

Federation of Digital Seismographic Networks

Minutes of Meeting in Vienna, Austria
August 15 and 19, 1991

The following participants were present during most or all of the sessions:

<i>Name</i>	<i>Institution - Network</i>	<i>Country</i>
<u>Members:</u>		
A. Dziewonski	Chairman, Harvard Univ	USA
B. Romanowicz	ILP, Berkeley	USA
R. E. Engdahl	IASPEI, USGS	USA
D. Giardini	Secretary, MedNet	Italy
R.G. Pearce	Edinburgh Univ	UK
B. Dost	ORFEUS	The Netherlands
R. Buland	USGS	USA
K. Muirhead	BMR	Australia
J.P. Montagner	GEOSCOPE	France
T. Ahern	IRIS	USA
P. Basham	CNSN	Canada
M. Gokhberg	Academy of Science	USSR
W. Hanka	GRN	Germany
S. Tsuboi	POSEIDON, ERI	Japan
<u>Observers:</u>		
D. Denham	BMR	Australia
E. Husebye	ORFEUS	Norway
R. Butler	IRIS	USA
A. Morelli	ING, MedNet	Italy
Y. Fukao	POSEIDON	Japan
M. Cara	GEOSCOPE	France
G. Ekström	Harvard Univ	USA
P. Puster	MIT	USA
S. Halbert	USGS/BFEC	USA
M. Hashizume	UNESCO	
T. Kanazawa	Tokyo Univ	Japan
P. Tamle	MIT	USA
R. Hansen	AFTAC/TTR	USA
B. Massinon	CEA/LDG	France

L. Nicolaysen	BPI, Witwatersrand	South Africa
P. Firbas	Geofyz. Brno	Cecoslovakia
A. Plesinger	Czec. Acad. of Sciences	Cecoslovakia
J. Hjelme	KMS-Seismology	Denmark
S. Malone	IRIS-DM	USA
M. Jost	GERESS	Germany
V. Gusiakov	CC	USSR
Yelles	CRAAG	Algeria
R. Green	BPI. Geophysics	South Africa
H. Haah	KNMI	NLD
H. Shimamura	Hokkaido Univ	Japan
M. Baumbach	ZIPE Postdam	Germany
A. Alekseev	Comp. Center Novosibirsk	USSR
A. Gvishiani	ILP	USSR
R. Ateş	Earth. Res. Dept.	Turkey
L. Beranzoli	ING, MedNet	Italy
I. Mac Gregor	NSF	USA
W.J. Mao	Univ Trieste	Italy
C.E. Stuart	Univ. College London	UK
M. Russi	OGS, Trieste	Italy

The following summarizes the discussions held by the Federation over two days. Many items were covered in separated sessions in both days, and a joint summary is given here, which does not attempt to be a detailed record of all the discussions.

1. Adoption of Agenda

On request by the Chairman, matters which need urgent approval or examination by the Working Groups are discussed first. Working Groups convene after the first day of the Federation assembly and report on the second day.

The Agenda is adopted.

2. Adoption of Minutes of 1990 Golden Meeting

The Chairman compliments B. Romanowicz, Acting-Chairman for the Golden 1990 meeting, for the success of the assembly.

One change to the minutes is proposed by the Chairman: at point 12, *Data Centre* should read *Archive and Data Centre*.

The Minutes are adopted.

3. Reports of Members

Each present member of the Federation reports on the current project status and on plans for developments in the next 1-2 years. China is not represented, but has submitted its annual report by mail. Reports forwarded by members are included (Attachment A).

Significant developments to be noted are:

- the installation of the Canadian National Seismic Network is proceeding on schedule; by 1994 the network will be completed, with 7 VBB installations, most of them on the Federation Network;
- Australia is reporting new stations equipped with CMG3 sensors and recording in GSE format, including sites in Macquarie Is. and Antarctica; no centralized distribution is planned;
- GEOSCOPE has upgraded 12 of the 23 existing sites to VBB standards; new and final installations will be in the near future in Chile, Brazil and USSR; distribution of CD-ROM network volumes written in SEED is rapidly progressing;
- with 8 VBB stations, the German Regional Network is a reality, with 3 more to go; a phone connection is available at all stations; data collection is centralized at Gräfenberg;
- MedNet confirms its plan to complete the network of 12 VBB stations by 1992; 8 are active now and 2 more are scheduled within the end of the year;
- ORFEUS and the activities conducted by the ODC in facilitating worldwide data distribution are complimented by the Chairman;
- IRIS efforts to cover the USSR region have been very successful; the IRIS DMC will soon move to Seattle; the on-line archive is now of 6 T-bytes, with 10% of data distribution toward non-US Federation members;
- the US National Seismic Network is running its final tests; USGS expects 20-25 stations within one year and a final distribution of about 40 stations in the Western US and 30 in the Eastern US;
- the installation of stations within the POSEIDON umbrella is progressing; new stations are or will soon be operating in S. Korea, Philippines Is. and Indonesia; plans for a unified POSEIDON Data Centre are still on hold.

4. Report of Working Groups

WG-I: Siting Plans

B. Engdahl, Chairman, reviews global and regional achievements in the last year, and present and planned station distributions; a global map and the list of the stations, as of September 1991, are in Attachment B. Deployment of BB and VBB stations is rapidly progressing, with major improvements in all continental areas of the Northern hemisphere; the distribution is still sparse in the South, with the exception of Australia

and the Antarctic. The number of high-quality digital stations now is well above one hundred, and major improvements are still expected in the next year.

The Chairman requests better notice in case of proposed or planned site, to avoid duplication of efforts. Networks are strongly encouraged to communicate their installation plans via e-mail or on FTP accounts; IRIS DMC will maintain a Bulletin Board for messages from Federation members.

The issue of temporary stations is discussed, on request from B. Dost. The assembly agrees that a complete list of all temporary deployments of stations is not a Federation task, even if these stations comply to the BB standards set by the Federation; it is then decided to invite programs involving temporary but long-time installations, to report station locations to the WG-I on an experimental basis; evaluation will be done at the next annual assembly.

WG-III: Data Collection and Exchange Formats

The assembly agrees to unify under this group the tasks of the SEED and DRM (Data Request Manager) working groups. WG-III is composed by R. Buland (chairman), T. Ahern (secretary), S. Halbert, B. North, B. Dost, A. Morelli, W. Hanka, J.P. Montagner, S. Tsuboi, K. Muirhead and Starovoit.

WG-III met to discuss SEED implementation (the report is in Attachment C), while discussion on DRM is postponed to the next assembly. The SEED report was lively discussed by the assembly, covering three main issues.

- (a) SEED is a general format, with many applications in seismology and geophysics; the concern of the Federation is the implementation of a Federation SEED. Contacts should be maintained with groups working on different implementations of SEED. The general consensus of the assembly is that the SEED manual should describe the more general SEED, with addenda covering the specific SEED implementation of the Federation.
- (b) While some members request that SEED be frozen in its present form to ease its implementation, the general view is that SEED needs to remain open to changes, which by now concern only minor items, most often regarding fields or blockettes not yet used or discovered to be incorrect in the original formulation. The assembly agrees that future changes should be transparent to present SEED readers and approved by the whole Federation assembly upon discussion in the WG-III.
- (c) Future users of SEED, for different types of data, should adhere to the present SEED format.

An open meeting is tentatively scheduled in occasion of the IASPEI assembly in New Zealand in 1994, to cover topics related to the implementation of SEED.

WG-IV: Data Centres

The assembly agrees that the WG-IV has fulfilled its task and is dissolved.

5. Federation CD-ROM

The production of the first Federation volume on CD-ROM, scheduled for distribution by the USGS at the Vienna IUGG assembly and containing data for October-December 1989, has been delayed.

R. Buland summarizes the schedule and strategies of USGS regarding data distribution. USGS is presently processing data for March 1987 for CD-ROM release, using the GDSN format. Data from 1988 on will be on SEED format and USGS expects to complete production of the 1988 volumes within the summer of 1992. All CD-ROM are presently released under the Federation banner.

The production of the special 1989 Federation volume was delayed because many data were missing or in incompatible, non-SEED format. Furthermore, the USGS is afraid that any additional assemblage of data might slow its efforts to bring the release of CD-ROMs on schedule, and would prefer to cancel the production of the 1989 Federation volume until its due time in the present USGS schedule.

However, the Chairman underlines and the assembly approves that the USGS had freely offered to produce a Federation CD-ROM for October-December 1989 in SEED as a test for all networks and that this release should be completed as soon as possible. The Chairman suggested that he would discuss this matter with dr. John Filson, the new Chief of the Global Seismology Branch of the USGS.

Three technical items concerning the future release of Federation volumes are discussed:

- (a) event selection and data requests for inclusion in the volumes is done at USGS using USGS thresholds; the WG-III is asked to explore new ways to select events, in addition to traditional m_b ;
- (b) the Federation CD-ROM is defined to contain only data for the Federation Network; WG-I will discuss the issue of data distribution for those stations not included in the Federation list;
- (c) the Federation Archive at IRIS DMC could provide data to the USGS for inclusion in the CD-ROM, to speed operations and avoid duplication of data transfer.

6. Federation Network

The assembly agrees that the Federation Network needs to be annually redefined, taking into account recently deployed stations and on the basis of geographical distribution and quality. A committee is named by the Chairman to review annually the list of stations to be included in the Federation Network and distributed for that year in the Federation CD-ROM volumes. The committee is composed by B. Engdahl (chairman), R. Butler, D. Giardini, J.P. Montagner, Shimazaki and M. Gokhberg.

The map of the Federation Network, reviewed for 1991, is in Attachment D; the stations are listed in Attachment B. The Federation Network contains now 101 stations; 10 new stations have been added since 1990 and 3 have been deleted. Better coverage is to be noticed in the Arctic, Antarctic and Western Pacific. POSEIDON is asked to name one of its stations in Japan for inclusion in the Federation list.

7. Station Book

The efforts to finalize the format for the production of the Federation Station Book are continued by J. Hoffman. T. Ahern will chair a group, yet to be named, to formulate and circulate specifications among Federation members and to produce the volume by next meeting.

8. ISOP

A report is given by E. Engdahl on the ISOP meeting held in Denver in March 1991 and on plans for ISOP implementation. The four-days meeting saw the participations of several Federation representatives and many network operators, and was instrumental in covering topics like technical specifications of hardware and software, desired parameters and characteristics of the final product, project schedule, relationship between large instrumental programs and single observatories and between digital and analog technologies. A complete report has been circulated among Federation members.

The Chairman asks all members to consider ways to enhance participation in ISOP, which is tentatively set to begin in 1994.

9. Ocean Seismic Network

The Chairman reports on recent experiments conducted by Federation members in ocean bottom seismometry and on future plans for the OSN. OSN-1, the first OSN designated experiment, was conducted off the coasts of Hawaii in March 1991; OSN-2 is planned during ODP Leg 136, with a 330 m hole devoted to broad-band seismic experiments, dug in 100 Myr old ocean basalt.

Another possible experiment will be the hole NW-1 on ODP Leg 145 in the NW Pacific, scheduled for the fall of 1992, with the possibility for a 4 days experiment including the installation of a re-entry cone. A joint proposal by the OSN and Japan has been submitted, and a letter of support for this initiative is approved by the Federation assembly (Attachment E).

10. GSE

A report by P. Basham covers the activities of the Group of Seismic Experts of the Conference of Disarmament of Geneva and on its last Technical Test GSETT-2, conducted over 42 days in April-May 1992.

The GSETT-2, whose final evaluation will be completed in March 1992, involved the participation of 34 worldwide stations, with telemetered data transmission to the four designated international data centres in Sweden, USA, USSR and Australia; daily bulletins were prepared and redistributed to all participants within 7 days.

The Conference on Disarmament will likely request some continuation of the GSE activities, but no plans are yet available.

11. Federation Archive

The assembly confirms the designation of the IRIS DMC as the first Federation Archive, agreeing on the definition of archive as a centre which has the responsibility to keep a

complete copy of available data for distribution; while each Federation member maintains its own archive and data centre, the IRIS DMC has taken the responsibility of providing an archive service to all Federation members.

To improve this service and ensure mutual agreement between IRIS and Federation members, an Archive Advisory Committee is formed, including representatives to be named from IRIS/USGS, GEOSCOPE, POSEIDON, MEDNET, CNSN and ORFEUS; B. Dost agrees to chair the group. In addition, IRIS is asked to invite a Federation representative on its Standing Committee as a liason.

12. Election of Executive Committee for 1991-1993

A nominating committee, composed by drs. E. Engdahl, P. Basham and D. Denham, was nominated by the Chairman at the beginning of the meeting, with the approval of the assembly. The new slate of officers named for the Executive Committee for the 1991-1993 period is composed by:

Adam M. Dziejowski	Chairman
Jean Paul Montagner	Vice-Chairmen
Yoshio Fukao	
Bob Engdahl	IASPEI Representative
Barbara Romanowicz	ILP Representative
Domenico Giardini	Secretary

The new Executive Committee is unanimously approved by the assembly.

13. Next FDSN Annual Meeting

The next annual meeting of the Federation will take place on December 5-6, 1992 in Seattle (Oregon, USA); it will be hosted by the new IRIS DMC facility – and site of the Federation archive – in conjunction with the AGU Fall Meeting to be held in S. Francisco on December 7-11, 1992.

Adam M. Dziejowski
Chairman

Domenico Giardini
Secretary