FDSN W55 Meeting

Agenda
- Acceptance of 2021 meeting minutes
- Overview of previous actions
- Presentations
    - Previous actions
        - Survey of OBS meta/data creation tools (W Crawford)
        - Rapidly changing metadata effort (T Ahern
    - New actions
        - Ocean bottom seismometer meta/data references (W Crawford)
- Additional items / future needs
- Change of WG leadership

Participants
There were 32 participants, in person or online:

Nick Ackerley, Yinshuang Ai, Tim Ahern, Fernando Carrilho, Jerry Carter, Carlo Cauzzi, Mark Chadwick, John Clinton, John Collins, Wayne Crawford, Peter Danecek, Mohameld El Idrissi, Domenico Giardini, Renate Hartog, Florian Haslinger, Nikolaus Horn, Victoria Lane, Wen-Tzong Liang, Amir Lubna, Lucia Margherin, Tobias Megies, Milena Moren, Cristian Neagoe, Xyoli Perez Campos, Javier Quinteros, Joel Simon, Frederik Simons, Angelo Strollo, Chad Trabant, Martin Vallee, Ludek Vecsey, Peter Voss

The scanned sign-in sheet is appended to this document

Acceptance of 2021 meeting minutes
The 2021 meeting minutes are unanimously accepted.

Overview of previous actions
Four actions were proposed at the 2021 meeting:

2021.1: Review of the GeoCSV proposal (Chair, Tim Ahern)
The Proposal Review Committee, consisting of Chin-Jen Lin, Adam Ringler and Joachim Wasserman, approved the proposal, recommending however that the **team should evaluate the pros and cons of other formats differing from CSV for easier and possibly automatic integration into stationXML (e.g., JSON or YAML).**
Tim Ahern is asking for an action group to finish the specification and to find funding for the implementation.
The Evaluation and Implementation review will take place in WGII
Tim Ahern will make a presentation in this meeting

2021.2: Verify the SOG proposal (Chair and Vice-Chair)

This is an action item going back to at least 2017 and led by Bruce Beaudoin (former chair). It was not advanced in 2021-2023. The **new WG leadership should restart this action item**, the old WG leadership will show them the history and help them to start

2021.3: Definition of digital filters for data decimation (Chair)

The goal of this action is to add accessibility to broadband ocean bottom seismometer data for scientists studying low frequency phenomenon, like normal modes, by creating a validated tool to decimate data down to ~1 Hz and to create associated StationXML channels which append the decimation filter responses to the prior channel response.
A code has been written to implement this using the open-source filters from SAC2000, but the evaluation of the best filters for the job has not been performed.
Would like an action group to evaluate decimation filters, finishing with the choice of the most adapted filters and possibly a scientific article.
Wayne Crawford led this action until now, but would prefer another leader so that he can focus on 2021.4 and the proposed OBS data/metadata standards documentation/dissemination.

2021.4: Survey of OBS data/metadata creation (Chair)

A survey was performed in 2021, sent to 22 OBS facilities and responded to by 14. It showed that most groups do not put their data on FDSN-compatible data centers, 1 does not correct for clock drift, only 1 has the possibility of non-linear clock corrections, about 30% do not include the digitizer digital filters in the metadata and that many disparate tools are used to create data and metadata. The survey responders also proposed new questions, covering how orientation and leap-seconds are handled, whether data are resampled, and whether there was any interest in the PH5 format.
Chair **proposes to make another survey, including the new questions,** using Google Forms for an easier parsing of responses, and to send the results to the WG V mailing list. There may be new proposed actions based on the results.
Chad Trabant states that EarthScope no longer uses PH5 but is transitioning towards TileDB.

Presentation: Rapidly changing metadata effort

Led by Tim Ahern and Joel Simon. Details are in the presentation slideshow on the FDSN WG5 webpage, 2023 meeting . A brief overview is that the effort was motivated by the drifting MERMAIDs instruments and that, in addition to things that change with time, the format could also present several measurements of the same value (for example, orientation).
Tim proposes to form a small advisory group from WGs 2, 3 and 5, and that he will seek funding using output from that group. The hoped-for time line is: 1) beta version 6 months after funding, release version 18 months after funding, and adoption by FDSN at the 2025 Lisbon meeting. He notes that FDSN would need to develop plans to make modifications to relevant tools.

Q&A:

J Quinteros: What does "FDSN would need to develop…" mean/imply?

T Ahern: This format should be able to be included in a StationXML channel element

P Danecek: So StationXML would need to put a reference to the information?

T Ahern: It could either: 1) Put a pointer to the information (often overlooked), or 2) merge it directly into StationXML

J Quinteros: Could put an extra attribute (software could skip extra information and not break)

T Megies: Ideally want integrated, pointers get lost. Probably want to make condensed GeoCSV, include into StationXML paper. From obspy point of view, could extend obspy easily

R Hartog: More extreme cases where you need to update every minute, could get very bloated (example: station on a landslide)

T Ahern: True, but if you need this information then you need to store and access it.

????: This could also be useful for drones

A Strollo: Should we include channel level, or simply open a different channel ? Trade-off question

P Danecek: If sample rates 1/s, ca capture StationXML, New miniSEED might allow new encodings. Could you make a time series with the values?

J Quinteros: Some of these issues are related to issues with fiber-optic cables (moving sampling point on cable…). Should probably work with each other.   You are ahead in time, might have information to share.

Presentation/proposal: Publication of OBS data/metadata standards

Led by Wayne Crawford. Details are in the presentation slideshow on the FDSN WG5 webpage, 2023 meeting . The goal is to publish OBS data/metadata standards where they can be easily and publicly consulted, discussed and added to when necessary. These standards were first proposed in 2016 and updated through discussion and experience until present, but they are not consultable/updatable.

Q&A:

A Strollo: Could we put all of this on FDSN documentation?

J Clinton: Not just for OBS, for other groups too. "Guidelines for specific datasets"

J Quinteros: For all the calls that we will open, these should be things that are approved by the community.

C Trabant: FDSN has an organizational GitHub account, could use it for development/approval.

Additional items:

F Haslinger: Where should large-N deployments be discussed? Is it specific enough for its own WG?

T Ahern, C Correla: It should fit within WGV.

New Leadership

Joel Simon and Yinshuang Ai will be the new chair and vice-chair, respectively, of WG5. Wayne Crawford (previous Chair) is available for any questions they have and particularly to help them restart action 2021.3

2023 Actions

The following was not specifically discussed in the meeting, but compiled by the Chair based on the discussions during the meeting,

2023.1: Verify the SOH proposal (ex 2021.2)

History: was Action 2021.2, inactive

Responsible: Chair and Vice-Chair?

To Do:

- Review and evaluate Prague 2015 SOH recommendations, specifically engaging WGs 1 and 2
- Take two SOH proposal documents (2029135 and associated Excel spreadsheets), evaluate if they need to be modified, and send to companies for their review and validation

2023.2: Definition of digital filters for data decimation

History: partially completed action 2021.3

Responsible: Open

To Do:

- Find someone to take charge
- Assemble an action group to investigate different digital filters, choose the most appropriate ones, and evaluate the tiskitpy Decimator class used to implement the filtering and the StationXML channel/response creation. Possibly write a scientific article.
- Propose the standard at FDSN 2025 meeting

2023.3: Survey of OBS data/metadata creation (completion of 2021.4)

History: survey sent out as action 2021.4, but not completed with new questions

Responsible: Wayne Crawford

To Do:

- Create and send out a new survey (Google Forms) to as many OBS facilities as possible.
- Compile and send results to WG V mailing list for discussion on what needs to be done to improve creation/inclusion of OBS data/metadata on FDSN-compatible data centers.

2023.4: Creation of OBS data/metadata references (new)

History: new, but using standards proposed and updated since 2016

Responsible: Wayne Crawford

To Do:

- Form action group to discuss the standards, put them on an intermediate site (FDSN GitHub?) for evaluation and to allow future discussions/upgrades.
- Interact with FDSN on how to include them in new "Guidelines for specific datasets" within the StationXML and miniSEED documentation.
- Put approved standards in this documentation.

FDSN WG 5 Meeting: 18/7/2023

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② FDSN WG 5 Meeting: 18/7/2023

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