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Distributed Data-base System
for
scientific (non-textual) data

Why ?

Huge amounts of recent scientific data in different laboratories around the world not yet accessible to the public cooperation of the laboratories on mutual projects

1 Characteristics of this Concept

- Different Laboratories measure their data and can
  - store their data locally,
  - use this data-base as a local data-archive,
  - define multiple public access rights.
- A central data-base server is the public user-interface to those data and
  - should be updated automatically by the decentral data-bases of the laboratories,
  - allows searches in these data with a easy retrieval system, shows grafical data-overviews (spectra) in a grafical mode,
  - controls access-rights and registers accesses on demand,
  - orders the whole data on demand, regarding defined access-rights.

2 Features of the definable access-rights

- defining access-groups explicitly (for a scientific project with a group of laboratories),
- including and excluding user, internet-domains (examples: Universities, Max-Planck Laboratories, etc.)
- registration of searches of stored data,
- comments on requests of permitted datas (like E-Mail address of the laboratory)

3 Quality-Certification

- The system allows requests on 'grey' (prior to refereeing) data and certificated data.
- A referee system by members of the subgroup of the scientific community being experts in this field labels scientific data as qualified.

4 Hard- and Software Requirements

- The programs for accessing the systems have to exist for many often used hard- and software systems.
- Integration of (academic) public-domain software-packages as far as possible encourages a wide ackceptance in the scientific commiunity.

5 Experiences

- Realization of a decentral mass-spectra-data-base under VM/CMS via EARN (1987-1989) with T.H. Darmstadt (Inst. f. Kernphysik, CRNS Frankreich (Inst. Phys. Nucleaire), Univ. Oldenburg (AG Molekül-und Biophysik).
- Participation on "Modellversuch Informationsvermittlung" of the German Science Ministery 1986-1989, thereby developement of the program "MVS-Recherch", with supports the scientists at universities searching in external data-bases, registers the costs, splitting one host-login into many second user-ids within the university.
- Active participation on the national BMFT/DPG project "Electronic Information for Physics at Universities" 1990-1993, thereby education of physicists of 40 universities of Germany.
  Modification of MVS-Recherch for a general use (40 dept. used this program).
  Adaptation to UNIX, (70 dept. used this version).
- Workshops on WWW and NCSA-MOSAIC.
- Installation of a WWW-Server for other institutions, such as DPG (German Physical Society), GI (German Society for Information Science), ...

6 An Example for a Realization

Realization with the user-interface NCSA-MOSAIC and a simulated data-base-server!

You can use the links in the documents or You can see the pages with the links above.

- First the user has to decide the range of the search (of the data-base server and the general kind [1] of the search.
  In this simulation only mass spectra data is implemented.
- The user searches mass-spectra and gets this starting WWW-page of the data-base-server for mass spectra searches[2].
- On this page the user has to define the kind of search[3], only the first choice is implemented.
- This page discribes the input for the simple search[4]. After filling the fields and activating the START QUERY button, a data-base search will be done.

- This is a simulated result of the search, where 5 hits are shown i a general - non grafik - format.
  - A spectra of propanol[5]
  - A spectra of oxiran[6]
  - A spectra of propenal[7]
  - A spectra of propanal[8]

[1] query.html
[2] file:massq.html
[3] file:simple.html
[4] file:spektren.html
[5] file:propanol.html
[6] file:oxiran.html
[7] file:propenal.html
[8] file:propanal.html

- A spectra of butyn[9]
- A spectra of ethen[10]

[9] file:butyn.html
[10] file:ethen.html