MESO AMERICAN AND CARIBBEAN SEA HYDROGRAPHIC COMMISSION
14th Meeting, St Maarten, Netherlands (9-13 December 2013)

NATIONAL REPORT – BRAZIL

1. Hydrographic Office / Service:	Directorate of Hydrography and Navigation (DHN)
2. Surveys:	Coverage of new surveys: during 2013, Brazilian Navy Hydrographic Ships and other units conducted hydrographic surveys on the Amazon Basin, contributing to the nautical cartographic update of the area. New riverine survey hydrographic capacities: 4 new ships were comissioned and 1 to be commissioned by the beginning 2015 (total of 7). New equipments were acquired (singlebeams and multibeams) so as to increase the riverine hydrographic capability.
3. New charts & updates:	- New paper charts: INT4196 - Do Cabo Norte ao Cabo Maguari - September 2013 - New Editions of ENC cell produced: BR400242 - 4th Edition - Da Ilha dos Porcos à Ilha de Santana; and BR400204 – 5th Edition - Das Ilhas Pedreira à Ilha de Santana.
4. New publications & updates:	- New Editions: Tide Tables DG6 49th Edition (DEZ2013); and Nautical Almanac DN5 69th Edition (DEZ2013). Means of delivery: paper and digital format accessible at DHN INTERNET website.
5. MSI	Brazilian Navy Hydrographic Centre is responsible for the reception, processing and promulgation of MSI for NAVAREA V, on behalf of the Directorate of Hydrography and Navigation (DHN), in accordance with GMDSS Master Plan. Navigational warnings and Meteorological Information are broadcasted by SafetyNET service at scheduled times (0030 and 1230 UTC) twice a day. Meteorological information is

broadcasted at scheduled times (0730 and 1930 UTC) twice a day. Bad weather warnings are forwarded any time, whenever it's necessary.

MSI is also broadcasted in VHF/HF radio band by Rio de Janeiro Navy Radio Station, at least three times a day. Local navigational warnings are broadcasted by VHF/HF radio band only.

SERVICE	Yes	No	Partial	NOTES
LOCAL WARNINGS	X			
COASTAL WARNINGS	X			
NAVAREA WARNINGS	X			
INFORMATION ON PORTS AND HARBOURS	X			

GMDSS IMPLEMENTATION (IMO Publication 970 - GMDSS Handbook)

SERVICE	Yes	No	Partial	NOTES
Master Plan	X			
A1 Area		X		
A2 Area		X		
A3 Area	X			
NAVTEX		X		
SafetyNET	X			

6. C-55

Status of **hydrographic survey** of all navigable waters, including internal waters, out to the limits of the EEZ (as stated in the last update, MAY 2013):

Survey coverage, where:
A = percentage which is adequately surveyed.
B = percentage which requires re-survey at larger scale or to modern standards.
C = percentage which has never been systematically surveyed

	A	B	C
Depths < 200m	70	30	0
Depths > 200m	90	10	0

Status of **nautical charting** within the limits of the EEZ:

Coverage of charts published by your organisation, where:
A - Percentage covered by INT series, or a paper chart series meeting the standards in M-4.
B - Percentage covered by Raster Navigational Charts (RNCs) meeting the standards in S-61.
C - Percentage covered by ENCs meeting the standards in S-57.

PURPOSE/SCALE	A	B	C
Offshore passage/Small	90	100	90
Landfall and Coastal passage/Medium	71	82	71
Approaches and Ports/Large	100	100	100
Percentage of Group A showing depths in metres	100		
Percentage of Group A referenced to a satellite datum	75		

7. Capacity Building

a) Training needed: X X X

b) Training and courses offered:

COURSE	DESCRIPTION	DURATION
C-Esp-HN	Aims to qualify the student to be a technician in Hydrography and Navigation issues.	42 weeks
C-Ap-HN	Aims to increase the capability of the student to be a technician in Hydrography and Navigation.	35 weeks
CAHO (IHO Cat."A")	Aims to provide the student with the capability to plan, to conduct and to execute the activities related with the Hydrographic Service.	50 weeks
Hydro 1	Aims to provide the student with the capability of planning a hydrographic survey.	66 hours
Hydro 2	Aims to provide the student with the capability of conducting and executing a hydrographic survey using singlebeam ecosounders, multibeam ecosounders and side scan sonars.	98 hours
Training in singlebeam A/P	Aims to promote a day-by-day follow up of the singlebeam acquisition and of the processing tasks aboard.	-
Training in multibeam A/P	Aims to promote a day-by-day follow up of the multibeam acquisition and of the processing tasks aboard.	-
Training in Side Scan operation	Aims to promote a day-by-day follow up of the side scan operation aboard.	-
Training in gauge operation	Aims to promote a day-by-day follow up of the gauge operation aboard.	1 week
Training in GPS survey and post	Aims to provide the student with the capability of planning a GPS network, carrying	1 week

COURSE	DESCRIPTION	DURATION
processing	out a classical survey, post-processing baselines and adjusting geodetic coordinate network stations.	
Training in oceanographic data acquiring and post-processing	Aims to promote a training on CTD, ADCP Termosalinometer operation and data processing	2 weeks

On November 2013, DHN (Brazil) will host the Multibeam Sonar Training Course promoted by the University of New Brunswick, as a part of the Ocean Mapping Group effort to promote the multibeam echosounder technology capability.

This six-day, 36-lecture course is designed to provide a theoretical and practical background in marine swath survey technology and techniques for hydrographic surveys, continental shelf boundary delimitation, offshore engineering, harbour dredging, fisheries habitat, route survey and scientific research, and provides overviews of:

- the technology and problems associated with shallow water multibeam surveys;
- processing and visualization techniques designed to address the complexities of swath mapping; and
- constraints on using swath bathymetry to produce highest quality data.

On September 2013, DHN-BR contributed with the training of personal and production of nautical paper charts of INAHIMA (Mozambique Hydrographic Service) by sending qualified technical personnel to share knowledge and assist INAHIMA Cartographic Department (at no cost).

This program was sponsored by CB Fund (travel costs envolved).

c) Projects under development: X X X

8. Oceanographic activities

General: deployment of XBTs by Brazilian Navy Ships at international waters and the operation and maintenance (annual) of eight PIRATA moored buoys by Brazilian Hydrographic Navy Ships.

GEBCO/IBC's activities: routine GEBCO soundings are performed by the Brazilian Hydrographic Navy Ships employed during the all the commissions done.

Oceanographic cruises were done by the Brazilian Navy Hydrographic Ships on the north, east and south coasts of Brazil, using CTD, XBT and ADCP.

The Brazilian National Buoy Program counts on four operational buoys (total of six deployed, two being repaired at the moment). Drifting buoys were also deployed along the Brazilian coast during the oceanographic cruises.

9. Other activities	Participation in IHO Committees / Working Groups: HSSC, IRCC, MACHC, SWAtHC, HCA, TSMAD, SNPWG, DPSWG, CSPCWG, DQWG, MSDIWG, TWLWG, HDWG, EUWG, ABLOS, WWNWS, CBSC, WENDWG, IBSC, GEBCO-SCUNF, GEBCOTSCOM, IEHG,PAC-PRIMAR,IMO-NAV, IC-ENC.
10. Conclusions	Future plans include the conclusion of coverage for ENC cells of the MACHC region until the end of 2013. DHN reassures its commitment with the MesoAmerican and Caribbean Sea Hydrographic Commission (MACHC) and plans continuous hydrographic activities so as to keep the nautical charts updated.