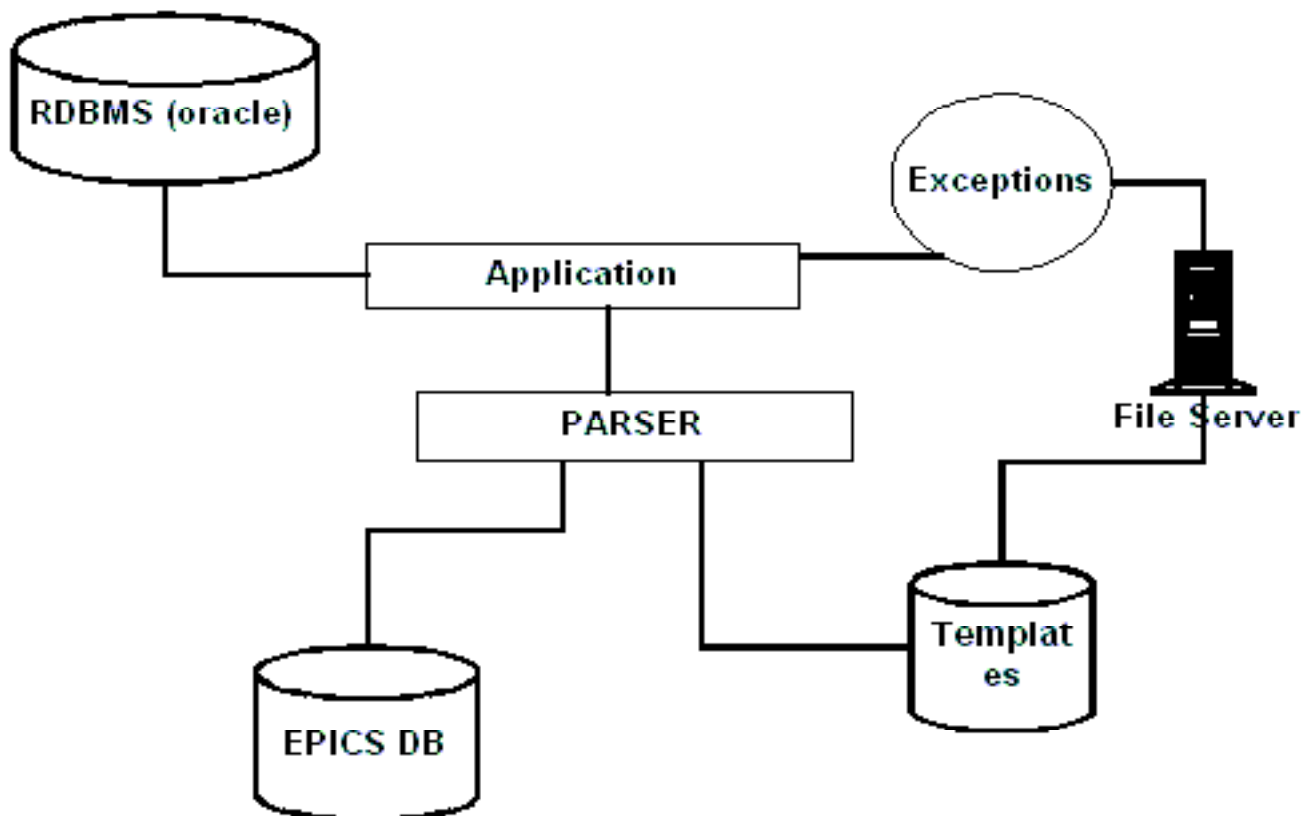


EPICS 2002 - Maintenance Frontend to RDBMS at BESSY

1. Documents for EPICS Conference 2002

1.1. Substantial Structure

View of the substantial structure generating EPICS db files at BESSY.



- device dependend scripts and no generic frontends
- document generation and navigation is manually organized
- 3 phases of building a information system:

1. *Script Wars* (<http://oracle.bessy.de>)
2. *The Chaos strikes back*
3. *The Return of the API* (<http://www.bessy.de/>)

- compiled c programmes using oracle precompiler for each table
- non persistent db structure

EPICS Power Supply Configuration Data

All Microtron Injection Line Booster Transferline Storage Ring

This database contains data to configure EPICS Database templates.
Data Access

1. **WWW Browser** (this one)
2. use Oracle®Forms Application'epics_conf'(/opt/oracle/local/BIl_forms/) to browse and to update EPICS power supply data
3. write own application programs and **include precompiled database functions**
4. develop own **embedded SQL application programs**
5. develop own **OCI application programs**
6. use **Oracle-TCL Interface**

Data designed and

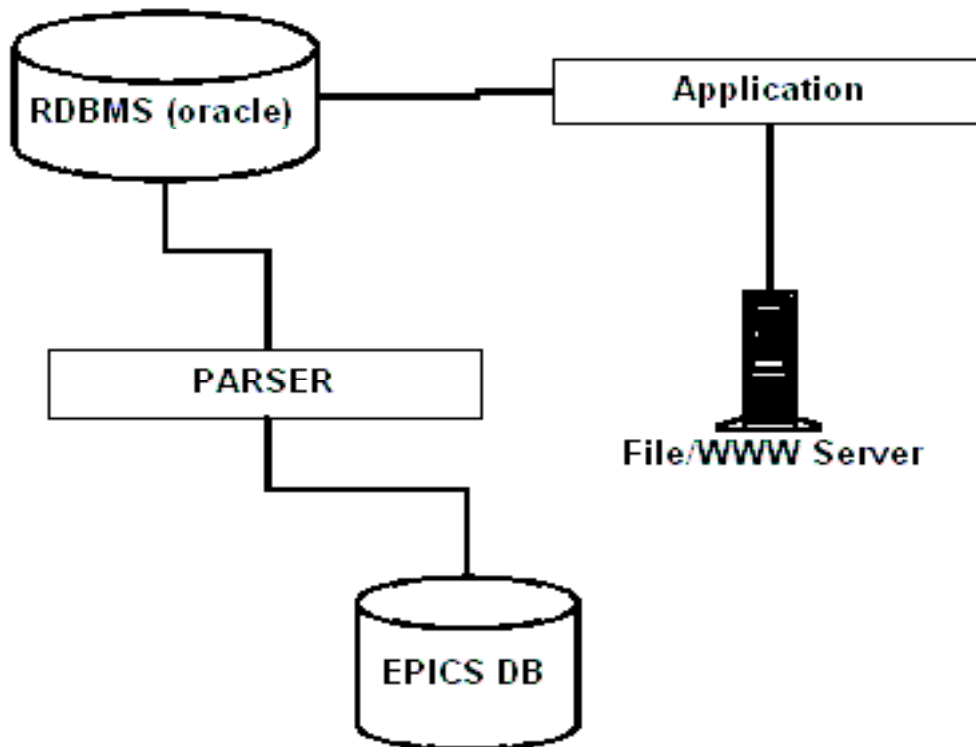
Collectors
[User's Guide](#)

Data Area of Devices
[old CAD](#) | [new CAD](#)
[Geodesie](#)
[Power Supplies](#)
[PS and Magnets](#)
[PS and Parameter List](#)
[Magnets and Parameter List](#)
[Magnet Data](#)
[Kicker/Septa/Bumper](#)
[Kicker/Septa/Bumper PS](#)

- distributed for each devicegroup
- including lots of specialities
- extra ordinary grouping
- properties as timedepended structure
- direct access of tool or manually sequels (inserting 10 power supplies seems to be a good result for a day, changing magnet configuration data for premodeling between 1 to 3 days)
- searching for correct data query without papered organisation chart up to 1h, publishing an building papered organisation chart is expensiv on time an nerves
- difficult backup an restore

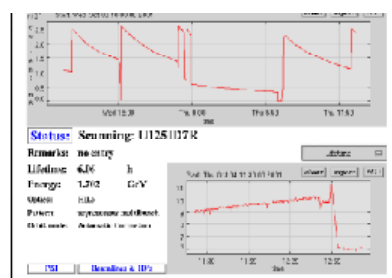
1.2. Idea for Easy Working

View of the want to have straight forward EPICS db generation



- like to move exceptions and templates to the rdbms and the parser is a simplified querytool
- We will have now **one** source.
- So it is easier to manage and administer the data and the structure.

See <http://www.bessy.de>



Contents

[Experimental Services](#)

- Shift Work

[Accelerator Operations](#)

- Shift Work, OP-Summaries, Shutdown Plans

[Status Overview](#)

- BESSY II - Operational Status: Recent Activities, Current, Lifetime, ID Gap Values

[Performance](#)

- Monitoring / Surveillance: long term data archives

[Operators Help](#)

- Documentation, Manuals, Procedures, Summaries

- API for unified database access let expand faster and easier generic class of applications (<http://drop.acc.bessy.de:8001/menu> !SECURED! will be moved to <http://www-db.bessy.de/menu> soon!)

to the list - to the bottom			
4	get_systemDir	\$A_dir \$A_filter \$A_subdir = 0	This function needs options.
27	get_systemDirectories	\$A_dir	This function needs options.
33	get_systemIncludes	\$A_dir	This function needs options.
39	get_systemLibraries	\$A_dir	This function needs options.
45	get_systemGlobals	\$A_array	This function needs options.
to the top - 5 rows read -			

<http://drop.acc.bessy.de:8001/menu/module>

- generic and special Frontends for an easy way of changes and informations
- commandline libraries for heavy database accesses like import, export of special dataformats (<http://drop.acc.bessy.de:8001/browser/>)

Device DB Parser

Key	Name	Member	Ind	Family	Counter	Subdomain	Domain
925	U411T6R	U	41	I		T6	R
927	U49ID8R	U	49	I		D8	R
915	U180ID4R	U	180	I		D4	R
916	U49IV	U	49	I			V
918	U125ID7R	U	125	I		D7	R
919	U125ID2R	U	125	I		D2	R
5119	U49ID4R	U	49	I		D4	R
5082	U1IV	U	1	I			V

SELECT p_name.name_key key, p_name.part_name||p_name.part_index||p_family.part_family||p_name.part_counter||p_subdomain.part_subdomain||part_postfix||part_domain name, p_name.part_name member, p_name.part_index ind, p_family.part_family family, p_name.part_counter counter, p_subdomain.part_subdomain||part_postfix||subdomain, part_domain domain FROM p_name, p_family, p_subdomain, p_domain WHERE p_name.family_key=p_family.family_key AND p_name.subdomain_key=p_subdomain.subdomain_key AND p_subdomain.domain_key=p_domain.domain_key AND part_name='U' AND p_family.family_key=8

8 device names found for your sequel

http://www.bessy.de

- automatic documentation, easy management of stored data (<http://drop.acc.bessy.de:8001/machine/>)
- complete backup an restore
- joining and linking organisational and technical databases
 - BLdb and schedules
 - responsibilities
 - resource management

1.3. Behind the page

command-line tools	perl dbi based tools	cgis	dcms API
perl module		www API (cgis, PHP)	
		binaries	
DATASOURCE			

View of the API structure in future

- API for commandline and cgis (perl)
- API for direct webaccess (PHP)
- splitting low level and high level functions

BESSY Device Name Service

[\[A\]](#) [\[B\]](#) [\[C\]](#) [\[D\]](#) [\[E\]](#) [\[F\]](#) [\[G\]](#) [\[H\]](#) [\[J\]](#) [\[K\]](#) [\[L\]](#) [\[M\]](#) [\[N\]](#) [\[O\]](#) [\[P\]](#) [\[Q\]](#)
[\[R\]](#) [\[S\]](#) [\[T\]](#) [\[U\]](#) [\[V\]](#) [\[W\]](#) [\[X\]](#) [\[Y\]](#) [\[Z\]](#) [\[New Device\]](#) [\[Log\]](#)

Overview
Name
PINH7FD4L
PINH9FD5L
PVUE561D3R
PVUE5612D3R
PVUE5613D3R
PVUE5614D3R
PHBUE561D3R
PHBUE5612D3R
PVBUE561D3R
PVBUE5612D3R
PVBUE52ID5R
PVBUE52ID5R
PHU1801D4R
PHU18012D4R

- engineers can use API for coding her own application

[to the list](#) - [to the bottom](#)

get_systemGlobals (45/0)

```

function get_systemGlobals($A_array) {
    eval ("global $A_array;");
    eval ("{$L_array = $A_array;");
    $L_cols = 2;
    if (empty($L_array) || count($L_array) < 1) {
        return write_tblData("Keine Globale namens $A_array gefunden.", "colspan={$L_cols}" class="error" align="center");
    }
    $L_return .= write_tblNextRow();
} else {
    $L_return .= write_tblTitle("Global '$A_array'", "class="inputdescr" colspan={$L_cols}");
    $L_return .= write_tblNextRow();
    while (list($L_key, $L_value) = each ($L_array)) {
        $L_return .= write_tblData($L_key. " : ", "align="right");
        $L_return .= write_tblData("&nbsp;&nbsp;&nbsp;".htmlentities($L_value).'", "align="left");
        $L_return .= write_tblNextRow();
    }
}
return $L_return;
?>

```

[Back](#) [to the top](#) - 0 rows read -

<http://drop.acc.bessy.de:8001/menu/modules.php> Patrik

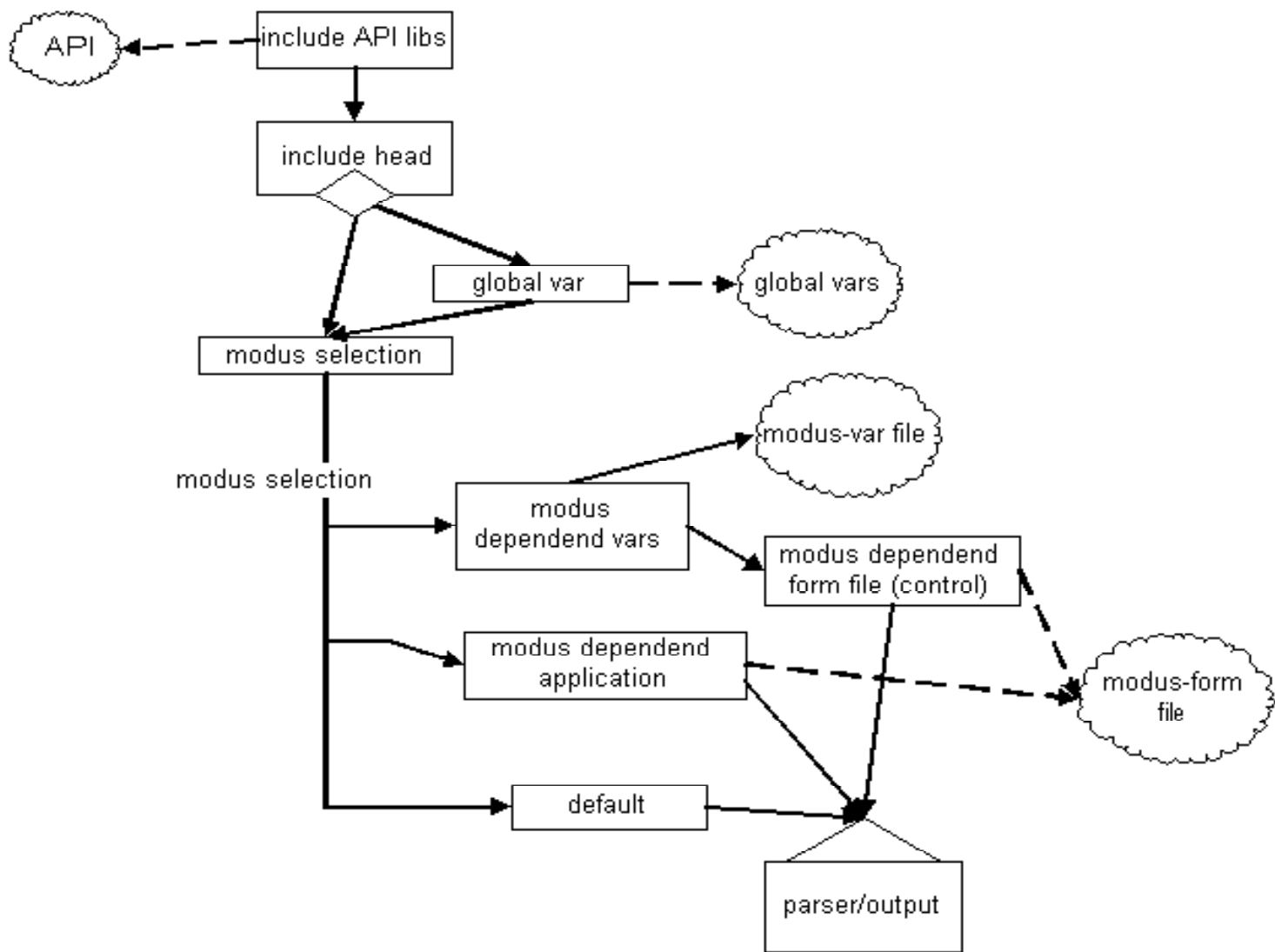
- API documentation - Systemdocumentation (<http://drop.acc.bessy.de:8001/menu/>)
- Simple documentmanagement
 - implement new documents or structures
 - building indecees
 - lists an trees
- Generating PDF on the fly, in future Graphics (libgd) and animations(libswf)
- functions for simplified operations like database queries, building lists, tables, format documents (<http://drop.acc.bessy.de:8001/machine/>)
- logging accesses and errors to syslog or webserverlogs
- using applications are free and useful (<http://drop.acc.bessy.de:8001/knowledge/>)

Simple Device Parser

BESSY Device Information	
Key	5102
Member	BMF
Ind	
Family	C (Control system)
Counter	
Subdomain	B (domain entry;Booster)
Description	BESSY Magnet Flashlight
BESSY Device Grouping	
Grouplist	
BESSY Info	
Key	115
Signal	flapOpen
loc	1
Type	bi (Epics Record)
Description	flap of keycase open
BESSY IOC Info	
loc	IOC1S16G
<input type="button" value="To List"/>	

Simple Device Parser

BESSY Device Information	
Key	5123
Member	AI
Ind	
Family	C (Control system)
Counter	
Subdomain	S13G (;Gallery/storage-ring)
Description	Neu Kuer simple Device
BESSY EPICS Values	
Signalname	seg11 (Error in seg 11)
OSV="MAJOR"	
DTYP="EK I032"	
ZNAM="ok"	
ZSV="NO_ALARM"	
ONAM="error"	
INP="#C2 S1"	
Signalname	seg12 (Error in seg 12)
OSV="MAJOR"	
DTYP="EK I032"	
ZNAM="ok"	
ZSV="NO_ALARM"	
ONAM="error"	
INP="#C2 S2"	
Signalname	seg13 (Error in seg 13)
OSV="MAJOR"	
DTYP="EK I032"	



Short Overview of the flow in a complete webpage with more than one modus

