



SAM/IG/5
IP/08
10/05/10

**International Civil Aviation Organization
South American Regional Office**

**FIFTH WORKSHOP/MEETING OF THE SAM IMPLEMENTATION GROUP (SAM/IG/5)
REGIONAL PROJECT RLA/06/901**

Lima, Peru, 10 to 14 May 2010

Agenda Item 2: Optimisation of the ATS routes

**IMPLEMENTATION OF RNAV ROUTES AND PERFORMANCE BASED NAVIGATION
(PBN) IN THE CAR/SAM REGION**

(Presented by IATA)

Summary

Update on RNAV/RNP Activity in LATAM/CAR

1 Background

1.1 IATA continues to actively support and promote the implementation of RNAV and RNP, under the globally harmonized ICAO Performance Based Navigation (PBN) concept. RNAV/RNP is a proven method for effectively improving the safety, dependability and efficiency of flight operations, as well as increasing airspace capacity surrounding congested airports. GNSS is the primary navigational enabler for the optimum exploitation of the benefits of PBN. Several airlines and States have realized the potential of this technology and have requested IATA's assistance in the development of such procedures. IATA is already engaged in several RNAV/RNP procedure implementation projects.

2 Discussion

2.1 Review the attachment depicting RNAV/RNP initiatives implemented and/or pending implementation.

3 Suggested action

3.1 Take note of the information provided.

3.2 Inform IATA of projects not identified or accounted for.

LATAM CAR, NAT NAM, ATC-ATM Efficiencies -Projections 2010

Region	Descriptor	FORECAST 2010								IMPLEMENTED Y T D		
		Domain- Fuel- Kgs (Per Airac cycle)			Savings (13 Airac Cycles)					KGS	USD\$ Price Per Kilo	CO2 Kg
		ENROUTE	TMA	GROUND	DIST	TIME	IMP DATE	FUEL	CO2 Kg			
	LATAM / CAR										\$0.90	
TMA and Airports	San Jose SID / STAR		291,364			2	17-Sep-10	3,787,732	11,931,356		\$0	
	San Jose RNP App		42,472			2	17-Sep-10	552,136	1,739,228		\$0	
	Guatemala City SID / STAR		205,976			2	16-Dec-10	2,677,688	8,434,717		\$0	
	Guatemala City RNP App		29,164			2	16-Dec-10	379,132	1,194,266		\$0	
	San Salvador SID / STAR		197,000			2	16-Dec-10	2,561,000	8,067,150		\$0	
	San Salvador RNP App		164,840			2	16-Dec-10	2,142,920	6,750,198		\$0	
	Liberia SID / STAR		41,888			2	16-Dec-10	544,544	1,715,314		\$0	
	Liberia RNAV App		7,504			2	16-Dec-10	97,552	307,289		\$0	
	Toluca SID / STAR		90,588			2	17-May-10	1,177,644	3,709,579		\$0	
	Toluca RNP App		96,994			2	17-May-10	1,260,922	3,971,904		\$0	
	Bonaire SID / STAR		53,564			2	16-Dec-10	696,332	2,193,446		\$0	
	Bonaire RNAV App		8,544			2	16-Dec-10	111,072	349,877		\$0	
	Brasilia,BSB, RNAV SID-STAR-APP		518,664			2	8-Apr-10	6,742,632	21,239,291	6,742,632	\$6,068,369	21,239,291
	Recife,REC, RNAV SID-STAR-APP		393,343			2	8-Apr-10	5,113,459	16,107,396	5,113,459	\$4,602,113	16,107,396
	Rio De Janeiro,GIG, RNAV SID-STAR- APP		910,813			2	18-Nov-10	11,840,569	37,297,792		\$0	
Guarulhos,SAO,RNAV SID-STAR- APP		1,712,540			2	18-Nov-10	22,263,020	70,128,513		\$0		
Havana, HAV, RNAV Rwy 24		30,005			2	16-Dec-10	390,065	1,228,705		\$0		
SPECIAL USE	Bogata,BOG, Arrivals Palenquero		216,480		36	7	16-Dec-10	2,814,240	8,864,856		\$0	
	Puebla		185,925			2	16-Dec-10	2,417,025	7,613,629		\$0	
REGION	Maldonado -Beunos Aires	17,390			44		16-Dec-10	226,070	712,121		\$0	
	Montevideo-Buenos Aires	124,499			42		16-Dec-10	1,618,487	5,098,234		\$0	
	Panama City-Buenos Aires	15,559			25		6-May-10	202,267	637,141		\$0	
	Panama City - Montevideo	7,273			36		16-Dec-10	94,549	297,829		\$0	
	Santiago-Sao Paulo- Santiago	80,747			14		6-May-10	1,049,711	3,306,590		\$0	
	Santiago-Mendoza	7,544			24		16-Dec-10	98,072	308,927		\$0	
	Bonaire-Guayaquil/Quito	17,057			24		16-Dec-10	221,741	698,484		\$0	
Bonaire-Lima	70,894			71		16-Dec-10	921,622	2,903,109		\$0		

Region	Descriptor	FORECAST 2010								IMPLEMENTED Y T D		
		Domain- Fuel- Kgs (Per Airac cycle)			Savings (13 Airac Cycles)					KGS	USD\$ Price Per Kilo	CO2 Kg
		ENROUTE	TMA	GROUND	DIST	TIME	IMP DATE	FUEL	CO2 Kg			
AL ROUTES	Aruba-San Juan	3,563			10		16-Dec-10	46,319	145,905		\$0	
	Brasilia -Rio Bronco	60,872			40		16-Dec-10	791,336	2,492,708		\$0	
	Toluca - Cancun TLC - CUN - TLC	19,768			3,12		17-Mar-10	256,984	809,500		\$0	
	Toluca - Ciudad Juarez TLC - CJS	6,496			12		17-Mar-10	84,448	266,011		\$0	
	Toluca - San Jose Del Cabo TLC - SJD	3,864			4		17-Mar-10	50,232	158,231		\$0	
	Toluca - Tijuana TLC - TIJ	60,928			30		11-Feb-10	792,064	2,495,002	792,064	\$712,858	2,495,002
	Toluca - Monterrey TLC - MTY	46,144			20		14-Jan-10	599,872	1,889,597	599,872	\$539,885	1,889,597
ROUTES to US and EUROPE	Bogotá - Santo Domingo	2,848			20	2.5	17-Dec-10	37,024	116,626		\$0	
	Mexico City-Miami	104,850			33		17-Dec-10	1,363,050	4,293,608		\$0	
	Bogota-New york	43,770			45		17-Dec-10	569,010	1,792,382		\$0	
	Santiago-Miami	97,920			45		17-Dec-10	1,272,960	4,009,824		\$0	
	Guayaquil-Madrid	64,555			26		17-Dec-10	839,215	2,643,527		\$0	
	AORRA Phase 3 of 4	410,596					6-May-10	5,337,748	16,813,906		\$0	
	Los Angeles LAX - GRU	11,232			24		17-Dec-10	146,016	459,950		\$0	
	Atlanta ATL - Sao Paulo GIG	21,952			42		17-Dec-10	285,376	898,934		\$0	
	Houston IAH / Dallas DFW - Lima LIM	8,848			24		17-Dec-10	115,024	362,326		\$0	
	Montevideo-Europe , via direct ERETU	3,295					6-May-10	42,835	134,930		\$0	
	Buenos Aires - Europe, via EZE BRS UM532	72,353			17		6-May-10	940,589	2,962,855		\$0	
	Santiago-Europe, via. ASU - BRS UM403	56,621			21	3	6-May-10	736,073	2,318,630		\$0	
	LATAMCAR.TOTAL	1,441,438	5,197,668	0	601	46		86,308,378	271,871,391	13,248,027	\$11,923,224	41,731,285