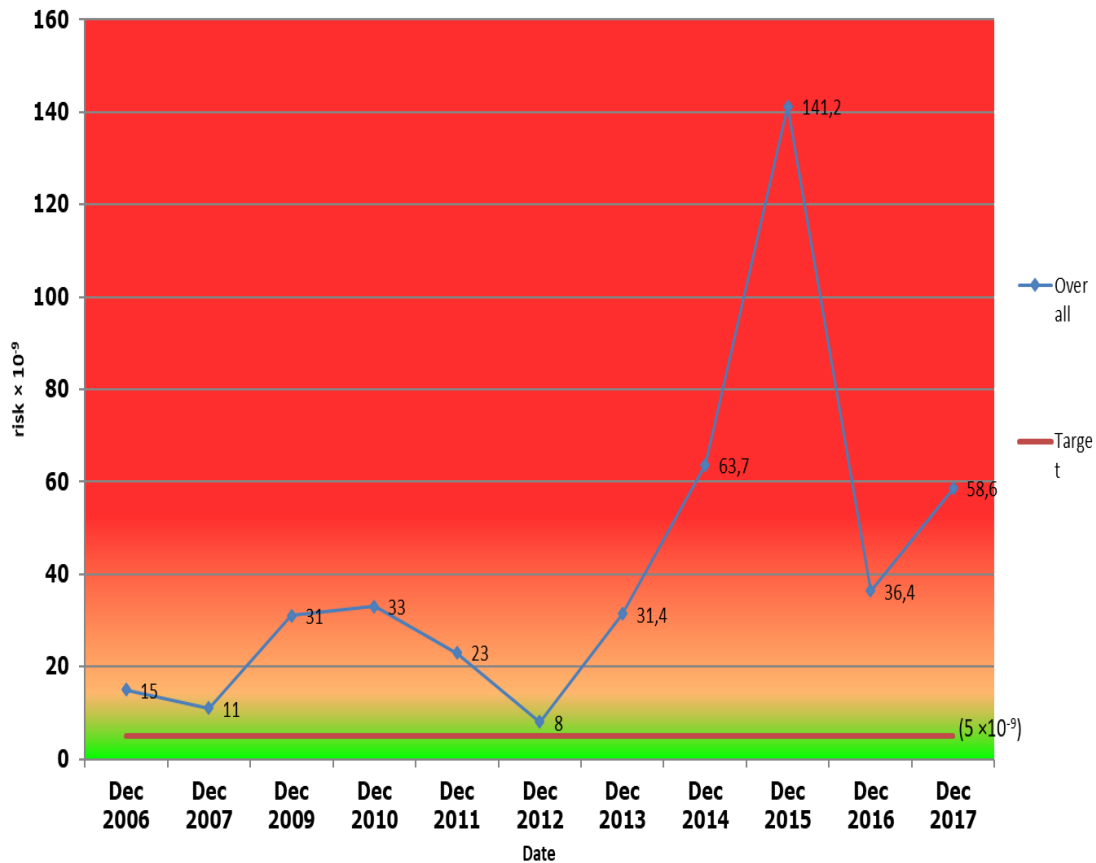


APPENDIX – F3 COLLISION RISK ASSESSMEN (AFI REGION)

The CRA 12 2017 estimate of the total vertical collision risk was 58.6×10^{-9} fatal accidents per flight hour, i.e. 12 times the total vertical TLS. It was approximately 1.6 times larger than its CRA 11 2016 counterpart. The increase in the CRA 12 2017 estimate of the total vertical collision risk represented the combined effect of increases in the probabilities of vertical overlap due to improper flight level crossings and flying at wrong flight levels. The former increased by a factor of approximately 1.2 and the latter by a factor of approximately 1.8.

Overall Collision Risk Assessment



2.2 SAT Area Risk Assessment 2017:

FIR/UIR	CRA 12 2017		CRA11 2016	CRA 10 2015	CRA 9 2014	CRA 8 2013
	$n_x(\text{opp})$	$n_x(\text{equiv})$	$n_x(\text{equiv})$	$n_x(\text{equiv})$	$n_x(\text{equiv})$	$n_x(\text{equiv})$
Accra	0.003518	0.003675	0.02147	0.02926	-	-
Asmara	-	-	-	-	0.01249	-
Beira	0.082251	0.082341	0.15083	0.1175	0.1004	0.1141

Brazzaville	0.017984	0.018808	0.015836	0.1639	0.04408	0.04509
Cape Town	0.000000	0.000006	0.000005	0.000535	0.002702	0.00132
Dakar	0.09205	0.092379	0.072278	0.07351	0.1118	0.1524
Johannesburg	0.000049	0.000088	0.00079	0.000493	0.000630	0.00107
Johannesburg Oceanic	-	-	-	-	-	-
Luanda	-	-	-	-	-	-
N'Djamena	0.099002	0.099079	0.21169	0.2142	0.1444	0.09560
Niamey	0.07014	0.071261	0.19777	0.1767	0.04139	0.06608
Roberts	0.019510	0.019516	0.02175	0.01983	0.03652	0.03557

FIR/UIR	Nr of Months with submitted Form 3	Nr of Coordination failures	Nr of Communication failures	Nr of Turbulence events	Nr of ACAS events
Accra	11	16	61	17	3
Asmara	0	-	-	-	-
Beira	12	2	0	0	0
Brazzaville					
- <i>Brazzaville</i>	6	1	0	2	0
- <i>Douala</i>	7	0	0	1	0
- <i>Libreville</i>	4	0	0	0	0
Cape Town	8	0	0	0	0
Dakar					
- <i>Abidjan</i>	0	-	-	-	-
- <i>Bamako</i>	12	0	0	4	0
- <i>Dakar</i>	11	0	0	0	0
- <i>Nouakchott</i>	3	3	4	0	2
Johannesburg	10	111	34	49	1
Johannesburg Oceanic	0	-	-	-	-
Luanda	0	-	-	-	-
N'Djamena	7	6	3	7	0
Niamey					
- <i>Niamey</i>	11	0	3	1	0
- <i>Ouagadougou</i>	12	0	0	0	0
Roberts	11	0	0	0	0
Total		145	105	81	6

The graph below illustrates the figures for 2009 onwards to 2017 of LHD

