International Civil Aviation Organization
CAR/SAM Regional Planning and Implementation Group (GREPECAS)
First Meeting of the Communications, Navigation and Surveillance / Air Traffic Management Subgroup (CNS/ATM/SG/1)
(Lima, Peru, 15-19 March 2010)

Agenda Item 2: Review of Global and CAR/SAM CNS/ATM Developments

Activities Carried Out by the Brazilian Administration for the Implementation of PBN

(Presented by Brazil)

SUMMARY

This working paper contains information on the activities carried out by the Brazilian Administration for the implementation of PBN, in accordance with the PBN Implementation Plan of Brazil, which was sent to the ICAO South American Regional Office.

References:

- Resolution 36/23 of the 36th ICAO Assembly, and
- Report of the GREPECAS/15 meeting

ICAO Strategic Objectives:	*A - Safety* *D - Efficiency*

1. Introduction

1.1. The Brazilian Administration, taking into account the requirements established in Resolution 36/23 of the 36th ICAO Assembly and conclusion 15/38 of GREPCAS/15, has prepared the National PBN Implementation Plan, which was sent to the ICAO South American Office in December 2009. In drafting the Plan, consideration has been given to the Guidance Material prepared by GREPECAS and the SAM PBN Implementation Programme, including the RNAV-5 Action Plan and the model action plans for implementation in TMA and approach.

2. PBN Implementation in Brazil

2.1. Short-term Implementation (until 2010)

2.1.1. En-route Operations - Oceanic Airspace

2.1.1.1. Since October 2001, the use of RNP-10 (RNAV-10) in the EUR/SAM Corridor provides sufficient airspace capability for flights to fly their optimum profiles in the short term. Thus, no PBN implementation has been scheduled for the oceanic airspace under the jurisdiction of Brazil in the short term.

2.1.2. En-route Operations – Continental Airspace

2.1.2.1. RNAV-5 implementation in the SAM Region, scheduled for November 2010, along with Version 1of the SAM ATS route network, which is part of the SAM Route Network Optimisation Plan, approved through Conclusion SAM/IG/3-1, will allow for the optimisation of the airspace structure. The implementation of the SAM ATS route network in the continental airspace shall be carried out through a "top-down" strategy, with a view to identifying the main air traffic flows in the region, as well as the

deficiencies of the route network and of the sectoral division of ATCs involved. With this identification, it will be possible to devise an integrated regional/national network that can serve the requirements of airspace users and the ATS providers. This network shall take into account the need for sectoral division, integration of airports not served by the network, the use of non-permanent routes, and connectivity among the TMAs.

2.1.3. **Terminal Control Areas (Departures and Arrivals)**

2.1.3.1. PBN implementation in the TMAs with greater air traffic volume is based on fast-time and real-time simulations, taking into account the different potential implementation scenarios, with a view to achieving the best cost-benefit ratio for aircraft operators and air navigation service providers, also seeking to reduce airspace complexity and thus reduce pilot and air traffic controller workload.

2.1.3.2. In the short term, the Brazilian Administration has planned to implement PBN in the Brasilia, Recife, Rio de Janeiro, and Sao Paulo TMAs. PBN implementation in TMAs will begin with the PBN Implementation Project in the Brasilia and Recife TMAs; this implementation is scheduled for 8 April 2010. This project was based on the action plan approved at the SAM/IG/2 meeting. The purpose of the PBN Implementation Project in the Brasilia/Recife TMAs, as well as PBN implementation itself, is to gain experience in less complex airspaces, with medium density, characterised by the Brasilia and Recife TMAs. SID, STAR, and RNAV/ILS and RNP APCH with Baro-VNAV approach procedures were published on 11 February 2010 and shall become into effect on 8 April 2010.

2.1.3.3. The PBN Implementation Project in the Rio de Janeiro and São Paulo TMAs is in its final stage, the tentative implementation date being November 2010. The implementation project in the Rio de Janeiro and São Paulo TMAs is aimed at implementing PBN in the two main Brazilian TMAs, both in terms of density and airspace complexity. In addition, the short distance between the two TMAs (200 NM) and the interrelationship of the air traffic flows between them made it necessary to develop the implementation project in order to ensure the harmonisation of the airspace structure and the IFR procedures of the two TMAs.

2.1.3.4. The RNAV STARs and SIDs may be used by aircraft and operators approved for any of the following navigation specifications: RNAV1 and Basic RNP-1. The RNAV STARs and SIDs may also be performed by aircraft and operators approved for these types of procedures, using GNSS.

2.1.3.5. Aircraft operation in RNAV STARs and SIDs, based on the RNAV1 navigation specification, shall be conditioned to the use of ATS surveillances sin the ATCs involved. Only Basic RNP-1 approved aircraft can continue to use RNAV STARs and SIDs, in the event ATS surveillance systems are not available.

2.1.3.6. In the specific case of the Recife TMA, there will not be enough DME coverage to address the requirements foreseen for RNAV1 or Basic RNP1, using the navigation system based on DME/DME. In this case, operators who wish to use RNAV STARs and SIDs using RNAV2 or RNAV 1 navigation specifications must use GNSS.

2.1.3.7. As of 8 April 2010, the Brazilian Administration will begin to apply part of amendment Nº 1 to the Fifteenth Edition of the PANS-ATM (Doc 4444), applicable on 15 November 2010, by inserting some alphanumeric codes related to RNAV and RNP approvals, which are essential to PBN implementation. The objective will be to display PBN approval on the flight progress strips and in radar screen “targets”, thus allowing air traffic controllers to identify PBN-approved aircraft and the types of navigation specifications that can be used by a specific aircraft.

2.1.3.8. In this manner, the status of operator and aircraft approval for any type of RNAV and/or RNP navigation specification shall be indicated in the Filed Fight Plan (FPL) form inserting the letter "R" in box 10 of the FPL. In the specific case of Repetitive Flight Plans (RPL), the aforementioned approval status shall be indicated inserting the letter "R" in box "Q" of the RPL, as follows: EQPT/R.

2.1.3.9. PBN approval status shall be indicated in box 18 of the FPL or in box "Q" of the RPL, by inserting the following alphanumeric characters, with a maximum of 8 codes or 16 characters, preceded by the designator PBN/:

RNAV Specifications	
Code	Navigation Specification
B1	RNAV 5 – All sensors allowed
B2	RNAV 5 GNSS
B3	RNAV 5 DME/DME
B5	RNAV 5 INS or IRS
C1	RNAV 2 – All sensors allowed
C2	RNAV 2 GNSS
C3	RNAV 2 DME/DME
C4	RNAV 2 DME/DME/IRU
D1	RNAV 1 – All sensors allowed
D2	RNAV 1 GNSS
D3	RNAV 1 DME/DME
D4	RNAV 1 DME/DME/IRU
RNP Specifications	
Code	Navigation Specification
O1	Basic RNP 1 – All sensors allowed
O2	Basic RNP 1 GNSS
O3	Basic RNP 1 DME/DME
O4	Basic RNP 1 DME/DME/IRU
S1	RNP APCH

2.1.3.10. The status of GNSS approval of operators and aircraft shall be indicated using the letter "G" in box 10 of the FPL. In the specific case of Repetitive Flight Plans (RPL), the aforementioned approval status shall be indicated using the letter "G" in box "Q" of the RPL, as follows: EQPT/G.

2.1.3.11. Aircraft and operators not approved for RNAV and/or RNP navigation specifications may continue to fly in the Brasilia, Recife, Rio de Janeiro, and São Paulo TMAs using "conventional" procedures (VOR/DME or NDB) or through the use of radar vectors by the ATCs involved for aircraft operation. However, ATC units may be forced to clear the operation of said aircraft outside of their optimum flight profiles, either by increasing the distance flown or using altitude restrictions.

2.1.3.12. In addition to the Brasilia, Recife, Rio de Janeiro, and São Paulo TMAs, 319 RNAV SIDs will be published in 120 airports in Brazil, accounting for 89% of IFR airports, by the end of 2011. The goal is to optimise departure paths and seek an alternative in case ground-based navigation radio aids are not working. The remaining 11% are airports with low air traffic, in which the implementation of RNAV SIDs is not justified until air traffic demand increases. STARs will only be implemented in airports with the highest air traffic volume, in which the corresponding ATC simulations are performed. The implementation of STARs and SIDs will be carried out in accordance with the Implementation Programme of Air Navigation Procedures per Aerodrome, attached to this Plan as an Appendix.

2.1.4. **Approach**

2.1.4.1. The Implementation Programme of Air Navigation Procedures per Aerodrome also seeks to publish RNAV (GNSS) approach procedures for all IFR thresholds, with the possibility of using vertical navigation (LNAV/VNAV), through the use of Baro-VNAV. Moreover, RNAV/ILS approach procedures will be published at airports with ILS equipment in order to facilitate the arrival and approach interface. By the end of 2010, 30% of the IFR thresholds are expected to have APV Baro-VNAV procedures in place. The remaining 70% shall be contemplated until the end of 2011. Until the end of 2011, 264 RNAV (GNSS) procedures with Baro/VNAV will be published in 122 airports, corresponding to 90% of IFR airports. Also, 34 RNAV/ILS procedures will be published. Taking into account the importance of APV procedures to avoid CFIT, the remaining airports will be contemplated until 2014.

2.1.4.2. RNAV approach procedures may be performed by aircraft and operators approved for the RNP APCH navigation specification. RNAV approach procedures may also be used by aircraft and operators approved to perform these types of procedures using GNSS. Use of the LNAV/VNAV portion of RNAV (GNSS) procedures will require the specific approval of aircraft and operators for Baro-VNAV.

2.2. **Medium term (2011-2015)**

2.2.1. **En-route Operations – Oceanic Airspace**

2.2.1.1. The implementation of RNP 4 in the Atlantic FIR is foreseen for the medium term (until 2015); taking into account that fleet navigation capacity shows that it would be possible to begin an approval process for aircraft and operator. The application of RNP 4, together with ADS-C/CPDLC applications, implemented on 30 July 2009, will allow the implementation of a 30 NM horizontal separation. Currently, an average of 70% of aircraft are connected to the ACC-AO ADS-C/CPDLC system.

2.2.1.2. Taking into account that the EUR/SAM Corridor is a homogeneous airspace, the application of RNP4 in this airspace will depend on the participation of users and air navigation service providers responsible for the FIRs involved (Atlantic, Canarias, Dakar, and Sal), through adequate planning by the Group for Improving Air Traffic Services in the South Atlantic (SAT).

2.2.2. **En-route Operations– Continental Airspace**

2.2.2.1. As foreseen in the CAR/SAM PBN Roadmap, en-route operations shall evolve from RNAV-5 to RNP-2, seeking to take advantage of the improved fleet navigation capacity, with greater use of GNSS, which will permit reduced route spacing. The implementation of RNP-2 for en-route operations shall be analysed at regional level for harmonious application, based on the results achieved with RNAV-5 implementation, the increase in air traffic demand, and the evolution of fleet navigation capacity.

2.2.3. **Terminal Areas (Departures and Arrivals)**

2.2.3.1. In order to give continuity to PBN implementation in the TMAs with higher air traffic volume in Brazil, fast-time and real-time simulations will be performed in the Belo Horizonte, Curitiba, Porto Alegre, and Salvador TMAs, seeking a harmonious implementation of RNAV SIDs and STARs through 2012. At the end of these studies, new priorities can be established for other TMAs in which air traffic demand has increased enough to justify the use of simulation techniques to define the best implementation scenario. Likewise, as of 2012, it will be necessary to carry out studies to validate the need to review the SID/STAR procedures implemented in the Brasilia, Recife, Rio de Janeiro, and Sao Paulo TMAs, trying to adjust traffic flow in these airspaces to traffic increases and improvements in fleet navigation capacity. In the specific cases of the Rio de Janeiro and São Paulo TMAs, it will be necessary to carry out studies to determine the feasibility and operational requirement of establishing an exclusionary airspace for PBN-approved aircraft in these TMAs.

2.2.4. **Approach**

2.2.4.1. With regard to the RNAV (GNSS) and RNAV (ILS) approach procedures, it is hoped that all IFR thresholds will be contemplated by 2014, as already mentioned in paragraph 2.1.4.1.

3. **Suggested Action**

3.1. The Meeting is invited to:

a) Take note of the information provided in this working paper;

b) Consider PBN implementation plans in Brazil for harmonisation purposes in the CAR/SAM Regions; and

c) Discuss the requirement for/operational impact of early adoption of PBN elements of Amendment 1 to Doc. 4444.

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APPENDIX / APÉNDICE

IMPLEMENTATION PROGRAMME OF AIR NAVIGATION PROCEDURES PER AERODROME / PROGRAMA DE IMPLANTACION DE PROCEDIMIENTO DE NAVEGACION AEREA POR AERODROMO

Priority/ Prioridad	Airport/ Aeropuerto	Name / Nombre	LNAV	BARO/VNAV	ILS RNAV	SID	STAR	TOTAL	AIP Amd No./ Nº Enmienda AIP	Date of Publication/ Fecha de Publicación	Date of Validity/ Fecha de Vigencia
1	SBGL	Galeão	0	0	0	10	0	10	SUP	19 Nov 2009	19 Nov 2009
2	SBWL	Ilhéus	1	0	0	0	2	3	SUP	17 Dec 2009	17 Dec 2009
3	SBBR	Brasília	0	0	0	20	12	32	13	11 Feb 2010	08 Apr 2009
4	SBRF	Recife	0	2	1	0	4	7	14	11 Feb 2010	08 Apr 2009
5	SBBR	Brasília	0	8	4	0	0	12	1	11 Mar 2010	08 Apr 2009
6	SBRF	Recife	0	0	0	12	0	12	1	11 Mar 2010	08 Apr 2009
7	SBVT	Vitória	0	0	0	4	0	4	1	11 Mar 2010	08 Apr 2009
8	SBSP	Congonhas	0	2	0	0	0	2	SUP	11 Feb 2010	11 Mar 2009
9	SBVT	Vitória	0	2	0	0	0	2	SUP	11 Feb 2010	11 Mar 2009
10	SBSC	Santa Cruz	0	2	0	0	0	2	SUP	11 Feb 2010	11 Mar 2009
11	SBSP	Congonhas	0	0	2	6	0	8	2	08 Apr 2010	06 May 2009
12	SBGR	Guarulhos	0	4	4	4	0	12	2	08 Apr 2010	06 May 2009
13	SBGL	Galeão	0	4	3	1	0	8	3	06 May 2010	03 Jun 2010
14	SBRJ	Santos Dumont	0	4	0	7	0	11	3	06 May 2010	03 Jun 2010
15	SBCF	Trancredo Neves	0	2	1	8	0	11	3	06 May 2010	03 Jun 2010
16	SBBH	Pampulha	0	2	0	7	0	9	3	06 May 2010	03 Jun 2010
17	SBCY	Cuiabá	0	2	1	6	0	9	3	06 May 2010	03 Jun 2010
18	SBCT	Curitiba	0	4	2	4	0	10	4	03 Jun 2010	01 Jul 2010
19	SBSV	Salvador	0	2	2	6	0	10	4	03 Jun 2010	01 Jul 2010
20	SBPA	Porto Alegre	0	2	1	6	0	9	4	03 Jun 2010	01 Jul 2010
21	SBCX	Caxias do Sul	0	2	0	2	0	4	4	03 Jun 2010	01 Jul 2010
22	SBCB	Cabo Frio	0	2	0	1	0	3	4	03 Jun 2010	01 Jul 2010
23	SBGO	Goiânia	0	2	0	3	0	5	4	03 Jun 2010	01 Jul 2010
24	SBFL	Florianópolis	0	2	1	4	0	7	5	01 Jul 2010	29 Jul 2010
25	SBPS	Porto Seguro	0	2	0	2	0	4	5	01 Jul 2010	29 Jul 2010
26	SBRP	Ribeirão Preto	0	2	0	2	0	4	5	01 Jul 2010	29 Jul 2010
27	SBJV	Joinville	0	2	0	2	0	4	5	01 Jul 2010	29 Jul 2010
28	SBNF	Navegantes	0	2	0	2	0	4	5	01 Jul 2010	29 Jul 2010
29	SBFI	Foz Iguaçu	0	2	1	4	0	7	5	01 Jul 2010	29 Jul 2010

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30	SBMA	Marabá	0	2	0	1	0	3	5	01 Jul 2010	29 Jul 2010
31	SBCZ	Cruzeiro do Sul	0	2	0	1	0	3	5	01 Jul 2010	29 Jul 2010
32	SBJU	Juazeiro	0	2	0	2	0	4	5	01 Jul 2010	29 Jul 2010
33	SBPL	Petrolina	0	2	0	2	0	4	5	01 Jul 2010	29 Jul 2010
34	SJTC	Bauru - Arealva	0	2	0	2	0	4	5	01 Jul 2010	29 Jul 2010
35	SBMN	Manaus, Ponta Pelada	0	2	0	8	0	10	6	29 Jul 2010	26 Aug 2010
36	SBSJ	São José dos Campos	0	2	1	4	0	7	6	29 Jul 2010	26 Aug 2010
37	SBCG	Campo Grande	0	2	1	4	0	7	6	29 Jul 2010	26 Aug 2010
38	SBEG	Manaus, Eduardo Gomes	0	2	1	8	0	11	6	29 Jul 2010	26 Aug 2010
39	SBBE	Belém	0	4	1	12	0	17	6	29 Jul 2010	26 Aug 2010
40	SBFZ	Fortaleza	0	2	1	2	0	5	7	26 Aug 2010	23 Sep 2010
41	SBNT	Natal	0	6	1	2	0	9	7	26 Aug 2010	23 Sep 2010
42	SBMO	Maceió	0	2	0	2	0	4	7	26 Aug 2010	23 Sep 2010
43	SBLO	Londrina	0	2	0	2	0	4	7	26 Aug 2010	23 Sep 2010
44	SBCH	Chapecó	0	2	0	2	0	4	7	26 Aug 2010	23 Sep 2010
45	SBCM	Criciúma	0	2	0	2	0	4	7	26 Aug 2010	23 Sep 2010
46	SBUA	São GApriel da Cachoeira	0	2	0	1	0	3	7	26 Aug 2010	23 Sep 2010
47	SBPV	Porto Velho	0	2	1	4	0	7	7	26 Aug 2010	23 Sep 2010
48	SBSM	Santa Maria	0	4	0	4	0	8	7	26 Aug 2010	23 Sep 2010
49	SBCA	Cascavel	0	2	0	1	0	3	7	26 Aug 2010	23 Sep 2010
50	SBSP	Congonhas	0	TBD	TBD	TBD	TBD	TBD	8	23 Sep 2010	18 Nov 2010
51	SBGR	Guarulhos	0	TBD	TBD	TBD	TBD	TBD	8	23 Sep 2010	18 Nov 2010
52	SBKP	Campinas	0	TBD	TBD	TBD	TBD	TBD	8	23 Sep 2010	18 Nov 2010
53	SBGL	Galeão	0	TBD	TBD	TBD	TBD	TBD	8	23 Sep 2010	18 Nov 2010
54	SBRJ	Santos Dumont	0	TBD	TBD	TBD	TBD	TBD	8	23 Sep 2010	18 Nov 2010
55	SBSC	Santa Cruz	0	TBD	TBD	TBD	TBD	TBD	8	23 Sep 2010	18 Nov 2010
56	SBAF	Afonsos	0	TBD	TBD	TBD	TBD	TBD	8	23 Sep 2010	18 Nov 2010
57	SBMQ	Macapá	0	2	0	2	0	4	9	21 Oct 2010	18 Nov 2010
58	SBCR	Corumbá	0	2	0	2	0	4	9	21 Oct 2010	18 Nov 2010
59	SBJP	João Pessoa	0	2	0	2	0	4	9	21 Oct 2010	18 Nov 2010
60	SBMG	Maringá	0	2	0	3	0	5	9	21 Oct 2010	18 Nov 2010
61	SBSR	São José do Rio Preto	0	2	0	3	0	5	9	21 Oct 2010	18 Nov 2010
62	SBUL	Uberlândia	0	2	0	2	0	4	9	21 Oct 2010	18 Nov 2010
63	SWQI	Caracaraí	0	2	0	0	0	2	9	21 Oct 2010	18 Nov 2010

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64	SBSN	Santarém	0	2	1	4	0	7	9	21 Oct 2010	18 Nov 2010
65	SBAN	Anápolis	0	2	1	2	0	5	9	21 Oct 2010	18 Nov 2010
66	SBCO	Canoas	0	2	0	3	0	5	9	21 Oct 2010	18 Nov 2010
67	SBYS	Piraçununga	0	2	1	4	0	7	9	21 Oct 2010	18 Nov 2010
68	SBAR	Aracaju	0	2	0	2	0	4	10	18 Nov 2010	16 Dec 2010
69	SBCC	Novo Progresso	0	2	0	1	0	3	10	18 Nov 2010	16 Dec 2010
70	SBTE	Teresina	0	2	0	3	0	5	10	18 Nov 2010	16 Dec 2010
71	SBIZ	Imperatriz	0	2	0	1	0	3	10	18 Nov 2010	16 Dec 2010
72	SBKG	Campina Grande	0	2	0	1	0	3	10	18 Nov 2010	16 Dec 2010
73	SBFN	Fernando de Noronha	0	2	0	1	0	3	10	18 Nov 2010	16 Dec 2010
74	SBUR	Uberaba	0	2	0	3	0	5	10	18 Nov 2010	16 Dec 2010
75	SBPF	Passo Fundo	0	2	0	2	0	4	10	18 Nov 2010	16 Dec 2010
76	SBDN	Presidente Prudente	0	2	0	1	0	3	10	18 Nov 2010	16 Dec 2010
77	SBPJ	Palmas	0	2	0	2	0	4	10	18 Nov 2010	16 Dec 2010
78	SBBI	Bacacheri	0	2	0	4	0	6	10	18 Nov 2010	16 Dec 2010
79	SBBZ	Cabo Frio/Umberto Modiano	0	2	0	0	0	2	10	18 Nov 2010	16 Dec 2010
80	SBGU	Guarapuava	0	2	0	1	0	3	10	18 Nov 2010	16 Dec 2010
81	SBHT	Altamira	0	2	0	1	0	3	11	16 Dec 2010	13 Jan 2011
82	SBAQ	Araraquara	0	2	0	1	0	3	11	16 Dec 2010	13 Jan 2011
83	SBAT	Alta Floresta	0	2	0	2	0	4	11	16 Dec 2010	13 Jan 2011
84	SBAU	Araçatuba	0	2	0	0	0	2	11	16 Dec 2010	13 Jan 2011
85	SBAX	Araxa	0	2	0	1	0	3	11	16 Dec 2010	13 Jan 2011
86	SBBT	Barretos	0	2	0	1	0	3	11	16 Dec 2010	13 Jan 2011
87	SBCP	Campos dos Goitacazes	0	2	0	4	0	6	11	16 Dec 2010	13 Jan 2011
88	SBIH	Itaituba	0	2	0	1	0	3	11	16 Dec 2010	13 Jan 2011
89	SBIP	Ipatinga	0	2	0	2	0	4	11	16 Dec 2010	13 Jan 2011
90	SBMK	Montes Claros	0	2	0	1	0	3	11	16 Dec 2010	13 Jan 2011
91	SBML	Marília	0	2	0	1	0	3	11	16 Dec 2010	13 Jan 2011
92	SBMS	Mossoró	0	2	0	1	0	3	11	16 Dec 2010	13 Jan 2011
93	SBNM	Santo Ângelo	0	2	0	1	0	3	11	16 Dec 2010	13 Jan 2011
94	SBPB	Parnaíba	0	2	0	1	0	3	11	16 Dec 2010	13 Jan 2011
95	SBQV	Vitória da Conquista	0	2	0	2	0	4	11	16 Dec 2010	13 Jan 2011
96	SBTT	Tabatinga	0	2	0	2	0	4	12	13 Jan 2011	10 Feb 2011
97	SBUF	Paulo Afonso	0	2	0	1	0	3	12	13 Jan 2011	10 Feb 2011
98	SBBV	Boa Vista	0	2	1	4	0	7	12	13 Jan 2011	10 Feb 2011

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99	SBRB	Rio Branco	0	2	1	6	0	9	12	13 Jan 2011	10 Feb 2011
100	SBSL	São Luís	0	2	1	4	0	7	12	13 Jan 2011	10 Feb 2011
101	SBAA	Conceição do Araguaia	0	2	0	1	0	3	12	13 Jan 2011	10 Feb 2011
102	SBAM	Amapá	0	2	0	1	0	3	12	13 Jan 2011	10 Feb 2011
103	SBAS	Assis	0	2	0	1	0	3	12	13 Jan 2011	10 Feb 2011
104	SBBQ	Barbacena	0	2	0	1	0	3	12	13 Jan 2011	10 Feb 2011
105	SBBW	Barra do Garça	0	2	0	2	0	4	12	13 Jan 2011	10 Feb 2011
106	SBCD	Caçador	0	2	0	1	0	3	12	13 Jan 2011	10 Feb 2011
107	SBCN	Caldas Novas	0	2	0	1	0	3	13	10 Feb 2011	10 Mar 2011
108	SBGM	Guajará-Mirim	0	2	0	1	0	3	13	10 Feb 2011	10 Mar 2011
109	SBGW	Guaratinguetá	0	2	0	2	0	4	13	10 Feb 2011	10 Mar 2011
110	SBIC	Itacoatiara	0				0	0	13	10 Feb 2011	10 Mar 2011
111	SBLJ	Lages	0	2	0	1	0	3	13	10 Feb 2011	10 Mar 2011
112	SBLN	Lins	0	2	0	0	0	2	13	10 Feb 2011	10 Mar 2011
113	SBMD	Monte Dourado	0	2	0	1	0	3	13	10 Feb 2011	10 Mar 2011
114	SBPC	Poços de caldas	0	2	0	1	0	3	13	10 Feb 2011	10 Mar 2011
115	SBPN	Porto Nacional	0	2	0	2	0	4	13	10 Feb 2011	10 Mar 2011
116	SBTB	Trombetas	0	2	0	2	0	4	13	10 Feb 2011	10 Mar 2011
117	SBTD	Toledo	0	2	0	1	0	3	13	10 Feb 2011	10 Mar 2011
118	SBTR	Torres	0	2	0	1	0	3	13	10 Feb 2011	10 Mar 2011
119	SBTS	Tiriós	0	2	0	1	0	3	13	10 Feb 2011	10 Mar 2011
120	SBTU	Tucuruí	0	2	0	1	0	3	13	10 Feb 2011	10 Mar 2011
121	SBUG	Uruguaiana	0	2	0	1	0	3	13	10 Feb 2011	10 Mar 2011
122	SBVG	Varginha	0	2	0	2	0	4	13	10 Feb 2011	10 Mar 2011
123	SBBU	Bauru	0	2	0	3	0	5	14	10 Mar 2011	07 Apr 2011
124	SBJF	Juiz de Fora	0	2	0	3	0	5	14	10 Mar 2011	07 Apr 2011
125	SBLP	Bom Jesus da Lapa	0	2	0	1	0	3	14	10 Mar 2011	07 Apr 2011
126	SBTF	Tefé	0	2	0	1	0	3	14	10 Mar 2011	07 Apr 2011
127	SBVH	Vilhena	0	2	0	1	0	3	14	10 Mar 2011	07 Apr 2011
128	SBBG	Bagé	0	2	0	1	0	3	14	10 Mar 2011	07 Apr 2011
129	SBCI	Carolina	0	2	0	1	0	3	14	10 Mar 2011	07 Apr 2011
130	SBEK	Jacareacanga	0	2	0	1	0	3	14	10 Mar 2011	07 Apr 2011
131	SBPK	Pelotas	0	2	0	1	0	3	14	10 Mar 2011	07 Apr 2011
132	SBPP	Ponta Porã	0	2	0	1	0	3	14	10 Mar 2011	07 Apr 2011
133	SBCJ	Carajás parauapebas	0	2	0	1	0	3	14	10 Mar 2011	07 Apr 2011

- END / FIN –