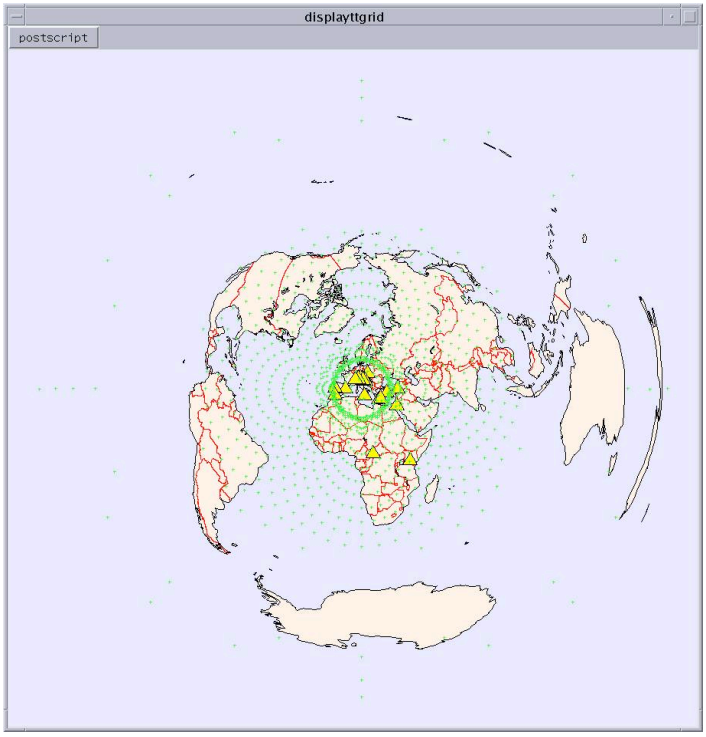
Italian CTBTO NDC
June 2003 status
FDSN 2003 meeting

Damiano Pesaresi
INGV
pesaresi@ingv.it
+39-06-51860-380

The Italian CTBTO National Data Center (INDC) is collecting via the satellite Global Communication Infrastructure (GCI) of the Comprehensive Nuclear Test-Ban-Treaty Organization (CTBTO), analyzing and storing waveform data from the International Data Center (IDC) of the CTBTO. Data from the IDC is then compared with data collected via internet from other scientific institutions of neighboring Countries. Products are available via email subscription.

Currently the Italian NDC is collecting real time data from the following broad-band seismic stations from the corresponding institutions:

Stations	**Originator**	**Connection**
BGCA	CTBTO (Austria)	satellite, CD-1
ARSA,DAVA,KBA,MOA, OBKA,WTTA	ZAMG (Austria)	Internet, Antelope orb2orb
MORC	IPE (Czech Republic)	Internet, Antelope orb2orb
EIL,GVD,ISP,KMBO,KRIS, MALT,MTE,SFS	GEOFON (Germany)	Internet, SeedLink
VAE	INGV (Italy)	satellite, CD-1
TRI	Trieste Univ. and INOGS (Italy)	Internet, Antelope orb2orb
CEY,CRES,LJU,ROBS	EARS (Slovenia)	Internet, Antelope orb2orb
EBR	EBRE (Spain)	Internet, SeedLink
BNALP,DAVOX,SENIN	SED (Switzerland)	Internet, SeedLink



real time stations @ Italian NDC

Data is collected and analyzed at the Italian NDC making use of the Antelope software package running on two dedicated SUN workstations. One is connected to the CTBTO GCI satellite system making use of a private IP address scheme, the other is connected in real time via Internet to the several scientific institutions cooperating with the Italian NDC.

One of the main tasks of the Italian NDC is to automatically produce locations and bulletins and to compare them with the CTBTO IDC corresponding products. In order to assure the good quality of its locations and magnitude estimates, the Italian NDC is contributing to the European-Mediterranean Seismological Center (EMSC) Real_Time_Seismicity and to the Swiss Rapid Earthquake Data to Pagers, Users, e-Mail recipients, and Authorities (RedPuma) systems.

Although the confidentiality policy for the CTBTO data and products is still to be determined, the current accepted practice is that the "owner" of the data has the right to freely distribute it. Following this current practice, the distribution of the Italian CTBTO NDC locations and bulletins represents today a unique opportunity of data sharing between the CTBTO and the scientific world.

The automatic locations and bulletins of the Italian NDC are in fact available via email: 32 subscribers all around the world are as per today taking advantage of this service, including the International Seismological Center (ISC) Director Dr. Willeman and the CTBTO IDC Director Dr. Kebeasy. To be included in the automatic locations and/or bulletins emailing lists, please send an email to the Italian NDC technical manager, Damiano Pesaresi, at pesaresi@ingv.it.

_____location alert example _____
automatic alert from francesco:6510

time= 21.May 18:44:18
lat= 36.7 lon= 3.3
criteria: regionalworldlocal
magnitudes: mb= 5.44 ms= 6.33 ml= -
nass= 19 ndef= 19
Region: ALGERIA
975km WSW of Roma
30km ESE of Alger
304km S of Palma
370km ENE of Oran
445km SE of Valencia

automatically created
by Italian NDC Antelope
http://www.ingv.it/seismoglo/pesaresi/indexINDC.html

_____bulletin example_____

Event 14663 ALGERIA

Date	Time	Err	RMS	Latitude	Longitude	Smaj	Smin	Az	Depth	Err	Ndef	Nsta	Gap	mdist	Mdist	Qual	Author	OrigID
2003/05/21	18:44:18.93	-1.00	0.68	36.7368	3.3112	-1.0	-1.0	-1	10.0	-1.0	19	0	280	8.88	27.73	a i uk	orbassocm	15130

Magnitude	Err	Nsta	Author	OrigID
mb 5.4	0.2	19	orbassocm	15130

Sta	Dist	EvAz	Phase	Time	TRes	Azim	AzRes	Slow	SRes	Def	SNR	Amp	Per	Qual	Magnitude	ArrID
ARSA	13.86	36.8	P	18:47:34.821	-0.5			T__	185.9			m__	0.0			5544
BNALP	10.82	18.9	P	18:46:54.326	0.4			T__	78.4			m__	0.0			5545
CEY	12.26	39.3	P	18:47:12.928	-0.6			T__	36.7			m__	0.0			5546
CRES	12.85	41.2	P	18:47:20.874	-0.8			T__	60.8			m__	0.0			5547
DAVA	11.61	22.7	P	18:47:05.861	1.1			T__	170.0			m__	0.0			5548
DAVOX	11.17	23.9	P	18:46:58.251	-0.3			T__	33.1			m__	0.0			5549
EIL	27.26	95.7	P	18:50:04.363	1.0			T__	82.5			m__	0.0			5550
ISP	21.59	78.8	P	18:49:08.993	0.2			T__	376.6			m__	0.0			5551
KBA	12.73	32.6	P	18:47:20.539	0.5			T__	46.2			m__	0.0			5552
LJU	12.52	38.5	P	18:47:16.470	-0.7			T__	74.0			m__	0.0			5553
MALT	27.73	76.0	P	18:50:07.031	-0.4			T__	429.0			m__	0.0			5554
MOA	13.72	32.5	P	18:47:33.679	0.1			T__	73.2			m__	0.0			5555
MORC	16.60	33.8	P	18:48:11.939	0.2			T__	130.5			m__	0.0			5556
OBKA	12.86	37.1	P	18:47:21.589	-0.2			T__	15.3			m__	0.0			5557
ROBS	12.18	35.5	P	18:47:11.676	-0.7			T__	53.3			m__	0.0			5558
SENIN	10.07	15.9	P	18:46:43.776	0.1			T__	247.3			m__	0.0			5559
TRI	11.91	37.9	P	18:47:07.540	-1.2			T__	26.9			m__	0.0			5560
VAE	8.88	81.9	P	18:46:27.701	0.4			T__	28.6			m__	0.0			5561
WTTA	12.19	27.7	P	18:47:13.846	1.2			T__	62.3			m__	0.0			5562

The Italian NDC is also running an AutoDRM interface for data extraction. List of stations and channels available can be found at the Swiss Waves4u. Access for the moment is restricted to INGV internal use.

For more information, including alarm criteria and a special page on the Mw=6.8 event in Algeria on May 21, please refer to the Italian NDC web page (http://www.ingv.it/seismoglo/pesaresi/indexINDC.html).

Future planning, provided that necessary funding will be available, include:

1. integration of more CTBTO stations (MLR, Muntele Rosu, Romania - GERESS, Freyung, Germany – ESDC, Sonseca, Spain – DBIC, Dimbroko, Côte D'Ivoire – LXEG, Luxor, Egypt – THA, Thala, Tunisia – EVN, Everest, Nepal – AKASG, Malin, Ukraine – KBZ, Khabaz, Russia – BRTR, Keskin, Turkey – PS26, Niger – PS38, Saudi Arabia) when available;
2. location reviewing;
3. 24h/day surveillance;
4. proposal of some stations (TRI, others) to CTBTO as National Cooperating Facilities;
5. installation of a seismic array in central Italy;
6. installation of an infrasound array in central Italy, co-located with the seismic array.