

# WGII Meeting Minutes

Hyderabad, India (virtual conference)

August 23<sup>rd</sup> 2021

Chair: Javier Quinteros

Vice-Chair: Rob Casey

Minutes:

## Attendees

Javier Quinteros - GEOFON/GFZ	<a href="mailto:javier@gfz-potsdam.de">javier@gfz-potsdam.de</a>
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Niko Horn	

Being more than 5 representatives (at least 8) from this WG-II and the minimum attendance is considered to be satisfied.

## Presentation

Presentation slides made to WG can be found at: <https://www.fdsn.org/wg/wgII/>

## Review of Proposed Agenda

Proposed agenda was presented by Javier Quinteros. With no comments or additions, the agenda was adopted.

## Review and Approval of Minutes from the previous Meeting in Montreal 2019

Minutes from 2019 meeting were approved with the proviso that Jerry Carter be added to the 2019 minutes as an attendee.

## Status of 2019 Action Items

J. Quinteros reviewed the action items from the last meeting. No objections were made.

Chad offered a comment on the Decision Taking process Action Item: The official process is that final approval from the WG is announced to the FDSN Steering Committee in order to get their vote. (This was found in the body of the text.) Javier acknowledged that this is important to put emphasis on.

Regarding the action item on the update of QuakeML to v2.0: Nick Ackerly commented that CHIS would like to see improvements to QuakeML. Peter Danecek also indicated interest by INGV and EPOS in general. Though the action item is incomplete, this represents interest in seeing this action item continue.

Javier mentioned that Dmitry Storchak could not be present (was Chair in a parallel session), but he informed him about the status of the Action Item related to Event Types. Namely, in this difficult period ISC focused their efforts on current operations, and there sadly was little progress with event types. Nevertheless, Dmitry is still keen to re-start with this topic.

Summary of Action Items: 3 Complete / 1 in progress (quite advanced) / 2 Incomplete.

## Recommendation about Metadata for legacy data

Tim Ahern presented a set of slides regarding Recommendation about Metadata for Legacy Data. This represents an entry into the Proposal Phase for the Working Group to engage. A 24 page proposal has been prepared.

A key issue in this proposal is that there are 75 recommended or mandatory metadata elements that would need to be supplied, according to the survey. These are a lot of fields that not all centers may be able fulfill.

Javier remarks that it is great to get a proposal that comes from input from the community.

Jerry asks if the plan is to see the data digitized eventually. There is scanning first to an image, then later a conversion of that image data to a time series. Tim says that this metadata effort does not get into the scanning and conversion process. This is an effort that Lorraine Hwang is carrying out. The metadata is seen as helpful to the process of carrying out the conversion of data to digital, useful forms.

Peter comments (in chat) that this looks to be a workflow problem. This proposal looks like the first step of a workflow. Observes that this might address paper images, but what about analog and early digi-data conversion? This also addresses metadata for other types of older legacy data including analog tapes, film chips etc. (Tim)

Peter comments on the need for a record of where paper and other legacy collections are. Also want to be able to track where already scanned collections are and make a catalog of this information available to the community. Tim indicated that Lorraine Hwang is developing an inventory of analog data collections and how the data are made available.

Javier comments that the good part of this approach focusing on the metadata is that we can find a way to map these fields to StationXML. We want information about the existence of the data to be accessible. Tim comments that it may be difficult to fit legacy metadata to StationXML and that there might be a need for a parallel specification. Peter agrees, but indicates that we can leave this to the WG 2 Review Group to determine.

**[Action Item]:** Send proposal to the WG with a Call to form an Proposal Review Team.  
Responsible: WG Chair

# GNSS data integration into seismological standard workflows

On behalf of Angelo Strollo, Javier presented a set of slides regarding GNSS data integration into seismological standards workflows. Looking for an effective short term solution using existing standards. Also want to discuss a long term solution using more broad formats such as HDF5 and SensorML. Asking to identify the groups that are working on this problem and see if we can get them to coordinate on a joint paper with a proposal.

Florian (in chat) asks if the type of GNSS data being discussed is only displacement time-series. Peter indicates that, yes, they are considering displacement solutions from GNSS, mostly real-time.

Jerry mentions that IRIS and UNAVCO are merging. The processed GNSS data loses a lot of information contained within that data product. Good for tsunami warning centers. Question about processing the GNSS data at the edge or at the data center. Mentions that the geodetic community has had difficulty using the SEED format for storing GNSS solutions. The joint IRIS/UNAVCO effort is underway to come up with standards for storing and integrating GNSS data with seismic. John clarifies that this proposal is not meant to replace existing formats for GNSS data, but to allow integration of these solutions into existing seismic information systems for specific processing needs such as alert rapid response solutions.

Chad mentions that the US Regional networks are working on a standardized system for an integrated real-time flow into systems (and relaying to other centers). Suggests it would be good for this US effort to be better advertised for awareness. John mentions that they have been in contact with the ShakeAlert system and their already existing integration of geodetic time series solutions into their systems.

**[Action Item 1]:** Identify the groups within the FDSN that are already working on this topic and together prepare a white paper about the GNSS data integration in Seismology.  
Responsible: GFZ with collaboration from other groups

**[Action Item 2]:** Based on that, develop guidelines to address the immediate needs (short term) and start a discussion within this group for the long term options.  
Responsible: GFZ with collaboration from other groups

## Proposal for miniSEED3

Chad Trabant presented a set of slides regarding the Proposal for miniSEED3. This mainly serves as a review and an update on the status of completion of this project. Thanks given to the miniSEED3 review group for their efforts.

The specification for miniSEED3 is complete and online and is ready for the Working Group to review. Working code is available, and the IRIS fdsnws dataselect web service offers a working format conversion to deliver miniSEED3.

Tim asks about CRCs used in miniSEED3. Forward Error Correction, was that ever considered? Chad indicates that this topic never arose, but WG 2 can always discuss this.

John asks, would IRIS have an interest in rolling out ObsPy tools to support this? What about instrument manufacturer support for this format in their data recorders? Chad indicates that these are great ideas. He has contacted three manufacturer groups about this and it ties in with the SeedLink 4 proposal as well. IRIS has limited resources to directly make changes to all open tools in the community, but as for ObsPy, it already uses libmseed, so it may involve just a small porting job to get ObsPy upgraded to support this.

Philip comments that this new format is nice in that new requirements or non-standard pieces of information can be incorporated into the miniSEED 3 key-value block.

Chad suggests that the FDSN work together to consolidate non-standard header names in an accessible catalog with the idea that some may get adopted by the FDSN as an official header.

Peter asks if there is a namespace scheme planned to avoid collisions? Chad shows that there are some FDSN reserved headers and that the key-value pairs are arranged hierarchically in JSON format, so the top level element tends to act as a unique identifier to indicate context or namespace.

Dan asks if there was discussion about querying directly on the data records with the extra headers. Chad says this is not part of the specification, though it is certainly possible that this could be done. In the past, miniSEED used to have a number of quality flags in the header, which can be used for filtering. However, there are millions of records in an archival dataset, so this is not necessarily practical.

**[Action Item]:** Send the proposal to the WG with a Call to form an Evaluation Review Team.  
Responsible: WG Chair

## Next steps for the presented proposals and on-going tasks

Javier Quinteros presented the status of the different proposals being submitted, or evaluated.

1. Call for a proposal review team for Tim Ahern's Metadata for Legacy Data in the next few days.
2. Call for an evaluation review team for Chad Trabant's miniSEED3 specification in the next few days.
3. StationXML evolution. A review team has been formed and will start in the next few days.

No objections to the proposed tasks.

## Summary of retained and on-going action items

**[Action Item - QuakeML]:** ETH will open the discussion about QuakeML on the WG, including new functionality planned to be included in v2.0.

Responsible: John Clinton

**[Action Item - Event types]:** Dmitry Storchak has agreed to lead an effort that will span both FDSN WG2 and COSOI regarding Event Types. He will inform the community about the progress on this discussion and joint effort.

Responsible: Dmitry Storchak

**[Action Item - StationXML]:** The Review Team work should start in the next few days. Issues will be evaluated and a Recommendation is expected as an output. Corrections to the standard, or documentation, but also new features for next release.

## A.O.B.

From Mario Locati: Has there ever been a discussion on the standardization of a JSON output for the fdsnws-event? Nick Ackerly wonders if this is a topic for WG 3. Comments that JSON sometimes is implemented, but nobody follows a standard. Chad accepts the suggestion that this topic get added to the WG 3 agenda of the upcoming meeting.

Javier will make the minutes and slides available on the FDSN website once everything has been collected.

## Adjourn

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## Additional Resources

<http://www.fdsn.org/wg/framework/>

<http://docs.fdsn.org/projects/stationxml/en/latest/>

<http://docs.fdsn.org/projects/source-identifiers>