

**GLOSS**  
**French contribution up to February 2005**  
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The 15 GLOSS stations under the responsibility of French agencies are:

Gloss 242	Brest	responsibility	SHOM
Gloss 205	Marseille		IGN / SHOM
Gloss 123	Nouméa		SHOM / DITTT / IRD
Gloss 142	Nuku Hiva (Marquises)		T.W.S. / C.E.A.
Gloss 138	Rikitea (Gambier)		Univ. de Hawaii
Gloss 140	Matavaï (Tahiti)		„
Gloss 023	Kerguelen		LEGOS / INSU
Gloss 024	Amsterdam St Paul		„
Gloss 021	Crozet		„
Gloss 131	Dumont D'Urville		„
Gloss 165	Clipperton		
Gloss 204	Fort de France (Martinique)		SHOM / METEO France
Gloss 017	Pointe des Galets (La Réunion)		SHOM / DDE
Gloss 202	Ile Royale instead of Cayenne		SHOM / DDE
Gloss 096	Dzaouzi Mayotte		

**GLOSS 205 and 242:**

Since January 2004, a radar gauge replaces the acoustic tide gauge at Brest. Calibration of the acoustic tide gauge was performed in April 2003. This experiment aimed also to assess the performances of the radar device. The tide gauge benchmarks were first linked to the permanent GPS station by precise levelling in 1999, and every 9 months since 2002. The distance between the GPS and the tide gauge is about 350 metres. The levelling results show that the whole site is stable at the millimetre level. This ensures that the GPS is actually monitoring the vertical motion that affects the tide gauge. The GPS station is operating continuously since October 1998.

Although the original floating device is still operating in Marseille since February 1885, a modern acoustic tide gauge was installed in June 1998. The calibration carried out in June 2004 shows that the old tide gauge is more precise and stable than the modern one. TGBMs are levelled yearly during the calibration experiment. The results show a locally stable site at the millimetre level. The permanent GPS station is operational since July 1998.

Hourly data files from both stations are retrieved weekly by SHOM and made available at the French sea level data centre SONEL through FTP ([ftp.sonel.org](ftp:sonel.org)). It was agreed shortly after the 8<sup>th</sup> GLOSS GE meeting to make these data also accessible through the GLOSS data centre.

**GLOSS 123:**

A modern radar tide gauge has just been installed at Nouméa by SHOM (January 2005) to replace the floating and the acoustic gauges that were getting older. The new tide gauge is located at a site called Numbo, which is about 6 km distance from the older one (Chaleix). Both French gauges, the new radar and the old mechanical, will operate simultaneously for at least a year. The IGS station is about 10 km distance, but it is set up on a different basement. A permanent GPS station is therefore scheduled by IRD at the top of the new tide gauge.

**GLOSS 138, 140, 142**

The University of Hawaii maintains these three stations.

### **GLOSS 021, 023, 024, 131**

The four stations of the South Indian Ocean are part of the ROSAME network (Réseau d'Observation Subantarctique et Antarctique du Niveau de la Mer). They are equipped with pressure sensor (water level pressure, seawater temperature, and atmospheric pressure). Kerguelen, Saint-Paul, and Crozet have recently been equipped with conductivity. These stations are automatic and transmit the data through ARGOS. The hourly data, after validation, are transmitted to the Hawaii Centre. An automatic acquisition / quality control software has recently been developed at LEGOS for real time follow-up of the data. Real time data for these four tide gauges can be seen on the LEGOS web page <http://www.legos.obs-mip.fr/en/soa/>

- Station 23 (Kerguelen) is operational since April 1993, with only a short gap of a few days in January 2000. Monthly tide gauge calibrations were performed in 2004. The TGBMs were connected in December 2003 by precise levelling and differential GPS to the IGS permanent station, which is located at a distance of about 3 km.

-Station 21 (Crozet) is in place since December 1994. It has been operational from November 1995 to February 1997, from December 1998 to June 1999, from March 2000 to June 2000, and from September 2000 to July 2001. It was destroyed end of July 2001. A new infrastructure was built in December 2003. It is now again operational since then, although the real-time transmission is deficient since December 2004.

-Station 24 (Amsterdam-St Paul) is operational since October 1994, with a gap from April to June 1999.

-Station 131 (Dumont d'Urville) was installed in February 1997. It has been operational from February 1997 to August 1997, from February 1998 to May 1998, and from February 1999 up to now, with a short gap in January and February 2000.

➤ Data from the ROSAME network are available at the anonymous ftp site:

```
ftp public-sef.cnes.fr
Login: anonymous
Password: email address
cd Users/techine/pub/rosame/
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### **GLOSS 165**

Two pressure gauges WLR7 have been moored at Clipperton in early January 2005. It will remain up to end of March 2005. Data are stored locally, no real-time transmission.

### **GLOSS 204**

Since 1999 no tide gauge is operating in Fort-de-France. A meeting took place at Fort-de-France between SHOM, Meteo-France and the French Navy in order to install a permanent radar gauge. Installation of this tide gauge is scheduled for the second half of 2005. SHOM will include this tide gauge in their RONIM tide gauge network. The hourly data will be retrieved weekly and made available to the scientific community through the French data centre SONEL, as for Marseille and Brest.

### **GLOSS 202**

Contacts have been taken by SHOM with the local authority DDE of Guyana in order to install a digital tide-gauge at " Ile du Salut " in Guyana. This tide gauge will join the RONIM network too. It should be installed in 2006.

### **GLOSS 017**

SHOM received two years of tide-sheets (1998 and 2000). They have not been digitised yet. Contacts have been taken with the local authority DDE to install a permanent radar gauge. This digital gauge will join the RONIM network too. It should be installed in 2006.

### **GLOSS 096**

Some tide sheets are to be digitised at SHOM. Non regular reception, doubt about quality of data. There is no project of a new tide-gauge there.

### **PSMSL**

The daily, monthly and annually averages of sea level were sent in February 2005 by SHOM to the PSMSL for the following stations : Dunkerque (2001, 02, 03, 04), Calais (2001, 02, 03, 04), Le Havre (2001, 02, 03, 04), Boulogne-sur-Mer (2001, 02, 03, 04), Cherbourg (2001, 02, 03, 04), Saint-Malo (2001, 02, 03, 04), Roscoff (2001, 02), Le Conquet (2001, 02, 03, 04), Brest (2001, 02, 03, 04), Concarneau (2001, 02, 03, 04), Le Crouesty (2001, 02, 03, 04) Port-Tudy (2001, 02, 03), Les Sables d'Olonne (2001, 02, 03, 04), La Rochelle-Pallice (2001, 02, 03, 04), Port-Bloc (2001, 02, 03), Arcachon-Eyrac (2001, 02, 03, 04), Bayonne-Boucau (2001, 02, 03, 04), Sète (2001, 02, 03, 04), Marseille (2001, 02, 03, 04), Toulon (2001, 02, 03, 04), Nice (2001, 03, 04), Monaco (2001, 02, 03, 04), Ajaccio (2003), Socoa (2004).

### **Ancillary Sea level Data Centres**

A dedicated data centre was set up in 2001 at the University of La Rochelle to gather, archive and make available as much cGPS data files as possible to support the scientific community interested by the cGPS@TG synergy. In particular, this data centre contributes to the IGS TIGA Pilot Project. Its anonymous FTP server address is: ftp.sonel.org. About 210 GPS stations are collected daily. These encompasses cGPS@TG stations as well as core GPS stations useful to realise the ITRF reference frame.

RONIM, the French modern sea-level network developed by SHOM, now comprises 23 digital tide gauges. Socoa was installed in May 2004, Roscoff in June 2004 and Nouméa in January 2005. The new stations are equipped with radar gauges. The shift from acoustic to radar technology was motivated by the large tidal ranges that dominate most French coasts. Acoustic gauges are sensitive to temperature gradient errors which are difficult to correct, specially in large tidal range conditions. The sea level data sets from the RONIM network are freely accessible to the scientific community through Internet on SONEL (see [www.sonel.org](http://www.sonel.org) for details).