RapidSeis
Portlets integration and metadata
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The Adoption of the JSR-168 standard for the NERIES portlet/portal development made the integration with Rapid easy.
RapidSeis, Pilot project: Waveform Visualization and Analysis Remote Portlet

To utilise the vast amount of seismic waveform data provided through the portal, it is necessary that scientists can perform analyses on them for their research.

The RapidSeis tool will provide a way to seismologists to create new analysis plugins that can be shared and executed within the portal itself, allowing the computation and data movement to be performed on suitable computational infrastructures (Local GRIDs).
Earthquake parametric information, waveform, phases and arrival times (theoretical) are...

- Aggregated as a single data product that can be visualized and downloaded

- Described in a machine understandable way (RDF) and accessible through a SPARQL Endpoint
Waveform metadata

<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
    xmlns:j.1="http://eu.neries/smi-resource/data/waveform#"  >
  <rdf:Description rdf:about="smi:de.gfz-potsdam/waveform/gfzArclink__8586/46679"  >
    <rdf:type rdf:resource="http://eu.neries/smi-resource/data/waveform" />
    <!-- DC properties --->
    <dc:creator rdf:resource="smi:smi-registry/people/admin" />
    <dc:publisher rdf:resource="smi:smi-registry/organization/GFZ" />
    <dc:title>Sichuan  2008-05-12T06:28:00</dc:title>
    <dc:description>Sichuan event 2008-05-12T06:28:00 Permanent GEOFON network</dc:description>
    <!-- NERIES properties --->
    <j.1:event-uri>quakeml:eu.emsc/event#20080512_0000023</j.1:event-uri>
    <j.1:channels>
      <rdf:Bag>
        <rdf:li rdf:parseType="Resource">
          <j.1:velocitymodel-name rdf:datatype="http://www.w3.org/2001/XMLSchema#string">iasp91</j.1:velocitymodel-name>
          <j.1:stationcode rdf:datatype="http://www.w3.org/2001/XMLSchema#string">MATE</j.1:stationcode>
          <j.1:networkcode rdf:datatype="http://www.w3.org/2001/XMLSchema#string">GE</j.1:networkcode>
          <j.1:channelcode rdf:datatype="http://www.w3.org/2001/XMLSchema#string">BHE</j.1:channelcode>
          <j.1:P-phasetime rdf:datatype="http://www.w3.org/2001/XMLSchema#double">48540.31137251435</j.1:P-phasetime>
          <j.1:S-phasetime rdf:datatype="http://www.w3.org/2001/XMLSchema#double">49220.54324534535</j.1:S-phasetime>
        </rdf:li>
      </rdf:Bag>
    </j.1:channels>
  </rdf:Description>
</rdf:RDF>
Metadata applications

- The metadata provide the starting point to display, aggregate and process information beyond the NERIES Data Portal.

A small example: iGoogle gadget.

**Latest waveform datasets** composed by the users of the NERIES portal (Fig 1).

**Datasets related to the latest Earthquakes**, which are described in all their parameters by the QuakeML Data Format (Fig 2).
RapidSeis
(datasets and metadata update/exchange)

RapidSeis Plugin editor

RapidSeis executor

Queries/Updates of Plugin/waveform metadata

SDX Processing on the User Cart’s Waveform datasets/metadata

RDF Update/Delete Webservice (only for allowed resource types)

SPARQL Endpoint
Plugin metadata

The plugin metadata are generated by the RapidSeis plugineditor and then stored into the RDF Model.
Open SPARQL Endpoint

RDF Update/Delete Webservice
(only for allowed resource types)

Ingests RDF, and update/delete actions are allowed only for the Resources which belong to a set of allowed types: Plugin, Waveform. (configurable, requires authentication)

Public SPARQL Interface, Answers to DESCRIBE, SELECT, ASK, CONSTRUCT Queries on the underlying datamodel

RDF metadata services
(datasets and metadata update/exchange)
Seismic Data Portal

Future work: precessing traceability

Class
RapidSeis/execution

Instance
smi:de.gfz-potsdam/waveform/gfzArclink__8586/46679

dc:Description
Sichuan event 2008-05-12T06:28:00
Permanent GEOFON network

Class
data/waveform

Instance
smi:eu.orfeus/rapidSeis/execution#id

wf:processing-sequence

Instance
smi:eu.orfeus/rapidSeis/execution#id

Instance
smi:eu.orfeus/rapidSeis/execution#id

Instance
smi:eu.orfeus/rapidSeis/execution#id

Seq