Database developments
- IFREE/JAMSTEC perspective -

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Databases

Earth's Environment Portal
(operated by the Global Oceanographic Data Center (GODAC))

Deep-sea Video Database
Provides streaming of the valuable deep-sea research videos maintained by JAMSTEC, along with various detailed information (metadata) including research location, purpose, video content (organism names and phenomena recorded), and panoramic images.

Document Database
Provides access to public relations publications, as well as reports and research papers issued by JAMSTEC.

MIRAI Data Web
Provides access to public relations publications, as well as reports and research papers issued by JAMSTEC.

Deep-Sea Research Data Web
Provides access to vessel-based observational data obtained from deep-sea research. Mainly geophysical data is provided.

Deep Seafloor Image Database
Provides access to images of the deep seafloor, deep-sea creatures, and other phenomena obtained from deep-sea research.
Earth Science database

• Different discipline
• Different places
• Same kind of (huge) data in different format

→ how to integrate?

Web services might be a solution…
Google earth?
2. Web Service Portal Site Outline

Web Service Portal Site

Controller

Web service interface

Request parameters

Results

User Interface Page

HTTP

Web service

interface

Internet

User

Web Browser

enter parameters

receive data

Data distribution Web service

data center A (Web service)

Cont data

Event data

Station info

Data distribution Web service

data center B (Web service)

Cont data

Event data

Station info
QuakeML

QuakeML is a flexible, extensible and modular XML representation of seismological data which is intended to cover a broad range of fields of application in modern seismology.

QuakeML is an open standard and is developed by a distributed team in a transparent collaborative manner. The first part of QuakeML will cover basic seismic event description, including moment tensors. The standard document is about to be subjected to a Request for Comments process. A pre-RFC draft document can be found in the Documents section.

The standardization process for resource metadata and inventory information is also under way, but still in the pre-RFC stage. The flexible approach of QuakeML allows further extensions of the standard in order to represent waveform data, macroseismic information, probability density functions, moment tensors, slip distributions, shake maps, and others.

If you have questions or suggestions, please contact us at quakeml (at) sed.ethz.ch.
Integration of Geochemical and Geophysical Data Project

Integration of geochemical and geophysical data would give us a new insight to the nature of the Earth. It should advance our understanding for the dynamics of the Earth's interior and surface processes. Today various geochemical and geophysical data are available on Internet. These data are stored in various database systems. Each system is isolated and provides own format data. The aim of our project is to display both the geochemical and geophysical data obtained from such databases together. We adopt Google Earth as the presentation tool. We display any graphical features on Google Earth by KML format file. We have developed softwares to convert geochemical and geophysical data to KML file. You can visually present various data easily and quickly by this tool.

As a first step, we have developed softwares to convert seismic tomography model and geochemical data of rock provided by GEOROC and PetDB.

seismic tomography model on Google Earth
geochemical data of rock on Google Earth
Earth Science data on
Google Earth

• Multi purpose geoscience data viewer
  – Integration of geochemical and geophysical data.
  – Efficient use of various format data.

• Tool to convert geoscience data to a KML file
  – We adopted Google Earth.
KAIREI 2003
Zoom up KAIREI 03-08
Landscape of sea floor
Temperature and ocean depth
Global tomography
Regional tomography
Geochemical data
Tomography and geochemical data
Tomography and geochemical data
Geochemical data from PetDB
Visit our poster presentation!

Integration system of geochemical data of rock, seismic tomography model and navigation data of research vessels

by Yamagishi et al.