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Recent advances in the Lesser Antilles observatories Part 2 : WebObs - an integrated web-based system for monitoring and networks management

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Seismological and Volcanological observatories have common needs and often common practical problems for multi disciplinary data monitoring applications. In fact, access to integrated data in real-time and estimation of measurements uncertainties are keys for an efficient interpretation, but instruments variety, heterogeneity of data sampling and acquisition systems lead to difficulties that may hinder crisis management. In Guadeloupe observatory, we have developed in the last years an operational system that attempts to answer the questions in the context of a pluri-instrumental observatory. Based on a single computer server, open source scripts (Matlab, Perl, Bash, Nagios) and a Web interface, the system proposes:

- an extended database for networks management, stations and sensors (maps, station file with log history, technical characteristics, meta-data, photos and associated documents);
- a web-form interfaces for manual data input/editing and export (like geochemical analysis, some of the deformation measurements, ...);
- routine data processing with dedicated automatic scripts for each technique, production of validated data outputs, static graphs on preset moving time intervals, and possible e-mail alarms;
- computers, acquisition processes, stations and individual sensors status automatic check with simple criteria (files update and signal quality), displayed as synthetic pages for technical control.

In the special case of seismology, WebObs includes a digital stripchart multichannel continuous seismogram associated with EarthWorm acquisition chain (see companion paper Part 1), event classification database, location scripts, automatic shakemaps and regional catalog with associated hypocenter maps accessed through a user request form.

This system leads to a real-time Internet access for integrated monitoring and becomes a strong support for scientists and technicians exchange, and is widely open to interdisciplinary real-time modeling. It has been set up at Martinique observatory and installation is planned this year at Montserrat Volcanological Observatory. It also in production at the geomagnetic observatory of Addis Abeba in Ethiopia.