

BRAZILIAN NAVY

NAVY HYDROGRAPHIC CENTRE

GLOSS-2003



Summary

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- **Local Sea level Network;**
- **Data Acquisition and Processing Methodology:**
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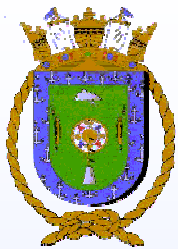
Introduction/Motivation

Brasil, the largest country in South America, is bordered by a coastline of more than 7.400 km in extent. Economic, scientific and other activities linked to the sea explain the need of an appropriate understanding of this complex environment. Among others, the study of sea level monitoring is a good example of a research activity which provides important and useful information.

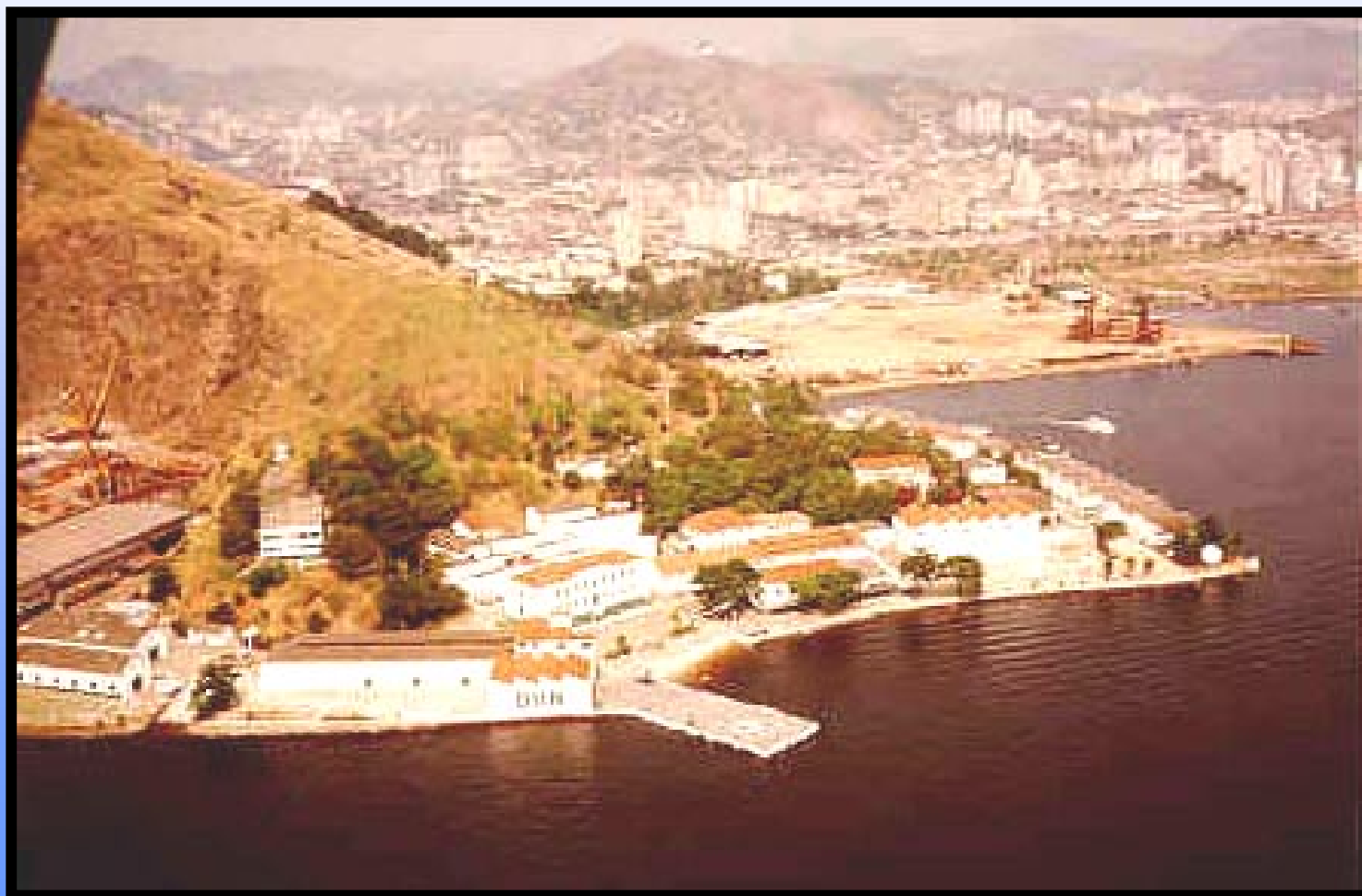


(Introduction/Motivation.....)

[Recognizing the importance of the study of sea level, the Diretoria de Hidrografia e Navegacao (DHN), the Brazilian institution designated as coordinator of ocean research in the country, started in 2002, to develop an Implementation Plan for the Gloss Brasil Program.



Aerial view of DHN, in Rio de Janeiro





The Implementation Plan for the Gloss Brasil Program

- The main objective of this Plan is to join efforts of the most relevant Brazilian Institutions that carry out some kind of sea level monitoring, research and application activity. Each member will have it's own responsibilities in maintaining one or more sea level stations as well as in making available quality-controlled data for the international sea level centers. The complete group of Brazilian Institutions, which are taking part in this Implementation Plan, is composed by:**



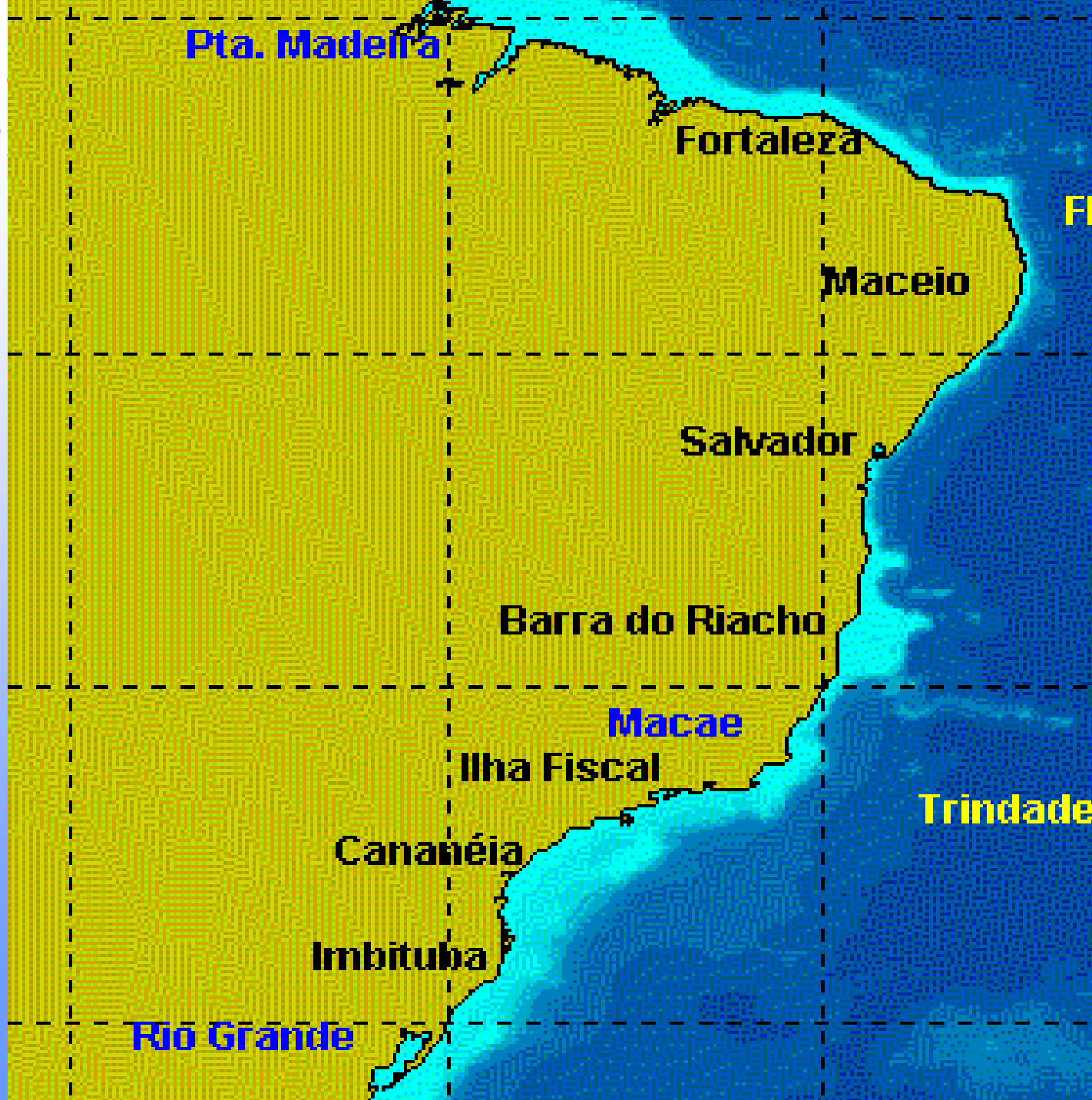
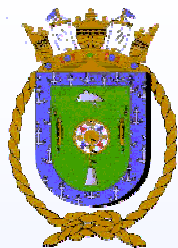
(The Implementation Plan for the Gloss Brasil Program...)

- 1 - Diretoria de Hidrografia e Navegação (DHN)- (coordinator)
- 2 - Centro de Hidrografia da Marinha (CHM)
- 3 - Instituto Brasileiro de Geografia e Estatística (IBGE)
- 4 - Instituto Oceanográfico da Universidade de São Paulo (IOUSP)
- 5 - Centro de Estudo do Mar da Universidade Federal do Paraná (CEM)
- 6 - Coordenação de Programas de Pós Graduação em Engenharia da Universidade Federal do Rio de Janeiro (COPPE)
- 7 - Fundação Universidade do Rio Grande (FURG)
- 8 - Instituto de Pesquisas Hidroviárias (INPH)
- 9 - Gerência Geral do Porto de Ponta da Madeira (Companhia do Vale do Rio Doce)
- 10 - Terminal Especializado de Barra do Riacho - PORTOCEL
- 11 - PETROBRAS



Local Sea level Network

	Station	Responsible	Situation
Principal	Fortaleza	IBGE	To be installed
	Suape x Maceio x Natal	TBD	To be installed
	Fernando de Noronha	CHM	To be installed
	Salvador	IBGE - CHM	Active(*)
	Barra do Riacho	PORTOCEL	Active (*)
	Ilha Fiscal	CHM	Active
	Ilha Trindade	CHM	Being installed
	Cananéia	USP	Active
	Imbituba	IBGE	Active (*)
Secondary	Ponta da Madeira	CVRD	Active (*)
	Macaé (Imbetiba)	IBGE/Petrobras	Active (*)
	Rio Grande	FURG	To be re-installed





Trindade Oceanic Island - Feb/2003



Data Acquisition and Processing Methodology:

In order to follow the GLOSS standards regarding data acquisition and processing, two systems, developed in Brasil, are being evaluated by DHN, UFRJ and IBGE.

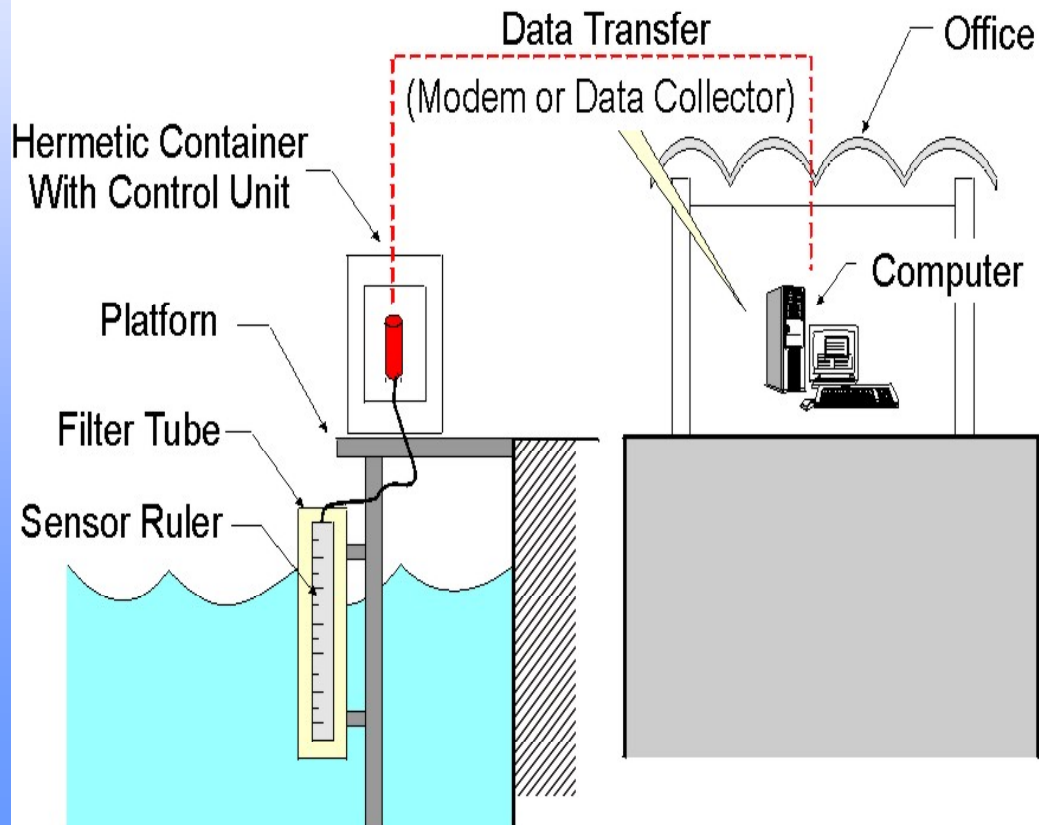
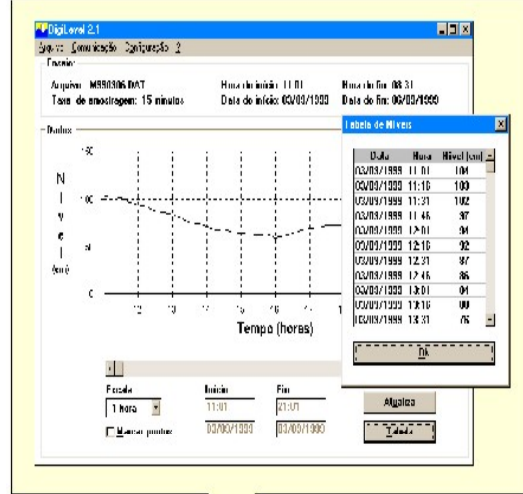
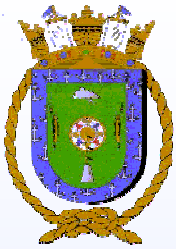
These systems are:

- ρ DIGILEVEL; and
- ρ MARESCAN.



DIGILEVEL

Ilha Fiscal, Barra do Riacho, Salvador and Macae sites have installed not only the float/well arrangement with an analog recorder but also a DIGILEVEL gauge. This is a result of a research work developed by UFRJ. It resembles an electronic tide staff with sensors spaced 1 cm apart along a staff that is housed in the stilling well.

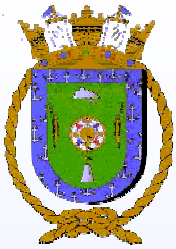




Digilevel

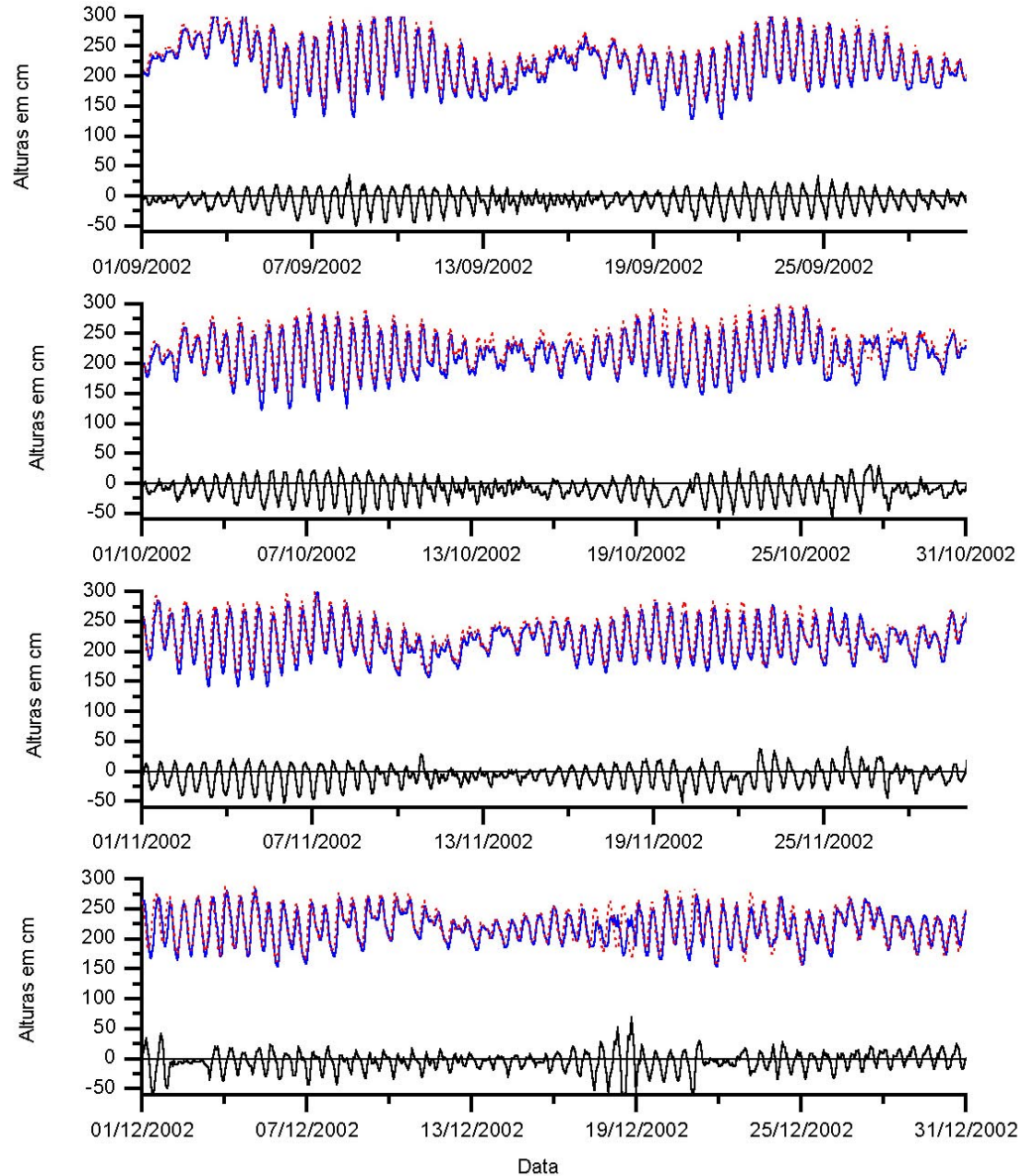


Control Unit and Data Collector



Ilha Fiscal
setembro a dezembro/2002

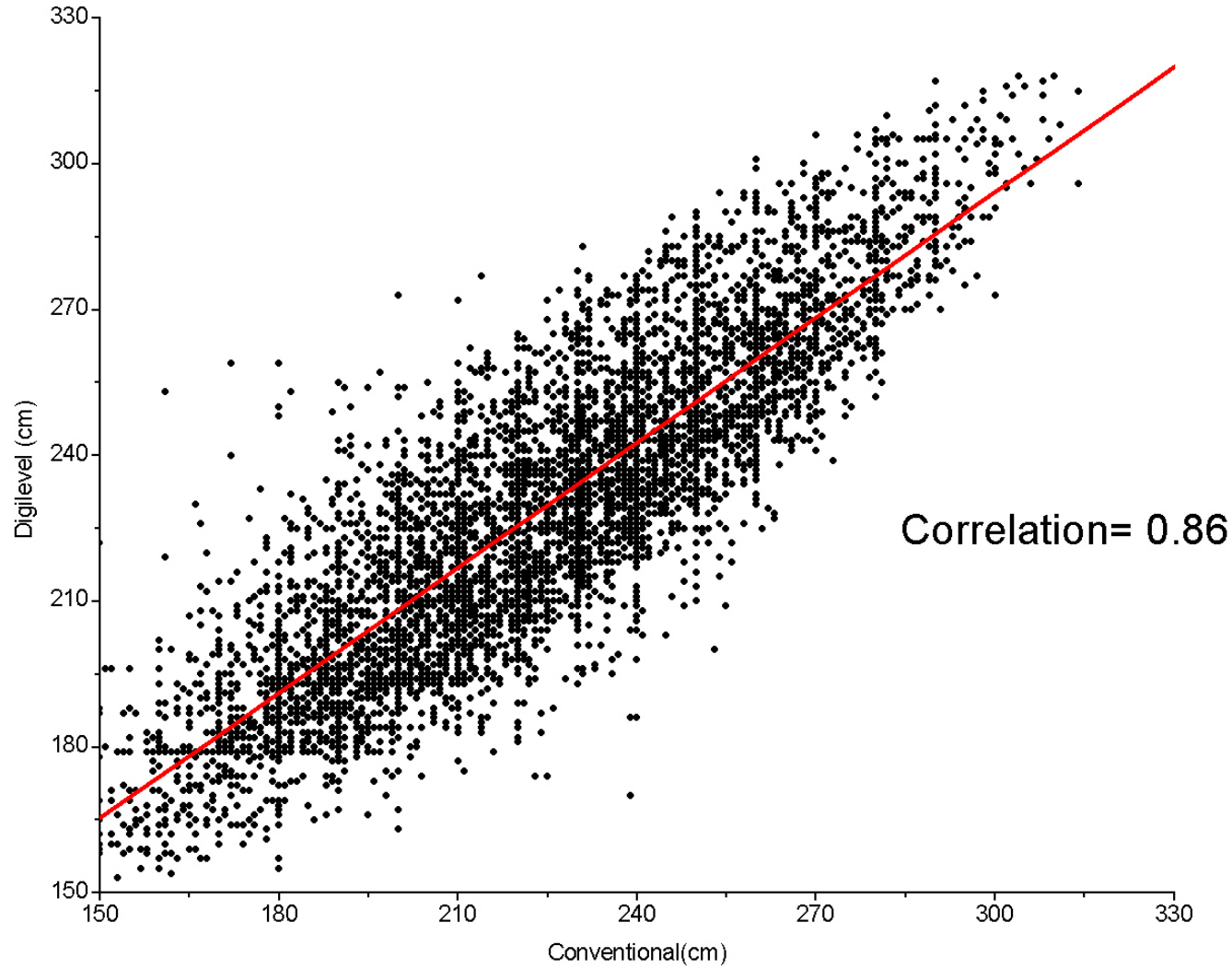
- Conventional
- - - Digilevel
- Difference





Linear Fit

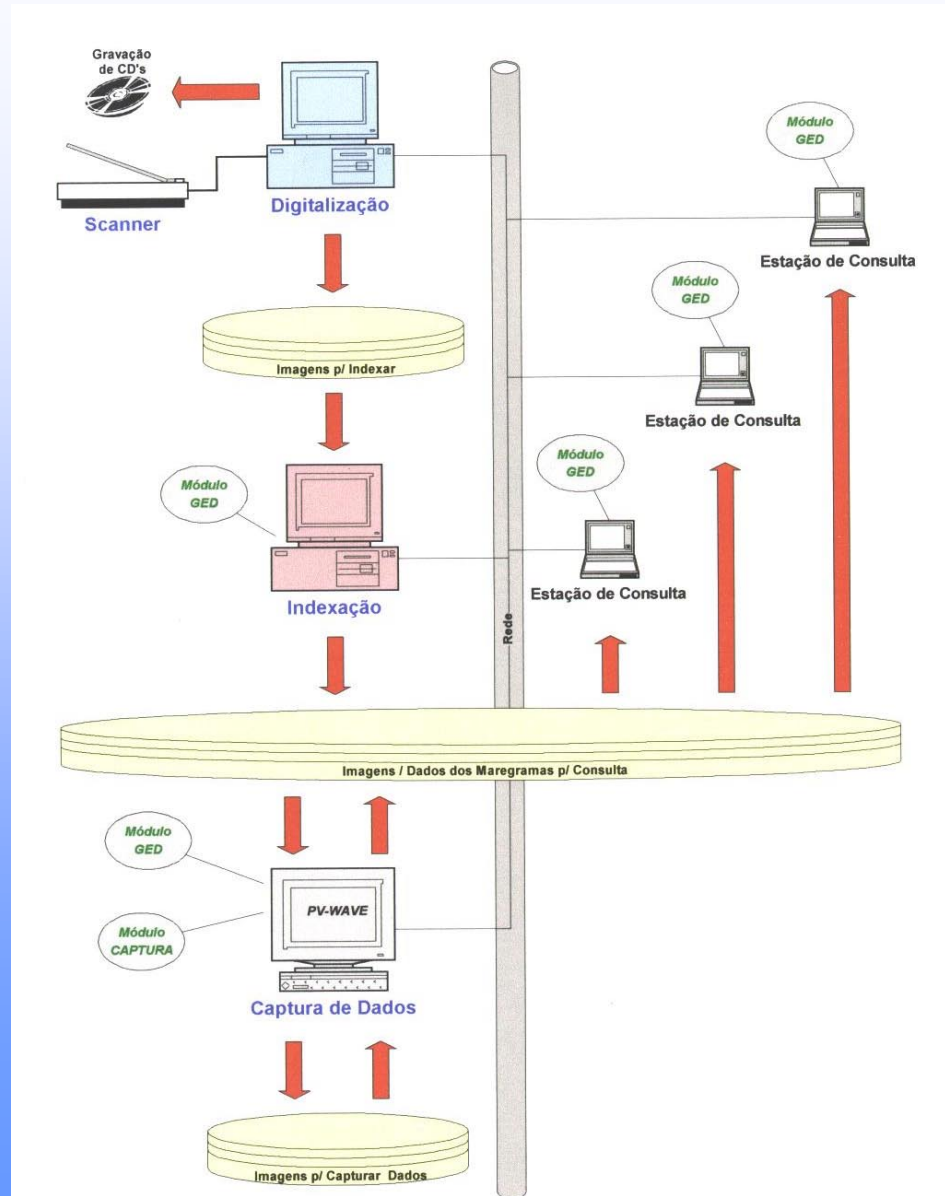
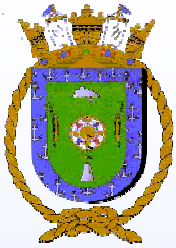
Ilha Fiscal : Conventional (x) X Digilevel (y)





MARESCAN

The CHM is evaluating the software MARESCAN as a tool for scanning analog rolls. This software is easy to use with and has built in quality control checks.



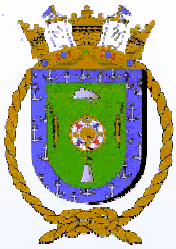


Conclusions and Future Work



During the last seven months, since the beginning of the Implementation Plan for the Gloss Brasil Program, some considerable efforts can be noticed. Salvador site became operational on December 2002 and its data is now under evaluation to be considered in GLOSS standards ; Field work was performed in the Oceanic Island of Trindade in order to prepare the structure to receive the equipments for installation of a sea level station. These equipments are expected to be installed by the second semester of 2003.

Also Imbituba, Macaé, Ponta da Madeira and Barra do Riacho sites are being prepared to become effective GLOSS stations.



(Conclusions and Future Work...)

The site in the northeast coast, between Salvador and Fortaleza, as well as Fernando de Noronha station will have its installation processes discussed by July, 2003 and are also depending on the acquisition/donation of new gauges.

The DHN will provide training courses to tide station observers and technicians of other Brazilian institutions.

It would be very useful if some data acquisition, processing and archiving course could be provided by the GLOSS community or by the PSMSL to the members of the Brazilian institutions that take part of the GLOSS-Brazil Program.

The process of evaluation of MARESCAN and DIGILEVEL systems will continue and these systems are expected to become useful to the Brazilian community shortly.



Afro-America Gloss News:

<http://www.mares.io.usp.br/aagn/ind.html>

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