

Real time data acquisition system TECHSAS

TECHSAS (TECHnical and Scientific sensors Acquisition System) is a technical and scientific sensors acquisition system developed by Ifremer. Its functions are:

- sensors data acquisition,
- data time-stamping,
- data recording,
- data control display,
- real time broadcasting on Ethernet network.

TECHSAS can acquire and record the following sensors :

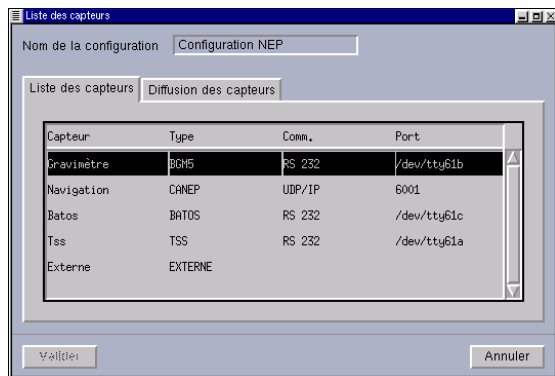
- central clocks,
- Seabird thermosalinographs,
- Seabird water sampler,
- Batos - Météo France weather stations,
- Vaisala weather stations,
- GPS,
- gyrocompass,
- Bodenseewerk KSS and Lockheed-Martin BGM gravimeters,
- Seapsy and Thomson SMMII magnetometers,
- SeaPath and TSS POS/MV attitude sensors,
- Kley and Marelec winches,
- Oceano Posidonia underwater positioning system,
- trawl sensors positioning systems (EBS Geonet, Pacha, Scanmar),
- EA400, EA500, EA600 single beam echo-sounder, ...

The interface between TECHSAS and the sensors are an Ethernet link, RS232 or RS422.



SYSTEM CONFIGURATION

The software **TECHSAS** runs on a Linux PC. It is totally configurable by the user. The software architecture is a multi-process architecture, there is an active process for each sensor to acquire. The acquisition process communicate with the GUI and recording process by an UDP/IP link. With that protocol, the users are able to developed their own acquisition process and to add their specific sensors. Furthermore, any process can be run on different machines.



DATA TIME-STAMPING

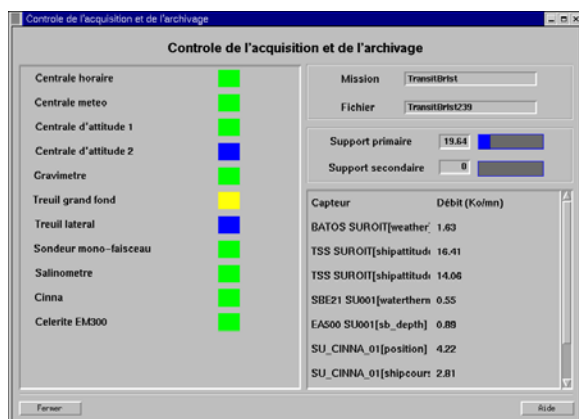
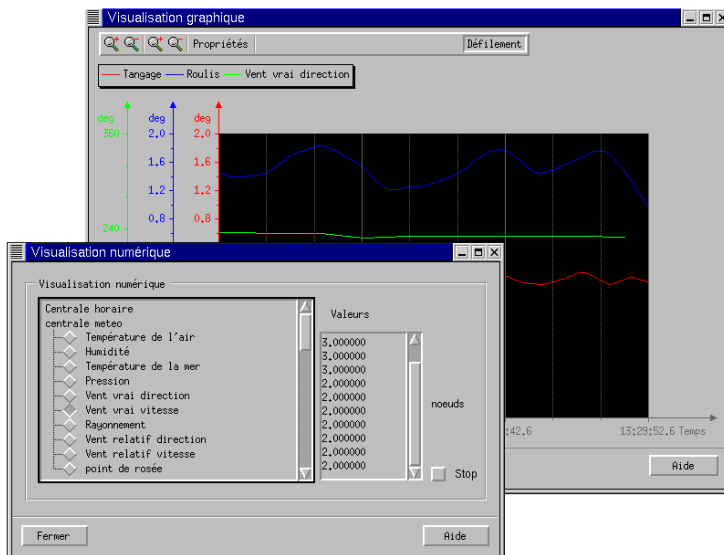
The sensor data can be time-stamped by the acquisition PC system clock, or by a time given by an external central clock. The precision of time-stamping is 10 ms.

DATA TECHNICAL DISPLAY

Three display data modes are possible :

- sensor raw data display,
- digital data preview,
- graphic data preview (curve as a function of time diagram).

A control window shows a synthetic view about every sensor acquisition state and the recording statistics.



DATA ARCHIVING

For safety reasons, a redundancy system is used to record data on the PC's hard disk. **TECHSAS** can record data on two formats : format **ASCII** NMEA type or format binary **NetCDF** type. The operator can check in real-time every sensor's recording rate and the filling's partitions rate.

DATA BROADCAST

TECHSAS broadcast all data in UDP/IP frames on the on-board LAN. There are two broadcasting formats : NMEA broadcasting format or XML broadcasting format. The broadcasting format XML is a self-descriptive format. The data broadcasting allows different users to install, on the vessel network, preview applications, data control programs, scientific logbook, ...

For more information ,we suggest to browse through our Internet server : <http://www.ifremer.fr/fleet>



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