**WG-III Coordination of Products, Tools & Services**
**3 July 2011**
**Melbourne, Australia**

The meeting began at 6:10PM. The proposed agenda was circulated and no additions were made. The meeting minutes from the 2009 Capetown meeting were approved.

A new version of the working group's charge was discussed.  The charge was expanded slightly to encompass WG III's activities in the area of services. The new charge was accepted. The approved charge is:

*Within the FDSN, WG III will coordinate the*
- *production of standard products and the methods for producing these products,*
- *identification, development and/or distribution of standard software applications to be used to acquire, manage, distribute and use data available from FDSN data centers,*
- *development and adoption of standards for services, including web services and other data center services that are supported and deployed at FDSN centers.*

Discussion turned toward services within the FDSN and the Chair indicated that this area in WG III charges would be the focus of this meeting. An overview was presented by several groups currently working in the services area. ORFEUS' activities were presented by Reinoud Sleeman. These included
- www.seismicportal.eu that includes event, waveforms, and a user data cart
    - event data comes from EMSC
    - waveforms come from ORFEUS
- ORFEUS is considering following OGC compliant web services
- Event data is available via both SOAP and REST style services. QuakeML is available through both SOAP and REST and JSON formats
- Waveforms are available through Seismolink web service in the EIDA project. Both SOAP and REST, and represented in wsdl.
- Other services include Tau-P
There are client tools, including Joque, (event data from catalog) Porsche, (data from user parameters) and Neries-Client which is a C++ event and waveform fetching tool

Reinoud showed a seismic data portal Powerpoint slide that showed the available web services from IRIS, INGV, and EMSC-ORFEUS

ORFEUS has a tau-p service. A question about where the Tau-P code is coming from, and it's assumed that it's the java version from Philip Crotwell.

John Clinton gave a summary of QuakeML. It is a representation for

seismological data. It has an open schema, and is an umbrella schema, using resource identifiers, etc. The current development has basic event description (BED). It has been widely adopted. John listed users to date including IRIS, SeisComp3, EMSC, ORFEUS, etc. John showed a slide showing the development timeline, the first release of QuakeML dates from 2008, an intermediate release, v1.2, is due is spring 2011. Future developments could include Station inventory, site descriptions, macroseismic information, and ground motion. The current status is that there is no official acknowledgement, and no funding, so John would like institutional backing from the FDSN. This would possibly enable future development.

John presented a draft resolution to the group. It asks for FDSN moderation within FDSN WG-III. Motion to refer this to WG-II as well. John will email the language to WG III chair as a bullet for the plenary session on July 4, 2011. The wording that was presented was accepted with the WG-II addition.

Tim Barton next discussed the Geosciences Australia QA/QC/SoH architecture framework. They have been working on updating all of their information within an Oracle database. They use CSS3.0 schema. They use PLSQL queries to create FDSN station pages and integrate this information with State if Health information. He described metadata products, like FDSN station pages. In addition to text-based info, they have KML displays that show threshold metrics such as latency. Question posed: is this useful to users? Should they link to IRIS QUACK or from the network directly? Their position is that this info should come from the FDSN. Another question: Has the station book lost it's value? Perhaps, by replacing it with something like mda, using web-services to pull information would be better. Question: Is this a product that the FDSN wants to endorse? Yes, it's decided but it needs to be modernized, and it should include only automated metadata. It could possibly use StationXML web services to generate these.

Motion to have Tim Barton recommend a station book creation mechanism and come back to the appropriate FDSN working group

IRIS webservices discussion was then made by Tim Ahern. He indicated that complete documentation of web services at IRIS can be found at http://www.iris.edu/ws. He made a proposal to start the discussion by focusing on five primary services:
- station
- dataselect
- bulk data select
- available
- event
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Secondary services available at IRIS include: RESP, SACPZ, timeseries, distaz, ms2ascii, plotter, tracedsp, FlynnEngdahl. But Ahern felt that these were not the key services FDSN data centers should focus on developing as first steps.

Ahern also listed clients and ways to invoke web services. These included:
- curl,
- wget,
- browser,
- java and other object oriented apps
- Perl clients from IRIS including
  - Fetchbulkdata,
  - FetchMetadata,
  - FetchResp,
  - FetchSacPZ,

Shows usage of webservices, and asked for agreement on a plan to adopt and support within the community. This includes a focus on the 5 primary services including station, dataselect,bulkdataselect, available and event as the first services to focus on.

Ahern felt that WGIII might focus on the standard definition of the inputs and outputs and parameter defintion and usage. WGIII should work closely with WG II to determine the various XML schemas desired.

One plan is to get started with StationXML since it is a very close mapping of dataless Seed to an XML representation. IRIS has tools ready or nearly ready that convert dataless Seed to StationXML and also StationXML to dataless SEED. This will lower the level of entry for data centers to begin using Station XML.

Within 2 years, create a FDSN StationXML, getting input from all partners.
An overview of reasons and carrots for why these are the right set of 5 to start with was presented. Ahern then presented a series of slides showing possible advantages with this approach. A major advantage is that federated data is easier to get from distributed centers that run web services with identical inputs and outputs. It would also be possible to have a web service broker to do the routing of requests from users to data centers.

The next topic discussed was products. There was an overview of IRIS products, that listed all of the current products and links to proposed ones. The question was asked if there are there any other products not in the list, and is this an acceptable set of products to focus upon? Ahern will ask for further input by email to those on the FDSN WG III list and then Ahern will circulate Product ideas across the FDSN that should be considered.

One potential item related to WG II was a standard method of reporting data distribution details.  IRIS presented their format that they need if any IRIS data are redistributed by other centers.  The details of the new format proposal for shipment statistics are found below:

- Date: Date of Request
- Type of request, (Breqfast, NetDC, WILBER, etc.)
- Network code
- Station Code
- Location ID
- Channel code
- #_of_bytes,
- st_time: starting time of data request
- end_time: end time of data request
- email or IP,
- Country Abbreviation,
- Country,
- City,
- Lat
- Lon

Examples follow first for request by email (Breqfast, NetDC, Webrequest, etc)

2011/01/01   WILBER  IU     ADK    00     BH1    80896   2009/08/12 22:50:49
2009/08/12 23:21:28    ymhe@mail.igcas.ac.cn   CN     China   Beijing 22
39.9289 116.388

And an example of IP Based Requests
2011/01/02  SL_SeedLink   IU     AFI    00     BH1    3875328 2011/01/02
00:00:00    2011/01/03 00:00:00    193.144.251.92 ES     Spain  Madrid 29
40.4000 -3.6833

**FDSN Tools:**
Tools are primarily software tools.  These include such things as rdseed and verseed, which are hoped to be deprecated with webservices.  Other tools include such software packages as SeisComp3, ObsPy, SAC, MATLAB, Excel, PDCC, and of course PQLX.

The commercialization of PQLX was discussed. The final situation is still unclear.  It appears that some FDSN members have versions of PQLX that contain features that are not currently included in the open source version and this will be investigated and the most current version will be made available to all.

It was proposed to have links on the FDSN website to useful software.  The FDSN web site should make full use of existing information such as that found on the ORFEUS web site.

**Other Business**

The only comment made asked whether web services would have versioning imbedded into them, and its been put on the list of tasks at the IRIS site at least.

Meeting adjourned at 7:45PM

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