


DABC as DAQ system and new possibilities for online monitoring



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GSI / Common systems / Experiment Electronic
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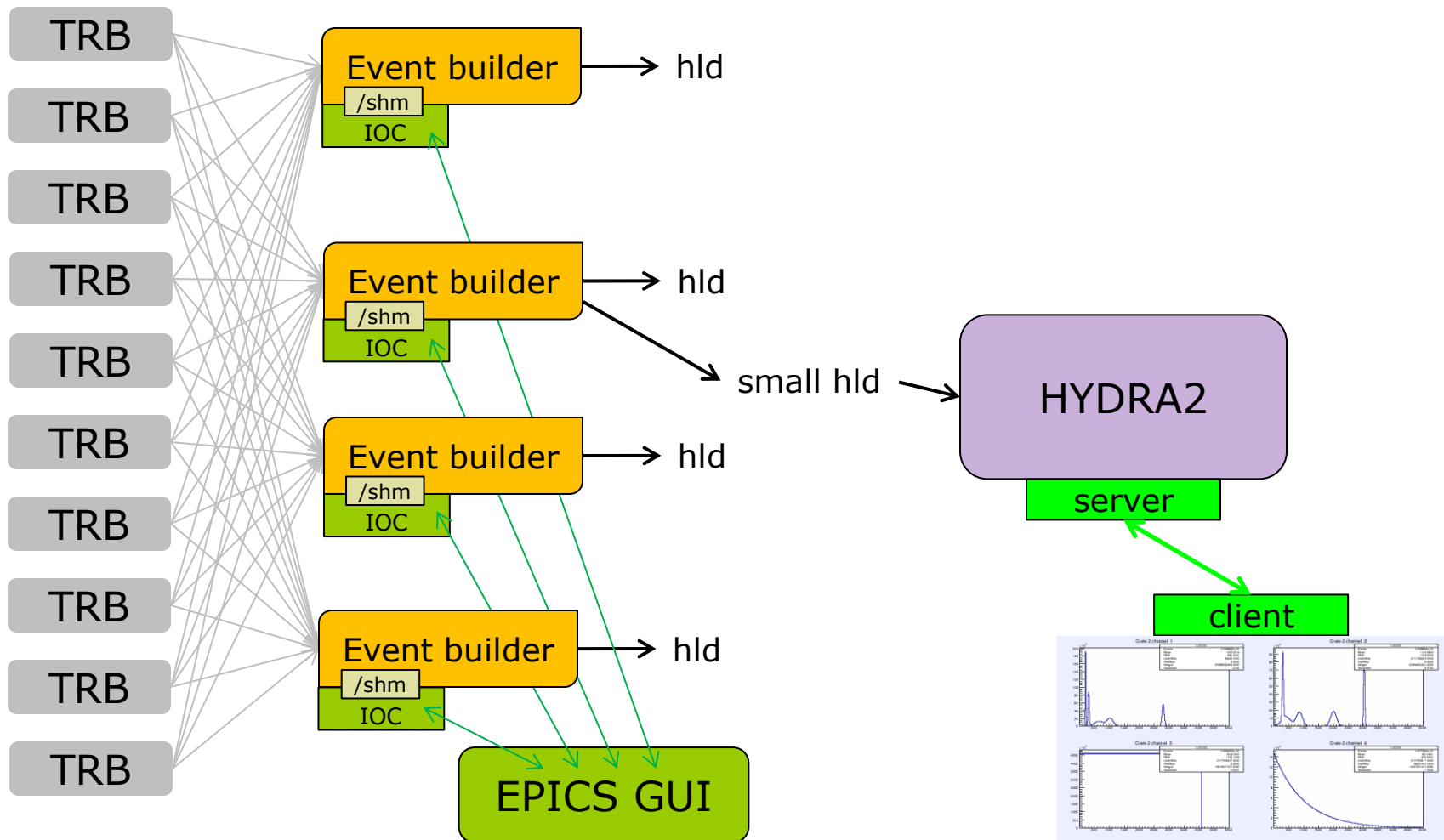
Outlook

- DABC as new event builder
- Stream event source for hydra
- Monitoring via web interface

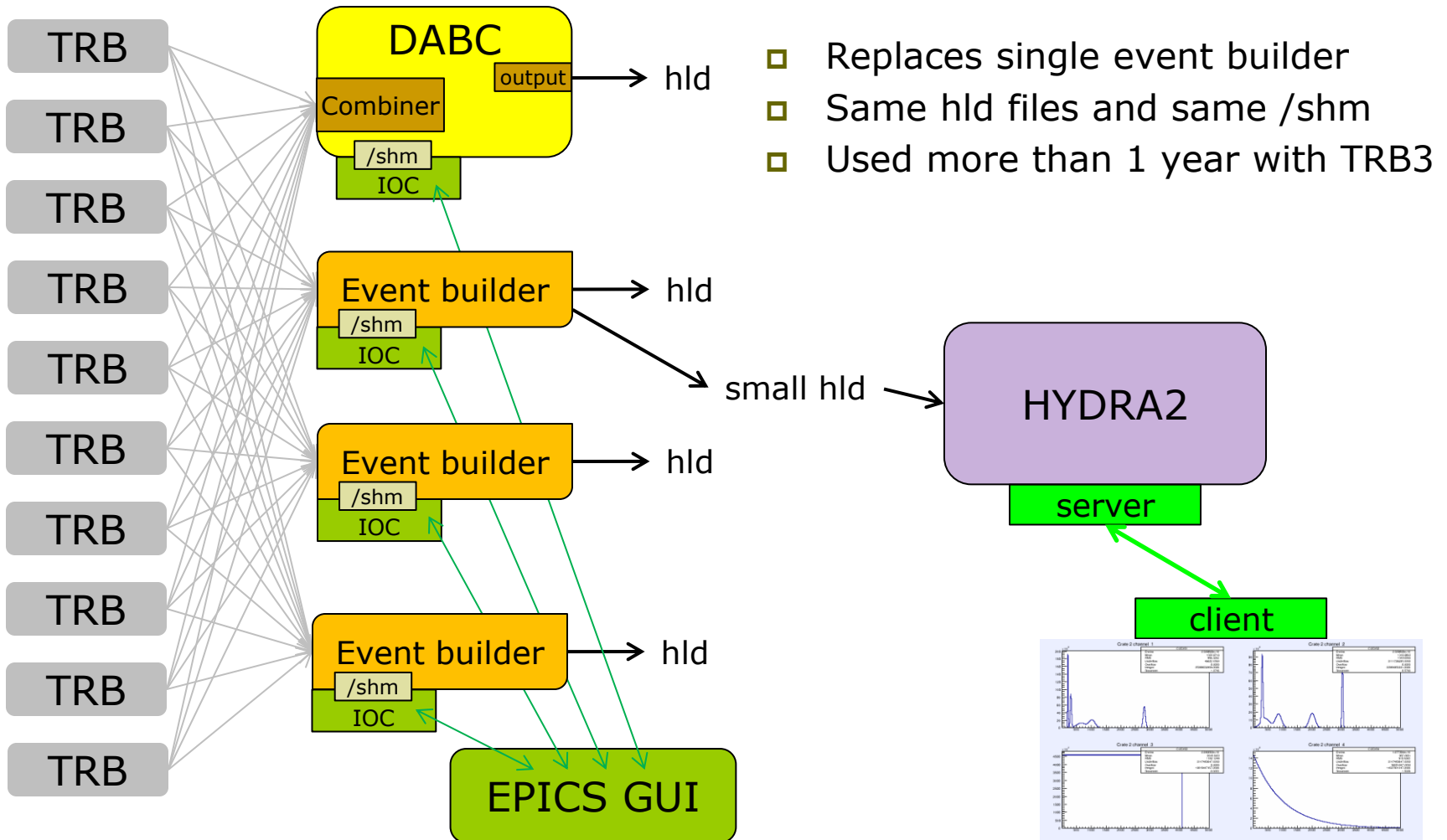
DABC – DAQ software framework

- ❑ Multithreaded environment
- ❑ Software modules for user code
- ❑ Zero-copy data transport approach
 - full support of InfiniBand/10GE VERBS
 - multithreaded socket support
- ❑ Full integration with MBS
- ❑ Plugins for HADAQ, FESA, ROOT, EPICS, ...
- ❑ Used as DAQ system for TRB3
- ❑ Was the DAQ for CBM test beams (till Nov 2012)

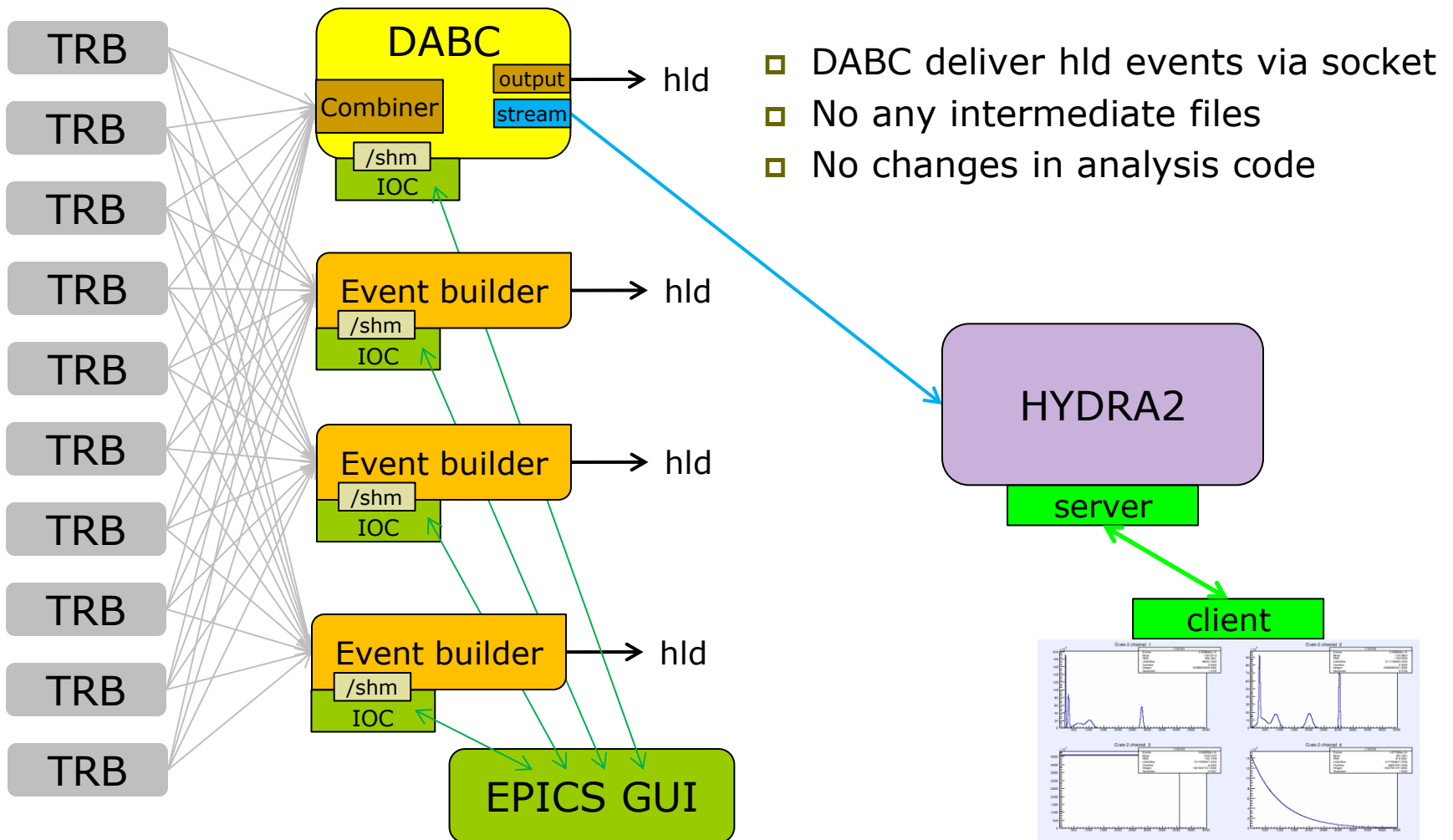
HADES DAQ and online



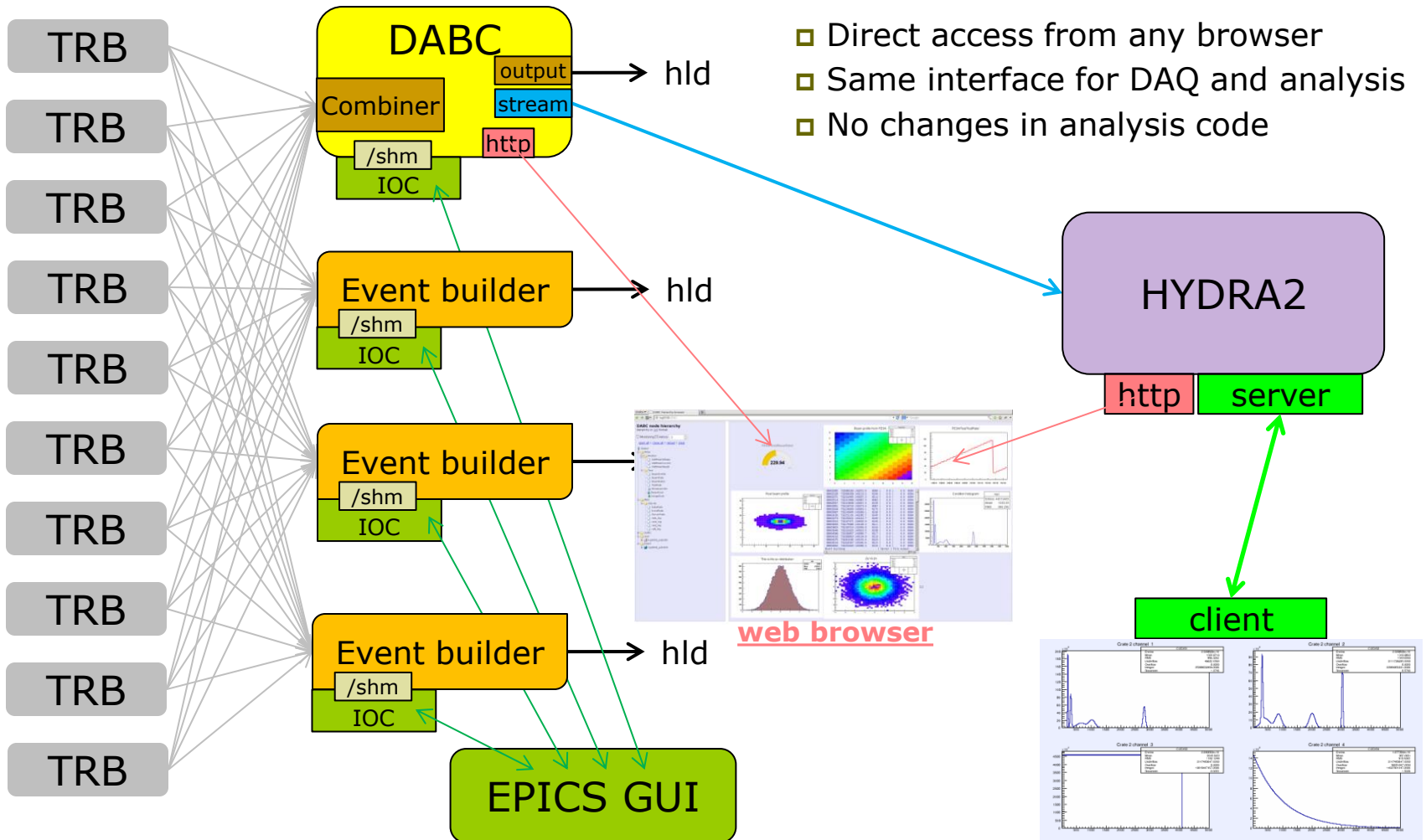
DABC in HADES DAQ



HldStreamSource in hydra2



http server in DABC and HYDRA



http::Server in DABC

- http protocol via
 - embedded mongoose server
 - FastCGI - interface to web server (Apache)
- DABC provides access to:
 - MBS, ROOT, Go4, FESA, EPICS
- JSRootIO for client side
 - JavaScript
 - Interactive web pages
- Monitoring and control capabilities

DABC in web browser

Firefox ▾ DABC hierarchy browser

lxg0538:8090

Google

DABC node hierarchy

Hierarchy in [xml](#) format

Monitoring History 3

[open all](#) | [close all](#) | [reload](#) | [clear](#)

- Global
- FESA
 - Monitor
 - GetMeasVoltage
 - GetMeasCurrent
 - GetMeasWeight
 - Test
 - BeamProfile
 - BeamRate
 - BeamRate2
 - TestRate
 - StreamerInfo
 - BeamRoot
 - ImageRoot
- MBS
 - X86-46
 - DataRate
 - EventRate
 - ServerRate
 - rate_log
 - rash_log
 - rast_log
 - ratf_log
- DABC
- Go4
- lxg0538_pid2005
- ROOT
 - lxg0538_pid2024

FESA/Test/BeamRate/

0 229.94 500

Beam profile from FESA

Event	4098
Mean x	8.03
Mean y	8.17
RMS x	4.414
RMS y	4.414
0	0
0	4098
0	0

Root beam profile

Event	10228
Mean x	15.00
Mean y	15.00
RMS x	1.000
RMS y	1.000
0	10228
10	0
0	10

88002085	732086189	142972.6	8099	0.0	0.0	0004
88002228	732094308	143119.2	8104	0.0	0.0	0004
88002371	732102405	143257.3	8112	0.0	0.0	0004
88002514	732110498	142987.3	8092	0.0	0.0	0004
88002657	732118638	143047.4	8139	0.0	0.0	0004
88002801	732126734	143273.4	8097	0.0	0.0	0004
88002944	732134909	143093.1	8175	0.0	0.0	0004
88003087	732143045	143269.1	8136	0.0	0.0	0004
88003230	732151191	143185.7	8145	0.0	0.0	0004
88003373	732159331	143163.7	8140	0.0	0.0	0004
88003516	732167471	143030.9	8140	0.0	0.0	0004
88003659	732175580	143128.3	8111	0.0	0.0	0004
88003803	732183716	143359.9	8134	0.0	0.0	0004
88003946	732191825	143016.5	8108	0.0	0.0	0004
88004089	732199957	143099.7	8117	0.0	0.0	0004
88004232	732208063	143134.8	8119	0.0	0.0	0004
88004375	732216185	143155.4	8123	0.0	0.0	0004
88004519	732224307	143340.6	8115	0.0	0.0	0004
88004662	732232429	143390.3	8124	0.0	0.0	0004

Event building | Server | File output

FESA/Test/TestRate/

Condition histogram

His1	
Entries	43072409
Mean	1033.33
RMS	966.256

This is the px distribution

Event	25000
Mean	-0.004011
RMS	0.9978

py vs px

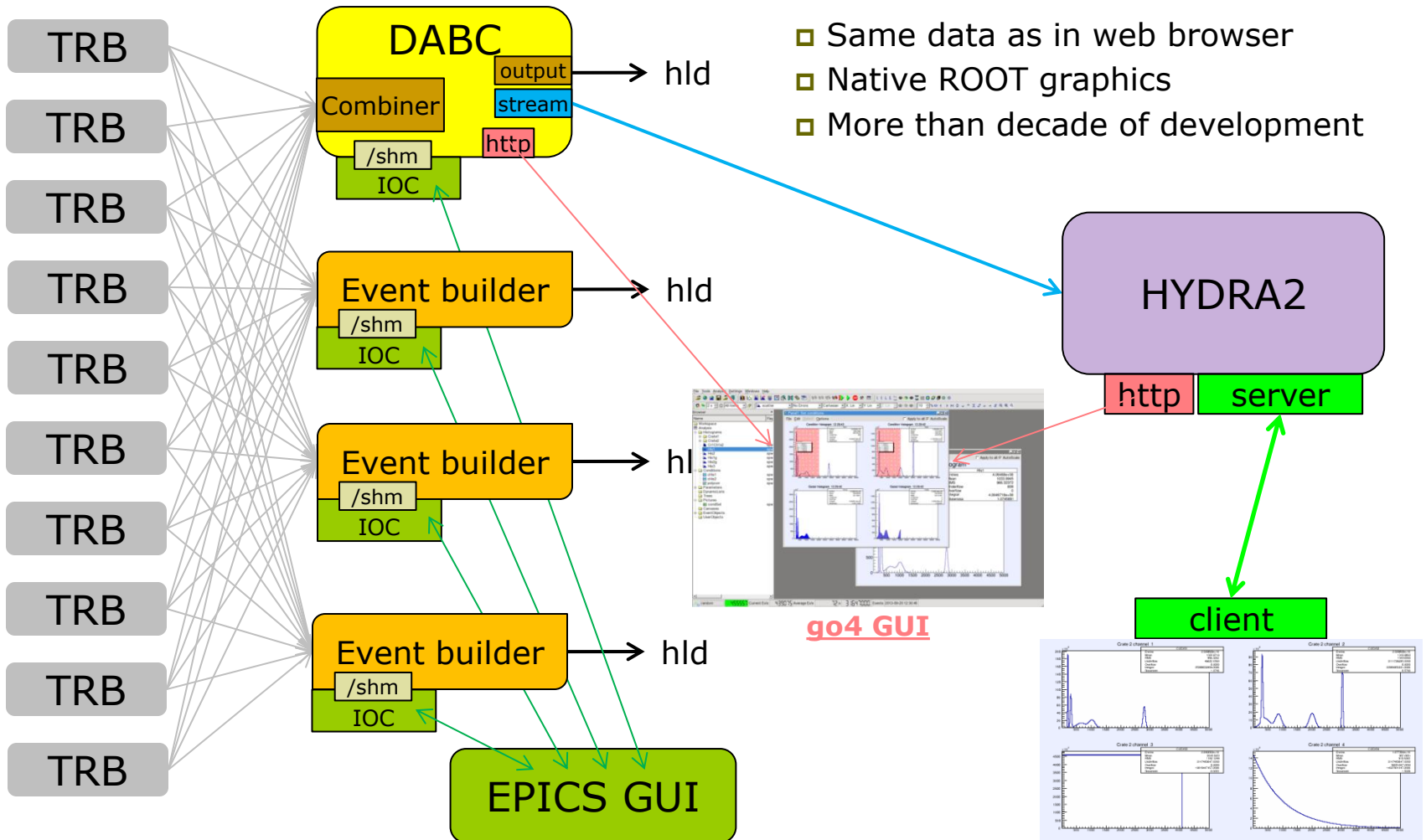
Event	24997
Mean x	-0.10
Mean y	-0.10
RMS x	1.000
RMS y	1.000
0	0
1	24998
0	0

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go4 GUI for monitoring



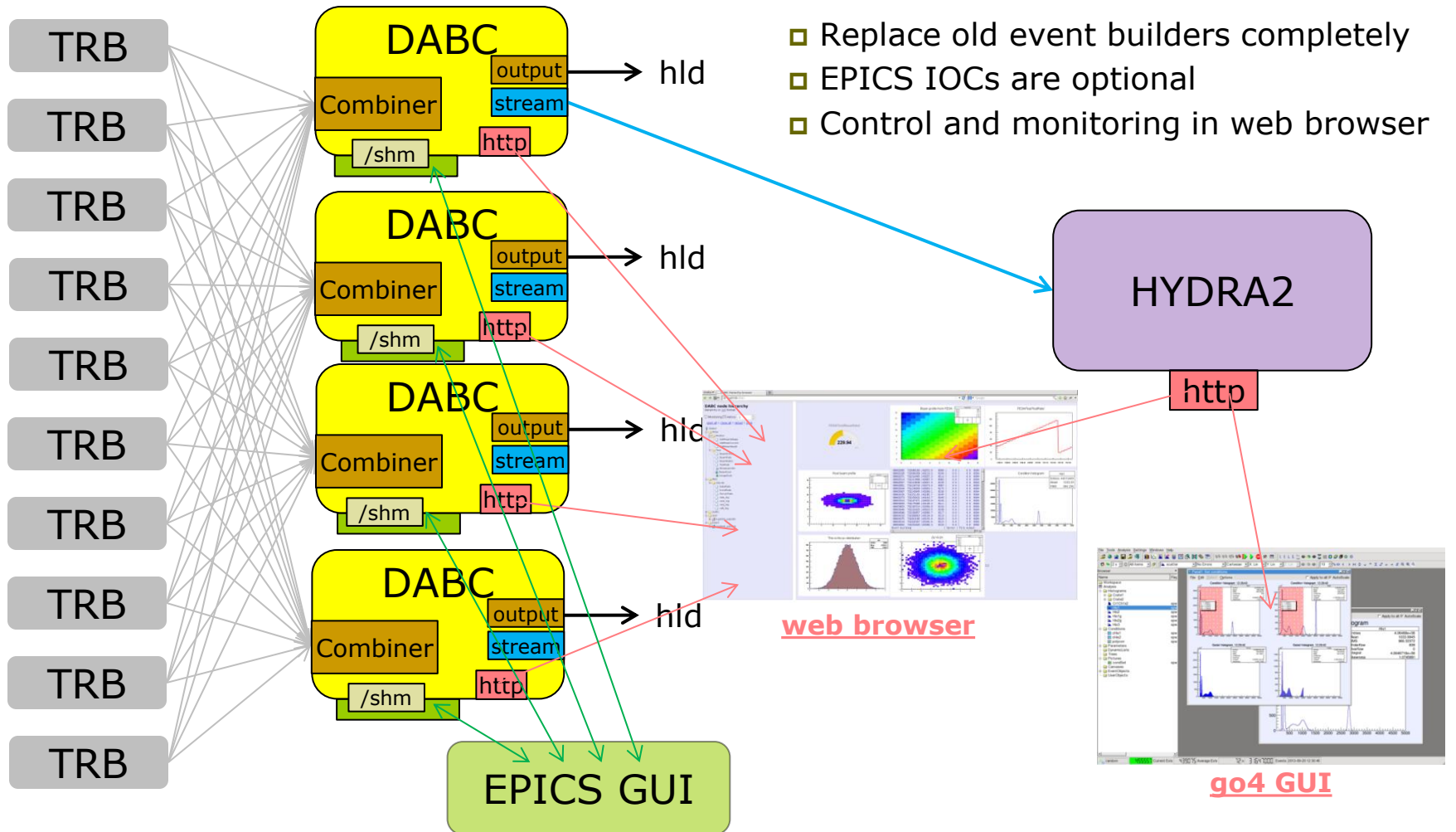
DAQ and online – our plans

- Introduce step by step new components
 - DABC event builder
 - DABC stream server for online HYDRA
 - http access for DAQ and online

- Parallel work of old and new components is possible on all stages

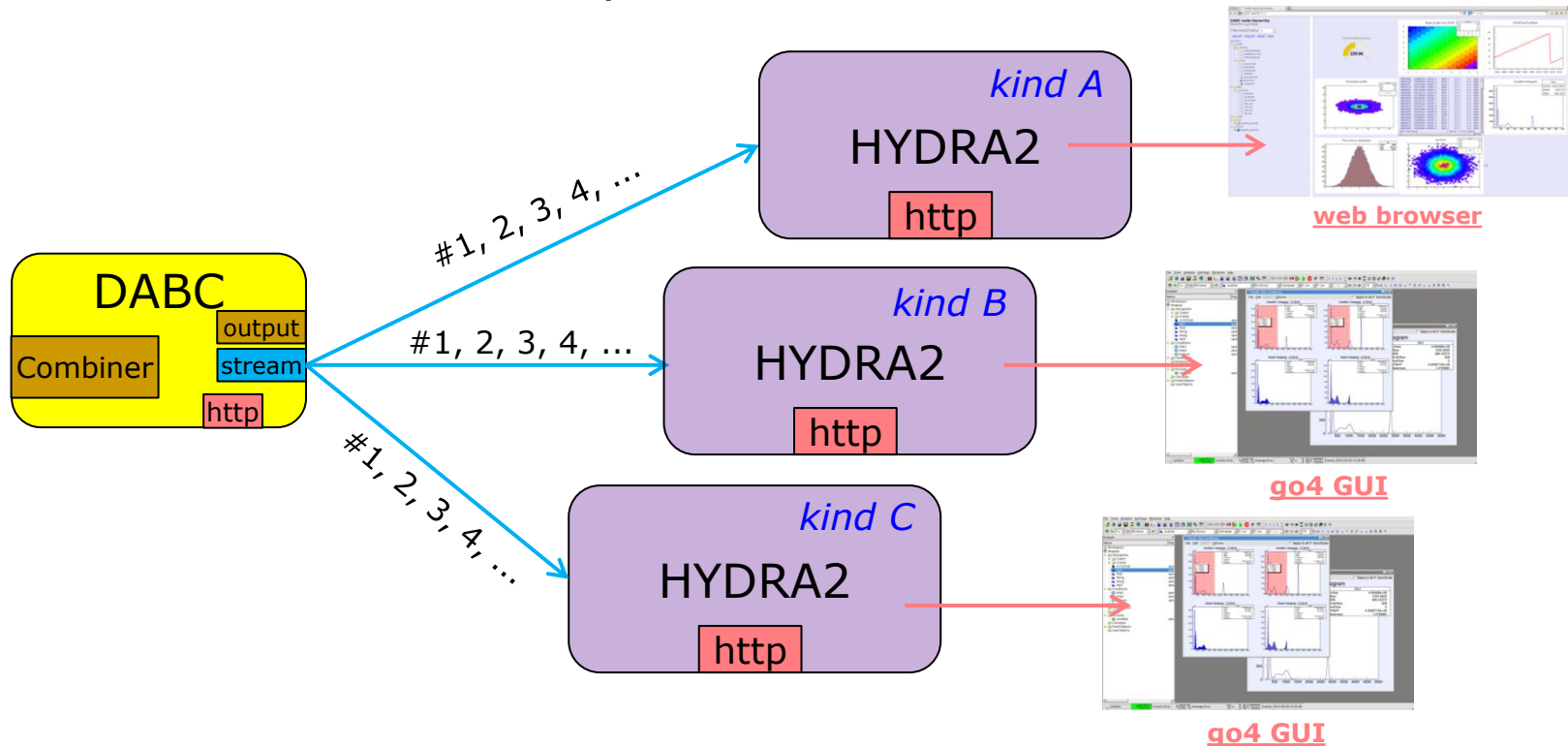
- Keep and maintain old components as long as necessary

DAQ and online – near future



Many online analysis in parallel

- Different code, same events
 - allows to run different analysis kinds in parallel
 - no extra work is required



Many online analysis in parallel

- Same code, different events
 - more events can be processed online
 - no any changes in analysis
 - to be done – generic histograms collector

