MedNet status report
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MedNet is a network of very broadband seismic stations installed in countries bordering the Mediterranean area. The project started in 1987, with a final goal of 12-15 stations and a spacing of about 1000 km between stations. It was motivated both by research interest and by seismic hazard monitoring.

The network presently comprises 23 operating stations, all of them equipped with state of the art seismographic stations. Their deployment is still governed by the principle of increasing broadband station coverage with due regards to the deployment of similar stations by other operators.

Seismometers are mostly Streckeisen STS2, with a few STS-1/VBB installed during the early phases of the project. Almost all data-loggers are from Quanterra (Q380-680, Q730, Q4120 and Q330). Data are transmitted in real time from the stations to Rome using TCP protocol and via several different physical links: leased lines, VPN, Internet and satellite link. Real time data acquisition and distribution is accomplished by means of the SeedLink protocol and SeisComP, a software package developed, maintained and freely distributed by GEOFON.

Station Map: closed stations are shown in red, open stations in green.

<table>
<thead>
<tr>
<th>Net</th>
<th>Sta</th>
<th>Lat</th>
<th>Lon</th>
<th>Elev (m)</th>
<th>Start</th>
<th>End</th>
<th>Rate (sps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GE/MN</td>
<td>ISP</td>
<td>37.84330</td>
<td>30.50930</td>
<td>1100</td>
<td>1996,297</td>
<td>present</td>
<td>20,1,0.1</td>
</tr>
<tr>
<td>GE/MN</td>
<td>MALT</td>
<td>38.31340</td>
<td>38.42730</td>
<td>1120</td>
<td>2000,146</td>
<td>present</td>
<td>100, 20,1,0.1</td>
</tr>
<tr>
<td>MN</td>
<td>AIO</td>
<td>37.97120</td>
<td>15.23300</td>
<td>751.4</td>
<td>1999,365</td>
<td>present</td>
<td>100, 20,1,0.1</td>
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<tr>
<td>MN</td>
<td>AQU</td>
<td>42.35400</td>
<td>13.40500</td>
<td>710</td>
<td>1988,213</td>
<td>present</td>
<td>100, 20,1,0.1</td>
</tr>
<tr>
<td>MN</td>
<td>BGY</td>
<td>44.80260</td>
<td>20.51580</td>
<td>250</td>
<td>1991,084</td>
<td>2001,364</td>
<td>20,1,0.1</td>
</tr>
<tr>
<td>MN</td>
<td>BNI</td>
<td>45.05200</td>
<td>6.67800</td>
<td>1395</td>
<td>1988,120</td>
<td>present</td>
<td>100, 20,1,0.1</td>
</tr>
</tbody>
</table>
Data are distributed following three main routes: the fast, but restricted one of real time distribution (data are exchanged on a one-to-one basis between Institutions and are usually regulated by bilateral agreements), the intermediate one of distributing data grouped by event (available from the mednet web pages http://mednet.ingv.it), and the last one, slow, but very comprehensive, of sending data at users’ request via e-mail or ftp, drawing them from the archive, by standard NetDC and AutoDRM protocols (in SEED and GSE formats respectively). The dissemination of station information is ensured by the so-called dataless SEED volumes, i.e. files in SEED format in which all the information regarding a station is reported, that is its location, channels, response functions, etc.

Presently, fully automatic network functions include:
- daily monitoring of state of health;
- data recover after link failures;
- triggered retrieval of event waveforms;
- update of web pages (http://mednet.ingv.it) for events and station information.

Two different techniques for rapid semiautomatic moment tensor solutions are running at MedNet. The first one makes use of the Regional CMT (Arvidsson & Ekström, 1998) routines. The procedure is very stable, but the human intervention is essential. The second procedure is based on Dreger & Romanowicz (1994) TDMT, producing a first unmanned solution, then a successive solution revised by a seismologist. This second approach uses higher frequencies, in order to lower the Mw threshold for which moments are estimated in areas with proper station coverage.

Developments at MedNet are following two main directives:
- within the EC Project NERIES, the MedNet Data Center is contributing to the European Integrated Data Archive, providing support and/or backup to the partner institutions, in cooperation with Orfeus, Geofon and Geoscope Data Centers;
In the framework of IOC initiative on North East Atlantic Tsunami Warning System (NEAMTWS), INGV is developing a Regional Center for a tsunami watch in the Mediterranean. In this regard, two different algorithms (LocSat and NonLinLoc) and different network configurations are under test at MedNet to check the capability of the extended network for locating potentially tsunamigenic earthquakes.