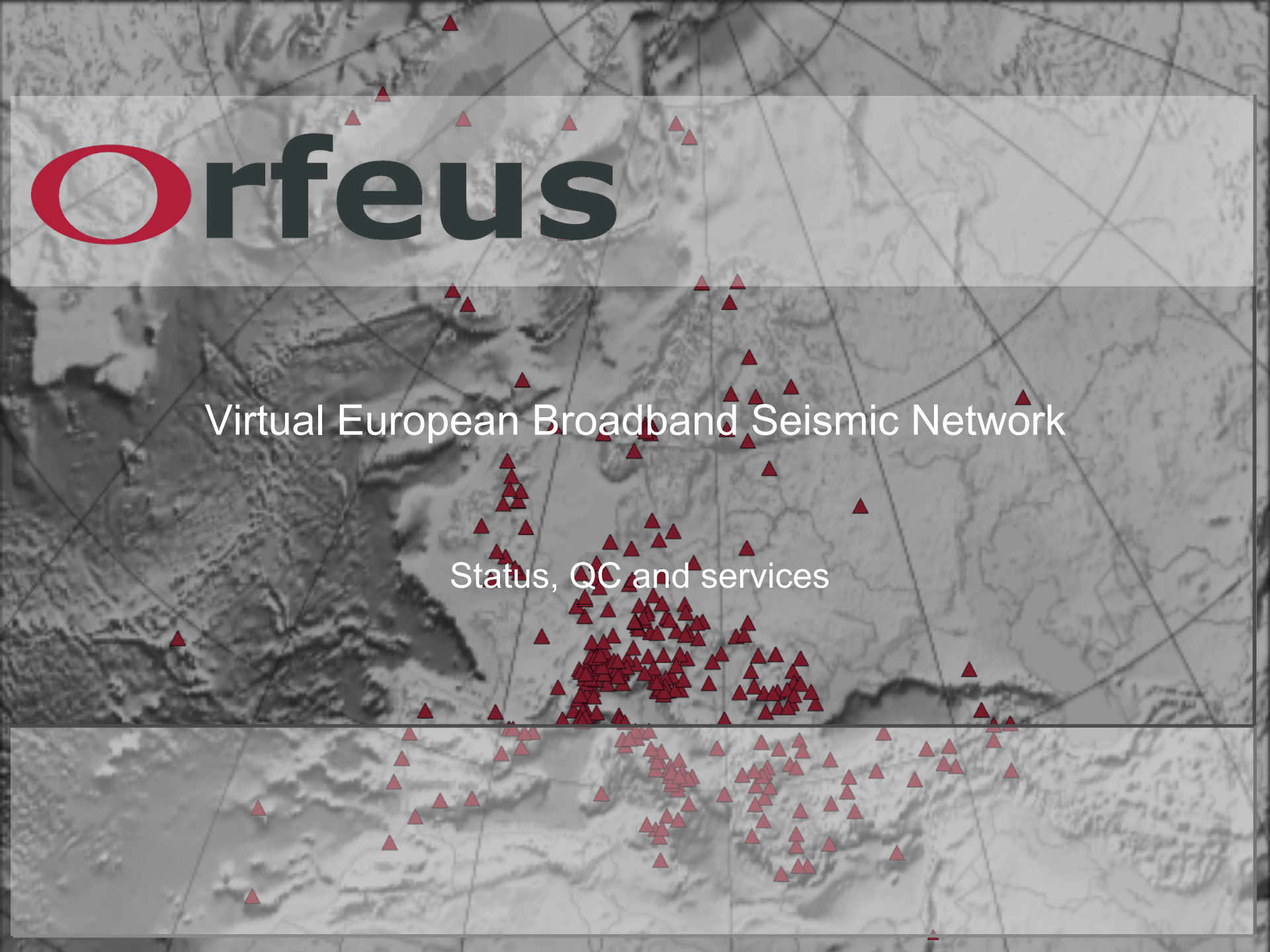




Orfeus

Virtual European Broadband Seismic Network

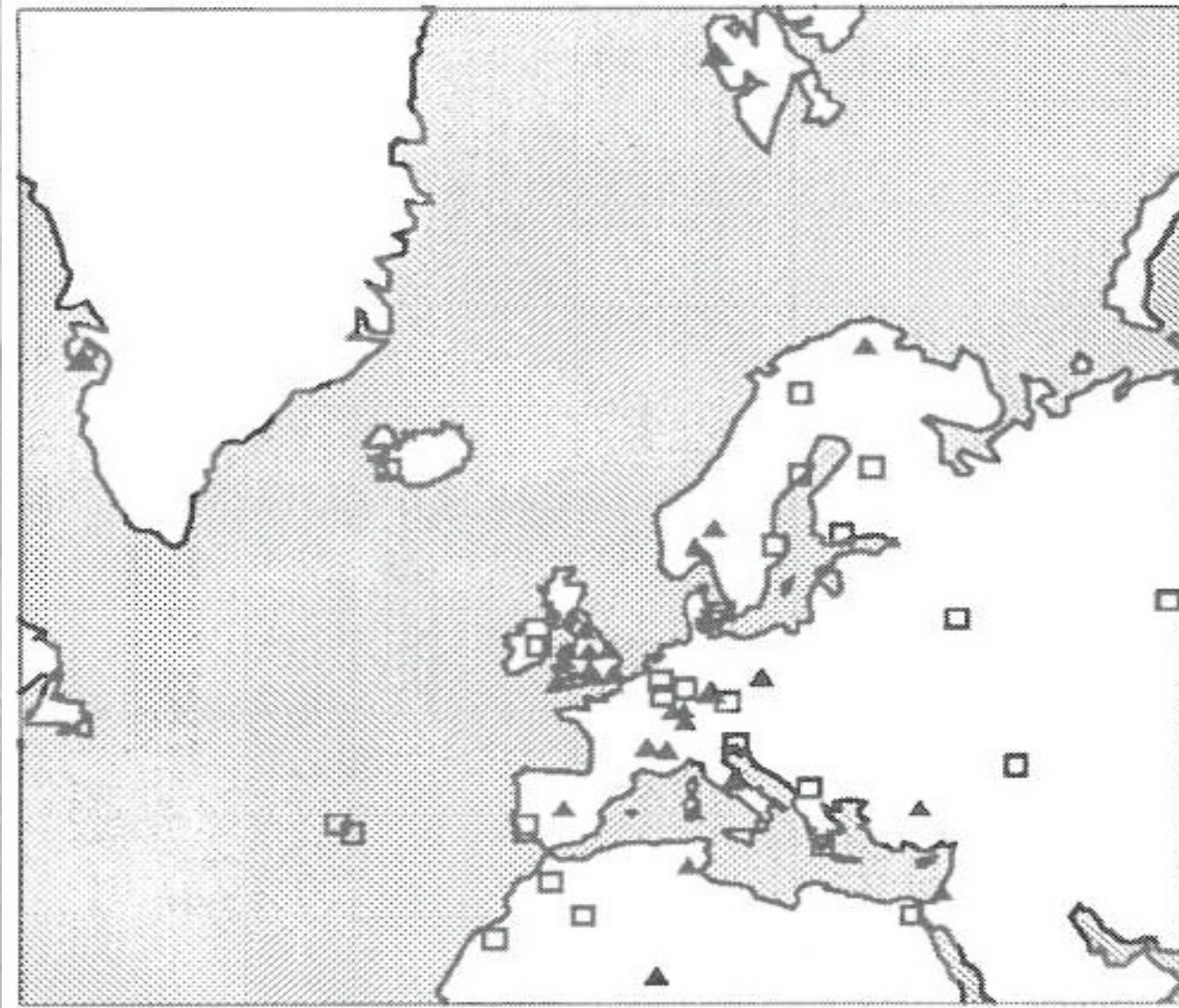
Status, QC and services



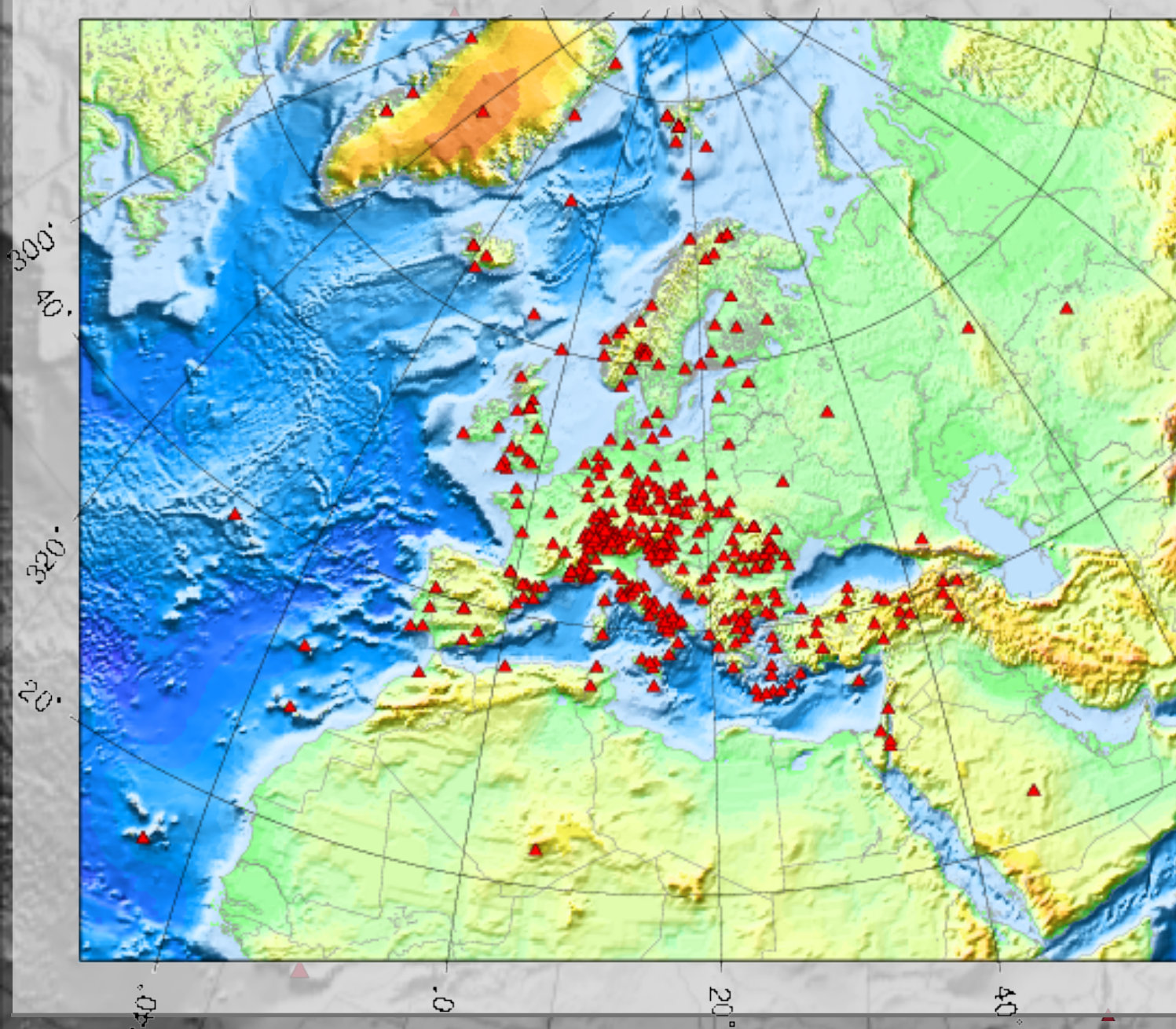
ORFEUS Data Center – mission

The primary purpose of the ORFEUS Data Center (ODC) is to collect and archive high quality seismic broadband waveform data from European and Mediterranean organizations, and to give open and rapid access to the data by the scientific community.

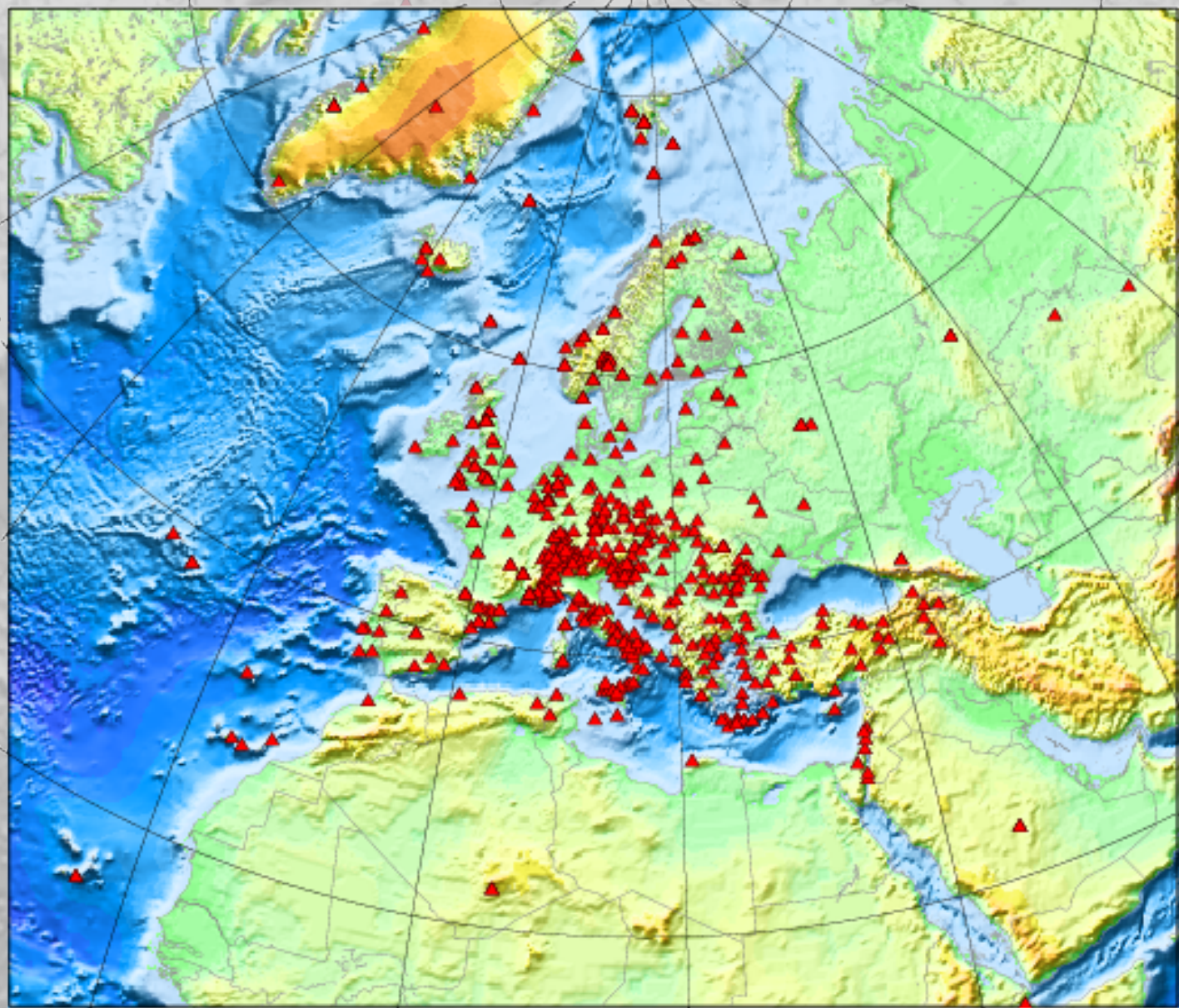
The ODC can fulfill this mission only in strong cooperation with seismic observatories, seismic network operators and end users from the scientific community.



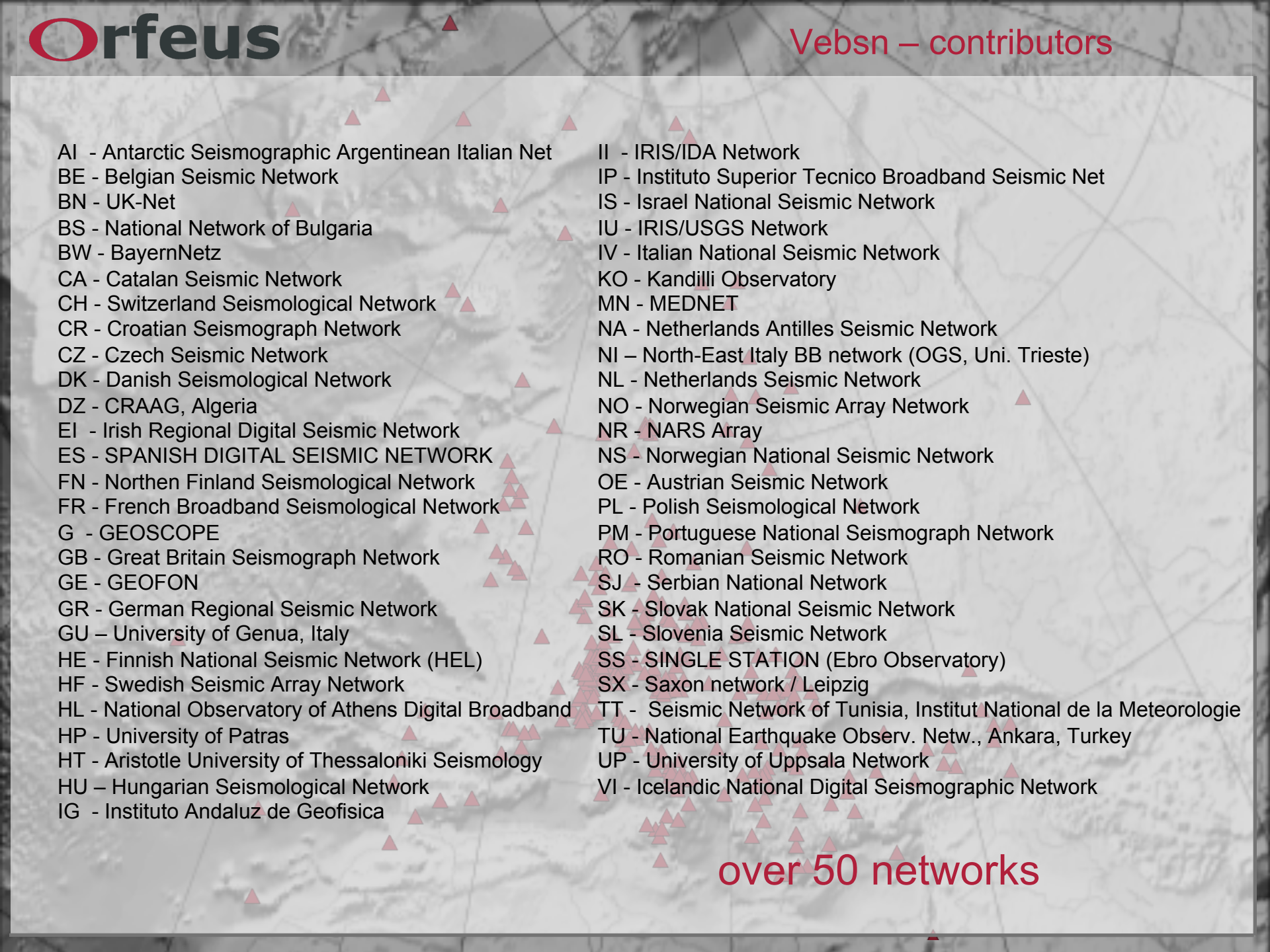
30 stations
Jan 1987



400 stations
Mar 2010



502 stations
total

- 
- AI - Antarctic Seismographic Argentinean Italian Net
BE - Belgian Seismic Network
BN - UK-Net
BS - National Network of Bulgaria
BW - BayernNetz
CA - Catalan Seismic Network
CH - Switzerland Seismological Network
CR - Croatian Seismograph Network
CZ - Czech Seismic Network
DK - Danish Seismological Network
DZ - CRAAG, Algeria
EI - Irish Regional Digital Seismic Network
ES - SPANISH DIGITAL SEISMIC NETWORK
FN - Northern Finland Seismological Network
FR - French Broadband Seismological Network
G - GEOSCOPE
GB - Great Britain Seismograph Network
GE - GEOFON
GR - German Regional Seismic Network
GU - University of Genua, Italy
HE - Finnish National Seismic Network (HEL)
HF - Swedish Seismic Array Network
HL - National Observatory of Athens Digital Broadband
HP - University of Patras
HT - Aristotle University of Thessaloniki Seismology
HU - Hungarian Seismological Network
IG - Instituto Andaluz de Geofisica
II - IRIS/IDA Network
IP - Instituto Superior Tecnico Broadband Seismic Net
IS - Israel National Seismic Network
IU - IRIS/USGS Network
IV - Italian National Seismic Network
KO - Kandilli Observatory
MN - MEDNET
NA - Netherlands Antilles Seismic Network
NI - North-East Italy BB network (OGS, Uni. Trieste)
NL - Netherlands Seismic Network
NO - Norwegian Seismic Array Network
NR - NARS Array
NS - Norwegian National Seismic Network
OE - Austrian Seismic Network
PL - Polish Seismological Network
PM - Portuguese National Seismograph Network
RO - Romanian Seismic Network
SJ - Serbian National Network
SK - Slovak National Seismic Network
SL - Slovenia Seismic Network
SS - SINGLE STATION (Ebro Observatory)
SX - Saxon network / Leipzig
TT - Seismic Network of Tunisia, Institut National de la Meteorologie
TU - National Earthquake Observ. Netw., Ankara, Turkey
UP - University of Uppsala Network
VI - Icelandic National Digital Seismographic Network

over 50 networks

Data-flow

over 1650 channels flowing in per day resulting in a “size per day” of around 7 Gb
mainly slink2orb and orb2orb

Frequency-range

ranging from very broad band (0.1 Hz) up to high frequency channels (125 Hz)

Additional sensor

30 accelerometric stations (120 Hz) from the Swiss network

VEBSN status of data streams

The data stream latency is VEBSN status is given in seconds, sorted alphabetically per network. By clicking on a station name, detail information on the latency is given, specified per channel.

Network	Station	Latency legend							
AI	BELA	ESPZ	JUBA	ORCD	SMAI				
	BE	MEM	RCHB	UCC					
		BN	EKB	LPW	SBD	WOL			
			BS	JMB	PLD				
				BW	RJOB	ROTZ			
CA	CADI	CBRU	CSOR		CTRE	FBR	POBL		
	CH	AIGLE	BALST	BERNI	BNALP	BOURR	BRANT	DAVOX	DIX

Latency legend:



AI	BELA	ESPZ	JUBA	ORCD	SMAI			
BE	MEM	RCHB	UCC					
BN	EKB	LPW	SBD	WOL				
BS	JMB	PLD						
BW	RJOB	ROTZ						
CA	CADI	CBRU	CSOR	CTRE	FBR	POBL		
CH	AIGLE	BALST	BERNI	BNALP	BOURR	BRANT	DAVOX	DIX

Current status, up to channel level

PQLX

near real time calculation of Probability Density Functions

PSD

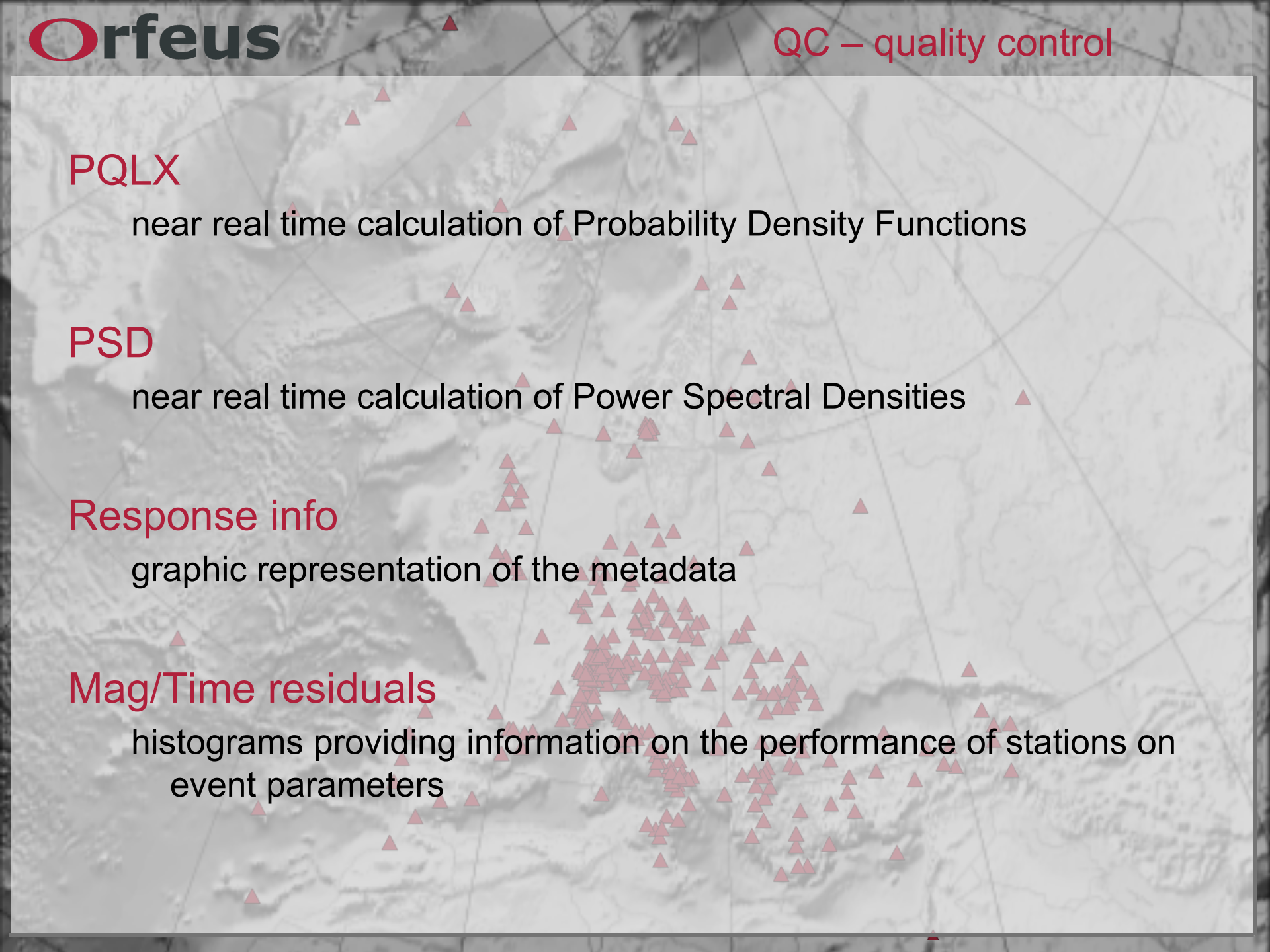
near real time calculation of Power Spectral Densities

Response info

graphic representation of the metadata

Mag/Time residuals

histograms providing information on the performance of stations on event parameters



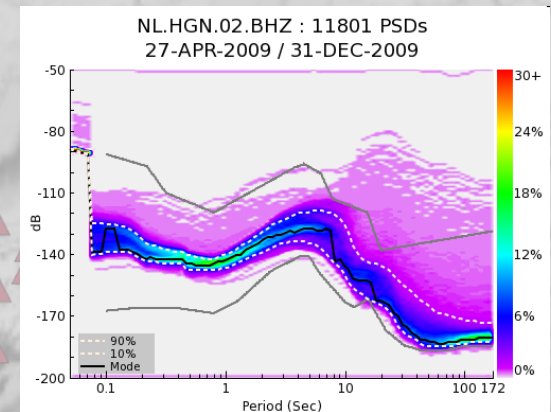
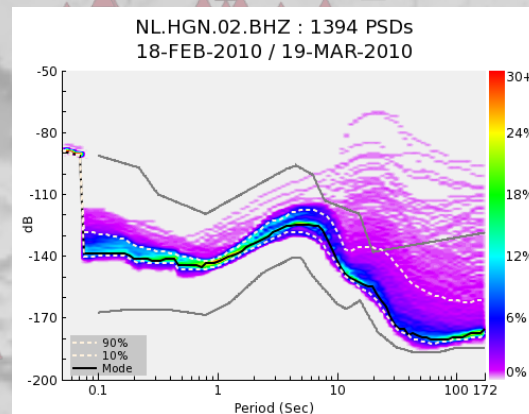
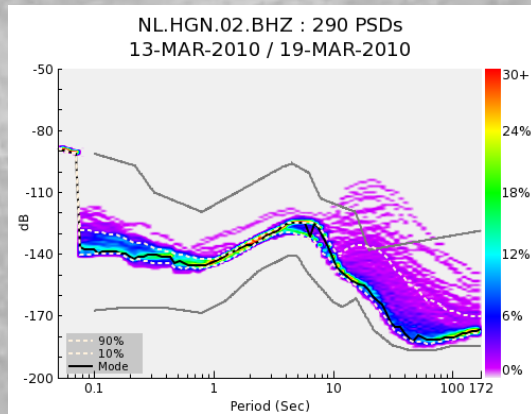
Old situation

calculations on all incoming traces. Currently 1 day takes approximately 10 hours (1 cpu)

New situation

new 4 quad core server, running pqlx on 8 cpu's → 1 day takes approximately 1-1.5 hours

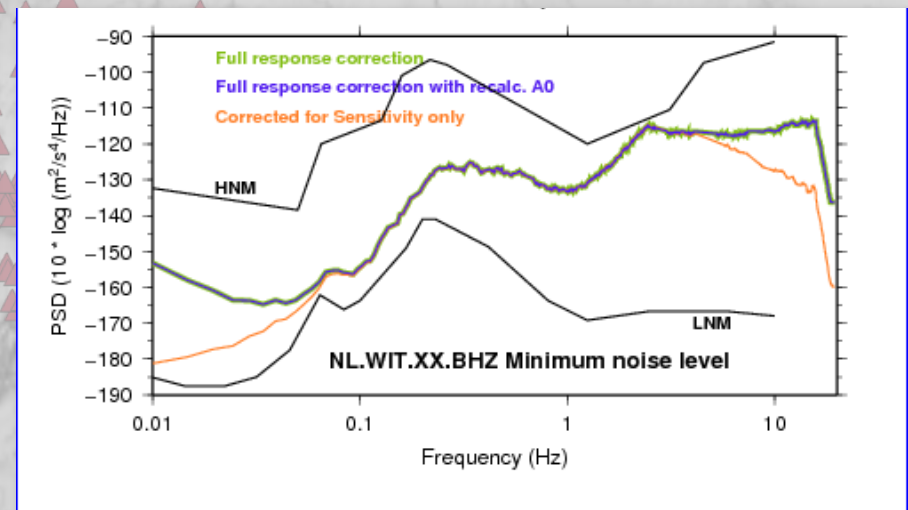
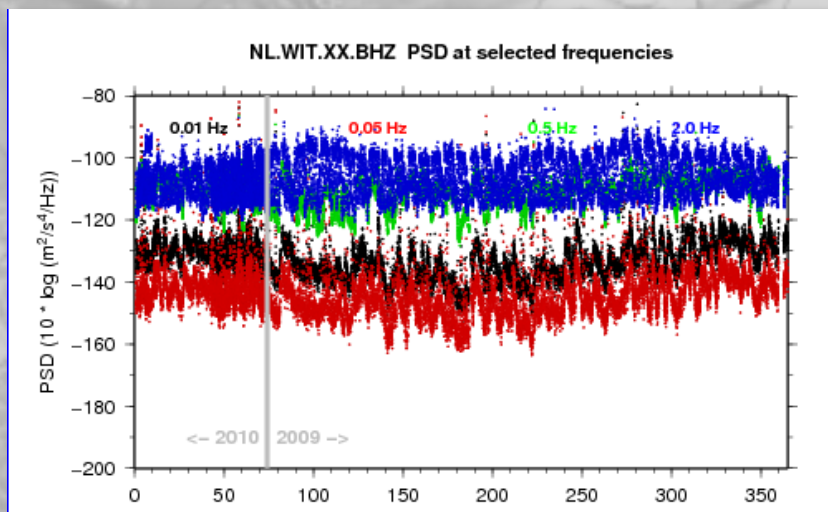
backwards calculations for archive data ← 2010, currently somewhere in 2006.



Power Spectral Density

PSD of the background noise as function of time, for selected frequencies

Daily update, plot covers 1 year

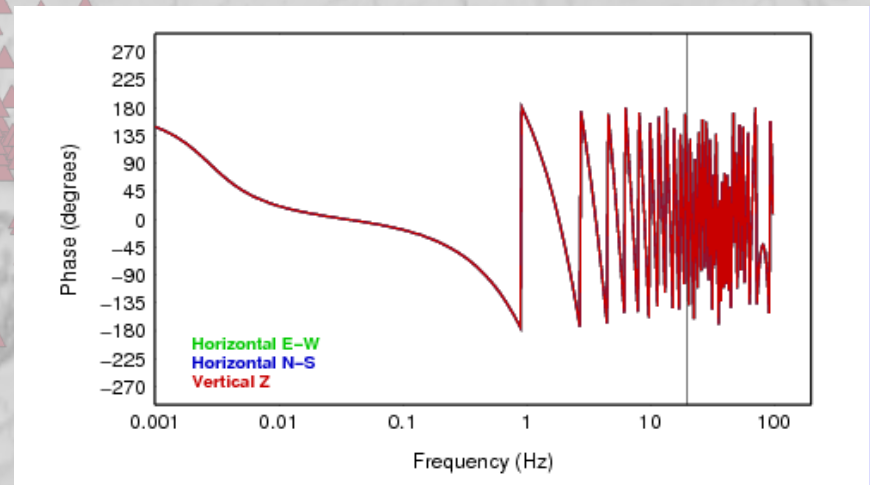
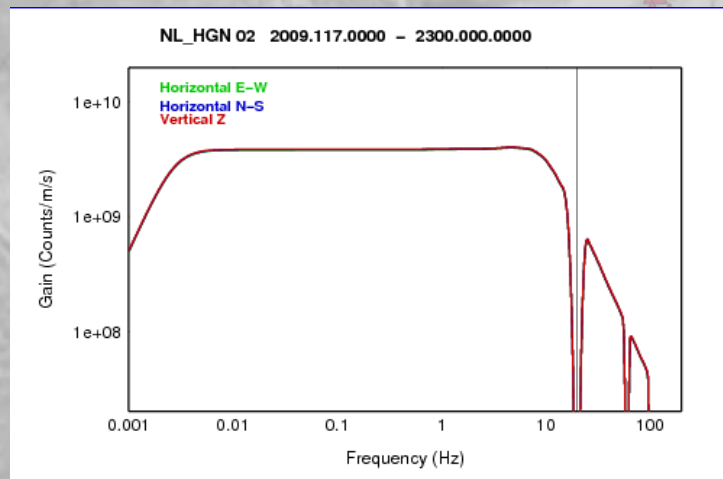


System response

overall system responses are visualized in graphical form from the dataless SEED volumes

History

complete record of changes in time



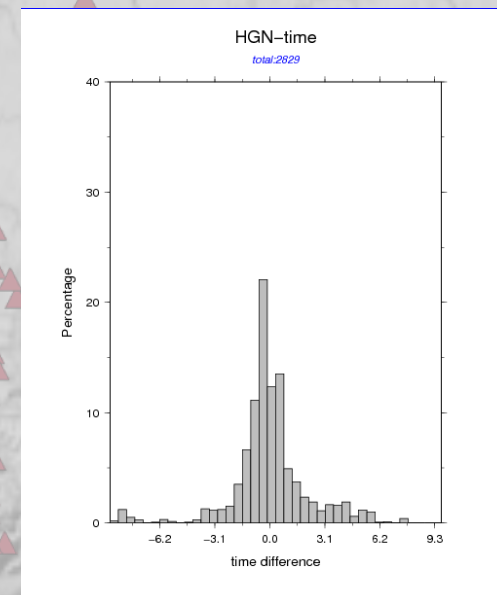
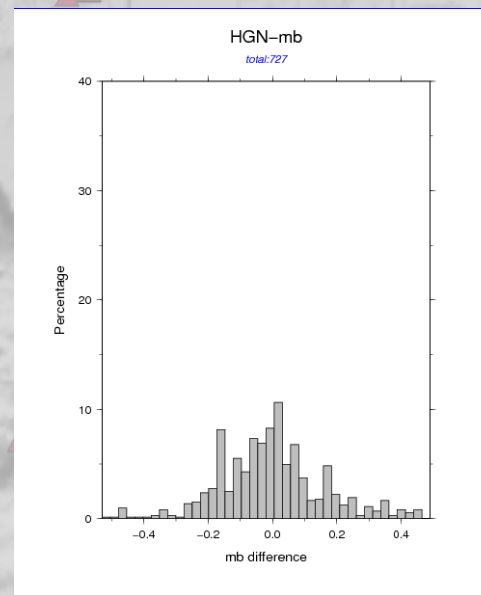
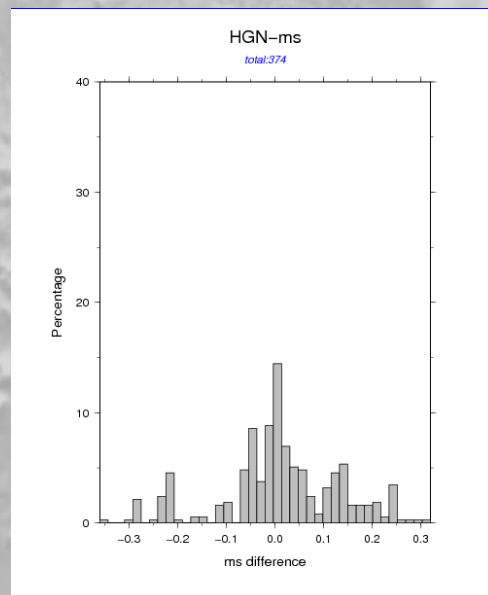
Antelope processing

provides location and magnitudes (automatic)

Histograms

station magnitude with respect to network magnitude

time residual between calculated and measured arrival time



Email based

data request services, like NetDC, BreqFast and autodrm (email based)

Orfeus Web Interface

step by step interface for requesting event, miniseed, dataless and fullseed data

Web-services

data-retrieval client using webservices of NERIES portal (in development)

Seismic data portal (NERIES)

web portal, going into production stage April 2010

“Waveform Explorer”
Remote Portlet
Multi Modal waveform requests,
Event or Time Modes

Event explorer

Timeline

Date minimum:

Date maximum:

Bounding box

Latitude minimum:

Latitude maximum:

Longitude minimum:

Longitude maximum:

Magnitude

Magnitude minimum:

Magnitude maximum:

Depth

Depth minimum:

Depth maximum:

Author

Unid

Show on Map Show list

61 events found corresponding to the

Map Event list Event cart Shared selections

Map Satellite Hybrid Terrain

Map data ©2008 Tele Atlas

Lon: 14.1284°E Lat: 42.0249°N

0 40 80 160 320 (km)

Events Details

Add to cart	Date & Time UTC	Latitude degrees	Longitude degrees	Region	Depth km	Magnitude
<input type="checkbox"/>	2005-08-17 05:00:43.300	44.416 N	10.373 E	NORTHERN ITALY	30.0	ML 3.6
<input type="checkbox"/>	2005-08-17 02:54:10.400	43.369 N	12.939 E	CENTRAL ITALY	56.9	ML 3.3
<input type="checkbox"/>	2005-06-27 02:43:05.800	42.7 N	12.677 E	CENTRAL ITALY	12.0	ML 3.3
<input type="checkbox"/>	2005-08-15 05:43:59.200	42.063 N	12.738 E	CENTRAL ITALY	8.8	MD 3.0
<input type="checkbox"/>	2005-09-29 22:42:52.900	44.036 N	11.438 E	NORTHERN ITALY	9.9	ML 3.2

★ This event has been reported in EuroMed Bulletin and in Real Time
★ This event has been reported only in EuroMed Bulletin

Put checked events into the cart

“Event Explorer”
Jetspeed Portlet
Seismic Events Selection

Waveform Explorer - Last update on Thursday 5 March 2009 -

Active Mode: **Event Mode** - help

Event Mode Time Mode

Events information

On map: 1 - In your request: 1

UNID: 20090115_0000039

Time: Thu Jan 15 2009 17:49:40 GMT+0100 (CET)

Region: EAST OF KURIL ISLANDS

Mag: 7.4

New Event Request Add Events

Available Networks

50 Networks found from 2009-01-15T17:49:40Z to 2009-01-15T18:10:40Z

Select the Events of interest from your cart or a Time window. This list of the available networks will appear below:

- AF South African National Seismograph Network
- AI Antarctic Seismographic Argentinian Italian Network (ASAIN)
- BE ROB
- BN UK-Net, Blacknest Array
- BS National Network of Bulgaria
- BW Bavarian Network
- CA Institut Estudis Catalans, IEC
- CH Switzerland Seismological Network
- CR Croatian Seismograph Network
- CX Plate Boundary Network
- CY CYCLADES Network
- CZ Czech Regional Seismic Network
- DK Danish Seismological Network
- EE Estonian Seismic Network
- EN Egelesos Network
- ES Spanish Digital Seismic

Wave xPp Map

Preferred Location Alternative Origin Selected Station Number of stations on map: 88

Station info Streams Orfeus QC

Map Satellite Hybrid Terrain

Show all station codes

stacod_locid

Label Data Quality Control

PSD (1/c³g²/m³/Hz)

Time (s)

0 50 100 150 200 250 300 350

Map data ©2009 Europa Technologies - Terms of Use

Lon: 109.33593750°W Lat: 82.02137602°N

Selected Stations: Streams, max allowed 20

You have selected 20 streams - Delete all streams - Check all channels - Change the velocity model (default: iasp91)

<input type="checkbox"/>	ISBH	GE, Gununggiliti	<input type="checkbox"/>	BHE	BHN	BHZ
<input type="checkbox"/>	ISBH	IA, Banda Aceh	<input type="checkbox"/>	BHE	BHN	BHZ
<input type="checkbox"/>	ISBH	IA, Tuntungan	<input type="checkbox"/>	BHE	BHN	BHZ
<input type="checkbox"/>	ASTYBH	CY, Astypalea	<input type="checkbox"/>	BHE	BHN	BHZ
<input type="checkbox"/>	APEBH	HL, Apatzados Naxos	<input type="checkbox"/>	BHE	BHN	BHZ

Type your request description (linebreaks will be removed):

My Connect:

Email (required): spinuso@knni.nl

Receive notification by email

submit request Go to requests cart

User Events
Cart Ws

Request ID as URI.
The dynamically generated dataset (**Event's parameters** and the **waveform**) can be stored in the **SMI RDF Model**

Logout

Root Folder >> My NERIES
GIVE YOUR FEEDBACK ACCOUNT NA4 TEST SITE MAP

WaveForm Requests Cart

User: luca
[- Back to requests list -](#)



Request [smi:eu.orfeus/waveform/orfeusArmlink_6949/6950](http://smi.eu.orfeus/waveform/orfeusArmlink_6949/6950)

Date	Event	Location	Status	EstimatedSizeKB	Action
2009-6-23T15:33:39	BOSNIA AND HERZEGOVINA, M= 4.6, Time= 2009-06-21T11:20:04.400Z (quakeML)		Ready	64	

Your comments
my dataset

Dataset user description

Please rate your dataset here

Good Bad

User provided rate

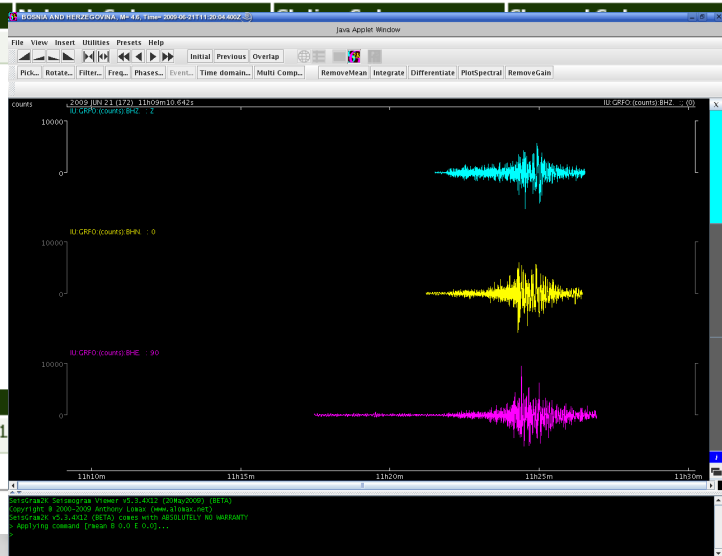
Begin Time	End Time	Location Id
2009-06-21T11:21:48	2009-06-21T11:25:50	

Seisgram2K visualization

Request [smi:de.gfz-potsdam/waveform/gfzArmlink_6949/241436](http://smi.de.gfz-potsdam/waveform/gfzArmlink_6949/241436)

Date	Event	SizeKB	Action
2009-6-23T15:33:40	BOSNIA AND HERZEGOVINA, M= 4.6, Time= 2009-06-21T11:20:04.400Z (quakeML)		

Your comments
my dataset



<http://www.seismicportal.eu>

