

Working Group Reports

Plenary 2

FDSN WGI Meeting Report

Wen-Tzong Liang WGI Chair and Luděk Vecsey WGI Vice Chair

Working Group I Meeting

- MCC 513D 12:00-13:30 Friday July 13, 2019



22 members attended in the meeting



- MCC 513D 11:30-11:50 Sunday July 15, 2019 (small group discussion)

WGI Meeting Agenda

- 12:00-12:05 Review and Approval of the 2017 Minutes from Kobe
- 12:05-12:15 A quick FDSN station performance report
- 12:15-13:00 Review of the Definition of the FDSN Backbone Stations
 - Do we need to revise the definition?
 - Should we increase the number of FDSN Backbone Stations?
- 13:00-12:20 Replacement of the FDSN station inventory?
- 13:20-13:30 Other business
- 13:30 Adjourn

Revision of the definition of FDSN Backbone Stations

- A subset of stations with **broad geographical distribution**, composed of the **highest quality broadband stations** available in as many geographic parts of the world as possible.
- This definition is complemented with **guidance** to assist working group with the implementation of station selection. (see next slide)
- The ultimate goal is to have 300-500 high-quality FDSN Backbone Broadband Stations with nicer global coverage.
- List of FDSN Backbone Stations will stay static (closed stations will be kept in the list).

Guidance for FDSN Station Selection

- **Broadband** permanent station with data stored **continuously** or transmitted in **real time** (preferred)
- **Global coverage**
 - broaden international participation, every FDSN member should designate at least 1 station from their network
 - Enhanced coverage in **seismogenic zones**
 - **300-500 backbone stations**
- **High-quality data and metadata**
 - low ambient noise level
 - high data availability
 - precise metadata in FDSN standard formats, preferable stored in one of federated datacenters

Procedure to densify FDSN Backbone Stations

- Encouraging each FDSN member network/data center to send in their metadata in XML (StationXML) to any federated data center through mailing list.
- Begin with 3 major global seismic networks (GSN, GEOFON, GEOSCOPE) whose instrumentation standards and metadata are relatively more reliable.
- Adding regional stations in the desired area on the basis of the guidance. Only those stations, whose metadata has been archived at federated data center, will be considered to be part of the FDSN backbone stations.
- To develop a QC mechanism for evaluating FDSN station performance across seismic networks, mostly with help of IRIS Mustang, EIDA WFCatalog or a new FDSN Availability service, whenever possible.
- Evaluating FDSN station performance every 2 years.
- The densified FDSN backbone stations will be proposed in the next FDSN meeting.
- Once the FDSN backbone stations has been updated, we may officially announce this news in EOS.

Station book

- The station inventory of all networks, permanent or temporary, is no longer maintained. The Working Group I will not provide this information any more.
- Instead, the corresponding data centers should submit their relevant metadata to any federated data centers to be accessible by the IRIS MDA service.

Revising the WG I webpage

- We need to revise the section of “Areas of interest to the working group”
- Remove not valid references (web links) “View listing of FDSN stations” and “2013 FDSN Network List (Excel file)”
- Add new references such as to “[_FDSN](#)” virtual network in IRIS-MDA
 - Currently, there are **214** FDSN Backbone Stations according to the IRIS virtual network web service at:

http://service.iris.edu/irisws/virtualnetwork/1/query?code=_FDSN&format=CSV

Appendix:

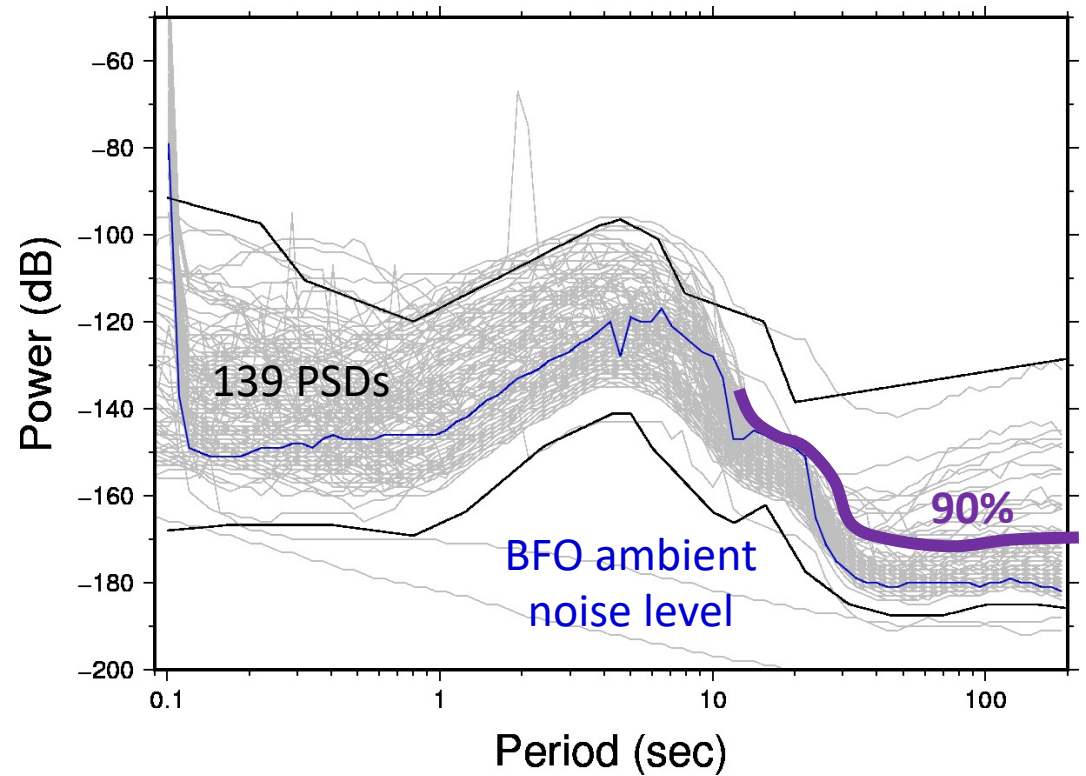
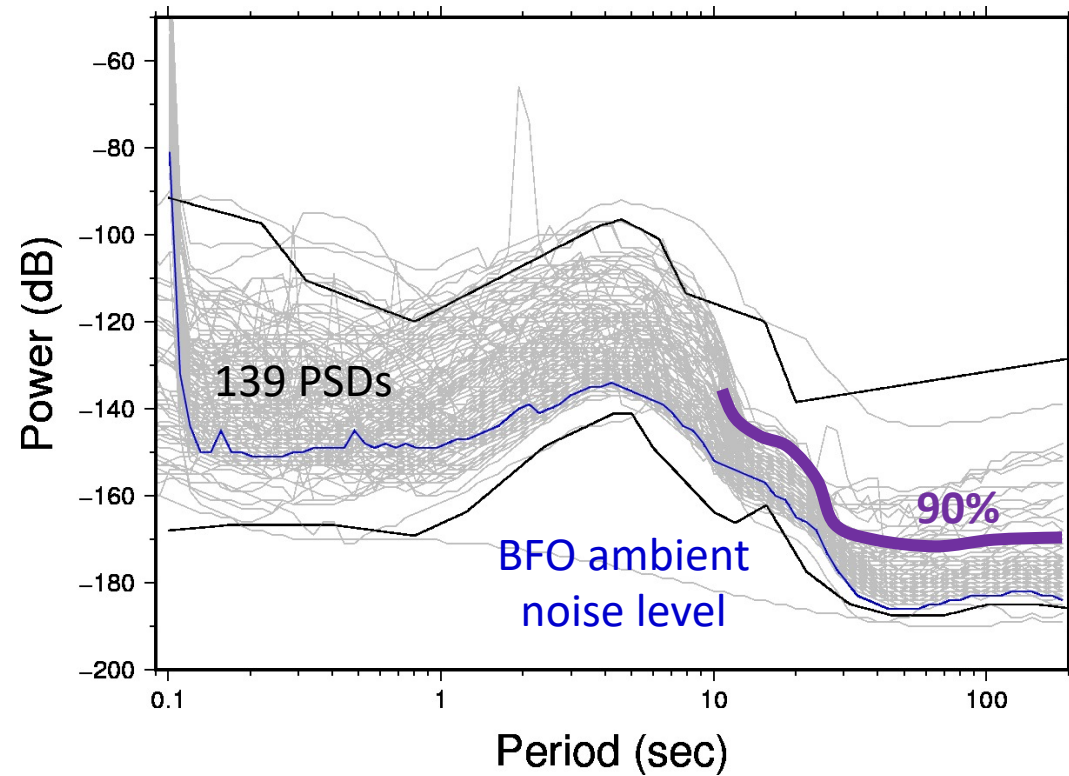
A quick FDSN network performance
report

FDSN Ambient Noise Levels

IRIS mustang/noise-psd web service

June, 2018

December, 2018

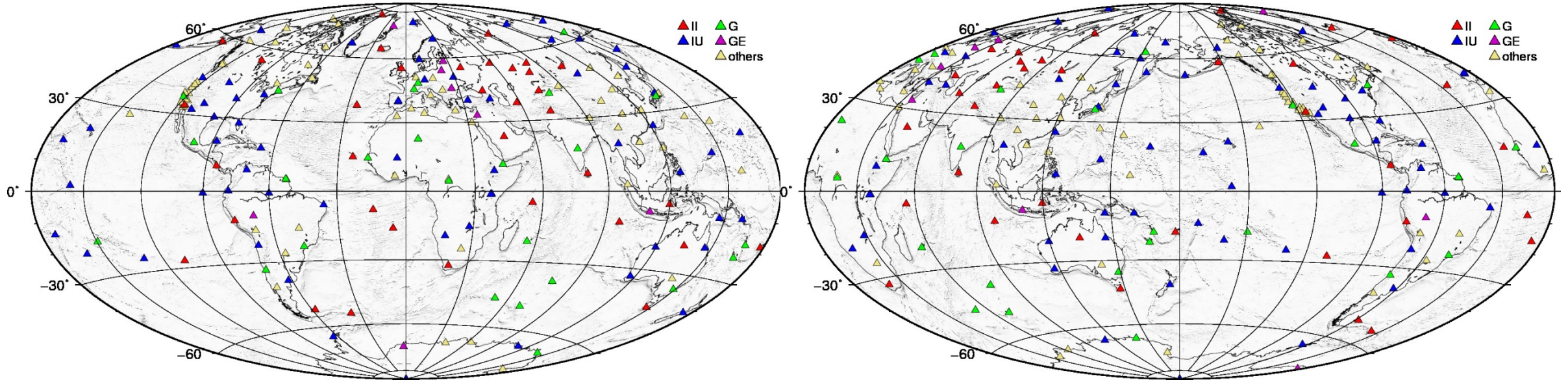


FDSN Backbone Stations

205(nominal)-36(expired)=169

Station list from

http://www.iris.edu/mda/_FDSN

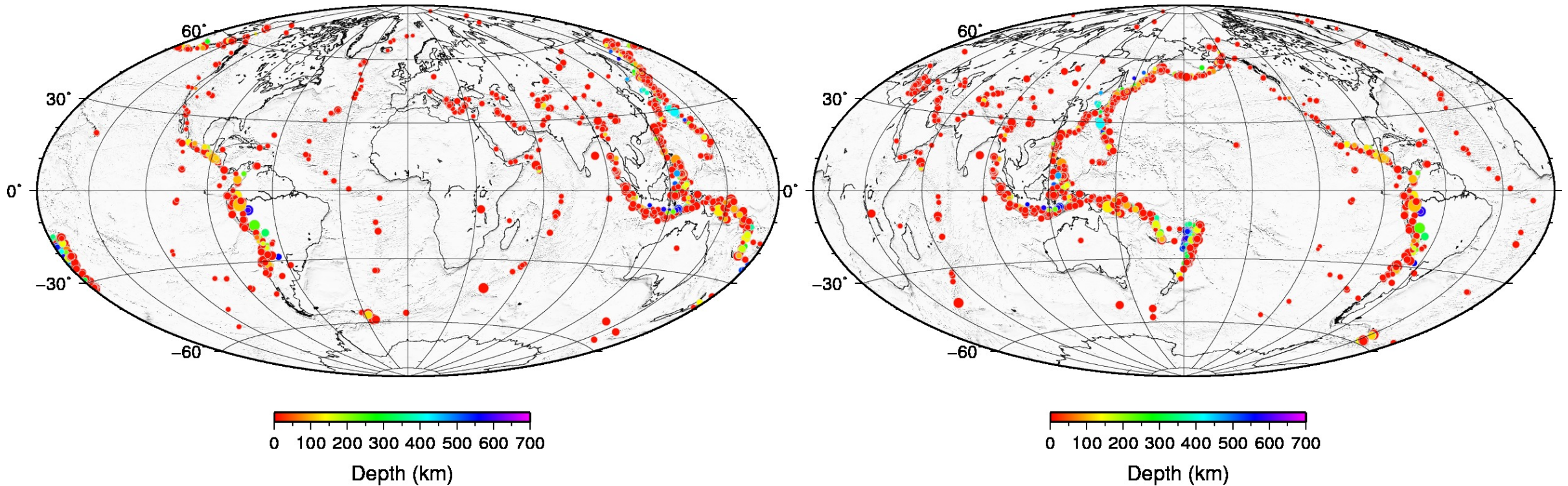


225 FDSN Stations

http://www.iris.edu/gmap/_FDSN

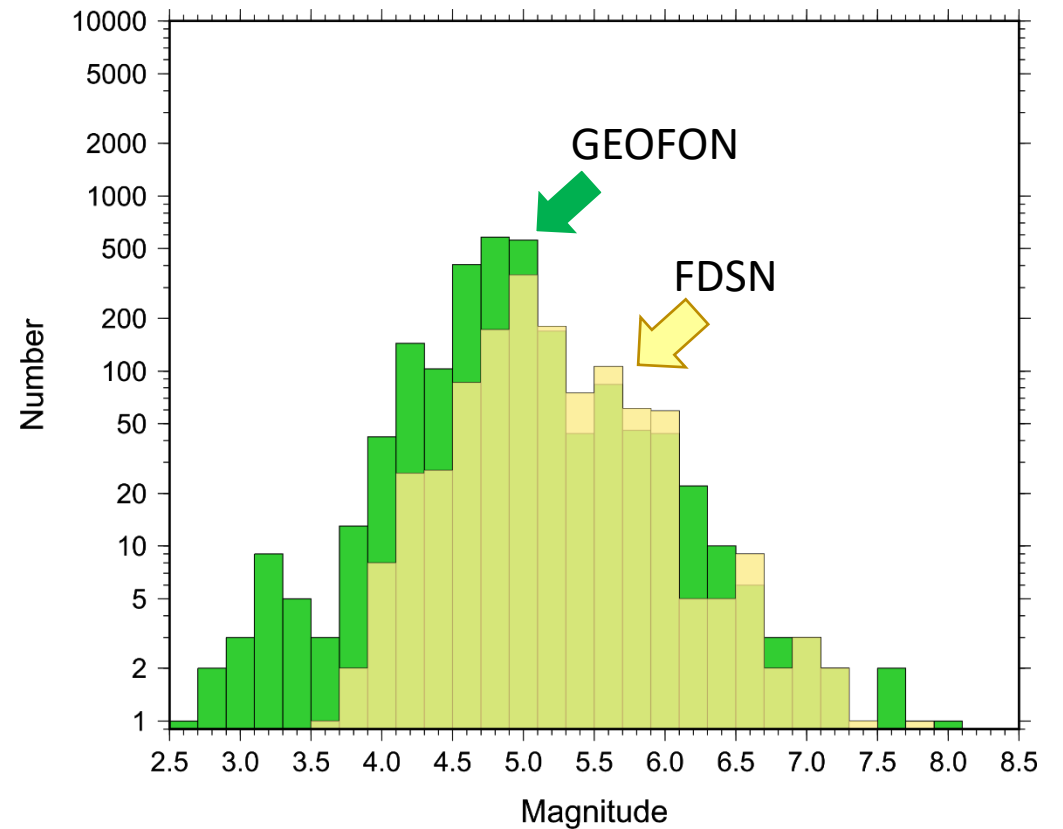
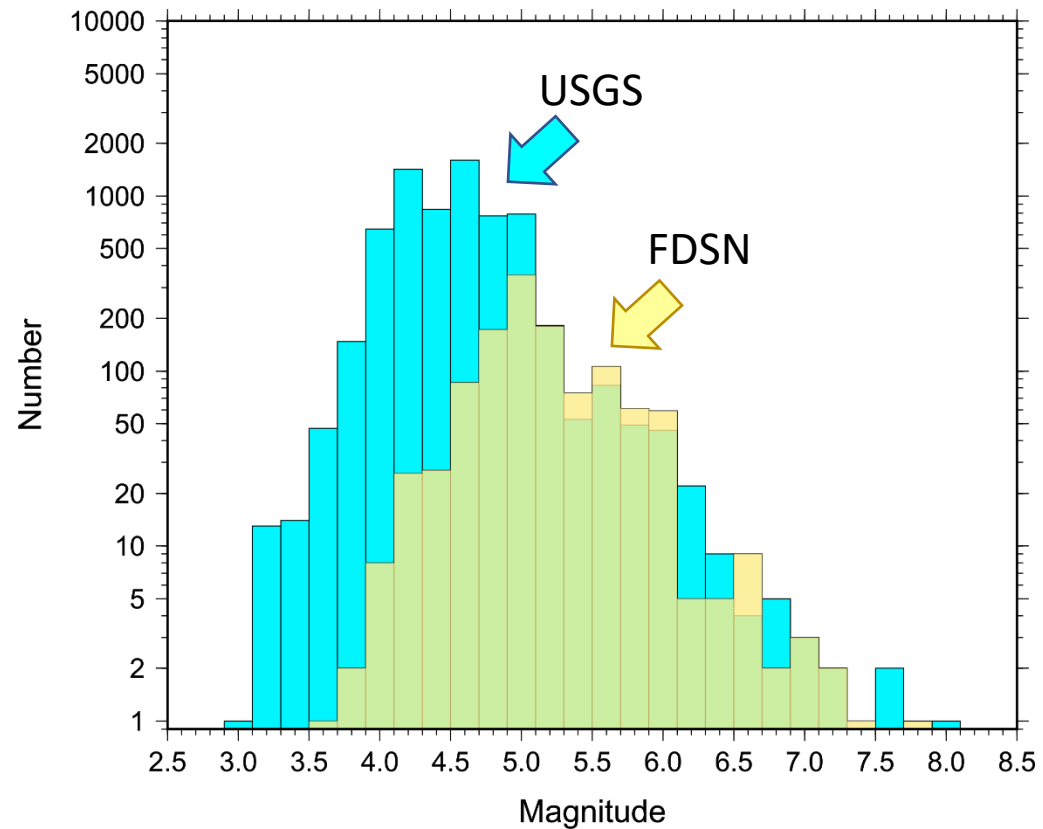
Global Seismicity by FDSN Backbone Stations

SeisComP3 : 2018-12-4/2019-06-20



Frequency-Magnitude Diagrams

Seismicity in 2018-12-4/2019-06-20



Working Group II

FDSN WGII Action Items

John Clinton WGII Chair and Chad Trabant WGII Vice Chair

Working Group II

- Held Saturday July 13 2019 at 12:00 - 13:30
- Well attended with 35 members present
- Thanks to Javier Quinteros for taking the minutes

WG II Action Items (1)

2017 Kobe Minutes were approved

Action items from the 2017 Kobe meeting are considered completed

- **Action Item: [Clinton] Decision Taking within FDSN WGs.** Quinteros, Carter, Trabant, Clinton, Danecek will form Core Team to reword the proposal, announce to WG2/3 and propose to Montreal Closing Plenary.
- **Action Item: [Trabant] Next Generation Mseed.** The invitation to review the IRIS miniSEED3 implementation will be extended to the whole working group via the mailing list. IRIS anticipates submitting the specification to the WG as a proposal within the next year.

WG II Action Items (2)

- **Action Item: [next WG Chair] StationXML.** Call for general ideas for further development, with a duration of 3 months. A subgroup will review all comments and do a proposal. Will follow decision taking protocol if accepted.
- **Action Item: [next WG Chair] URN IDs.** WG Chair will follow decision taking protocol if accepted.
- **Action Item: [Storchak] Event Types.** Storchak will inform the community about the progress on this discussion and joint effort.
- **Action Item: [Clinton] QuakeML** Clinton will open the discussion on WG, including new functionality planned to be included in v2.0.

Working Group III

FDSN WGIII Action Items

Tim Ahern WGIII Chair and Mark Chadwick WGIII Vice Chair

Working Group III

- Held Sunday July 14m 2019 at 12noon- 13:30
- Well attended with 36 members present
- Thanks to Mark Chadwick for taking the minutes

WG III Action Items (1)

- **Action Item:** 2017 Kobe Minutes were approved
Complete.
- **Action Item:** Action items from the 2017 Kobe meeting are considered completed except for the continuation of the method to authenticate services.
Complete.
- **Action Item:** Related to QoS standards. Once feedback had been incorporated, a Survey Monkey will be developed to get input from data centers as to the priority order that they should be implemented as QoS standards for the Federated System.

Responsible: IRIS

WG III Action Items (2)

- **Action Item:** Standardisation of the required QA service API including request parameters, and is expected to be coordinated between IRIS and EIDA, those being the two Quality systems in operation at EIDA and IRIS.

Responsible: IRIS and EIDA

- **Action Item:** An action was proposed that after the QA service API has been defined, then look towards getting this into SeisComp3 assuming funding can be found.

Responsible: FDSN

- **Action Item:** An action was proposed that since the existing prototype data center registry system exists it is ready for broader use. Existing datacentres should be solicited to add their entries to the system.

Responsible: Trabant and Quinteros

WG III Action Items (3)

- **Action Item:** Tim Ahern suggested that any other ideas for new services should be sent to the WG III mailing list.

Responsible: WG III

- **Action Item:** When an EIDA proposal related to a new authentication system is ready it should be distributed to the WGIII for comments.

Responsible: EIDA

Working Group IV



Federation of Digital Broad-Band Seismograph Networks

FDSN Working Group IV CTBTO Relations

István Bondár

IUGG General Assembly
Montreal, Canada, 15 July 2019



Federation of Digital Broad-Band Seismograph Networks

- **WG activities since the last meeting**
 - Announcement of CTBTO SnT conference was advertised on the FDSN mailing list.
 - The management of the IDC and IMS is supportive of FDSN.
 - NDC-in-a-Box software includes SeisComp3 that uses SEED format and FDSN standards.
 - István gave FDSN presentations at various CTBTO and RSTT workshops and trainings to advertise FDSN membership.



Federation of Digital Broad-Band Seismograph Networks

- **CTBTO status report**
 - Ronan LeBras gave an overview on the status of the IMS network. The IMS network is over 90% complete, the old GCI-II system is being replaced with the next generation GCI-III Global Communication Interface.
- **Discussion**
 - VDEC: used to be half-person supported by the EU; that specific support no longer exists, it is difficult to fund developments on VDEC. To get data in miniseed from VDEC is possible through GeoTool.
 - TORD, Niger: the station is operational. For FDSN membership the station operator should be contacted.



Federation of Digital Broad-Band Seismograph Networks

- Discussion cont'd
 - FDSN web services at the IDC: Many NDCs use FDSN web services and it would be beneficial them to have a familiar interface at the CTBTO secure website. Metadata could be also distributed this way. The initiative should come from the NDCs.



Federation of Digital Broad-Band Seismograph Networks

- **Action items**
 - Explore the possibility of reducing delay time (3 months currently) on VDEC
 - Ask the opinion of the Waveform Expert Group about the possibility of implementing FDSN web services at the CTBTO secure website.
 - Keep advertising FDSN at CTBTO workshops and trainings; reach out to station operators.
 - Follow up promising candidates for FDSN membership (Iraq, Ukraine).
 - Maintain good relations with CTBTO for the benefit of both organisations

Working Group V



*IUGG Montréal, Canada
16 July, 2019*

FDSN WG V
Meeting Summary

Portable Instrumentation
Bruce Beaudoin (Chair)
Wayne Crawford (Vice-Chair)



WG V: Summary

- Meeting held Tuesday 16 July, 2019 12:00-1:30pm
- 16 attendees
- Thanks to Jerry Carter for capturing meeting minutes



WG V: Summary

- 2017 Kobe minutes approved
- Standardized SOH Proposal approved
 - **Action Item 2019.01:** Move to review and evaluation specifically engaging WGI and WGII
Responsible: Beaudoin
 - **Action Item 2019.02:** Distribute proposal to manufacturers
Responsible: Beaudoin



WG V: Summary

- **Action Item 2019.03:** Form a group to establish requirements for documenting moving stations via time-referenced location and orientation records
Responsible: Beaudoin, Ahern