



Minutes for the FDSN opening plenary

22 August 2021

Online, India

Attendees:

Sergio Barrientos (DFG, CHILE)	Lars Ottemöller (Univ. Bergen, Norway)
Reinoud Sleeman (KNMI/ORFEUS)	Öcal Necmioğlu (KOERI, Turkey)
Xyoli Pérez-Campos (UNAM, Mexico)	Rob Casey (IRIS, USA)
Johannes Schweitzer (NORSAR, Norway)	John Clinton (ETH, Switzerland)
Wen-Tzong Liang (Inst. Earth Sciences, Taiwan)	Kent Anderson (IRIS, USA)
Jerry Carter (IRIS, USA)	Dmitry Storchak (ISC)
Nikolaus Horn (ZAMG, Austria)	Chad Trabant (IRIS, USA)
Carlo Cauzzi (ORFEUS, Europe)	Michelle Grobbelaar (CGS, South Africa)
Hugh Glanville (GA, Australia)	Tim Ahern (EarthScope-Oceans, USA)
Javier Quinteros (GFZ, Germany)	

Minutes:

Sergio Barrientos chaired the meeting

1) Welcome and Introductions

Sergio welcomed everybody to the opening plenary of the FDSN.

2) Adoption of the agenda

The agenda was adopted by the representatives attending the meeting.

3) Message from the chair

The chair thanked everyone for attending and those presenting during the meeting even though it has been difficult past few years in every sense; from the operations of networks and doing one's daily work, to conducting meetings.

We should try to use this opportunity for the advancement of the FDSN work.

Our thoughts are with those who have been personally affected by the pandemic.



4) Regional FDSN reports

1. **Europe** – Carlo Cauzzi presented the report.
The report covered the activities of ORFEUS and its associated institutions and data centres. The report covered activities in raw waveforms and station metadata, data archive, strong motion systems and databases, as well as activities in community services. The documentation for station XML has been completed together with IRIS.
2. **Asia** – Wen-Tzong Liang presented the report
Taiwan is going to release all seismograph data and there are more than 760 stations in this small island country. Asia is not unified with respect to a backbone of all networks, such as Philippines, where some stations are not available and China and India. FDSN should approach India and the other countries.
3. **Africa** – Michelle Grobbelaar presented the report on behalf of the AfSC
The report covered the activities carried out within Africa, specifically the meetings, training courses and publications.
4. **Latin America and Caribbean** – Xyoli Pérez-Campos presented the report.
The report covered the network information from: Argentina, Bolivia, Brazil, Chile, Columbia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Cayman Islands, Mexico, Nicaragua, Panama, Uruguay, Venezuela.
5. **North America** – Jerry Carter presented the report.
The report covered the FDSN activities at IRIS which has 105000 stations in archive with 15000 permanent stations and one on Mars. Currently there is 730 terabytes of data and it continues to grow. More than one petabyte of data is distributed, primarily through FDSN web services. FDSN network stations in North America showed over 95% data availability, mainly BHZ stations. IRIS continues to encourage registration of data centres. In additions, Mustang continues to be used for QA metrics. FDSN DOI tool has also been created.

5) Current Status and improvements of the System of Federated Data Centers? – encourage more data centres (Chad/Jerry)

The report presented a map of 19 data centres in registry across the world. The IRIS DMC has not used this registry automatically yet but information is synchronised. The features are: data centres can control and updated their own entries and information and IRIS can not add entries on behalf of data centres. There is only one preferred data centre for a given data set, which is valuable for future federating efforts. It is easy to update and maintain information, and both FDSN and non-FDSN services can be listed. How do we continue to encourage data centres to register? Perhaps advertisement of the registry at many levels?

Possible improvements going forward is to look into identity management (login and password for restricted data). Perhaps FDSN standards for identity management should be established?



6) Data licensing policy (resolution in second plenary) (Jerry)

Optimise the reuse of data, metadata should be released with clear data usage licence. FDSN pursue free and open access and encourage data providers to open data. Develop procedures for handling data licensing. Many different data licensing, CC-0 (open), CC-BY (credit creator of data), etc. Recommend FDSN to encourage FDSN operators to license data and metadata according to FDSN goals. It is suggested that metadata free and open but data could be either open or for attribution. Also include license data information in metadata and DOI to inform the recipient.

7) Working Group updates (preview of WG meeting issues)

Each WG will formulate recommendations and report back at the closing plenary on Thursday 26 August 2021.

7.1 WG I: Wen-Tzong reported that they will be meeting on Monday, 23 Aug @ 16:45-18:45 (IST) and will look at station selection guidance, quality of permanent stations and backbone FDSN stations.

7.2 WG II: Javier reported that they will be meeting on Monday, 23 Aug @ 20:15-22:15 (IST), and will review action items, metadata for legacy data, GNSS data integration, proposal for MiniSEED 3, stationXML roadmap.

7.3 WG III: Chad reported that they will be meeting on Tuesday, 24 Aug @ 20:15-22:15 (IST) and will be review Seedlink 4 review proposal, authentication for all FDSN web services.

7.4 WG IV: Michelle reported on behalf of the chair that the group will meet on Wednesday, 25 Aug @ 16:45-18:45 (IST) and will review the action items from last meeting, activities since last meeting and there will be a CTBTO presentation.

7.5 WG V: Chad reported that they will be meeting on Wednesday, 25 Aug @ 20:15-22:15 (IST), and will review a way to move forward to address rapidly changing metadata.

8) Membership

8.1 New members since last meeting (acknowledgement)

- the University of Bergen
 - Voted November, 2020
- the University of Memphis
 - Voted November, 2020
- Institute of Physics of the Earth (IPE), Masaryk University
 - Voted November, 2020
- EarthScope-Oceans



- Voted August, 2021
- National Survey for Seismic Protection - Armenia
 - Voted August, 2021.

8.2 Pending applications and potential votes

University of Beira Interior, in Portugal.

There is a concern that it may be premature to vote for their membership and perhaps we should rather wait until data transfer is established. As part of their project SHAZAM (Seismicity and Hazards of the sub-Saharan Atlantic Margin), they are installing four stations in Sao Tome and Principe islands, Gulf of Guinea. The stations have been installed, and they are working on the stabilization of real-time data transfer.

It was decided that the applicant should be requested that the PI should apply for membership.

9) Executive Committee Election

9.1 Positions to fill

The current positions which are up for elections are Chair, secretary, WGI chair, WGV chair and WGV vice chair.

9.2. Nominations received so far, and call for nominations

Chair - Michelle Grobbelaar

Secretary – none

WG 1 - Chair: Wen Tzong Liang

WG 5 - Chair: Wayne Crawford

- Vice Chair : Kent Anderson

10) The meeting was adjourned at 22:15 (IST)



FDSN 2nd Group Plenary

4 August 2017

Kobe, Japan

Attendees:

Xyoli Perez-Campos (UNAM, Mexico)	Ulubey Ceken (AFAD, Turkey)
Reinoud Sleeman (KNMI/ORFEUS)	Eren Tepeugur (AFAD, Turkey)
Tormod Kvaerna (NORSAR, Norway)	Mark Chadwick (GNS Science, New Zealand)
Domenico Giardini (ETH, Switzerland)	Wayne Crawford (IPGP)
Wen-Tzong Liang (Inst. Earth Sciences, Taiwan)	Goran Ekstrom (LDEO, Columbia Uni)
Seiji Tsuboi (JAMSTEC, Japan)	Marcelo Assumpcao (USP, Brazil)
Peter Voss (GEUS)	Trine Dahl-Jens (GEUS)
Jose A. Jara (ICGC)	Timo Tiira (Uni. Helsinki)
Catherine Lequegual (Resif)	Bruce Beaudoin (IRIS PASSCAL, USA)
David Jepsen (CTBTO, Austria)	Tim Ahern (IRIS, USA)
Bernard Dost (KNMI, Netherlands)	Wolfgang Lenhardt (ZAMG, Austria)
Michelle Grobbelaar (CGS, South Africa)	Florian Haslinger (SED/ETH, Switzerland)

Minutes:

The meeting was again chaired by Göran Ekström.

0) Discussion and Adoption of agenda

The agenda was adopted.

1) Executive committee election

No extra nominations were received since the first plenary on 30 July 2017.

The following people were unanimously voted (no objections and no abstentions) into the corresponding positions:

Chair: Sergio Barrientos

Secretary: Michelle Grobbelaar

WGI: Wen Tzong Liang

WGII: John Clinton

WGV: Bruce Beaudoin

WGII (vice): Chad Trabant

2) FDSN action by email vote

Goran reiterated that there seems to be a problem with decisions being made every 2 years because it hinders the works which is to be done between meetings. Thus, Goran suggested



that the ToR of FDSN be changed as follows in red and all members voted in favour of the changes:

III. Membership and Organization

- Membership in the FDSN is open to national and international organisations committed to both the development and operation of the broadband digital networks as well as organisations involved in management of data from digital seismograph networks consistent with the goals of the Federation. It is required that each network member will contribute digital waveform data, preferably in real time, from at least one station to the FDSN Archive for Continuous Data as well as to appropriate FDSN Regional Data Centers.
- The structure of the FDSN includes a steering committee and an executive committee.
- The members of the FDSN steering committee will consist of one representative per member organisation who will be appointed or selected from within the organization they represent.
- The members of the FDSN steering committee elect an FDSN executive committee. The executive committee will coordinate the activities of the Federation between meetings and is responsible for the organization and coordination of the steering committee meetings. Members of the FDSN executive committee are elected for a four-year term.
- The FDSN executive committee is headed by a chair, who will be assisted by a secretary and the chairs of all FDSN working groups. The chair of the executive committee will preside over the meetings of the steering committee. Members of the executive committee shall be elected from within the steering committee or the member organizations. Elections **to the executive committee** take place during steering committee meetings.
- The FDSN steering committee will form all necessary working groups or special technical committees as required to achieve the objectives of the FDSN. Each working group or special technical committee is headed by a chair.
- The FDSN steering committee will deliberate at least once every two years. Special meetings may be called by the chair as necessary for the progress of the FDSN.
- **With unanimous executive committee consent, proposed FDSN recommendations and actions can be put to steering committee vote via email. A response deadline of no less than three weeks following the distribution of the ballot must be specified. The ballot will be distributed via the fdsn-representatives@lists.fdsn.org email list.**
- Concerning all recommendations made and actions to be taken, each steering committee member of the FDSN will have one vote. A majority of 2/3 voting members will be required for an affirmative vote. **Ten** members of the FDSN will constitute a quorum for FDSN steering committee meetings **and email votes.**
- No fees are imposed but voluntary contributions may be requested to cover costs for communications and for organisation of FDSN meetings.
- Any member may resign six weeks after giving written notice to the chair.

3) WG reports and recommendations (see attached reports)

WG1 – the chair presented the report and recommendations. The following recommendations/actions were noted:

- 1. The current definition of the FDSN backbone station is distributed to WG-I mailing list and will be discussed in WG-I mailing list to determine if the definition should be amended to expand/contract a number of backbone stations.**
- 2. Station inventory will not be updated anymore and the member networks should keep a link to each data center in the station XML.**
- 3. There is software to maintain station information which may be useful to update the FDSN station book. It should be checked.**



WG2 – the chair presented the report and recommendations. The following recommendations/actions were noted:

1. **Release a minor version update of StationXML**
2. **Work on a major revision of StationXML related to future developments of mini-SEED.**
3. **Involve OBS community in discussions on, and development of StationXML and the future of mini-SEED.**
4. **EIDA document on quality control was circulated in the mailing list and it seems like the definitions are consistent with IRIS-DMC and will deploy further testing**
5. **Agreed that MSEED2 will remain an accepted FDSN standard, but will continue working on the Development Requirements Document/List of the new format**

WG3 – the chair presented the report and recommendations. The following recommendations/actions were noted:

1. **Investigate with GEMPA about the possibility of adding the matchtimeseries feature to SeisComp3. General consensus was to add matchtimeseries as an “optional” parameter in the station service.**
2. **QuakeML be made an FDSN standard and managed within WGII.**
3. **See if the three services (availability, timeseries, and timeseriesplot) can be added to SeisComp3 if funding can be found.**
4. **Look at the DOI form and see if all required metadata supported to be on the FDSN form from which DOIs are minted. Adjustments in the form may result.**
5. **Continue contacting organisations to become federated data centres. This would mean they still have control over their data, rather than sending it to another data centre where control could be lost.**
6. **Explore building a working group to work on the issue of a registry for FDSN services.**
7. **Further discussion related to the use of https should be handled via email, but that a time limit should be imposed to allow for closure. Suggest a 3 month time limit**

WG4 – Goran presented the report and recommendations on behalf of the chair. Three actions/recommendations were identified:

1. **Complete inventory of IMS data in FDSN archives**
2. **Develop ideas for training/workshops with CTBTO support/participation**
3. **Follow up on national contacts with objective of opening up data from IMS stations**

WG5 – the chair presented the report and recommendations.

The following recommendations/actions were identified:

1. **Identify a small working group to develop proposal for SOH channels.**
2. **Send list out of current methods used by various facilities to correct clock drift for feedback.**
3. **Put together a small working group to develop a short decimation summary paper. Suggested that it would be useful to engage the ObsPy group.**



4. **Send out request for new and updated content for the Web Page (QC tools, stationXML, inventory)**

4) Other Business

4.1 FDSN web pages

Goran appealed to the WG chairs to keep the web pages up to date and suggested the following action items:

- Put 2017 minutes and presentations on the FDSN web site (WG chairs)
- Review of FDSN web site to update and remove bad links (WG chair)
- Review information on members and representatives. Put names of representatives on the web site (not personal contact info.) Göran and Michelle

- 5) The meeting adjourned at 14:00.