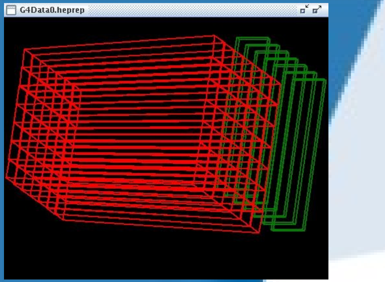
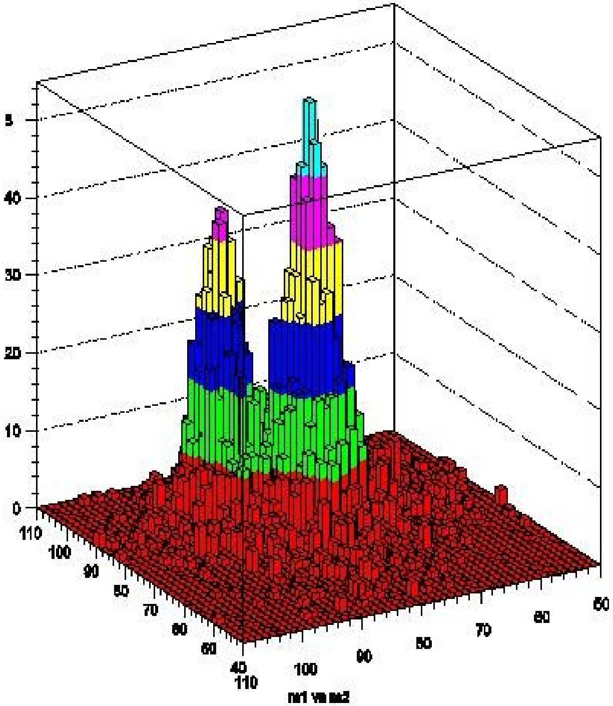


DrimageDB: Status and plans

Weekly dual read out meeting
17th August 2010

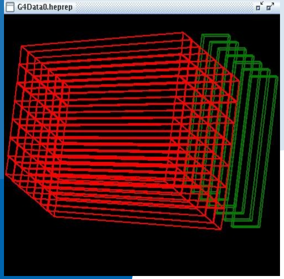


Hans Wenzel

Fermilab

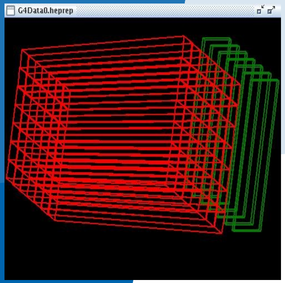
17th August 2010

Weekly meetings, Agenda page:
http://ilcagenda.linearcollider.org/categoryDisplay.py?categId=151

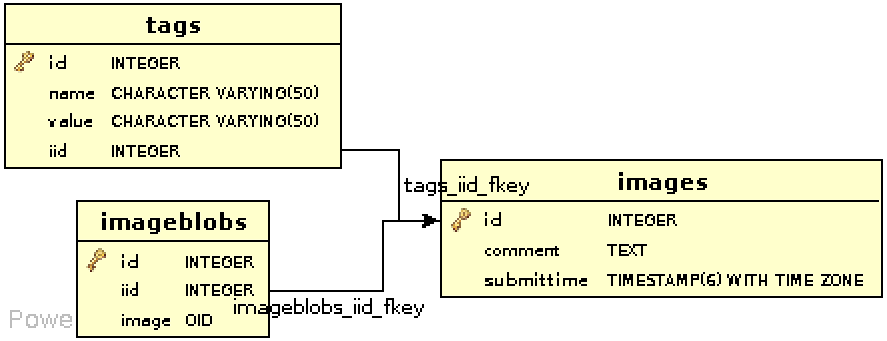


DRImageDB: What is it?

- Knowledge database that allows to store plots and associated information in a data base and display it via a JSP based web application (running on Tomcat or glassfish)
- Ultimately will consist of the following components:
  - Postgres DataBase
  - Web Application to select and display content and for Experts to modify the data base (upload, delete, update) http://kyoto.fnal.gov:8080/DRImageDB/
  - Java application for multiple file uploads to data base uses xml description as input
  - Java library (jar file) contains all classes to access the objects and store them in the data base (used by Java application and webapplication)
- All code is in the CERN SVN repository
- Database will ultimately hosted a DESY Zeuthen
- Prototype application for Geant 4 hadronic validation http://g4jsp.ifh.de:8080/G4HadronicValidation/



DB ER Diagram



tags

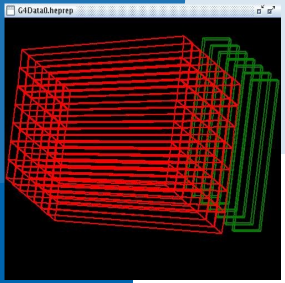
🔑	id	INTEGER
	name	CHARACTER VARYING(50)
	value	CHARACTER VARYING(50)
	iid	INTEGER

imageblobs

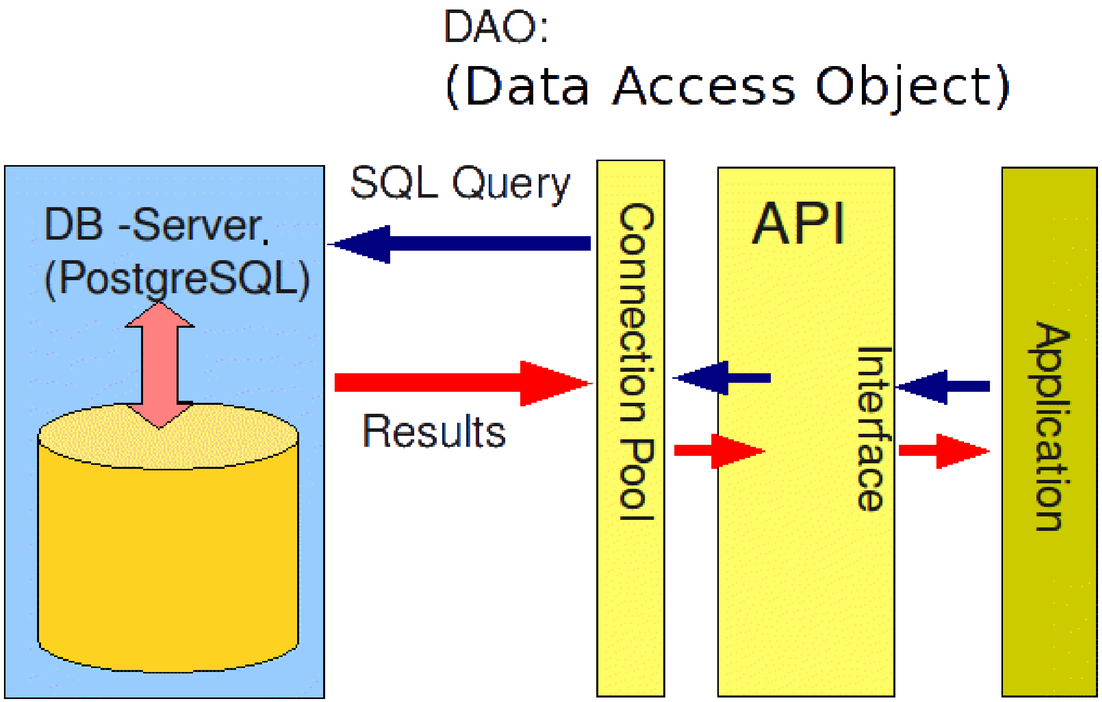
🔑	id	INTEGER
	iid	INTEGER
	image	OID

images

🔑	id	INTEGER
	comment	TEXT
	submittime	TIMESTAMP(6) WITH TIME ZONE



The display(Expert) web application



DAO:

(Data Access Object)

DB -Server, (PostgreSQL)

SQL Query

Results

Connection Pool

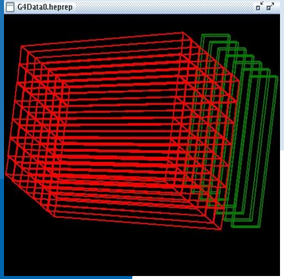
API

Interface

Application

Display Web Application

Expert Application



DRImageDB

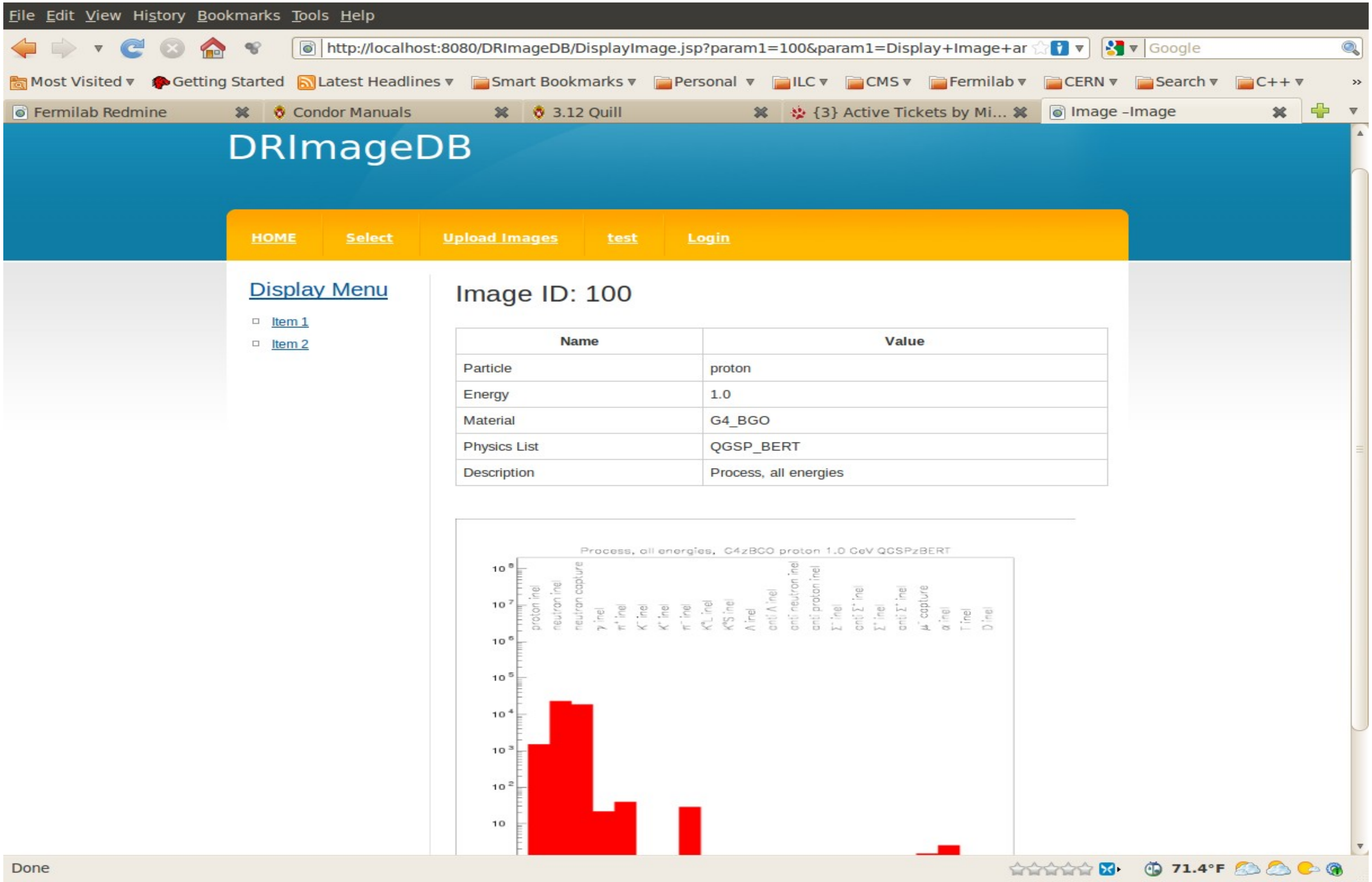
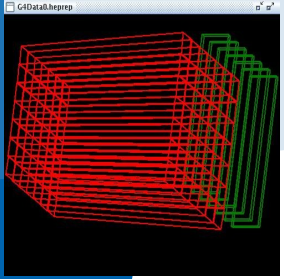


Image ID: 100

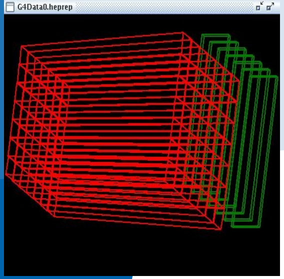
Name	Value
Particle	proton
Energy	1.0
Material	G4_BGO
Physics List	QGSP_BERT
Description	Process, all energies



Current XML description for multiple file upload

```
<?xml version="1.0" encoding="UTF-8"?>

<!--
    Document   : image.xml
    Created on : July 6, 2010, 3:45 PM
    Author     : wenzel
    Description:
        Purpose of the document follows.
-->
<imagelist>
    <image>
        <comment>First Comment</comment>
        <imageblob>/home/wenzel/piplus1.4GeV-C-proton.gif</imageblob>
        <tag>
            <name>Target</name>
            <value>Be</value>
        </tag>
        <tag>
            <name>Thickness</name>
            <value>0.98 mm</value>
        </tag>
        <tag>
            <name>Particle</name>
            <value>Muon</value>
        </tag>
        <tag>
            <name>Energy</name>
            <value>172 MeV</value>
        </tag>
    </image>
    <image>
        .
        .
        .
    </image>
</imagelist>
```

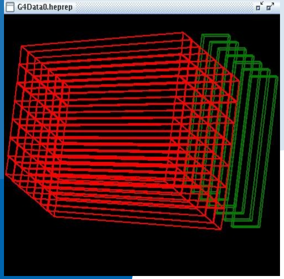


Access to the data base

The Data Access Object (or DAO) pattern:

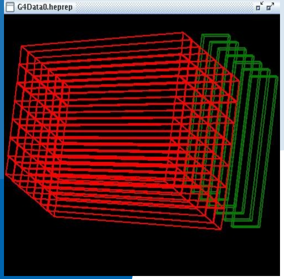
- separates a data resource's client interface from its data access mechanisms
- adapts a specific data resource's access API to a generic client interface

The DAO pattern allows data access mechanisms to change independently of the code that uses the data or the database that is used. (currently we use postgresql). Allows to access the data in the way that's most convenient not as dictated by the database structure. Developer doesn't need to know SQL.



Access to the data base

- All the database interactions are contained in service adapter (library);
- all the sql statements necessary to enter/delete one image (test) are combined into one transaction;
- use save-points so if something goes wrong the data base is rolled back.
- use prepared statements throughout;
- it has a delete,store, retrieve, update method that deletes all objects associated with an image from the database;



Plans

- Complete separating access library (API) from web application and File Upload Application.
- Modify Web application to use access library
- Improve web application:
  - Better Navigation
  - Search function
  - Indexing (needs some feed back)
- Packaging for distributing and deploying (jar file for the java application, war file for web application).
- Apply to Geant4 hadronic validation package.