

FEDERATION OF DIGITAL BROAD-BAND SEISMOGRAPH NETWORKSMinutes of Meeting at Vancouver, 9 & 13 August, 19871. Present:Members:

M.J. Berry	Chairman	G.S.C., Canada
A. Dziewonski	Vice-Chairman	Harvard University, U.S.A.
B. Romanowicz	Vice-Chairman	I.P.G., France
H. Aichele	Member	F.R.G.
P.W. Basham	Member	Canada
R. Butler	Member	IRIS, U.S.A.
D. Denham	Member	Australia
E.R. Engdahl	Chairman WG I	IASPEI
Y. Fukao	Member	Japan
E.S. Husebye	Member, Chairman WG IV	ORFEUS
R.P. Massé	Member	U.S.G.S., U.S.A.
R.G. Pearce	Member	U.K.
J. Scheimer	Chairman WG III	IRIS, U.S.A.
S.W. Smith	Member	IRIS, U.S.A.
Xu Shaoxie	Member	Peoples Republic of China

Observers:

A.S. Alekseev	Observer	U.S.S.R.
K. Fuchs	President	ICL
A.D. Gvishiani	Observer	U.S.S.R.
E. Hurtig	Observer	G.D.R.
K.E. Johnson	Observer	U.S.G.S., U.S.A.
R.M. Kebeasy	Observer	Egypt
W. Kondorskaya	Observer	U.S.S.R.
Z. Ndontoni	Observer	Zaire
A.R. Ritsema	Observer	The Netherlands

- The Chairman opened the meeting, welcoming those present and in particular: Dr. Pearce, the representative of the United Kingdom, and a new Member of the Federation; and, Academician Alekseev, Professor Kondorskaya, and Dr. Gvishiani, observers representing the U.S.S.R..
- Members' Reports

Each of the Members present briefly reviewed the current status of their Networks and their immediate and future plans for further network development. All Members were asked to provide the Chairman with a brief written report (those currently available are included in Attachment A).

Particularly noteworthy at this time are the ambitious plans being developed for Japan -- "Project Poseidon". This project envisages a network of stations covering the landmass and ocean bottom of the western Pacific/southeastern Asia. Dr. Fukao explained that he and his colleagues would be approaching other seismologists from the western Pacific and east/southeast Asian regions to discuss how the organization and operation of the planned Network might best be carried out.

Dr. Massé explained the plans for developing a broad-band national, telemetered network for the U.S.A.. He also noted that the U.S.G.S. is considering modifying to the U.S. network standard, some of the W.W.S.S.N. stations that will not be upgraded by IRIS to the full Federation Global standard (VBB).

Dr. Dziewonski reported that the question of ocean bottom observatories had been carefully considered at the recent COSOD II meeting (Attachment B). He noted that there was now support within the Ocean Drilling Project for the development of such observatories and that this might provide a means for the deployment of seismographs remote from land.

4. Reports of Working Groups

i) WG I - Siting Plans

The Chairman of Working Group I, Dr. Engdahl, presented figures showing the location of existing, planned, and proposed broad-band digital stations. He noted that the Federation has been successful in encouraging the seismological community to deploy very broad-band stations and that if all plans come to fruition, there will be a relatively dense global network within five years.

Members noted that while the globe generally will be well covered in the foreseeable future, the most notable "blank" on the map was the territory of the U.S.S.R. Members encouraged the Soviet observers to consider the possibility of joining the Federation.

Members noted that the station density for some regions (e.g., Europe) was much greater than for other regions. It was agreed that this would have beneficial effects for regional studies and would in addition allow particular kinds of global studies. Those countries planning networks within their borders as components of regional networks were warmly encouraged in their efforts.

ii) WG II - DBBS Specifications

In the absence of its Chairman the Committee considered the need for further refinement of the general specifications provided by Dr. Wielandt for the San Francisco meeting of the Federation. After discussion it was agreed that the general description provided by the system response graph, was an appropriate and operational specification for the global and regional seismograph stations of the Federation (Attachment C).

iii) WG III - Data Collection and Exchange Formats

The Chairman, Dr. Scheimer, tabled a comprehensive draft set of notes detailing data formats primarily for data exchange, but also including proposed formats for seismograph stations and data centres. As many Members of the Federation had not had an opportunity to consider this material before the meeting, it was agreed that the Federation should meet again later during the I.U.G.G. Assembly.

iv) WG IV - Data Centres

Drs. Husebye and Massé tabled a report proposing a hierarchical scheme for the collection and distribution of network data. The report, an elaboration of an earlier one tabled in San Francisco, envisages national data centres collecting data from their stations and contributing these to regional and/or international centres. After appropriate collation the international centres would then distribute data back to regional and hence to national data centres for their distribution to seismologists and research institutions. Considerable discussion ensued on the volumes of data and the difficulties that might be anticipated in archiving the complete data from a Federation Network made up of all available stations meeting Federation minimum specifications. Some Members felt that it was now timely to identify a "Federation Network" that would be made up of selected stations from the networks of Federation Members. Other Members present felt that such an exercise at this time might discourage the development of regional broad-band networks and that, therefore, such an exercise should be delayed until it was really necessary. Further discussion was delayed until the subsequent meeting.

5. Relationship with Commission on Practice of IASPEI

The Chairman and Dr. Engdahl explained to Members that with the creation of the Federation there was now some overlap between its activities and those of the Commission on Practice. Strictly, the activities of the Federation do not duplicate those of the Commission as membership in the Federation is limited to interested institutions operating broad-band networks, while the Commission is open to all practising seismologists. In practice, of course, there is considerable overlap with many of the same topics being considered by potentially many of the same seismologists. The Chairman suggested that some of the more purely technological aspects of the program of the Commission could be transferred to the Federation for its consideration, but appropriate liaison could be ensured by having the Chairman of the Commission, ex-officio, a member of the Federation's executive Committee. Members agreed to the suggestion.

6. Geneva Network

Basham briefed the Committee on the current work of the Group of Seismic Experts of the Committee on Disarmament at Geneva. He noted that the Group had until recently been discussing the exchange of parameter data with waveform data available only upon request. However, since 1986 there has been a more general recognition that exchange of waveform data in the first instance will be an essential component of any effective monitoring operation. Some Members inquired as to the relative capability of the proposed Geneva Network compared to that currently available from the existing stations (over 1500 reporting to ISC regularly). Basham agreed that the proposed 50 station Geneva network would not be able by itself to monitor the low levels achievable using all stations. He noted that this issue would have to be addressed in due course, but that rapid (24-48 hour) access to station data would be of paramount importance.

7. New Members

The Chairman once again noted that the United Kingdom has now joined the Federation as a Member and that he was anticipating that Italy would be joining and sending a representative to the second meeting of the Federation at Vancouver. Several Members reiterated their hope that the U.S.S.R. would choose to join in the near future.

8. Working Groups

The Chairman noted that some Members had not yet nominated representatives to the Working Groups of the Federation. He suggested that this was essential if Members were to participate fully in the development of Federation policy and practice. At this time the WG on Siting Plans, Data Collection and Exchange Formats, and Data Centres are active.

Action: Members

9. The meeting adjourned with a second meeting of the Committee scheduled for August 13, 1987, at Vancouver, at 1200 hours.

Minutes of Second Meeting at Vancouver, 13 August, 1987, 1200 hrs

1. Present:

Members

M.J. Berry	Chairman	G.S.C., Canada
B. Romanowicz	Vice-Chairman	I.P.G., France
H. Aichele	Member	F.R.G.
P.W. Basham	Member	GSC
R. Engdahl	Chairman WG I	I.A.S.P.E.I.
D. Giardini	Member	Italy
E. Husebye	Member, Chairman WG IV	ORFEUS
R. Massé	Member	NEIC/USGS
R. Pearce	Member	University College, Cardiff
J. Scheimer	Chairman WG III	IRIS
S.W. Smith	Member	IRIS
Xu Shaoxie	Member	Peoples' Republic of China

Observers

V.K. Gusiakov	Observer	U.S.S.R.
J. Hjelme	Observer	Denmark
E. Hurtig	Observer	G.D.R.
K. Johnson	Observer	USGS EDC-A for Seis.
C. Lomnitz	Observer	Mexico
R. Phinney	Observer	IRIS

2. The Chairman opened the second meeting welcoming Dr. Giardini the representative of Italy, a new Member of the Federation.

3. Data Formats

Dr. Scheimer briefly reviewed the document distributed at the earlier meeting and after brief comments by Members it was agreed that further careful review by technical experts was required. It was agreed that Members would send their technical comments to Dr. Scheimer by October 16 and that he would arrange to have these incorporated and a revised document circulated to the membership by early November. He would then convene a meeting at Albuquerque on December 3rd, 4th, and possibly 5th, immediately prior to the Fall AGU in San Francisco. The purpose of the meeting would be for all Members of the Federation to have an opportunity to consider in detail the proposed formats and for the Working Group to produce a document acceptable to all. It was agreed that this matter would then be brought forward to the next meeting of the Federation in 1988 at which time it was hoped that it could be adopted as a Federation standard. Several Members stated that they were anxious for such a standard to be agreed upon and that, while it might prove difficult to wait for a further 12 months, this was tolerable provided that a true consensus could be reached.

Action: Scheimer/
Members

Data Centres

Dr. Massé explained to Members that the USGS/NEIC/WDC-A was prepared to distribute event data from Federation stations to the seismological community at large. He noted that his organization was now distributing earthquake digital data for events greater than magnitude 5.5 from the global digital seismograph stations made available to NEIC. The data are being distributed on compact disc (CD-ROM) and he suggested that this would provide an excellent medium for the distribution of event data from the Federation Network of approximately 100 stations.

Further discussion emphasized that technology was not yet available to easily store the continuous waveform data from a full Federation network, but it was anticipated that this would be possible within 2 or 3 years. In view of this it was agreed that the question of an archive of all Federation data should be deferred, but that concrete plans should be developed to allow the Federation to accept the generous offer of the USGS/NEIC/WDC-A, for the distribution of event data.

Action: Chairman/
Massé

4. Open Stations

Dr. Giardini explained the plans of his organization to install a broad-band network around the Mediterranean to provide improved coverage of the region and particularly coverage of Italy. He noted that there was room for cooperation between the Italian Network and other regional or global networks to avoid unnecessary overlap in the siting of stations. He also suggested that it would be most valuable for countries to have ready access to a limited number, about 10, of global broad-band stations. He suggested that perhaps each network could arrange to make some of their stations open to the international community for dial-up at any time. It was agreed that this was a sensible suggestion and that the matter would be brought forward for consideration at the next Federation meeting.

5. Next Meeting

It was agreed that the next meeting would be in Europe, possibly immediately before a planned SEDI meeting.

Chairman's comment -- SEDI meeting is now combined with Mathematical Geophysics Commission Meeting and scheduled for June 20-25, 1988, in Spain.

6. There being no further business the meeting adjourned at 1330 hrs.