PrimEx Calibration Database

M. Ito

PrimEx Software Workshop

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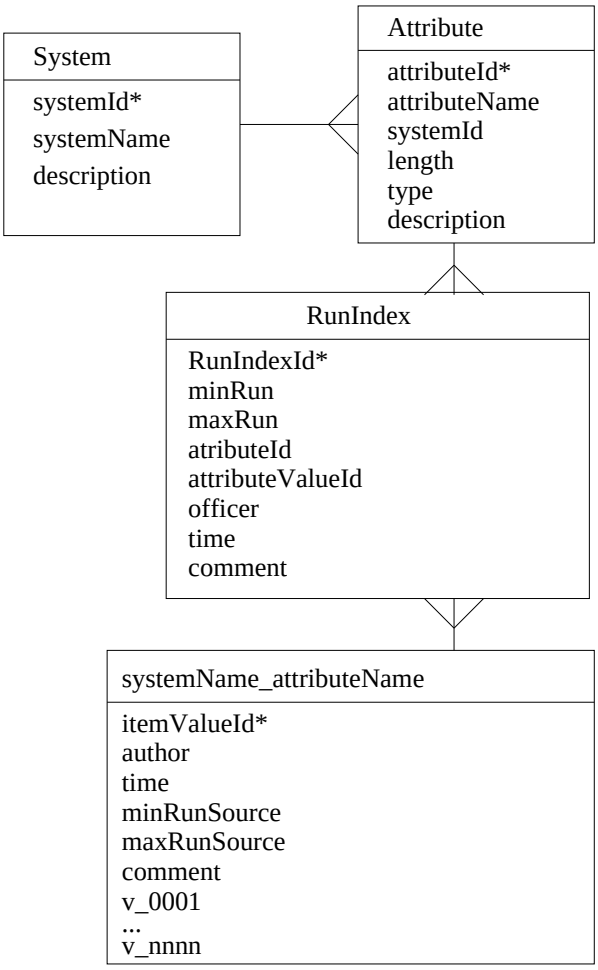
Introduction

- Database will contain all the necessary calibration constants needed to analyze PrimEx data
- Values will depend on run number
- Implemented in MySQL
- Sets of user-interface functions
  - analysis programs
  - detector calibrators
- Copied almost directly from CLAS CalDB

Features

- Run indexed lookup of constants by analysis jobs
- Ability for users to use and modify private copies of the run index without copying the constants themselves.
- Keep a change log: user, date, time, comment.

Database Tables



Notes on this structure

- Intemediate level of referencing.
  - Run numbers are not kept in the same table as the constants.
  - Different versions of the calibration constants are different instances of the run index table.
- "Freeze" by saving a version of run_index table.
  - Built-in of documentation; one knows exactly which constants are referenced in the frozen version.
- Constants are "never" deleted from the database.
  - Any frozen version will remain viable as long as the old constants remain in the constants database.
  - The only deletions would be for obvious mistakes.
  - Facilitates comparisons with old calibration methods.

- Private/custom versions of constants easy to make.
  - Can copy and (optionally) modify any run index table for private use.
  - No need to copy the constants tables.
  - Good for code development: stable set of constants.
  - Use prototype sets of constants without affecting the rest of the collaboration.
- Time history is recorded explicitly in the database.
  - Time of each modification is explicitly recorded.
  - Each modification is reversible.

Command-line Utilities

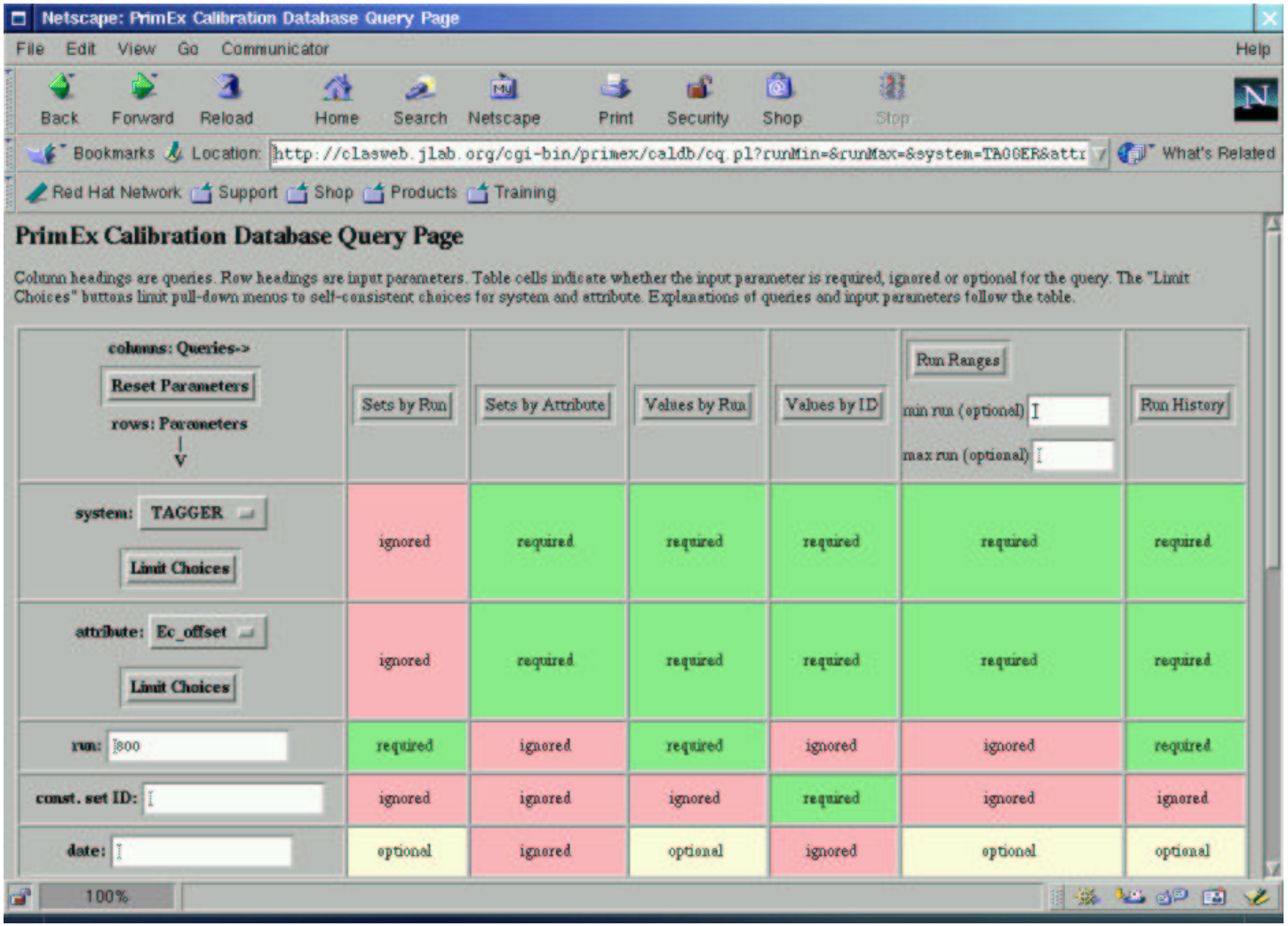
```
caldb_add_attribute.pl
caldb_add_officer.pl
caldb_add_system.pl
caldb_check_tables_priv.pl
caldb_copy_ranges.pl
caldb_copy_run.pl
caldb_create_runindex.pl
caldb_delete_changes.pl
caldb_delete_system.pl
caldb_drop_table.pl
caldb_link_constant_set.pl
caldb_make_run_index.pl
caldb_set_attributeValue_priv.pl
caldb_show_attribute_info.pl
caldb_show_attributes.pl
caldb_show_changes.pl
caldb_show_constants_id.pl
caldb_show_constants_run.pl
caldb_show_history.pl
caldb_show_run_ranges.pl
caldb_show_sa.pl
caldb_show_sets_attribute.pl
caldb_show_sets_run.pl
caldb_show_systems.pl
caldb_show_tables.pl
caldb_write_and_link.pl
caldb_write_constant_set.pl
cq.pl
DBI_version.pl
```

Web Interface

- Read-only access
- Comprehensive set of queries

C API

- Looks like “Map” calls
- Thanks to Eugene Pasyuk


Netscape: PrimEx Calibration Database Query Page
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Shop Stop
Bookmarks Location: http://clasweb.jlab.org/cgi-bin/primex/caldb/cq.pl?runMin=&runMax=&system=TAGGER&attr What's Related
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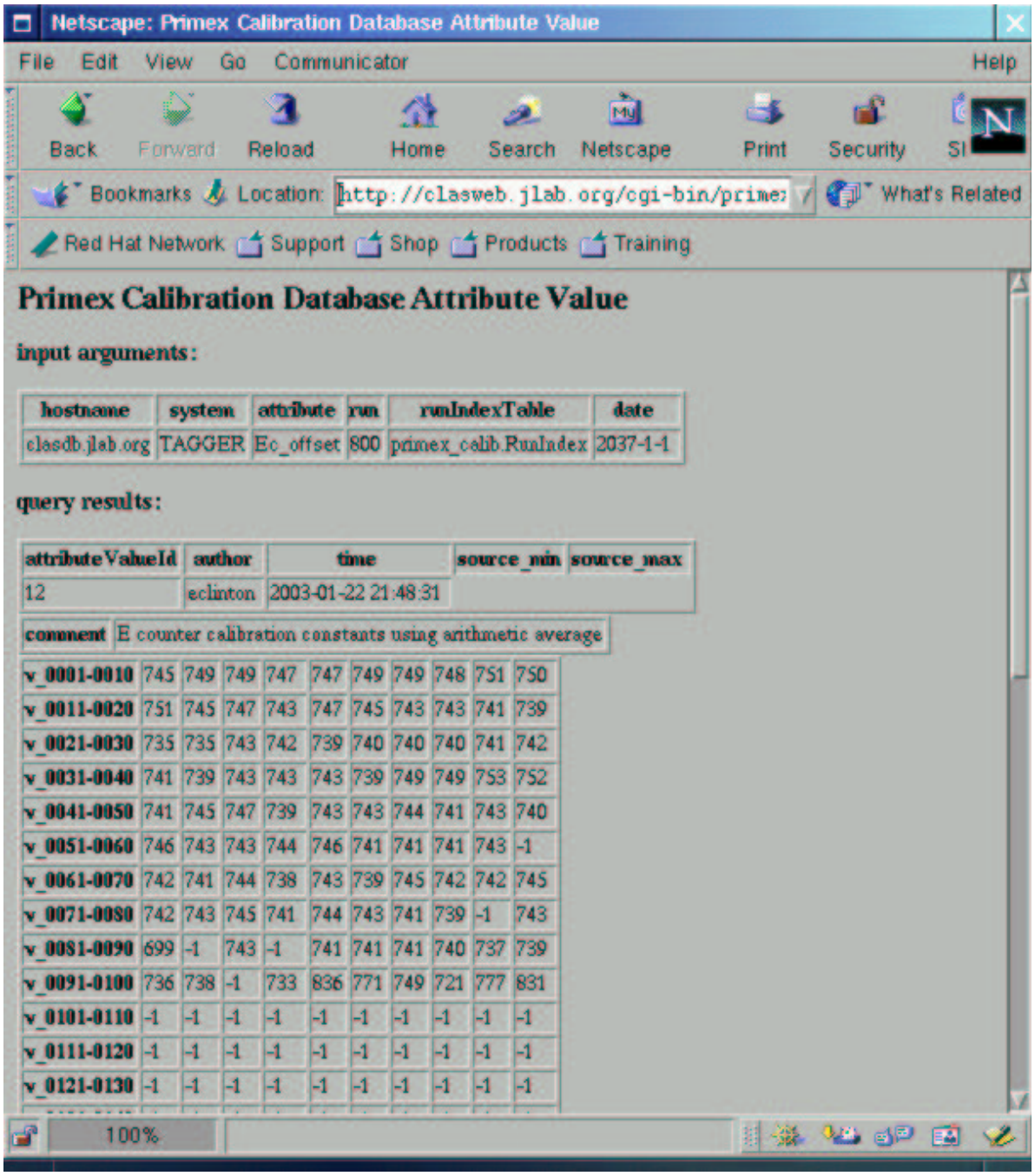
PrimEx Calibration Database Query Page
Column headings are queries. Row headings are input parameters. Table cells indicate whether the input parameter is required, ignored or optional for the query. The "Limit Choices" buttons limit pull-down menus to self-consistent choices for system and attribute. Explanations of queries and input parameters follow the table.
columns: Queries->
Reset Parameters
rows: Parameters
Sets by Run
Sets by Attribute
Values by Run
Values by ID
Run Ranges
min run (optional)
max run (optional)
Run History
system: TAGGER
Limit Choices
attribute: Ec_offset
Limit Choices
run: 800
const. set ID:
date:
ignored required required required required required
ignored required required required required required
required ignored required ignored ignored required
ignored ignored ignored required ignored ignored
optional ignored optional ignored optional optional
100%


Netscape: Primex Calibration Database Attribute Value
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security
Bookmarks Location: http://clasweb.jlab.org/cgi-bin/primex
What's Related
Red Hat Network Support Shop Products Training
Primex Calibration Database Attribute Value
input arguments:
hostname system attribute run runIndexTable date
clasdb.jlab.org TAGGER Ec_offset 800 primex_calib.RunIndex 2037-1-1
query results:
attributeValueId author time source_min source_max
12 eclinton 2003-01-22 21:48:31
comment E counter calibration constants using arithmetic average
v_0001-0010 745 749 749 747 747 749 749 748 751 750
v_0011-0020 751 745 747 743 747 745 743 743 741 739
v_0021-0030 735 735 743 742 739 740 740 740 741 742
v_0031-0040 741 739 743 743 743 739 749 749 753 752
v_0041-0050 741 745 747 739 743 743 744 741 743 740
v_0051-0060 746 743 743 744 746 741 741 741 743 -1
v_0061-0070 742 741 744 738 743 739 745 742 742 745
v_0071-0080 742 743 745 741 744 743 741 739 -1 743
v_0081-0090 699 -1 743 -1 741 741 741 740 737 739
v_0091-0100 736 738 -1 733 836 771 749 721 777 831
v_0101-0110 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
v_0111-0120 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
v_0121-0130 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
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Database Deployment

- There will be one authoritative version of the database.
- All write operations must be performed on this JLab-resident copy.
- If remote copies are necessary, they should be downloaded from JLab.
- Remote sites will have to install MySQL