

## FDSN WG 5 notes: 6/27/15 - IUGG/IASPEI meeting - Prague

### Attendees

Kent Anderson - IRIS PASSCAL, Bruce Beaudoin - IRIS PASSCAL Instrument Center , Mouse Reusch - IRIS PASSCAL Instrument Center , Katrin Hafner - IRIS GSN, Pete Davis - UCSD/IDA, Chad Trabant - IRIS DMC, Tim Ahern - IRIS DMC , Seiji Tsuboi - JAMSTEC, Nikolaus Horn - ZAMG/Vienna, Michelle Grabbelaar - CGS/South Africa, John Clinton - ETH Zurich, Edelvaya Spassor - Kinematics, Mark Chadwick - GNS Science/New Zealand , Alexandr Smirnov - Kazakhstan NDC , Inna Sokolova - Kazakhstan NDC , Natalya Mikhailova - Kazakhstan NDC , Yinshuang Ai - IGGCAS/China , Angelo Strollo - GFZ/Germany

### Agenda

#### *Approval of minutes*

motion: Strollo  
2nd: Anderson  
approved.

#### ***Highlights and Developments***

##### IRIS PASSCAL Highlights - Bruce Beaudoin

- Noise analysis with various installation - see poster S11P-572 on Tues/Weds
- Iridium communications for high-latitude - see poster at JS05-223
  - SOH low power C&C
  - RUDICS modem - through Xeos -
  - exploring the PILOT system for much higher bandwidth and higher power
- All-in-one seismic/digitizer form factor development - funded by Polar, but has broader applications - concomitant power/communications development
- PH5 development for large data sets and easier accessibility to controlled source experiments
- Large-N datasets
  - Sweetwater dataset available at IRIS DMC

##### RESIF Update Helle Pedersen and Anne Paul

- 120 MM stations (Nanometrics Taurus and CMG40T and STS02
- +30VBB instruments in fall 2015 for Alp Array
- 3 year moratorium on data release using FDSN WS
- Developments
  - distributing OBS data from joint offshore-onshore experiment at La Reunion
  - Increasing use of dense arrays with thousands of sensors on volcanoes (Fairfield Nodal nodes).

##### GFZ - A. Strollo on behalf of C. Haberland.

- Geophysical Instrument Pool Potsdam
- free use of instruments
  - Seismic and MT
- onshore instruments - ~2 year deployments
- data archived at GFZ seismological archive (GEOFON)
- 3 year moratorium
- ~900 DAS
- 5 sts2
- 65 120 compact
- 20 120s
- 150 CMG-40t

- ~500 short period
- ~200 geophones
- Usage
  - global deployments
  - 266 experiments from 93-2014
- DEPAS - OBS units
  - 70 OBS - 95 onland
  - 5 hydropones
  - managed by AEI
  - [www.awi.de/en/go/depas](http://www.awi.de/en/go/depas)

#### ETH - John Clinton

- passive pool of 50 stations (compacts and STS-2 with Nanometrics loggers)
- recently in Bhutan
- moving to AlpArray next
- been to Greenland
- available through WS
- embargoes are variable
- have not used with outside Swiss sciences, but could
- Alparray
  - 12 nations - 250 stations complementing ~400 existing stations
  - includes OBS
  - Working on PSD noise limits for standardization of best practices
  - Not all realtime
  - all data will be available through EIDA - embargoed for ~5 years

#### Academy of Sciences - China - Yinshuang Ai

- many agencies, Academy, CEA, CAGS, Universities, and PASSCAL experiments
- in the past 10 years, ~3000 stations in China between all the organizations
- CAS has 400 BB - 150 Trillium 120PA with Taurus - 150 from Guralp and REFTek 130 - 100 Chinese instruments
- CEA has ~2000 BB - most are CMG 3T with RT 130 (1500).
- CAGS has ~300 BB
- Data are currently internal, but are starting to release a few lines to IRIS (7 lines - from CAS) - working to get these released (blue lines on the map)

#### ***review of portable instrument inventories***

current inventory linked on [www.fdsn.org/wgv](http://www.fdsn.org/wgv)

currently includes, ORFEUS, PASSCAL, POLARIS - should be removed

proposed addition

OBSIP - US

Strollo - GFZ, RESIF should be in ORFEUS list

How about New Zealand? Mark Chadwick will check

#### ***Best Practices***

IRIS working on best practices and will post on the WG-V link

Others who wish to contribute

AlpArray - PDF file that can be linked (Clinton)

Strollo - Is this just existing links, or should this be a WG-V reviewed list

link first and then we can see if there are needs to converge on topics in future meetings

### **Mapping Tool and QC tools**

Is there a uniform way to show future, current and past experiments?

PASSCAL has developed a tool and SeisUK was doing something similar

Is there a need to do a broad use XML tool that can be used for the broader FDSN portable community?

Goran wanted this discussed to see if there is a better way to make portable experiment data more discoverable.

Strollo - already discoverable through FDSN web services

Bruce - particularly helpful for future experiments where collaborations may be possible.

Tim - can Station XML be used for future temporary stations? Preliminary metadata, for example - might make the data discovery easier than a big spreadsheet.

Clinton - FDSN network code requires bounding box - is this adequate?

Ahern - should ask WG II if this can be accomplished in XML - What do we want? Do we need a polygon tool in the network code request?

Bruce - should this be available on the FDSN portal?

***Recommended Action for WG II: How do we capture and share network planning through XML (perhaps StationXML). For example, allowing a polygonal bounding box for networks to provide more complete network information to aid potential collaborative projects. Additional information that will help facilitate collaborations and planning include: purpose of the experiment; type and quantity instrumentation; projected start dates; links to experiment information and contacts. Most of this information is currently captured on the FDSN Network Code request form, but the form may need to be updated once we figure out how to represent this in XML.***

This should be a part of the DOI - we need to encourage portable experimenters to use the DOI's.

### **QC tools**

There are no links on the FDSN links for QC

Perhaps should link to MUSTANG (for post-archive QC)

Are there actually any field appropriate tools that could be shared?

Strollo - not standard set.

What about "MUSTANG-lite"?

Development is funding limited - the algorithms exist, but the MUSTANG system is too complex for a field tool

There should be an easier way to make the algorithms more field accessible - but not accomplished yet.

Is this for field deployments or for looking at stations prior to archive (field service runs).

Bruce - some tools for quick QC assessment for functionality, but not necessarily for waveform quality.

Strollo: Should WG5 suggest a list of tools?

Bruce: Yes - what tools are out there? Lots of ideas, but little time/money for development.

Chad: DMC working on noise toolkit - might be extensible to field tool. (<http://ds.iris.edu/ds/products/noise-toolkit/>)

***ACTION: Bruce will survey the mailing list to find links to add to WG-V page related to QC: best practices related to Quality control (break out archive QC tools and field tools)***

**Noise Toolkit**  
**MUSTANG**  
**MUSTANG Data Browser**  
**LASSO**  
**PASSCAL tools (logpeek, qpeek)**

Bruce will update the mailing list to add the people from this room (no objections from this group).

**ACTION:** Tim Ahern will compile and distribute mailing list to the working group. (Update: IRIS is going to move the entire mailing system to the new IRIS DS developed Message Center. In the Message Center members of the list will be visible.)

**ACTION:** Ahern - FDSN chairs do not have administrative access to mailing lists - please fix (Update: see note in above Action Item).

This does not meet all the current needs for field experimenters, but it's a start

PASSCAL has a few tools (logpeek and qpeek)

#### ***Integrating Large and multi-modal datasets***

Bruce: Various users of large - multi mode experiments want data in various formats (SEGY/mseed, etc). We have been working on PH5 to capture and distribute more easily.  
Anybody else working on these challenges?

Clinton: Not really - may be a need, but not at that point yet. Certainly interested in what's developed.

PH5 is a possible solution: Tim: key is that PH5 or any solution must support FDSN WS - we're working towards that, but it is a work in progress. There are loads of details that need to be addressed to ensure it works with all the XML information that needs to be distributed.

More of the problem is in the active source community with full response information. StationXML is a bit overkill for past uses of active source data.

#### ***Instrument development***

PASSCAL performed sustainability analysis and are developing a recapitalization plan  
Is the FDSN an appropriate body to share specifications for future portable instrumentation

Edelvays (Kinematics) - always want to talk - sees more interest in portable instrumentation than permanent stations  
Nominations for vice chair - needs to be aware of acceptable tradeoffs with noise versus "portability"  
Loads of operations have loads of ideas - nice to have a standard set of instrumentation standards to help drive development.

Strollo: Log files and metadata - standardization of metadata capture and reporting.

Kent: Dirt-to-desktop initiative specifications should be shared with FDSN. Self-aware sensors and common formations so that DAS's know what it's plugged into and generate all the appropriate metadata in a standard format (StationXML).

Once D2D is defined within IRIS, share with FDSN and then with Vendors.

Ahern: Vendors should be responsive to StationXML - huge step to make D2D work

**ACTION:** Tim will send link to StationXML to Edelvays and Ogie [Update: Email sent with the information]

Clinton: Standardization of SOH across vendors.

**Recommendation:** FDSN (WG - V and perhaps WG - I) will develop a list of standardized digitizer outputs (e.g. SOH channels, meta-data) for vendors to meet when developing new equipment. Also will work on future potential equipment characteristics.

Nominations for WG:V vice chair:

Ahern proposed Dr. Ai from China

Clinton proposed Wayne Crawford - OBS community (EPOS project)

Tim thinks that OBS is pertinent to WG V and backs John's suggestions

**Recommendation:** We request that John ask if Wayne would be interesting in vice chair role

Other items:

Strollo: Because of timing of WG meetings, recommendations to WGII and WGI may not be in sync: This should not be a problem as most of the FDSN participants go to each meeting.