1996 FDSN MINUTES
May 5-12, 1996
The Hague, The Netherlands
in conjunction with the EGS meeting

The meeting of the FDSN was called to order by Chairman Jean Paul Montagner at 5:10 PM at the BelAir Hotel. Montagner indicated that this was a very important meeting since it marked ten years of the FDSN. Not entirely a coincidence, the first meeting was held in conjunction with an EGS meeting in 1986.

Montagner asked if there were any changes to the agenda before proceeding. Engdahl suggested that the discussion related to station codes might be addressed by the Federation. Butler thought that we needed earlier discussion about the GSE. It was decided to have Butler summarize the situation with the GSE during the first meeting.

The minutes were of the previous meeting were approved with only two minor modifications.

Montagner then proceeded to give the President's report.

Since much of the important business of the FDSN is conducted in its working groups, the meeting then turned to organization of the working group meetings. It was agreed to have Engdahl organize the Station Siting working group. The Data Exchange working group would be organized and hosted by Dost. The meeting then started addressing the Instrumentation Group that had first been organized at the Wellington meeting, but had never met. Concern was expressed at the lack of activity of the instrumentation group. Dziewonski suggested that the scientists should take the initiative on this issue. The idea of convening a workshop in conjunction with a major meeting would be a correct forum. Hanka and Trampert indicated that activity within the European Community was relevant. The issue was tabled until the following Friday meeting about organizing a session on instrumentation.

At the Wellington FDSN meeting there had been discussion about changing the By-Laws as they pertained to the nominating committee. In general there was a consensus to extend the term of the present executive committee until the 1997 IASPEI meeting in Thesaloniki, Greece. The By-Laws committee was established and consists of Engdahl, Romanowicz, Dziewonski and Dost. A draft of their recommendations will be available by January, 1997.

The FDSN meeting then turned to reports of the FDSN member networks.

- Australia - absent
- China - absent
- Czech Republic presented by Jan Zednik. The Czech Republic presently has nine stations that are now digital. They have an AutoDRM system in place. Stations PRU, KHC, and DPC are accessible via AutoDRM. Station DPC is equipped with a Quanterra datalogger and an STS-2 seismometer. MORC uses Geotool and converts miniSEED to CSS format. Zednik's report is attached to these minutes.
- Taiwan - absent
- United Kingdom - absent
- South Africa - absent
- Iran - absent. Montagner mentioned that Ashtiani still has plans for a 48 station network of broadband stations but there were export problems. Nanometrics has installed a network in Iran although not with Ashtiany and the details of the installation are not clear.
- France presented by Jeannot Trampert. IPG-Strasbourg has a network that is operated by three different institutions. They have standardized instrumentation and data exchange. They have 18 bit data streams on their data loggers. Discussion resulted in the conclusion that these data loggers did meet FDSN standards. Engdahl reminded the FDSN that strictly speaking, broadband means that the world wide short period and long period data streams can be extracted from the single VBB stream. FDSN also requires 3 component broadband data.

- France/GEOSCOPE presented by Genevieve Roult. GEOSCOPE presently has two temporary stations ICC and PVC. They are planning to install four more stations during the upcoming year. Two stations (SPB and VOR) will be equipped with STS1 seismometers and 2 stations (HDC and FDF) will have STS2 sensors. GEOSCOPE has four methods of data access.
  1. Autodrm, although a non-standard version
  2. WWW
  3. CDROMs containing data from January 1988 through December 1990.

4. Anonymous ftp
   All data are available through 1995 on JUMBO, their optical mass storage system. There is more discussion in Monday's EGS session. GEOSCOPE has plans for VSAT access to 8 stations; WUS, INU, HYB, ATD, RER, CRZF, PAF, and BNG. This effort is being funded through LDG, connected with the French Ministry of Defense.

- United States - USNSN presented by Bob Engdahl. He indicated that the USNSN information on the station inventory is very up to date. Ahern gave a brief summary as to availability of the data. Basically little progress had been made on SEED data from the USNSN.
- MEDNET given by Alexandro Pino. A new MEDNET station will be installed in Bulgaria the next week. Three new stations in Southern Italy are operating but no data are available yet. One station in Sicily has political problems. MEDNET has a WWW site but no data are available yet.
- ORFEUS presented by Bernard Dost. They started a WWW site in January, 1996. They have off-line data as well as on-line data. Data from 1989-1990 are on-line in a form similar to IRIS FARM SEED volumes. The 1991 data will be on-line in about one week. The data are those available from events with mb greater than or equal to 5.5 for global events or greater than or equal to 4.9 for European events. Two new CDROMs will be available soon. ORFEUS is beginning to look at high density CDROMs. ORFEUS is using SPYDER^{O} to access some MEDNET and GEOSCOPE stations in Europe. QRFEUS runs an AutoDRM for stations in the Netherlands as well as acting as a front-end to SPYDER^{O}.
- GEOFON presented by Winfried Hanka. GEOFON presently operates 25 stations. Fifteen of these are permanent, two are only loosely associated, five are semi-permanent in Alaska, five are in preparation and three are planned. The station BGIO in Israel is going to be relocated. The GEOFON Data Center operates a special SPYDER^{O} system in Europe. It attempts to recover data for events of magnitude 4.5 or greater. There are plans to produce FARM products similar in character to IRIS DMC FARM products.
- United States - IRIS GSN presented by Rhett Butler. Butler summarized new installations since the last FDSN meeting. He also summarized near term plans. Butler mentioned that IRIS is working with Science and Technology Agency (STA) in Japan for cooperative stations in the Pacific Ocean. Butler mentioned that the Hawaii H2O project is funded. Dost asked for clarification about station XAN in China. Butler indicated that this station is now a permanent station of the IRIS GSN.
- United States - IRIS DMC presented by Tim Ahern. Ahern summarized IRIS DMC activities as they are related to the FDSN. The IRIS DMC has assembled all the data for the production of the FDSN CDROMs, has developed FARM products and included FDSN data in the IRIS DMC FARM holdings and it has produced the FDSN station book. Ahern briefly summarized the types of data they presently have, noting the very significant contribution the FDSN holdings make at the DMC. The DMC now receives data from 25 different data sources. The DMC has a total of 1.720 terabytes of broadband data archived in Seattle. These are in nearly 700,000 files. The FDSN contribution (excluding IRIS) totals nearly 160 gigabytes. The DMC had serviced about 18,000 data requests for 1996 at the time of this meeting. 31% of the non-electronic data requests were sent outside the United States, a total of 985 data shipments. Ahern briefly summarized the various methods of contacting the IRIS DMC and making data requests.
- Pacific 21 (formerly POSEIDON) - presented by Seiji Tsuboi. Tsuboi mentioned that the POSEIDON project had received a new name partly due to different sources of funding. Tsuboi summarized the three projects that PACIFIC 21 was associated with.
  1. Project FREESIA- 20 VBB stations in Japan funded by STA
  2. Plume Project, STA funding of VBB stations in the Pacific Ocean
  3. UMI-Honkyu, outside Japan but VBB stations.

Pacific-21 has a GSE2.0 format AutoDRM running for the stations ISG, SHK, TSK, KKJ, and OCS

- Poland - given briefly by Jan Zednik. Zednik mentioned that there are 4 broadband stations in Poland.

Butler gave a brief summary of the GSE - Group of Scientific Experts. All stations in the primary and secondary networks are now defined. The CTBT should be ratified in the next six months. The system will consist of four types of sensors; seismic, hydroacoustic, infrasound and radionuclide. The Treaty language states that all primary stations will be funded and maintained by the treaty organization, auxiliary stations are not funded. Specifically statement 38 says that the costs of transmitting the data to the IDC is the only treaty commitment. Operations and Maintenance of auxiliary stations is not funded in the treaty text. The outstanding FDSN issue is that the GSE will be placing demands on the FDSN stations but not providing any funds. Romanowicz suggests that a series of questions be formulated in a letter and sent to the GSE. The GSE requires 40 sample/second continuous data with an STS-2 or CMG-3 sensor. Dost indicated that the Netherlands is obviously very closely tied to CTBT negotiations and might prove to be a useful conduit for FDSN to convey information to the GSE.

Ahern proposed that FDSN stationary was needed for an effective method for the FDSN to transmit correspondence. He will seek input from the various FDSN representatives and IRIS would be willing to produce the stationary.

Engdahl indicated that the Station Siting Working Group would meet on the next Wednesday at 12:00. Dost indicated that the FDSN working group on Data Exchange would meet on Tuesday evening between 6:00 PM and 8:00 PM. The instrumentation working group will not meet.

The meeting was adjourned at 8:00PM.

Second Meeting of the FDSN

Chairman Montagner called the second meeting of the FDSN to order at 9:05 AM. The attendance was small as reflected in the attached list of attendees. It was recommended that all FDSN members be contacted to insure that they are aware of the next meeting and that they attend. Ahern agreed to send out these letters.

The discussion turned to the membership. The committee of Engdahl, Romanowicz, Dziewonski and Dost will revisit the terms of reference related to membership. Possibilities include
1. A proxy for voting at FDSN meetings
2. Obligations of members
3. Issues about lowering the percentage needed for a quorum
4. Requirements for active membership

Ahern will send out a request for input regarding the modification of terms of reference for the FDSN and forward the comments to the committee.

Report of WG-I presented by Engdahl
Engdahl reviewed the entire FDSN list, identified inactive stations, suggested replacements. The FDSN list has grown to 165 stations. Butler will produce new maps to show the overlap of stations of the FDSN.

The inventory will be modified and updated. There was some confusion related to the terms BB and VBB. This confusion needs to be addressed.

The working group wanted to change the characteristics column to explicitly state the type of instrument installed. The working group also felt that there should be a new column that identifies where the data are available; specifically what data center(s) have the data.

Engdahl will contact David Denham to find out how Australian data are available.

There was discussion about station codes. Engdahl pointed out that SEED has five character station codes and a two character network code. NEIC and ISC can only handle four character station codes. Engdahl suggests that NEIC and ISC need to study this issue and that it is not really a WG-I issue.

WG-I felt that perhaps the FDSN should get involved in the organization of regional networks and data centers in support of multi-scaler networks.

The Station inventory will be complete, showing all stations of all FDSN member networks as well as a subset just showing FDSN stations.

Report of WG-III presented by Bernard Dost.
There were several small issues related to the SEED format specification that were all adopted. These were additions that helped to clarify the format more clearly.

Two special network codes were adopted
SS - for a single station network
XX - for an experimental station, data should never be distributed.

The need for SEED to specify the response for pressure was referred to Halbert for a recommendation.

The working group agreed that Portable Document Format (PDF) would be acceptable as a method of information exchange. The Noise Software (NEST) developed by Luciana Astiz was distributed by IRIS. The noise calculation for new stations must now be done by each FDSN member/network operator rather than by IRIS.

Dost summarized FDSN CDROM issues. The USGS will soon produce the 2nd CDROM soon. This will have March-June 1990 data. The working group felt that the USGS must adhere to a schedule of producing 6 CDROMs per year. Engdahl promised to send information to Ahern (FDSN Secretary) with an update of the status of the USGS effort. These were to be included in the minutes.

CDROM SEED volumes will be available on FARM, networks will be urged to submit data in monthly shipments, most networks are indicating that a delay of 6 to 12 months is normal.

Concern was expressed about the lack of data from FDSN members Australia and Mexico.

Dost summarized the working group recommendations on quality control. Information is exchanged by dataless SEED volumes. Major networks should send QC procedures to the FDSN documenting their quality control procedures.

The GSE AutoDRM was discussed. Dost, Buland and Ahern are members of the GSE working group. The major problem seems to be that this group is moving very fast and it is impossible for the FDSN to have effective input. Ahern provided some input but it was not incorporated into the GSE document. The FDSN will start a data request method that will have additional messaging capabilities for synchronization between data centers.

The working group agreed that SPYDER^{Ò} should distribute data as miniSEED and full SEED. This concluded the report of Working Group III.

Jan Zednik mentioned that PrePROC is available for free distribution now.

There was discussion related to Network Codes for Portable Networks. Ahern stressed the need for coordination in assigning the network codes among FDSN networks. Hanka proposed assigning a block of codes to FDSN members as a solution.

Butler showed a draft of a letter the FDSN will send to the GSE. Montagner suggested also sending a copy to Peter Wylie of the IUGG, and to IASPEI, etc.

Jon Berger will organize the workshop at the IASPEI meeting in Thesaloniki. The title will be Instrumentation in the 21st Century.

Montagner summarized the present activity of ION. There was an ION meeting at the EGS. They will reorganize the Ocean Drilling Program (ODP). It is searching for scientific input and leadership of ODP. They may merge a workshop at IASPEI with the instrumentation group. They are trying to have a special issue summarizing results of the IUGG session on Geophysical Networks. There will be an ION meeting at the ESC meeting in Iceland.

A brief report on ISOP was provided and is attached to these minutes. It was felt that perhaps ISOP should not be an agenda item next year.

It was felt that the FDSN should solicit a report from the Intermagnet and International GPS community at the next FDSN meeting. Montagner agreed to invite Intermagnet and Hanka will invite the GPS community.

We did not identify any new FDSN products.

Ahern reported that there was a meeting of some FDSN members of the NET_REQUEST initiative in which IRIS, GEOSCOPE, GEOFON and UC Berkeley are participating.

It was agreed that the next FDSN meeting would be in conjunction with the IASPEI meeting in Greece. We will attempt to have the first FDSN meeting on the Sunday before the IASPEI meetings begin and the second meeting on the following Wednesday. There was a general consensus to shorten the time between the FDSN sessions each year. Montagner and Ahern will work with Engdahl about the FDSN meeting schedule.

The meeting was adjourned at 11:15AM.

Respectfully submitted

Tim Ahern
FDSN secretary

List of Attachments

1. Agenda
2. List of Attendees
3. Report of the Czech Republic
4. Report of GEOSCOPE
5. Report of GEOFON
6. Report of IRIS GSN
7. Report of IRIS Data Management Center
8. Report of PACIFIC 21
9. ISOP Report

Proposed FDSN Agenda EGS 5-10 May 1996

First business meeting on May 5, 1996 17:00- 19:00 Hotel Bel Air, Grant Zaal
(Hotel Bel Air is 100m left from the Congress Centre)

1. Adoption of the agenda

2. Approval of minutes of 1995 IUGG Boulder meeting

3. Chairman report

4. Appointment of a nominating committee of the executive committee.

5. Reports of members

6. Composition of working groups:
I. Siting plans
II. Data Exchange.
Data centers, collection and exchange formats
III. Instrumentation group.

Symposium celebrating the 10th anniversary of the Federation on May 6.
Symposium Number SE25, Monday May 6, 1996 09:00 - 16:30
Congress Centre, Mesdagzaal 1

2nd business meeting on May 10, 1996
Friday May 10, 1996 Congress Centre, Commissiekamer 9. 09:00 - 18:00 or as needed

7. Membership
new members, new networks
Coordination of Global, regional, national, local, portable BB networks.

8. Reports of working groups.

9. Reports from other organizations:
GSE:
ION: Kiyoshi Suyehiro
ISOP: Bob Engdahl
Others?

10. FDSN products:
    - Station book (Future maintenance)
    - FDSN CD-roms
    - ISOP products
    - New Products (software distributions)
    - Automatic Internetwork Request
    - Others?

11. Next annual meeting

12. Election of a New Executive Committee

FDSN Meeting
The Hague, The Netherlands

List of Attendees
First FDSN meeting
May 5, 1996

NAME	ORGANIZATION	EMAIL
Tim Ahern	IRIS	tim@iris.washington.edu
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List of Attendees
Second FDSN meeting
May 10, 1996

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ISOP Report

1. Low level of activity since the August, 1995 Reduction in Force (RIF) at the USGS.
2. ISOP Office was reestablished at GSS, Eric Bergman's private venture. It is now becoming active again as the GSS office is set up.
3. Japanese GARNET (Global Alliance of Regional Networks) project is providing funding but Bergman

will continue to seek other support through collaboration with compatible projects.

4. The biggest problem with ISOP is not the move to GSS, but the crisis situation at NEIC.NEIS. They are not making expected progress to handle ISOP - type data.
5. Bergman will continue to publish the ISOP Newsletter, and look forward to starting to show up again at the usual meetings.
6. Erik Bergman can be contacted at

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