NEW WEB - BASED COMPONENT *for the configuration and the monitoring of NtripCaster* AT CAGLIARI UNIVERSITY

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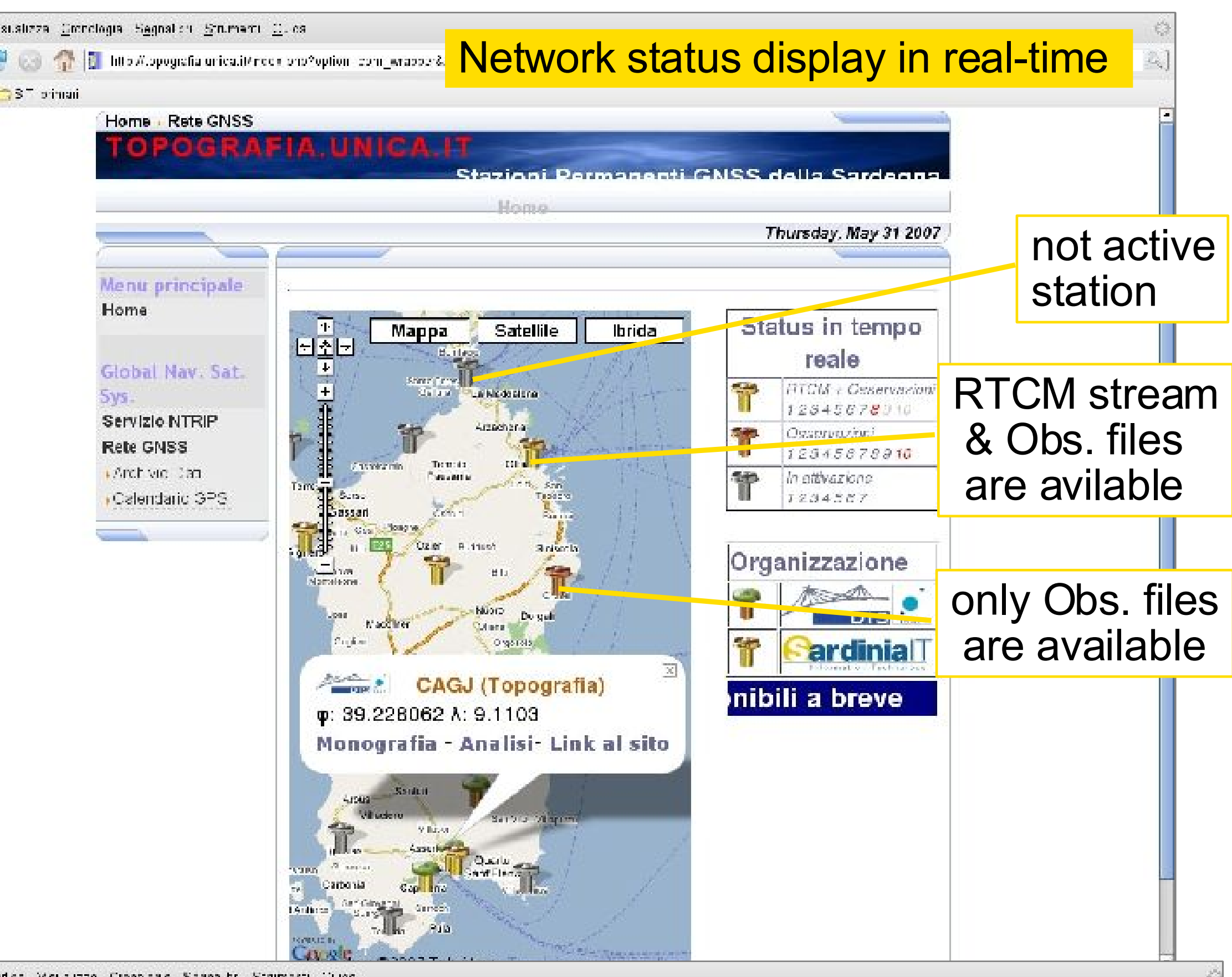
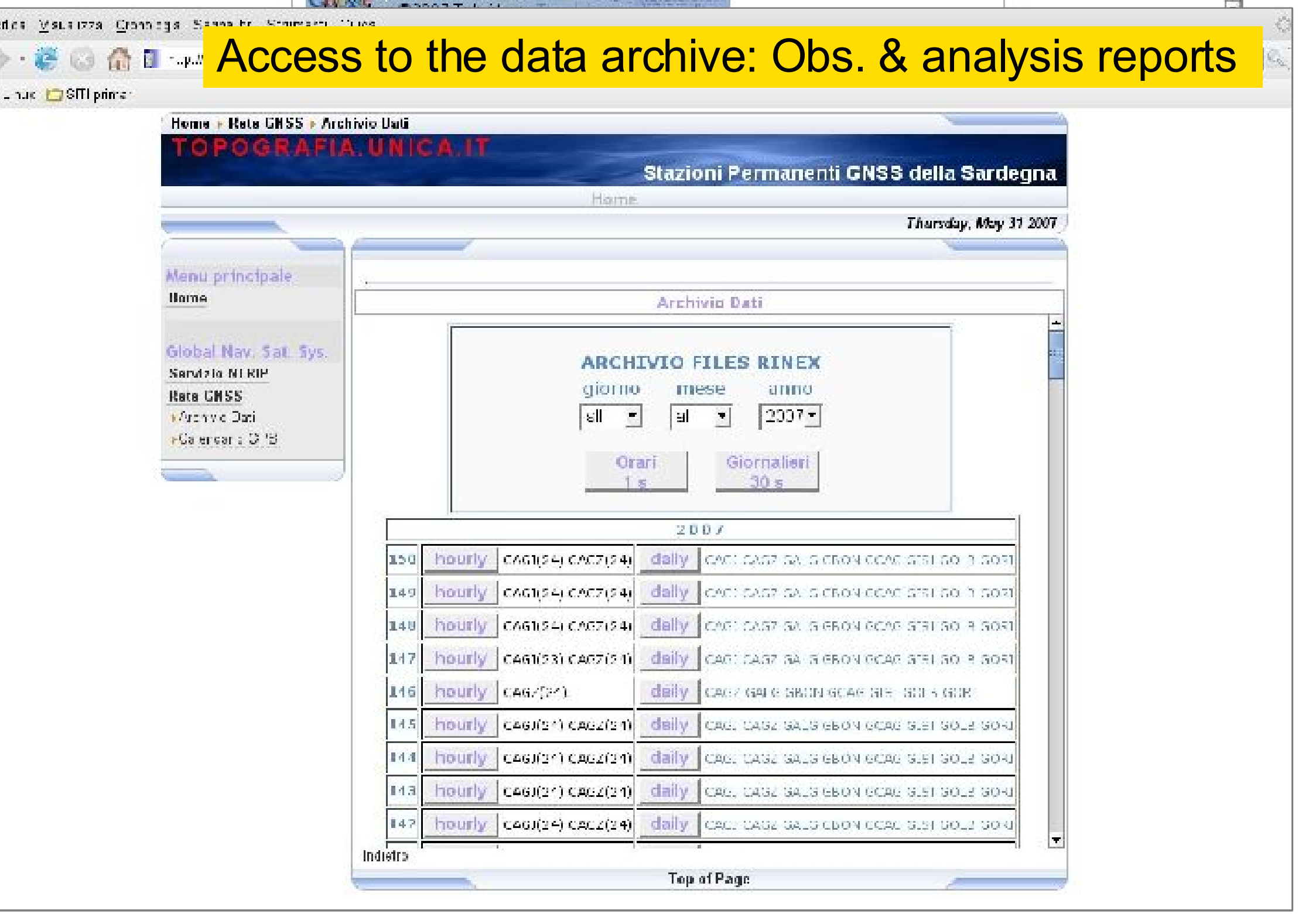

Network status display in real-time

not active station

RTCM stream & Obs. files are avaible

only Obs. files are available

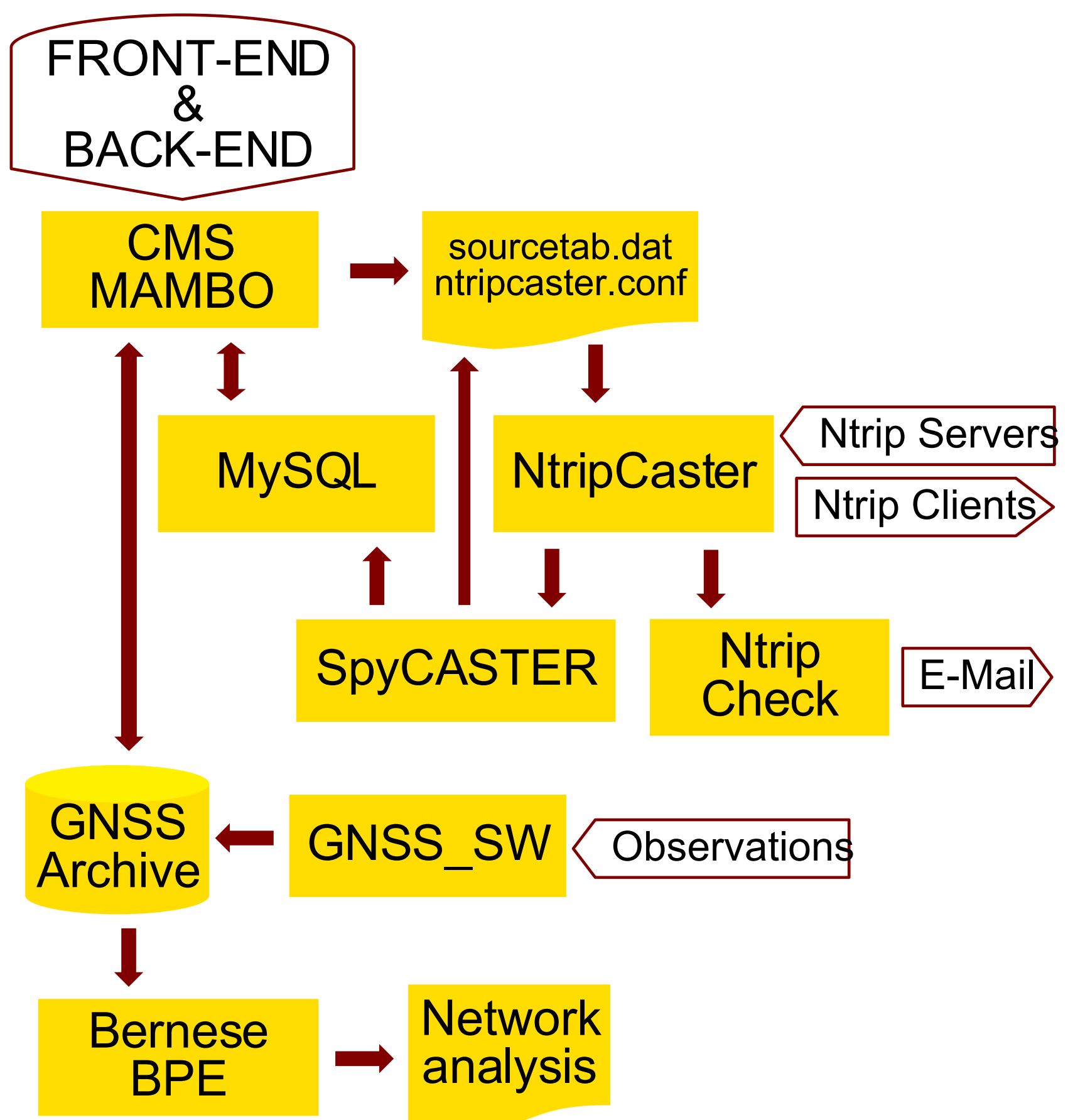

Access to the data archive: Obs. & analysis reports

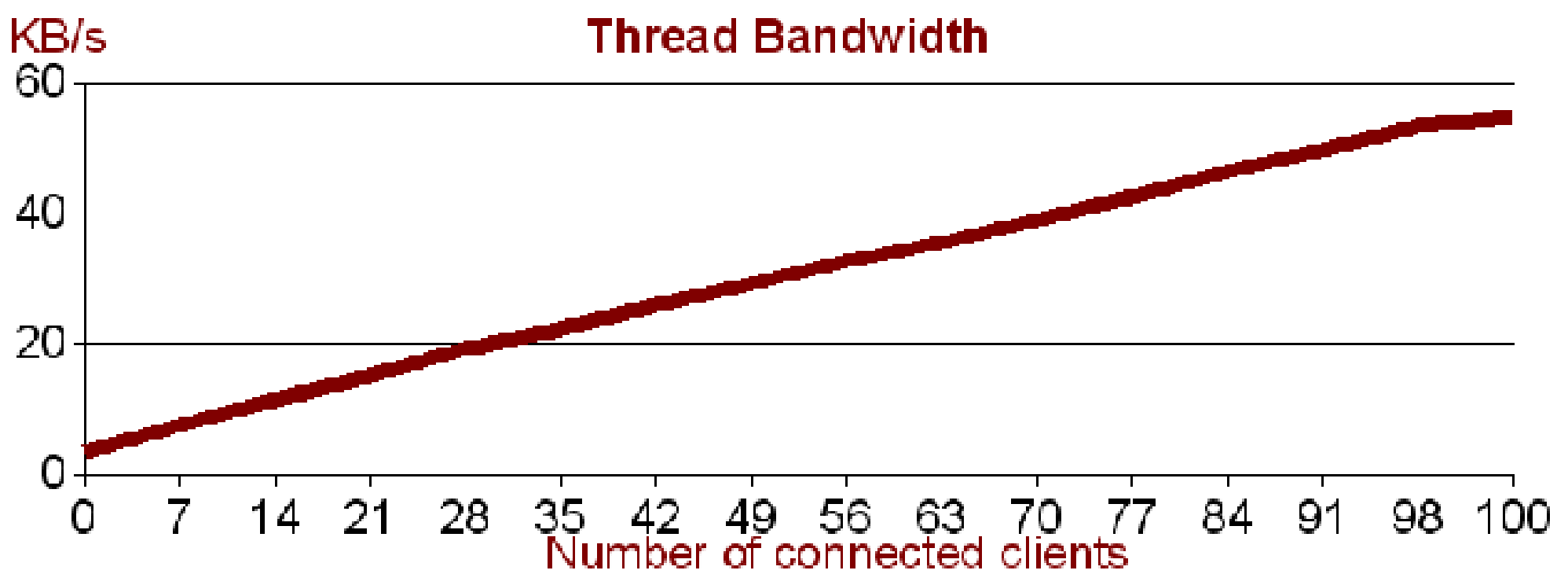
The research group of the university of Cagliari established a local service system, in order to promote the use of the permanent GNSS stations installed in Sardinia.

The system provides facilities and services concerning:
GNSS correction broadcasting using Ntrip protocol informations and errors log out for administrators and users;
Real Time network status, e.g. how many stations are actually broadcasting GNSS data;
Accesses to the data archive, for downloading daily/hourly observations files and for looking over the network analysis solutions;
System Administration, like adding new stations, adding new users, data and information restriction.

The principal requisites of which are kept in mind in the choice of the software and the configuration are:
Reliability. The start, and the incidental restart, of acquisition/transmission and monitoring programs are autamatized and assured. The programs include enough number of debug controls. The routines for the by e-mail notification about major status changes are put in.
Safety. The accesses to the various services according to granted privileges. Paths to restricted directories are hidden in the web navigation bar. Recourse to widespread and open-source basic softwares has done in order to dispose of continuous updatings.
Completeness. All the updatings can be handled without any adjustment in the software. The updatings of status flags and of the adressings to dinamic contents are automatic. All kind of data concerning the local GNSS network will be available.

In obedience to GNU/GPL protocol, the created software, togheter with the installation scripts, will be available as soon as the due comment lines will be inserted.





NtripCaster Augmentation

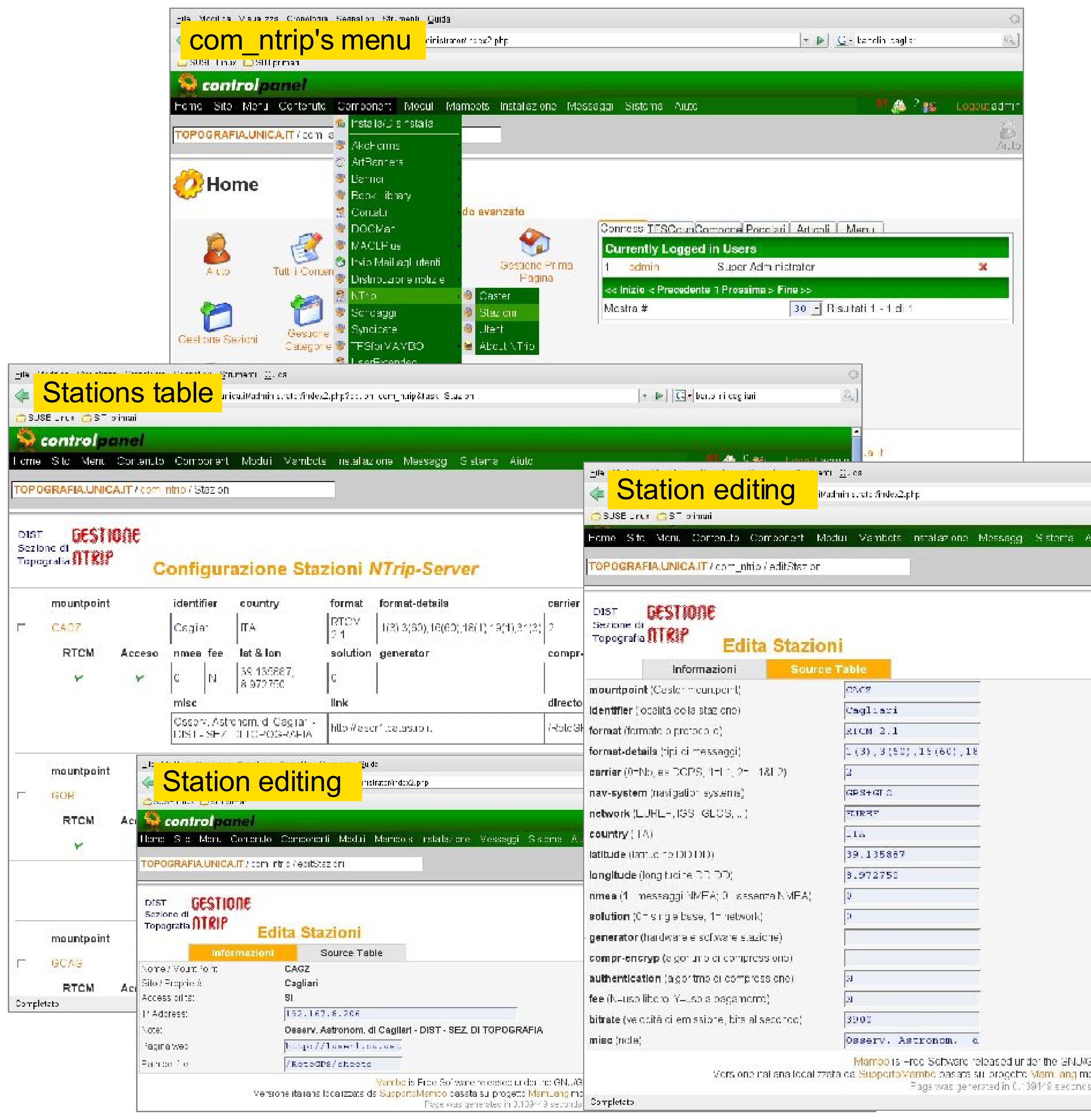
The problematics ones found in the use of NtripCaster open source version regards the acknowledgment of the events and the lack of dynamic configuration.
Every minute and as far as an events occurs, the software appends the messages always and only to the same file, that becomes of remarkable dimensions. The carrying out routines do not apply corrections to the sourcetable

In the respect of the original scripts, the package has been augmented by adding a few parts, constituted from spycaster.h and **spycaster.cpp**, and from some additional calls inside functions of the NtripCaster package utility.cpp, without, however, modifying its original lines. Those calls (stationstatus_DB(), client(), mountpoint()) point to "spycaster" functions: up_DB(), up_CFG() and up_LOG().
The first one updates the database fields of status of RTCM streaming from each mountpoint.
The second one updates the file /usr/local/ntripcaster/conf/sourcetable.dat with insertion of at the time available mountpoint rows, or their cancellation in the opposite case. A new log-out function put the streaming notices into distinct files, for every mountpoints and every clients, and one for the caster status too, and it arranges the database table that hold the mountpoints, users/clients and caster parameters .

The System

The system is installed on a PC server "HP Proliant EM64T" under Linux OS . The programs with server, management and services functions are listed below:
Database server: MySQL 5.0; Web server: Apache 2; Web Content Management System: Mambo 4.5; GNSS correction broadcasting: NtripCaster 0.1.5, NtripLinuxServer 2, LinuxRtcm-Decoder; GNSS network computation and analysis: Bernese 5.0

The access to the services of visualization, file acquisition, and administration is supplied from the web portal **topografia.unica.it**, managed by the CMS Mambo
The CMS Mambo is an open-source GNU-GPL licensed software, written in PHP and Javascript. It consists of modules, components, mambots, and templates.
Modules are the blocks of content and functionality that you can configure and position to customize the look of your Mambo site.
Components are the functional building blocks for dinamic content like Forums, Galleries, Document Management, Directories.
Mambots are Mambo "Plugins". Like custom search mambots, content parsing mambots, and even WYSIWYG editors.
Templates are the themes or skins that can transform the look of your entire site with a single click.
The implementation of additional Mambo parts is made easy by resource on basic component and modules whose are provided for portal management and concern users, groups, skin, and so on.


com_ntrip's menu

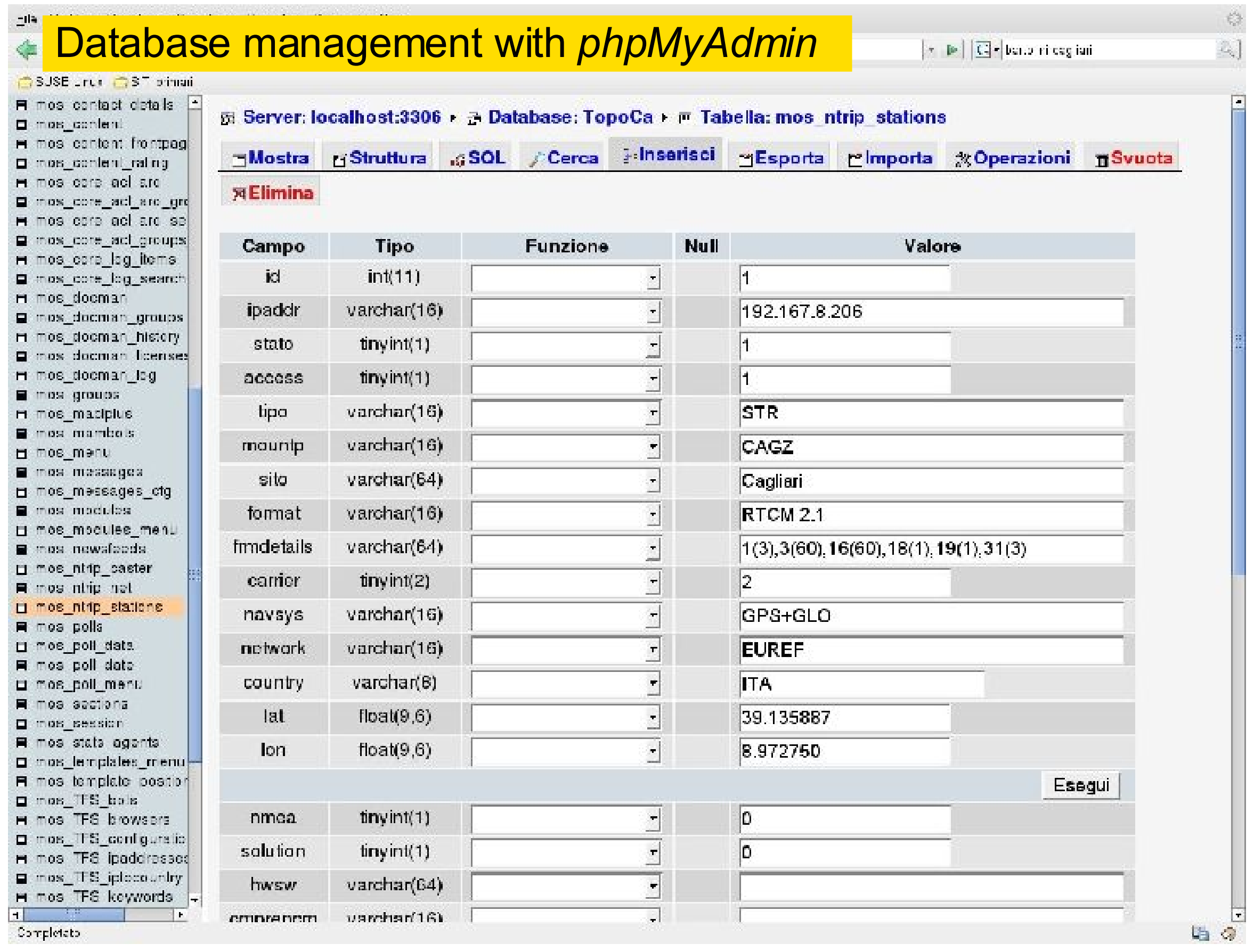
Stations table

Station editing

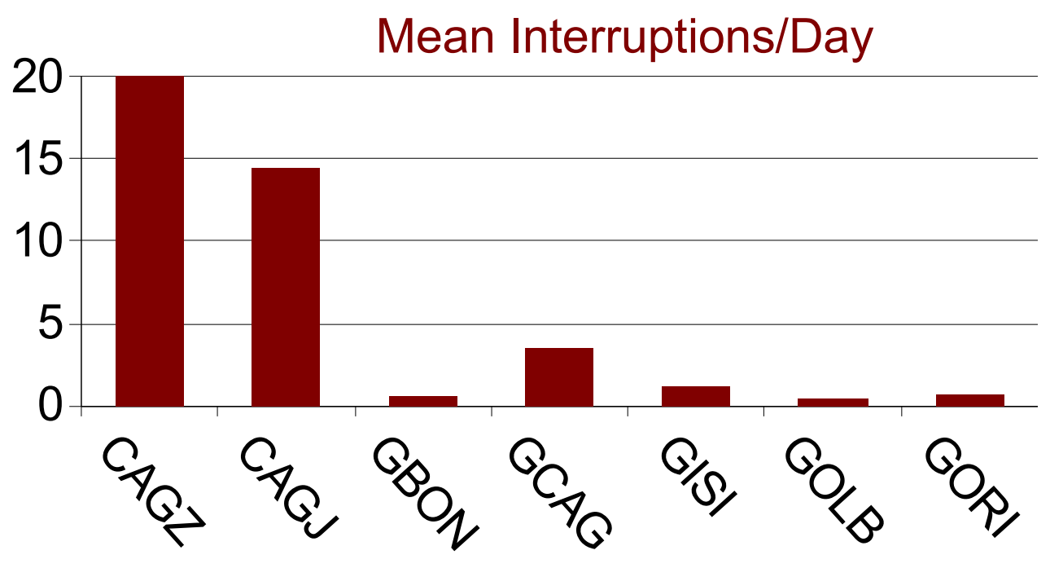
Station editing

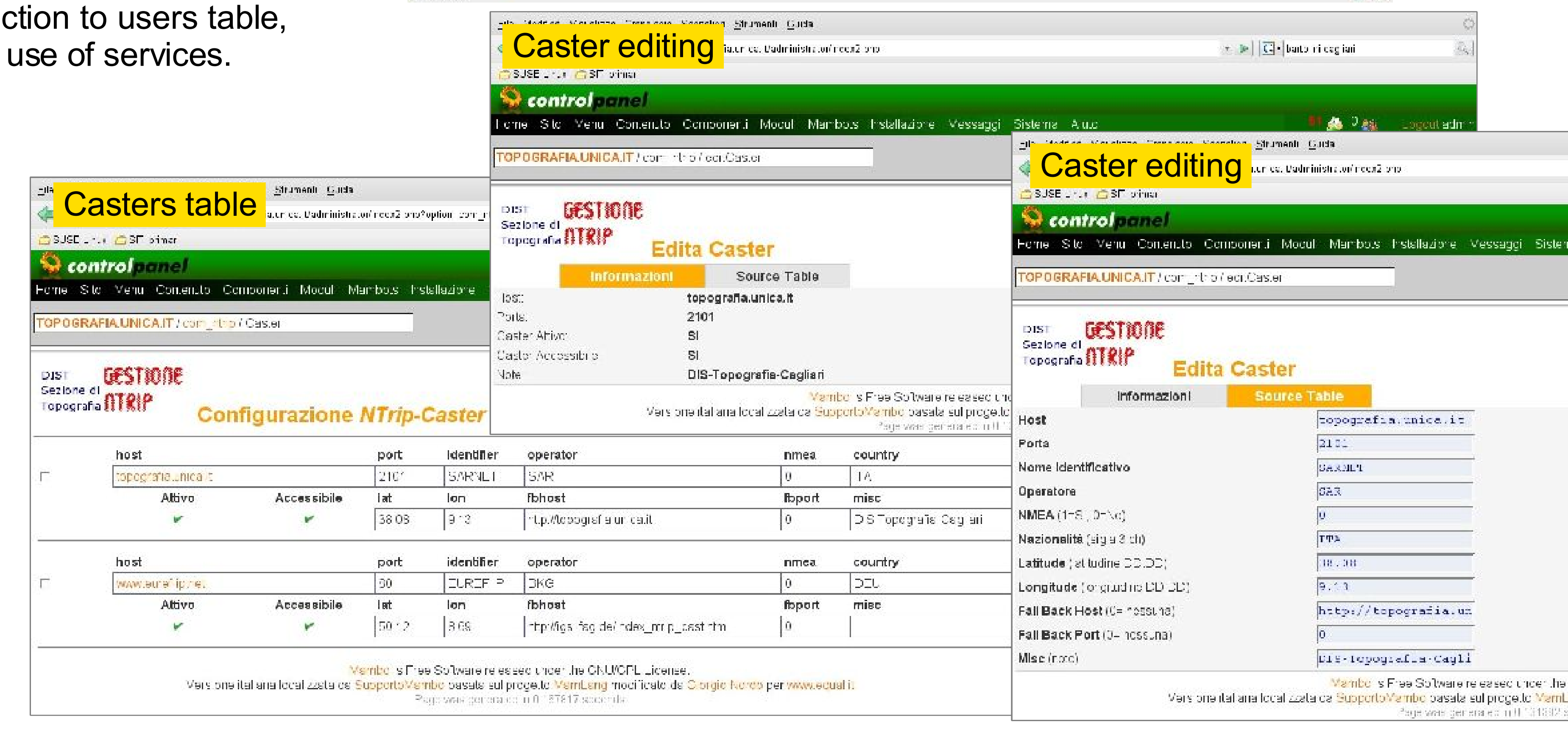
Backend & Frontend

A new **component com_ntrip** within the Mambo CMS was written.
It consists of the scripts: ntrip.class.php (classes definitions); ntrip.html.php (functions for html rendering); ntrip.php (system and database functions); ntrip.xml and install.ntrip.php (installation scripts); toolbar.ntrip.html.php and toolbar.ntrip.php (back-end facilities menus).
The installation scripts provide also to set up the database tables, those are used by the functions for managing the caster/mountpoints/client informations and the configuration of the component itself.
Concerning the ntrip database:
Mountpoint fields contain status flags, sourcetable substrings and further information like IP address or web link, precise coordinates, path of logout files.
Caster fields contain status flags, configuration substrings and further information like IP address or web link.
Client fields contain user-id for the connection to users table, status flags, and statistics concerning the use of services.


Database management with *phpMyAdmin*

Campo	Tipo	Funzione	Null	Valore
id	int(11)			1
ipaddr	varchar(16)			192.167.8.206
stato	tinyint(1)			1
access	tinyint(1)			1
tipo	varchar(16)			STR
mountp	varchar(16)			CAGZ
sito	varchar(16)			Cagliari
format	varchar(16)			RTCM 2.1
frmdetails	varchar(64)			1(3),3(60),16(60),18(1),19(1),31(3)
carrier	tinyint(2)			2
navsys	varchar(16)			GPS+GLO
network	varchar(16)			EUREF
country	varchar(8)			ITA
lat	float(9,6)			39.135887
lon	float(9,6)			8.972750
nmea	tinyint(1)			0
solution	tinyint(1)			0
hwsw	varchar(64)			




Caster editing

Casters table

Caster editing

Resources

http://topografia.unica.it
http://igs.ifag.de/index_ntrip.htm
http://www.source.mambo-foundation.org
http://www.bernese.unibe.ch
http://www.mysql.com
http://www.php.net
http://httpd.apache.org