

## ORFEUS Activity report 2007

ORFEUS is going through some major rapid development thanks to the active involvement within the EC projects NERIES and SAFER. We expect this will result in significantly improved services, while constantly aiming at a minimum long-term maintenance. Below we summarize some major points. In many of the European initiatives and networking the ORFEUS staff cooperates intensively with the EMSC. On waveform data center issues ORFEUS cooperates closely with the IRIS-DMC.

### ORFEUS organisational changes

#### Changes in the board of directors

Anne Deschamps (France) has replaced Domenico Giardini (Switzerland) as president of the board. The Dutch representative, Hein Haak, has been replaced by Bernard Dost.

#### Changes in the ORFEUS executive Committee (ExeCom)

The ORFEUS ExeCom president, Peter Labak, will be replaced in January 2008 by Alberto Michelini.

#### Changes in the ORFEUS staff

Reinoud Sleeman has replaced Bernard Dost as director of the Orfeus Data Center.

### ORFEUS Web services ([www.orfeus-eu.org](http://www.orfeus-eu.org))

The web pages have been re-organised this summer. Currently still some major improvements are pending, notably on the data services due to recent ODC developments and modifications in data management hardware and software. Within NERIES a major initiative on creating an interactive web portal for earthquake information and data has started within NERIES in coordination with the EMSC and in collaboration with the EarthScope portal project.

### NERIES project ([www.neries-eu.org](http://www.neries-eu.org))

The EC Research Infrastructure project NERIES (2006–2010), which is coordinated by ORFEUS, has gone through its first year. First year activity report and deliverables can be obtained from the project web pages. Although they often reflect progress with about 6 months delay they are regularly updated. Two NERIES newsletters have been published.

### Other EC projects with ORFEUS involvement

**SAFER** ([www.saferproject.net/](http://www.saferproject.net/)) Seismic Early Warning for Europe. ORFEUS is involved in this project with the intention to improve the location performance in Europe in coordination with EMSC. Project coordinator: GFZ. Duration 2006 – 2008.

**EERWEM** ([www.armada.mde.es/roa/eerwem/](http://www.armada.mde.es/roa/eerwem/)) is an INCO project coordinated by the EMSC with the intention to improve data exchange across the western Mediterranean. Two regional workshops and a MoU are specific accomplishments. Duration 2005 – 2007.

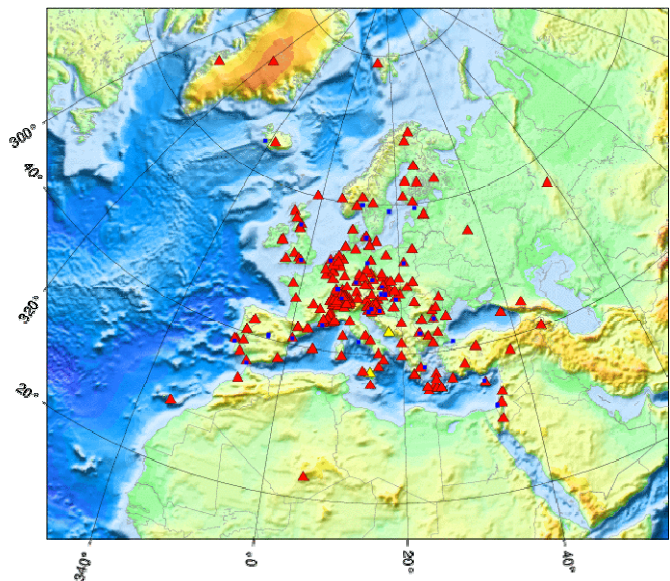
## ORFEUS Data Center (ODC)

### Restructuring the data management (hardware and software)

Moving from an event based data center to a data center accommodating both event waveform data and continuous waveform data required a significant revision of our data management structure. The ODC will be based on automatic (real-time) data gathering and integrate within the planned European Integrated Distributed Archive (NERIES activity NA3). Consequently, the hardware is being integrated within the KNMI hardware structure thus improving efficiency (reduce hardware maintenance) and securing long-term sustainability. We also developed and implemented the General Data Interface (GDI), a software tool that provides unique access to all available data and facilitates the implementation of user request mechanisms. Integration within the EIDA has started with the implementation of ArcLink.

### The Virtual European Broadband Seismic Network (VEBSN)

We are pursuing a very active data gathering policy, trying to convince the observatories in and around Europe to contribute with data to the ORFEUS coordinated European data archive, EIDA. Currently more than 40 observatories contribute with **200** stations (not including about **40** stations in the quarantine network). The quarantine network includes stations that are tested on their quality and are still lacking dataless SEED volumes. Figure 1 shows the current status of the VEBSN.



*Figure 1. Current status of the VEBSN (December 2007). Red triangle: VEBSN stations. Yellow triangle: pending stations (although there are many more). Blue squares: contributing observatories.*

### Data Quality Control

Data Quality Control of the incoming waveform data is becoming a core activity in order to provide high quality data for research. Consequently, we check, both manually and automatically, the dataless SEED volumes and its correctness, provide feedback on the incoming waveform quality through the Internet (PSD plots on [www.orfeus-eu.org/Data-info/dataquality.html](http://www.orfeus-eu.org/Data-info/dataquality.html)) and directly (currently only manually and planned to be structured) to the data providers, promoting tools for studying the data quality, etc. New QC tools will be installed in 2008 to further improve this activity.

## Data Services

The GDI developments will speed up the implementation and replacement of data request mechanisms. The current status is:

### Event data services:

- WILBERII – (Full SEED, miniSEED, SAC) Improved version already operational, but some older data (older than 2003) is still lacking. Finished by May 2008.
- DHI – ((mini)SEED). Installation pending on ISTI effort. Planned to be ready by spring 2008. Once implemented this will enable a number of services as provided by IRIS.

### Event and continuous data services:

- FTP – GDI independent, new organised directory structure planned to be operational by spring 2008.
- AutoDRM – (SEED) Installation on the new system to be implemented by spring 2008.
- NetDC - ((mini) SEED). Installation pending by spring 2008.
- BREQ-FAST ((mini)SEED). We are considering this installation as it has been requested by a number of users as a convenient bulk request mechanism.
- WebDC – ((mini)SEED). Data portal access developments in coordination with the EIDA implementation. Development will be started in 2008.

## Organised meetings and workshops

Workshop/meeting	Place	Date	Funding	Organisers
ORFEUS ExeCom meeting	De Bilt	February 5, 2007	ORFEUS	ORFEUS
QuakeML (proposed XML standard) coordination	Bruyères-le-Châtel	January 15-16, 2007	EMSC-ORFEUS	EMSC
SeisComP Users Group Meeting	Bucharest	May 7, 2007	NERIES-ORFEUS	NIEP-GFZ
European Observatory Coordination Workshop	Bucharest	May 7-11, 2007	NERIES-ORFEUS-NIEP	NIEP
NERIES General Assembly meeting	Zürich	June 11-13, 2007	NERIES	NERIES-ETHZ
ORFEUS Board and ExeCom meeting	Zürich	June 14, 2007	ORFEUS	ORFEUS
Installation and operation of broadband seismograph stations	Vienna	October 8-11, 2007	ORFEUS-NERIES	ZAMG
Earthworm workshop	Rome	October 18-19, 2007	INGV-ORFEUS	INGV-ISTI

## **ESFRI (European Science Foundation Research Infrastructures) proposal**

ORFEUS is heavily involved in the proposal of European Plate Observing System (EPOS) to be adopted on the ESFRI list (ESFRI - European Strategy Forum on Research Infrastructures: <http://cordis.europa.eu/esfri>) and pursued by governments. The proposal has been submitted by Italy (through INGV). The advantage of being listed on the ESFRI list is that this enables us to send in proposals on separate EC funds under 'Capacities' in FP7 and pursue initiatives under the name EPOS within National Research Organizations.

## **Personnel**

ORFEUS has currently a significant competent staff of 9 people (6.5 fte) and a NERIES administrative staff of 3 people (1.7 fte). However, the majority of the staff (7.2 fte out of 9) consist of temporary contracts on projects like NERIES and SAFER. This large percentage of temporary personnel is currently a concern for the long-term sustainability. Among others this motivates us pursuing new EC projects.

**Reinoud Sleeman**

**Torild van Eck**

May 15, 2008