedures between adjacent ACC and submit them to SATMA for approval in SAT meetings.
- d) Be responsible to monitor in each ACC the implementation of possible common operational procedures to reduce the operational errors in coordination procedures between adjacent ATC units.
- e) Provide SATMA with traffic and deviations data regularly following models published in DATA TO BE SENT BY STATES in SATMA webpage (www.satmasat.com).

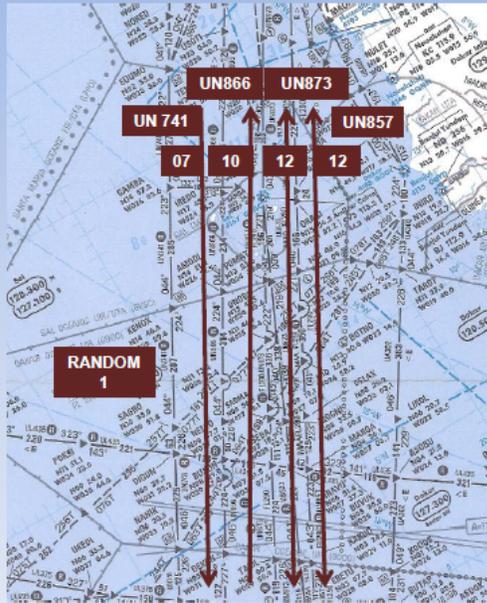
ANNEX C

LHD 2015 REPORT

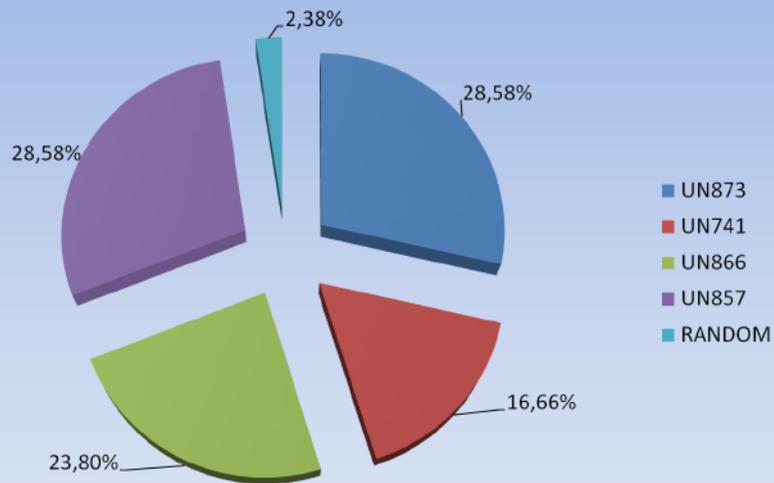




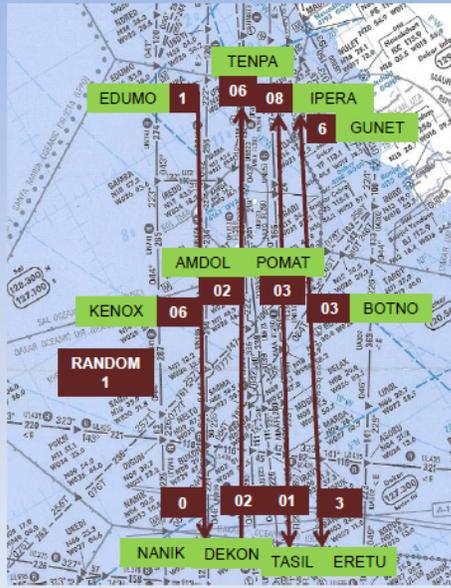
Distribution of LHD's per ATS route



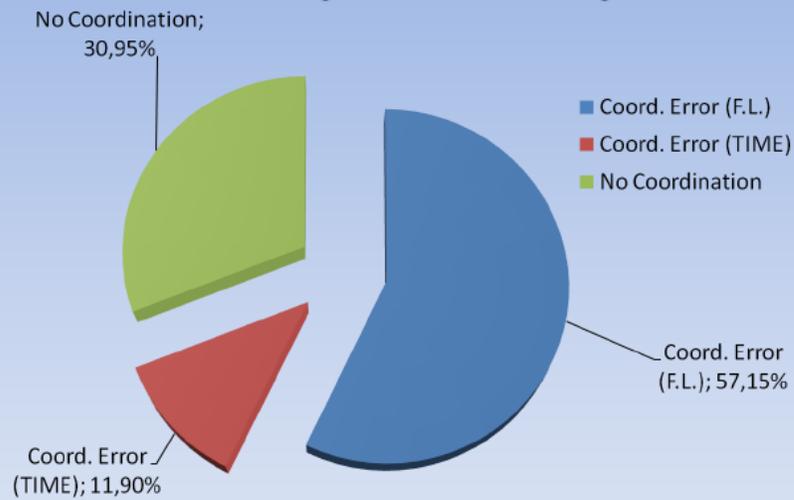
Percentage of LHD's per ATS route



Distribution of LHD per Fix Point



Percentage of LHD'S Contributing Factors





International Civil Aviation Organization

SAT21-WP/04
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