FDSN WGIII meeting
Coordination of Products, Tools and Services
Final Minutes

The meeting was called to order at ~12:05PM July 24, 2013, Gothenburg, Sweden - Room F3

An attendance list circulated and is included at the end of these minutes. All participants agreed to have their names added to the FDSN WG III email listserver.

BUSINESS:
The minutes of the previous working group meeting in Melbourne were distributed. A motion to approve the Melbourne minutes: Dewey moves, Sleeman seconds - no objections - Minutes of the Melbourne working group III were approved.

Ahern asks if current attendees have any objections to being added to the WGIII mailing lists: no objections. Ahern will add all of the attendees to the mailing list.

Review of WGIII charge
No comments

FDSN Web services
       Status from data centers
Europe
1) ORFEUS (Reinoud Sleeman)
Seismcomp3 installed to provide station XML services. If working they will provide station XML services to all EIDA services
waveform data - implemented WS (with help from IRIS) based on new Monet database. The system is still under development but they believe it will be complete in a few months (fall/winter 2013)
ORFEUS DC will provide access to waveform data just for ORFEUS DC (again, complementary to EIDA).

2) ETH – (Florian Haslinger)

The new system of SeisComp3 was installed by ETH and tested by ETH and IRIS. This version uses the recently released SeisComp3 fdsnws tool to support FDSN WS using a SeisComP3 database and waveform source. Installation was relatively trivial. There has been no public release yet . This version suupports FDSN-dataselect and fdsn-station. fdsn-event is still under evaluation

Plans for future include:

*   Web Services connected to live SCP3 dB, with data, events updated in near-real-time

 *   Support of event catalog for Swiss region

 *   ETH plans to offer community access to Swiss archives by Autumn 2013

 *   ETH wants to evaluate how WS can compliment EIDA

The new system of SeisComp3 was installed and tested by IRIS. This version uses SeismComp3 version for supporting FDSN WS. Installation was relatively trivial. Supports FDSN-dataselect and fdsn-station - fdsn-event still under test and not publicly released yet
Plans for future include:
 • Web Services connected to live SCP3
 • support of event catalog for Swiss region
 • ETH plans to offer community access by Autumn 2013
 • ETH sees WS and EIDA services as complementary

3) GEOFON (Angelo Strollo & Joachim Saul)
Very similar report to ETH - same status and timeline
internal testing - public access to be implemented by end of year

4) RESIF (Helle Pedersen)
2 WS installed but this system does NOT use the web services implemented in SeisComp3. One of RESIF's partners is responsible for consolidated bulletins.
 RESIF has not installed event web services.

5) There was no report from INGV

US
1) IRIS (Trabant)
IRIS has implemented FDSN versions of dataselect, station, and event and has been operating them for about 3 months. Prior to that, IRIS was operating IRIS style WS for about two years or more. IRIS will deprecate the IRIS versions of web services at the end of 2013 and rely totally on the newer FDSN versions. Other IRIS client software has been ported to FDSN services (Command line, Java, Matlab, jWeed, etc. IRIS s fully committed to the FDSN web services.

After some experience with the FDSN web services IRIS has made some recommendations for additions and extensions to them. These will be circulated within FDSN WG III for discussion and hopefully approval.

IRIS has several other services in operation and believes that at some future

time, after other FDSN centers have fully implemented the first three services, it may be appropriate for the FDSN to consider adoption of them into the FDSN web services collection. These include such services as SAC poles and zeros, a service to return RESP files, the time series web service that performs digital signal processing, a rotation service that can rotate time series into transverse and radial components or rotate non-traditionally aligned time series into N-S or E-W components. More information can be found at service.iris.edu

WebService usage at IRIS DMC
Current web service use at the IRIS DMC is 100s of gigabytes and 50-150 unique users per day with both of these trending upwards. Client software shows a tremendous variety including those that IRIS has developed and supports as well as those that have been independently developed. Statistics show that FetchBulkData has the most hits but Wget has accessed the most data and ObsPy is one of the more common methods invoking web services.

Parametric Data Centers
USGS - Jim Dewey
NEIC has implemented web services for events following the FDSN standards. They can be accessed at http://earthquake.usgs.gov/earthquakes/feed/v1.0/ (menu at left). They would like feedback on compatibility with the FDSN services.

ISC - Dmitry - plans for FDSN WS to be implemented at the ISC mirror in Seattle. They are committed to putting the ISC bulletin in QuakeML format with access through FDSN event services. ISC runs 4 mirrors of the ISC database (Tokyo, CTBTO, US LLNL and IRIS DMC)

Ahern indicated that IRIS would like to eliminate IRIS event services once NEIC and ISC are up and running as they are more appropriate centers to provide event-based information allowing the IRIS DMC to eliminate themselves from the event distribution business.

General WS (Trabant)
IRIS would like consideration of 5 new aspects of the web services including
   1) Specification of required versus optional services parameters
   2) Addition of "format" parameter (optional/default behavior)
   3) Addition of "nodata" parameter to control the HTTP response code - remove a hanging
   4) Clarification of definition for min/max latitude and longitude values (include "or equal to")
   5) Clarification of starttime/endtime

Ahern asked if there were any objections to adoption of suggestions - Sleeman agrees, but would like Chad to send out information for WGIII to review and

provide comments. It was decided that the comment period would be 4 weeks to accommodate the holidays in Europe. Ahern concurred.

IRIS recommendations for extensions to existing web services
FDSN_station service
    a) add a format parameter and accept format = text
    b) accept format json or geojson to return those format responses
    c) add "matchtimeseries" as optional parameter to limit results
    d) add 'nodata' as an optional parameter and accept nodata=204 and 404 to control
    e) accept multiple selection parameters as a POST style request

FDSNWS-event
a) add 'format' parameter and accept format=text

Florian asked if there is a 'query' under formats to allow users to see what formats are available?   Chad indicated that one could return a "WADL (Web Application Description Language) that might be a place to identify options for the parameters.

Tim: FDSN should identify acceptable types of formats. This item will also be distributed within WG III with a 4-week response time.

Ahern - PRODUCTS
Ahern described the 5 product levels that IRIS has adopted, following the lead of NASA. These levels are:

0 - raw data
1 - QC'd data
2 - derived information using standard processing
3 - Seismological research products
4 - Integrated research products (multi disciplinary)

IRIS currently has level 0 through 3 products available. Ahern asked if any other FDSN centers had implemented any products or if FDSN members had any ideas as to what new products could be. Torlid asked if these product levels being used by IRIS were appropriate for use within the FDSN. Tim said that these were not specifically IRIS levels but were adapted from NASA definitions but developed through EarthScope to coordinate integrated seismic/GPS developments. Perhaps these are useful considerations for EPOS.

Ahern showed the products available on the IRIS web site and identified several of the key IRIS products available from www.iris.edu/dms/products. These included EMC, GMV, Event plots, back-projections, etc. Ahern also demonstrated

the IRIS product management system (SPUD), a product repository. Ahern asked how products should be coordinated within FDSN? Should there be standard products? Torild indicated that some products should be extended (global events) but probably there was no need for shared regional products Johannes felt that there should be standards for calculations like CMTs.

Tim raised the point as to how are products discovered? At IRIS, products can be found via web services as well as through the web site. Perhaps we should start a discussion through the WG III email list? This seemed like most people supported this approach.

Quality Assurance:
Ahern gave a brief review of the IRIS QA Effort called MUSTANG. Currently MUSTANG has ~24 metrics developed. It uses web services for the basic architecture and as much as possible uses a documentation and usage style similar to other FDSN and IRIS web services. It is developing the logic to determine when metrics need to be recalculated due to changes in related time series or metadata. MUSTANG is designed to be part of a larger more distributed QA system and can accept metrics determined at other locations. All access to underlying QA metrics is done through web services.

MUSTANG consists of three primary components including:
1) Master Scheduler
2) Central metrics storage system
3) metrics calculators

The current status is that ~24 simple metrics have been implemented. Multiple time series metrics such as station percentage completeness, multiple station aggregates are being developed now and some of the more complex processing metrics such as - PSD's are nearly complete. PSDs are now storing the raw numbers and the instrument response is applied later making it easier to accommodate changes in metadata. MUSTANG will also provide multiple time series metrics including such things as cross correlation, differenced/aggregate PDFs and comparisons to caluclated tides. There are also many other metrics being considered. MUSTANG is being designed to be able to more easily add new metrics,

LASSO - Latest Assessment of Seismic Station Observations is being developed by IRIS Instrumentation Services especially the IRIS GSN. The MUSTANG client interface is underdevelopment by IRIS GSN, but can be applied to all data holds/virtual networks.

Documentation - service.iris.edu/mustangbeta/metrics/docs/1/help
all documentation links will be put on FDSN webpage

What should the next steps be for QA within the FDSN?

Florian: MUSTANG is a perfect pilot project. Let's see how MUSTANG works in this role. Europe may take this and add/modify, or create a new system. Might be too new to standardize at this point.

Sleeman: Need information on definitions and algorithms: might wish to alter timing of calculations, for example hourly instead of daily metrics.

Pederson: No need to standardize right away. Users might develop "tastes" for certain metrics. A variety of approaches might allow community to define what is most useful.

Florian: a centralized discussion is still important to begin.

Ahern: maybe a discussion thread through WGIII?

Johannes: Would like to see an overview of what each data center is currently providing in terms of QC.

Sleeman: metrics are very similar at this point. At least the base parameters (not complex/higher order metrics - i.e. complex calculations, intersensor/station comparisons, etc) Let's start with basic definition of basic metrics

Ahern: The base-order metrics should be stable for MUSTANG by the end of the year. At that point, perhaps we can compare them to other FDSN metrics.

Pederson: Redefinition of metrics may have impact on large data holdings if recalculations are required. Ahern responded that single metric changes shouldn't have that much impact. We'll just have to see.

Johannes: This should be a topic for Prague FDSN meeting

Chadwick: Some QA metrics can become products.

Angelo: Asked if there was any word on a "Broker"?

Ahern: IRIS is calling it a "Federator" instead of Broker. IRIS is developing an IRIS federator. Perhaps EIDA should develop an EIDA broker. Requests will return where data can be found but the data will flow directly from individual data centers to the user and this will allow data usage metrics to be tied to each federated FDSN data center. IRIS will not send data from other federated FDSN centers through the IRIS DMC. Should be complete sometime this year or early

next year.

With Business concluded, meeting called to close at ~1:25PM

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