WGV Meeting Minutes

Hyderabad, India (virtual conference)

August 25rd 2021, 20h15 India Standard Time (IST)

Chair: Wayne Crawford

Attendees

Name	Organization	Email
Wayne Crawford	IPGP/CNRS	crawford@ipgp.fr
Tim Ahern	EarthScope-Oceans	tim-ahern@comcast.net
Chad Trabant	IRIS	chad.trabant@iris.edu
Luděk Vecsey	IG CAS	vecsey@ig.cas.cz
Rob Casey	IRIS	rob@iris.washington.edu
Michelle Grobbelaar	CGS	michelle@geoscience.org.za
Joel Simon	EarthScope-Oceans	jdsimon@princeton.edu
Carlo Cauzzi	ORFEUS	carlo.cauzzi@sed.ethz.ch
John Collins	OBSIC	jcollins@whoi.edu
Spahr Webb	LDEO	scw@ldeo.columbia.edu
Wen-Tzong Liang	IESAS	wtl@earth.sinica.edu.tw
Peter Danecek	INGV / MedNet	peter.danecek@ingv.it

Presentation

Presentation slides will be made available from: https://www.fdsn.org/wg/wgV/

Agenda

The agenda was reviewed and accepted by the group

The minutes from the 2019 meeting in Montreal were accepted

2019 Action Items

Three action items from 2019 were reviewed:

2019.01: Review and evaluate Prague 2015 SOH recommendations, specifically engaging WG1 and WG2 (Beaudoin)

2019.02: Distribute SOH proposal for comment to equipment manufacturers (Beaudoin)
Bruce Beaudoin could not be at this meeting, but provided two documents: version 2019135 of an SOH proposal and an associated Excel spreadsheet. The new chair and vice chair need to determine if/how this was distributed and if the review and evaluation was completed.

2019.03: Form a group to establish requirements for documenting moving stations via time-reference location and orientation records (Beaudoin, Ahern)
A small group was formed and a proposal written which will be presented by Tim Ahern. Bounced off of Bruce Beaudoin who thought it could work for PASSCAL, talked mostly with Mermaids group (Nolet, J Simon, F Simons)

Proposal of GeoCSV format for rapidly changing parameters

Tim Ahern presented the proposal. The format addresses data that SEED doesn't handle, for example MerMaid (changing position), H20 (change of gain hundreds of times/day), deployments on icesheets and glaciers, and rapidly changing azimuths for stations near poles. **The presentation and the proposal document will be made available on the WGV webpage and sent out through the WGV mailing list.**

Questions:
Peter Danacek: what about sending proposal to WGII
Tim Ahern: Could do, but may be premature before the proposal is approved by WGV.
Peter: Do you know how the files/information could be distributed? For example in an extra stream like data?
Tim: Best would be to fold it into StationXML, but we haven't taken a stab at it yet.
Peter: Thought of it as separate information on a different channel, inform on StationXML the existence of supplementary information.
Tim: Thought same thing, could be another channel stream (channel comment), but would be too easy to ignore. So we think it is better to incorporate as StationXML elements.
Rob Casey: This info has close comparison to GNSS positioning and velocity time series. Any thoughts on cooperating with the GNSS community on a joint solution?
Tim: The only GNSS data are GPS data, it could be interesting but not sure
Rob: There are a lot of repeated fields (i.e. station name…), is there any reason to have this instead of putting in the header?
Tim: We thought a lot about this and decided to do this way to allow full flexibility. For example, there could be a file that describes the entire Mermaid network, so with

numerous station names. Files aren't large, so there isn't a huge disadvantage to being explicit/repetitive.

Joel Simon: Time delay and time correction were difficult, nothing in SEED for this, for example.

Wayne Crawford: Actually, miniSEED does have a time correction field, which we use for OBS data. But it doesn't have a time delay field: we just assume that it is the corrected value.

Wayne Crawford: What is the advantage of GeoCSV over other formats (JSON, XML…)

Tim: Ease of creation, easily readable. Came out of Earthcube and is meant for interchange between different institutions. We have worked with schools, for example, and CSV is clear to them, whereas JSON and XML are not so much.

Wayne: Is there a method to distribute text files with FDSN data? I remember seeing something like this with IRIS (we were interested in including provenance information) but it does not seem to be implemented at most FDSN data centers.

Tim: There are some efforts within FDSN, including DOI in which you can put anything you want. IRIS has a Metadata Aggregator (MDA) which allows this as well, this may be what you saw, but the general problem is quite tricky

Chad Trabant: The general problem is allowing exchange of attached files (deciding what to attach, indicating how they can be read). This is a pragmatic approach, we think/hope that a more general solution will be found in the future.

Tim: One could also embed file pointers in StationXML, so you don't have to create/include fields, but the information can be missed unless you have software cognizant of this type of data format. Not the focus of this proposal, **more a working group II problem**.

Peter: Second Chad's comment. What could be very flexible in the long term is to go into a linked data approach, with digital objects that are interlinked. Would need persistent identifiers. This is a larger scale problem/framework that belongs somewhere else.

Chad: Chair addressing this proposal, might invoke future adoption process (Proposal Phase) here (WGV) and WGII handles Evaluation and Adoption

2017 (Kobe) actions not discussed in 2019

Wayne Crawford, who proposed two actions in 2017, missed the 2019 meeting and so two actions were not discussed there:

2017.02: Send list out of current methods used by various parks to correct clock drift for feedback

Wayne started this collection but never compiled the results. Instead of using this old information, he has sent out a new form with questions about both data and metadata, as well as a request for other relevant questions (see **Presentation** on WGV homepage) and the names of OBS groups that were not contacted but should be. He is compiling the results and will send out a second questionnaire with the added questions, then send the final compiled results to the mailing list for discussion.

2017.03: Put together a small working group to develop a short decimation summary paper. Suggested that it would be useful to engage the ObsPy group

Wayne started a collaboration with Lion Krischer (ObsPy developer) to look at the effect of digital decimation filters, both within data loggers and for post-processing (OBS data, for example, are commonly sampled only at high rate and lower rates must be created post-experiment). They looked at several dataloggers and decimation programs (see **Digital Decimation Filters** on FDSN WGV webpage) and noted that different dataloggers, A/D conversion chipsets and decimation software use very different strategies, with different apparent goals for shaping the signal and for broadband noise rejection. They also ran into some roadblocks in obtaining decimation filter specifications from companies and lacked a digital filtering specialist and examples/testimonials from people who have had (measureable) problems with decimated/resampled data.
Wayne thinks that these people should be added to the project and the Action Item continued with more interaction with WGV through its waiting list. The goal would be an article or report on the results and proposed minimum standards for decimation filters, as well as accessible software (in ObsPy?) for decimation which also adds the appropriate metadata channel.

John Collins offers to help with the work. He states that WHOI always creates 1Hz as well as high sample rate, but also does 1Hz correction for other OBSs and would like to be able to work with the whole data set, not just daily files, in order to avoid daily edge effects. He notes that Antelope allows you to do this, but it would be nice to have this option in non-commercial software.

Wen-Tzong asked if anyone had contacted companies to communicate needs for digital filters? Wayne replied that he had communicated with Quanterra, for example, in order to obtain their digital filter stages, but that the needs had not yet been defined.

Next actions

2021.01: Review GeoCSV proposal (chair and vice-chair)
Assemble review team (3-6 people representing at least 2 regions and no more than 2 persons/region, as per FDSN framework) through a call for interested persons at the 2nd General Assembly and through the WGV mailing list. Rob Casey and Peter Danecek, who participated actively in the discussion about the proposal, were asked if they would be interested in being on the review team. Peter said that he was not the most qualified but he would propose someone more qualified. A time frame of 6 months was suggested, with early submission allowed.

2021.02: Verify the SOH proposal distribution and the 2019.01 action (WGV chair and vice-chair)
If not all was done, request and help B Beaudoin to finish the action.

2021.03: Definition of digital filters for data decimation (Crawford)
Wayne will send an email to the mailing list asking for collaborators specialized in digital filtering and/or people who have compared the spectra of decimated versus original data. Goal is to write a report or article showing the effects of decimation filters on the output data, suggesting minimum standards for decimation filters, and ideally proposing a software/workflow for data decimation (whole dataset to avoid edge effects on daily files)

and simultaneous metadata creation. If this works, it could become an FDSN proposal for 2023.

2021.04: Survey of OBS data/metadata creation (Crawford)
The preliminary survey has been sent out, a secondary survey based on the results will be sent out and the combined results of the surveys will be sent to the mailing list for comment and possible action.

Change of WG5 leadership

Bruce Beaudoin has stepped down as WGV Chair, we need to nominate a new Chair. FDSN suggested Wayne Crawford (current Vice Chair) as Chair, and Kent Anderson as new ViceChair. Meeting chair asked if there were any concerns or other candidates. Tim Ahern expressed concern that, as Kent Anderson is an IRIS employee, there would be 3 IRIS WG Chairs or Vice Chairs, risking institutional dominance. Suggested that we might want to look for someone from GFZ or the ORFEUS group on mobile pools. Carlo CAUZZI (ORFEUS) will write to European colleagues to see if there is a logical alternative candidate, but also noted that this would make the entire Working Group chaired by European scientists, which might not be good for balance either.

We will express the concern of institutional dominance at the 2nd General Assembly and propose an alternate candidate if one is found within ORFEUS or is presented from outside. However, the time frame is very short for finding a qualified candidate who makes consensus among the WG members.

Website update

The WGV webpage has several outdated links and references to formats that appear to be outdated as well. Wayne wanted to know what permissions are needed to change these values. Chad Trabant replied that the WG Chair has full autonomy to suggest changes on your website. If there are changes that might be questionable, propose them on the mailing list. If they could affect outside of the WG, send them to the executive committee.

Adjourned at 21h45 IST.