

FDSN WG IV CTBTO coordination

Monday lunchtime

12:00 p.m. – 13:30 p.m. Room MR 110

Working Draft Agenda

Review of 2009 WG IV report (in lieu of minutes)

Activities since last meeting

Feedback from the CTBTO S&T 2011 conference & PTS interactions

- brief report (Gerardo Suarez / Florian Haslinger)
- developments at the PTS (John Coyne, PTS)
- ideas for future action (Florian Haslinger)

Discussion of future activities

Potential topics

- *using vDEC to access IMS data / use FDSN to generate “virtual” IMS (may affect WGII and/or WGIII)*
- *coordination of capacity building, training, and outreach*
- *future cooperations (organizational / multilateral / bilateral) to enhance station sustainability and data quality*

Any other business

- opening WG IV mailing list archive also to non-list-members

Summary of meeting
FDSN Working Group IV
CTBT Coordination

- overview of the International Scientific Studies initiative, followed by fruitful discussions with benefit of representatives of the CTBTO

Outcomes - 1

FDSN should seek to collaborate with the CTBTO in areas of quality control, capacity building, training materials, and data mining:

- request real-time data for selected stations including arrays, routinely compute PDF's, and supply these to the CTBTO to aid QC
- participate in joint training sessions
- arrange to backfill an archive of data for specific IMS stations to investigate data mining

Outcomes - 2

- the FDSN could act as data broker for member agencies who propose scientific projects under the ISS
- the FDSN should present itself at upcoming meetings in Vienna in March and June 2009 to gain visibility within the CTBT community

FDSN WG IV CTBTO coordination

Activities since last meeting

(anything to report?)

FDSN WG IV CTBTO coordination

- Any other business
 - opening WG IV mailing list archive also to non-list-members

Feedback from the CTBTO S&T 2011 conference & PTS interactions

Meeting topics were:

- The Earth as a complex system
- Understanding the nuclear explosion source
- Advances in sensors, networks and observational technologies
- Advances in computing, processing and visualization for verification applications
- Creating knowledge through partnerships, training and information / communication technology

Feedback from the CTBTO S&T 2011 conference & PTS interactions

Meeting topics were:

- The Earth as a complex system
- Understanding the nuclear explosion source
- **Advances in sensors, networks and observational technologies**
- Advances in computing, processing and visualization for verification applications
- **Creating knowledge through partnerships, training and information / communication technology**

Feedback from the CTBTO S&T 2011 conference & PTS interactions

~ 500 participants, good mix of young and “old”, newcomers to CTBTO and usual suspects

step-by-step making PTS data (raw and bulletins) available to community
(separate presentation by John Coyne)

FDSN well represented







Federation of Digital Broad-Band Seismograph Networks

The IMS Network and the International Federation Of Digital Seismograph Networks,(FDSN): A **Productive and Long and Winding Road**

Gerardo Suárez and Florian Haslinger

International Federation of Digital Seismograph Network



Federation of Digital Broad-Band Seismograph Networks

Challenges of IMS and FDSN in the Early Years:

- Ensure Dual Use: Scientific and IMS
- Guarantee Independent Operation
- Authentication and IMS Format
- Training Operators to Troubleshoot both Systems



Federation of Digital Broad-Band Seismograph Networks

Mutual Benefits of this Relationship:

- Small Investment for the IMS
- Improved Operator Qualifications
- IMS Modernized Equipment at some Sites
- Reliable Communications for some FDSN Stations



Federation of Digital Broad-Band Seismograph Networks

Future Benefits and Challenges:

- Improve Operational Efficiency and Sustainability
- Collaborate in the Development of Local Seismological Expertise
- Support establishment of NDCs



Federation of Digital Broad-Band Seismograph Networks

Sharing IMS Data?

This was the question in the initial years



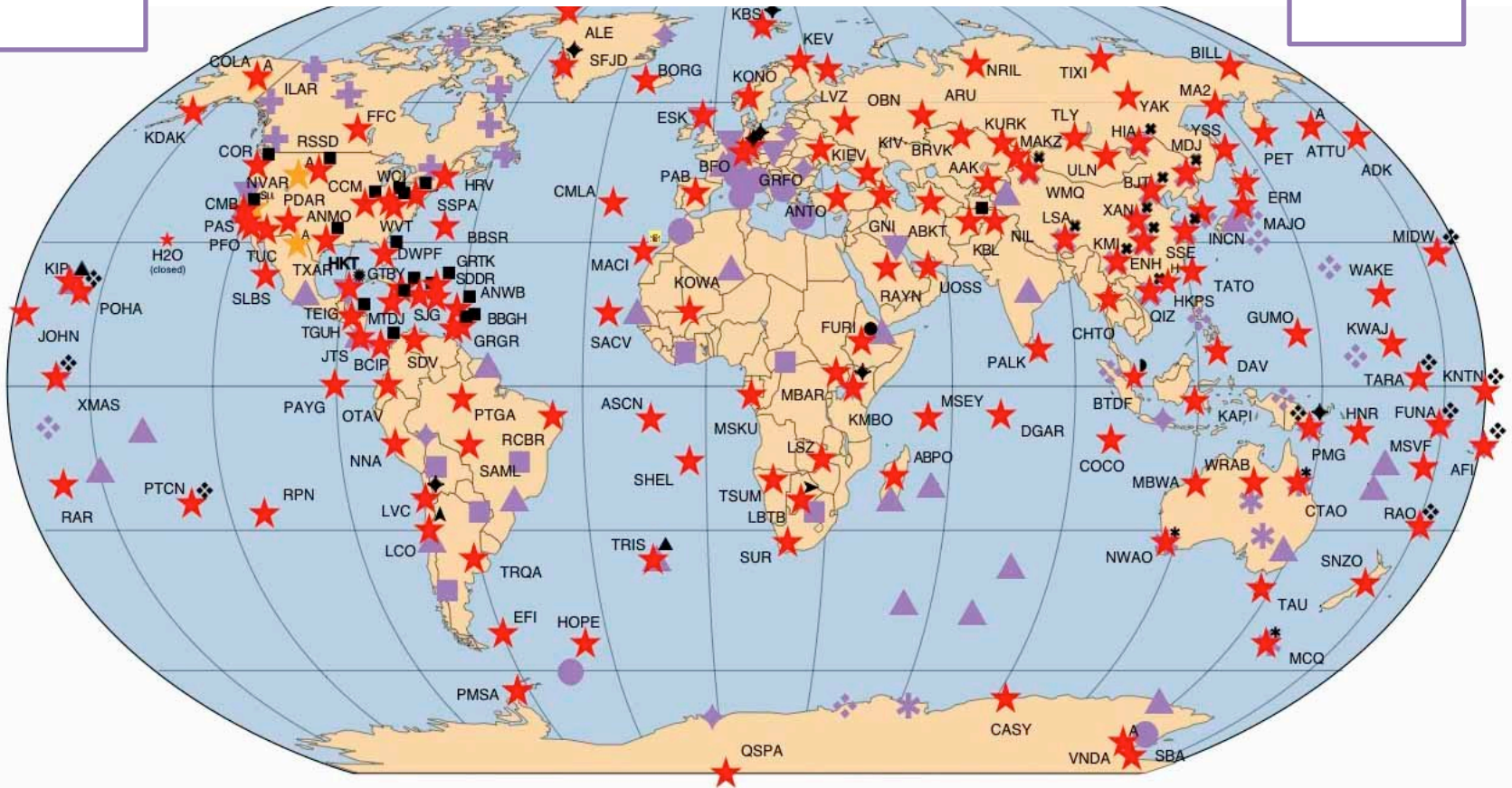
Federation of Digital Broad-Band Seismograph Networks

Sharing IMS Data?

This was the question in the initial years

THE TIDE HAS CHANGED!

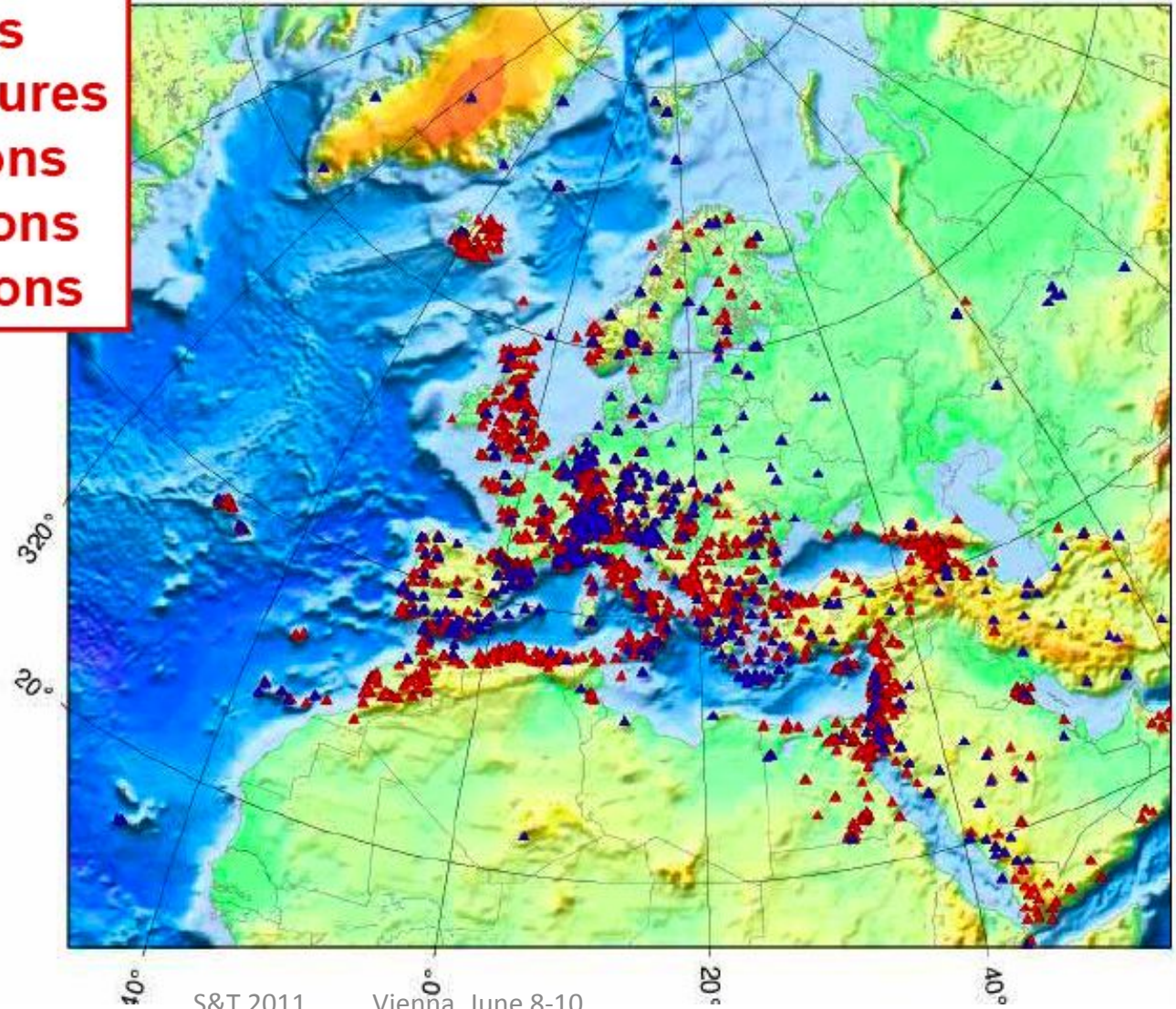
Real Time Stations (Backbone)



IRIS International & National Cooperative Sites														
IRIS	Affiliate	Japan	Mednet	Geofon/AWI/BGR/BFO	China/USGS	Mexico	Singapore	Botswana	Spain	Australia	HKO	USGS	AFTAC	SMU
★	★	▲	◆	■	●	●	●	●	●	●	●	●	●	●



46 countries
150 infrastructures
800 BB stations
1800 SP stations
3000 SM stations



S&T 2011

Vienna, June 8-10



Federation of Digital Broad-Band Seismograph Networks

Two-Way Exchange of Data:

- Develop improved event discrimination methods making use of unprecedented density of high quality stations



Federation of Digital Broad-Band Seismograph Networks

Two-Way Exchange of Data:

- Develop improved event discrimination methods making use of unprecedented density of high quality stations
- Allow independent validation of IMS products



Federation of Digital Broad-Band Seismograph Networks

Two-Way Exchange of Data:

- Develop improved event discrimination methods making use of unprecedented density of high quality stations
- Allow independent validation of IMS products
- Common *web-based* tools for data exchange for use with NDC-in-a-box (for example)

CTBT ISS 2011

PTS – FDSN breakout meetings on

- web services
 - PTS is developing web services for access to data & products via IDC secure website
 - web services may also be used for access to data & products through the vDEC (virtual data exploitation centre) platform
 - QuakeML (or other community xml standards) might play a role
- capacity building & training
 - agree that it would be beneficial to exchange information on training & capacity building programs
 - specifically exchange participants / applicants lists
 - seek synergies, e.g. include PTS training modules in (or attached to) other training courses (IRIS, ORFEUS, GFZ – there it already happened)
 - PTS training courses today usually separate for “data center” and “station operator” (different program content)

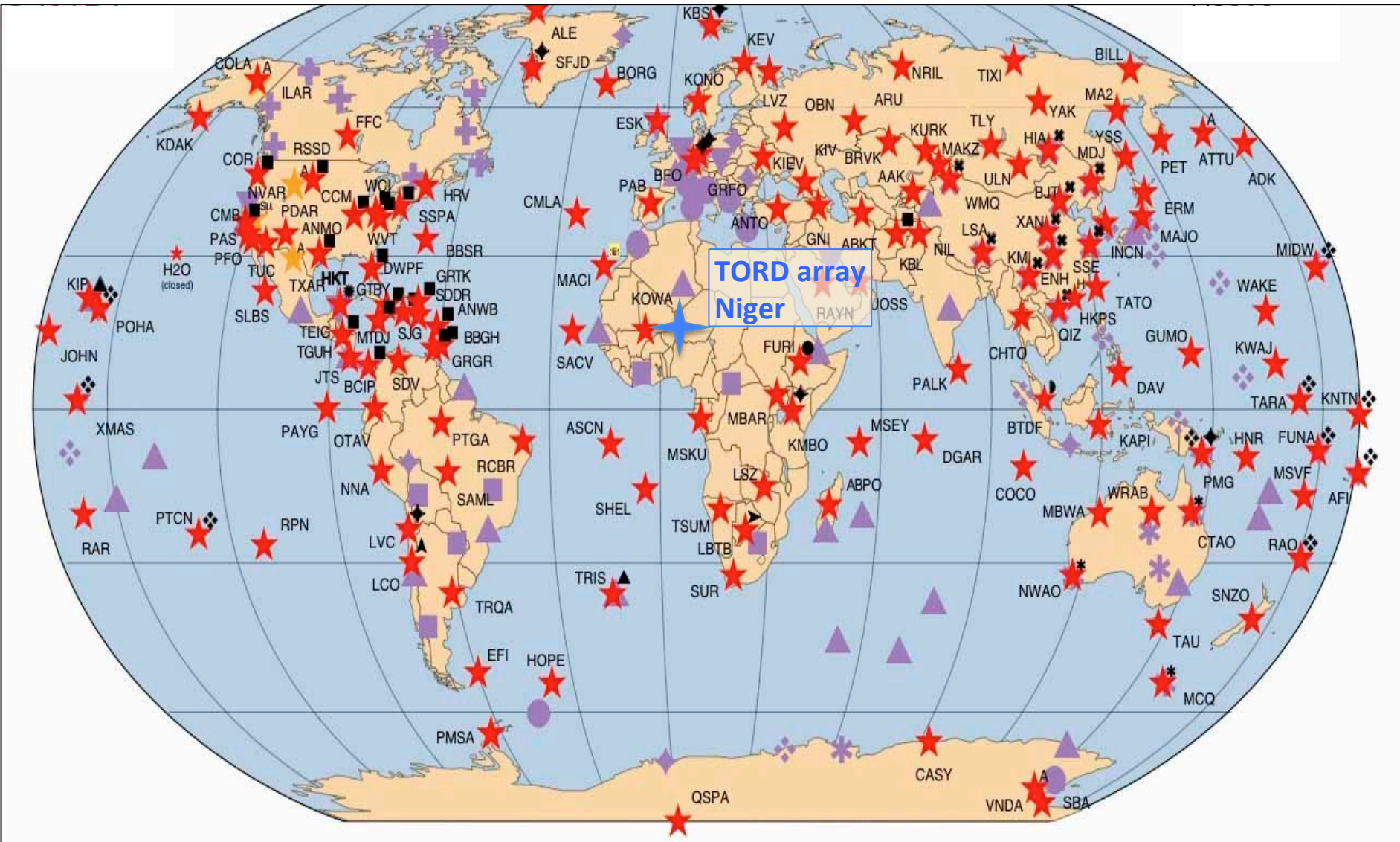
CTBT ISS 2011

On the fringes:

letter from Station Operator / host institution for TORD (Niger array) to Gerardo Suarez (via Chuck Estabrook, former PTS staff) on draft agreement with FDSN:

- provision of TORD data (inc. FDSN membership of Niger) in exchange for support by FDSN for training & education (e.g. M.Sc / PhD projects with FDSN member institutions, training programs by FDSN members in Niger, invitation of TORD staff to training programs abroad)

Agreement that we (FDSN chair) signs such agreement?



TORD array
Niger

IRIS International & National Cooperative Sites															
IRIS	Affiliate														
Current	Array	Geoscope	Japan	Mednet	Geofon/AWI/BGR/BFO	China/USGS	Mexico	Singapore	Botswana	Spain	Australia	HKO	USGS	AFTAC	SMU
★	☆	▲	◆	●	◆	✱	●	●	▲	●	★	●	●	▲	●

Working Draft Agenda

Review of 2009 WG IV report (in lieu of minutes)

Activities since last meeting

Feedback from the CTBTO S&T 2011 conference & PTS interactions

- brief report (Gerardo Suarez / Florian Haslinger)
- **developments at the PTS (John Coyne, PTS)**
- ideas for future action (Florian Haslinger)

Discussion of future activities

Potential topics

- *using vDEC to access IMS data / use FDSN to generate “virtual” IMS (may affect WGII and/or WGIII)*
- *coordination of capacity building, training, and outreach*
- *future cooperations (organizational / multilateral / bilateral) to enhance station sustainability and data quality*

Any other business

- opening WG IV mailing list archive also to non-list-members

Working Draft Agenda

Review of 2009 WG IV report (in lieu of minutes)

Activities since last meeting

Feedback from the CTBTO S&T 2011 conference & PTS interactions

- brief report (Gerardo Suarez / Florian Haslinger)
- developments at the PTS (John Coyne, PTS)
- **ideas for future action (Florian Haslinger)**

Discussion of future activities

Potential topics

- *using vDEC to access IMS data / use FDSN to generate “virtual” IMS (may affect WGII and/or WGIII)*
- *coordination of capacity building, training, and outreach*
- *future cooperations (organizational / multilateral / bilateral) to enhance station sustainability and data quality*

Any other business

- opening WG IV mailing list archive also to non-list-members

Ideas for future action / activities

formalize (informally...) coordination of capacity building & training
(mailing list / nominate contact points at FDSN and PTS)

promote & coordinate bilateral support / partnership programs
especially with (but not limited to) countries / institutions that do not have a (strong) seismology program, “orphan” auxiliary seismic stations (those not supported by international networks) in developing countries

- try to get CTBT station hosting institutions to join FDSN?
what benefits can FDSN offer?

cooperate on providing access to CTBT data & products, together / integrated with scientific community data & products

- integrate web-services / access portals
- create “virtual” IMS with all open CTBT stations on FDSN / IRIS

Exchange data & metrics on station problems, equipment failures and data outages

Ideas for future action / activities

Exchange data & metrics on station problems, equipment failures and data outages (David Jepsen's idea)

**Support development of interface(s) to connect "NDC" software (NDC-in-a-box, CD1.x data) to community packages (SeisComp3, Earthworm,...)
(Mark Chadwick's idea)**

A resolution?

The FDSN,

recognizing the mutual benefits arising from close collaboration with the CTBTO/
PTS

- welcomes the current efforts at the CTBTO/PTS to reach out to and seek closer collaboration with the scientific community, in particular with respect to making IMS data and IDC products available;
- offers its support and seeks active cooperation in the development and implementation of data access and exchange mechanisms and tools, and in the coordination of technical training and capacity building programs;
- endeavors to promote and support collaboration between FDSN member organizations and CTBT host country institutions (station operators and National Data Centres), specifically with regard to technical cooperation, capacity building and training.