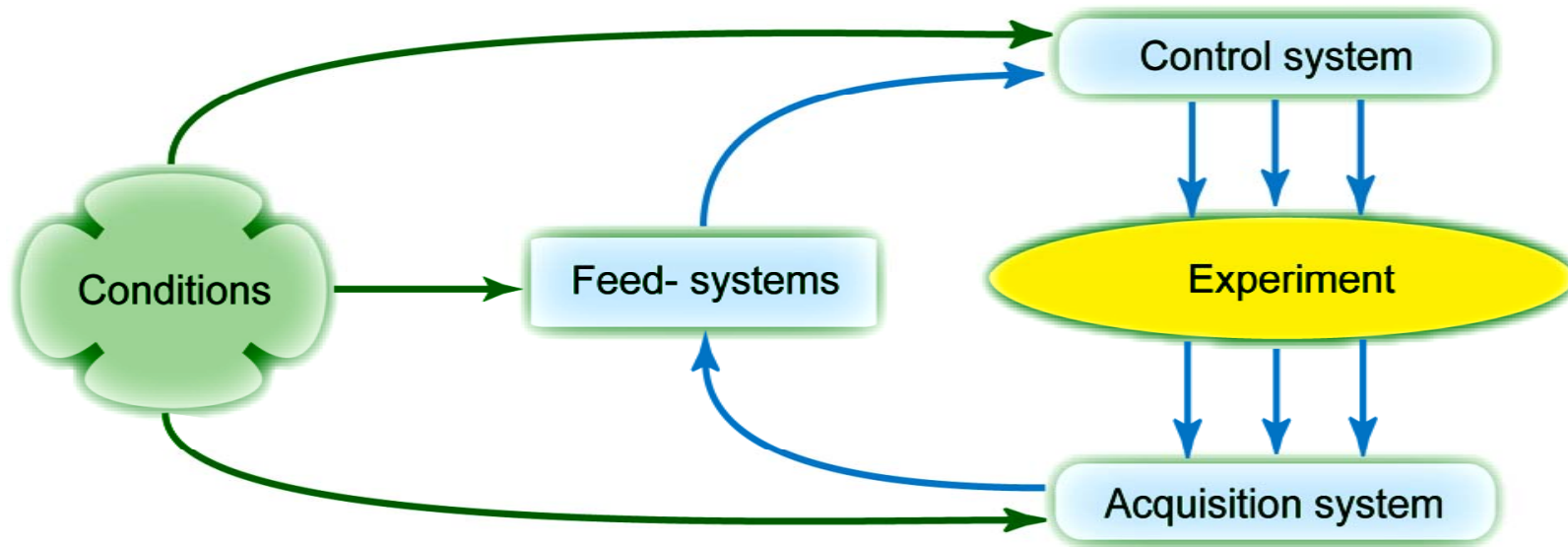


CLIC08 Workshop

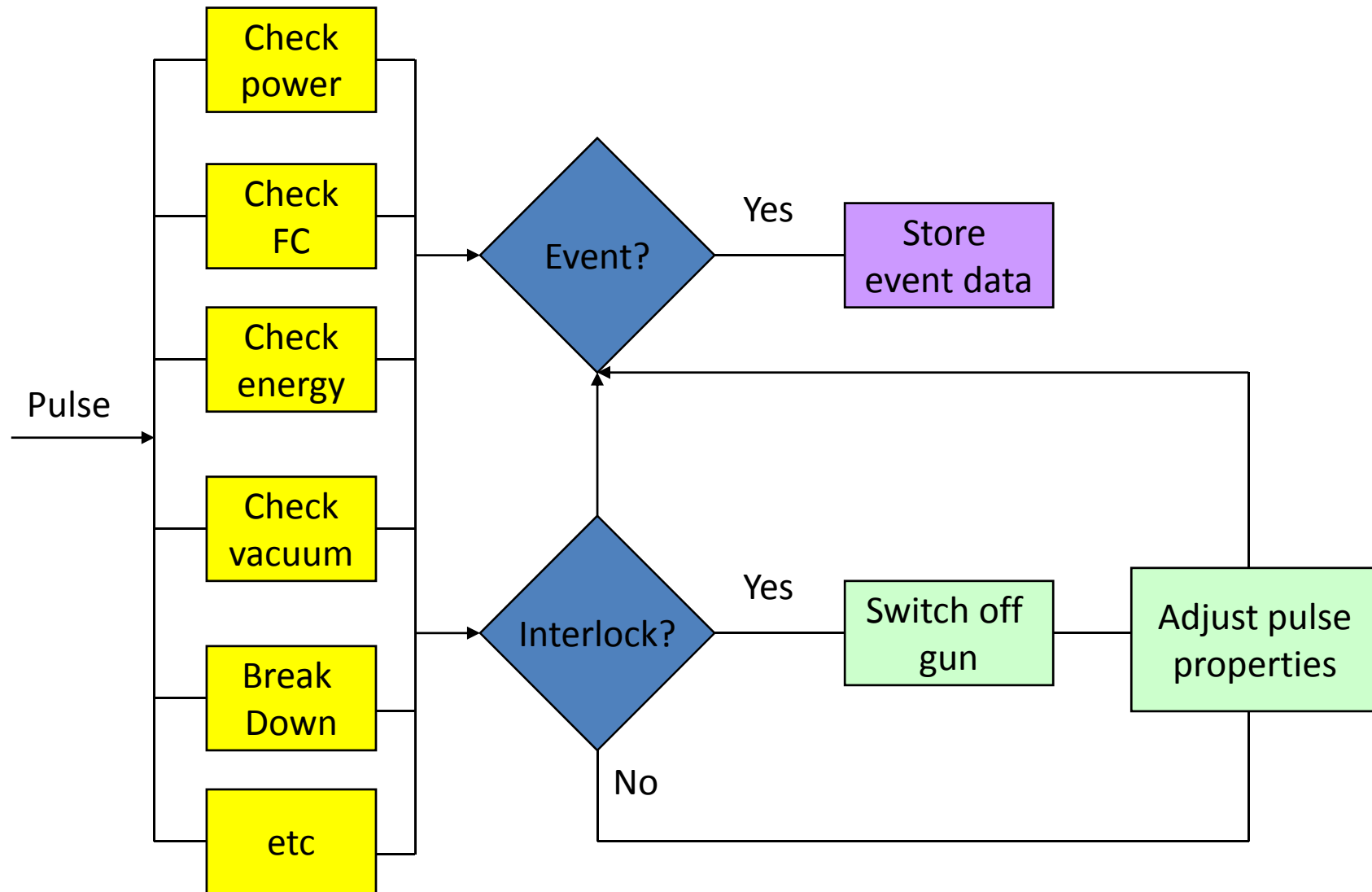
Conditioning Software used in CTF3

DubrovskiY AlexeY
(CERN, JINR, MSU)

The conditioning system definition



The conditioning software logic



Main aspects of the conditioning

Summary data

Relevant experiment and machine properties, which allow to draw an operational decision and to make post analysis of long term processes.

Interlock

It's a machine and experiment protection module in order to keep components safe and to provide pure experiment.

Conditioning strategy

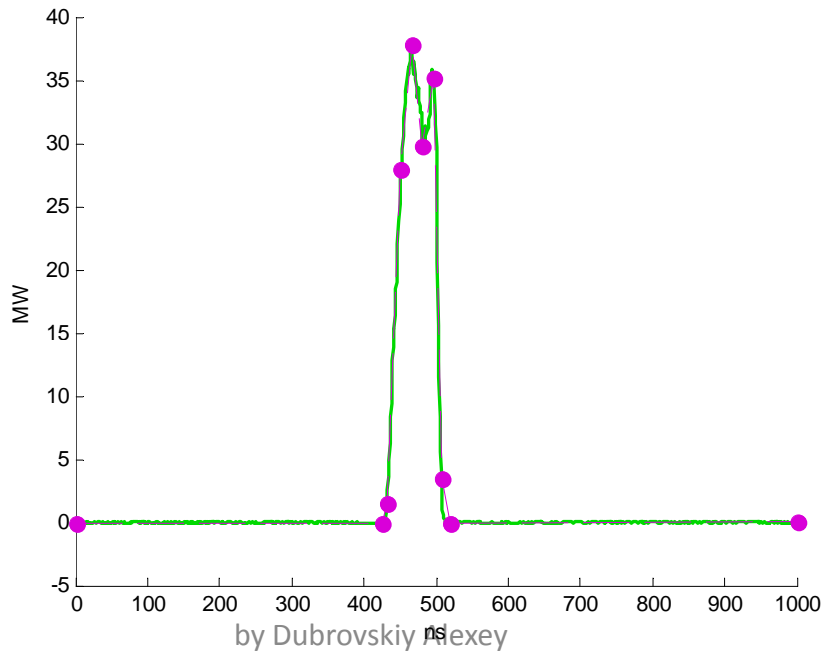
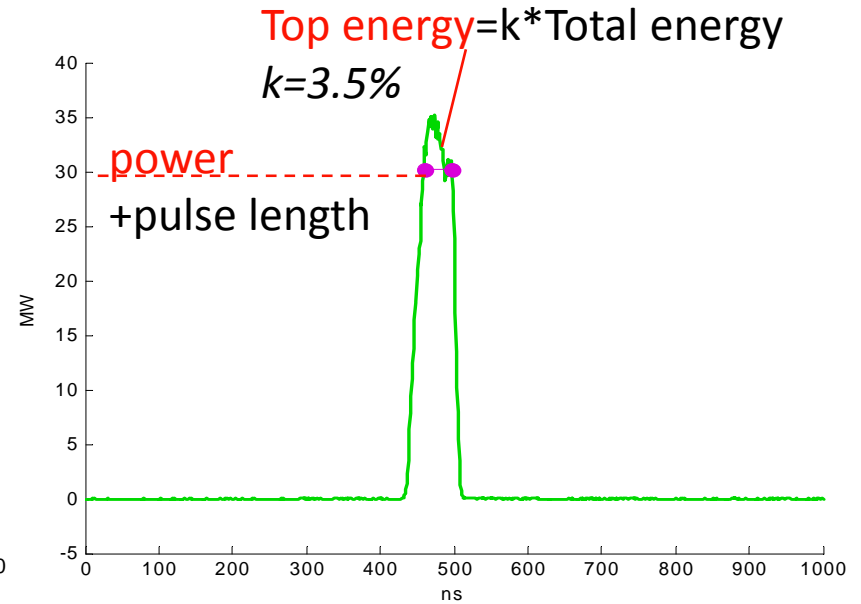
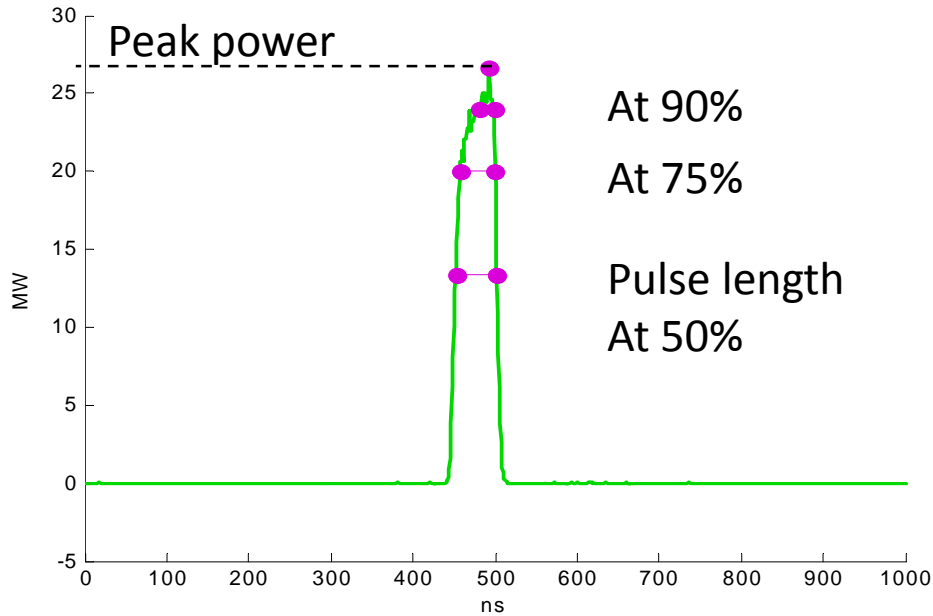
Operational description of the experiment

Event

Definition of abnormal, unforeseen and observable situations, when the full data set is needed in order to study them later.

Event data

Pulse relevant information

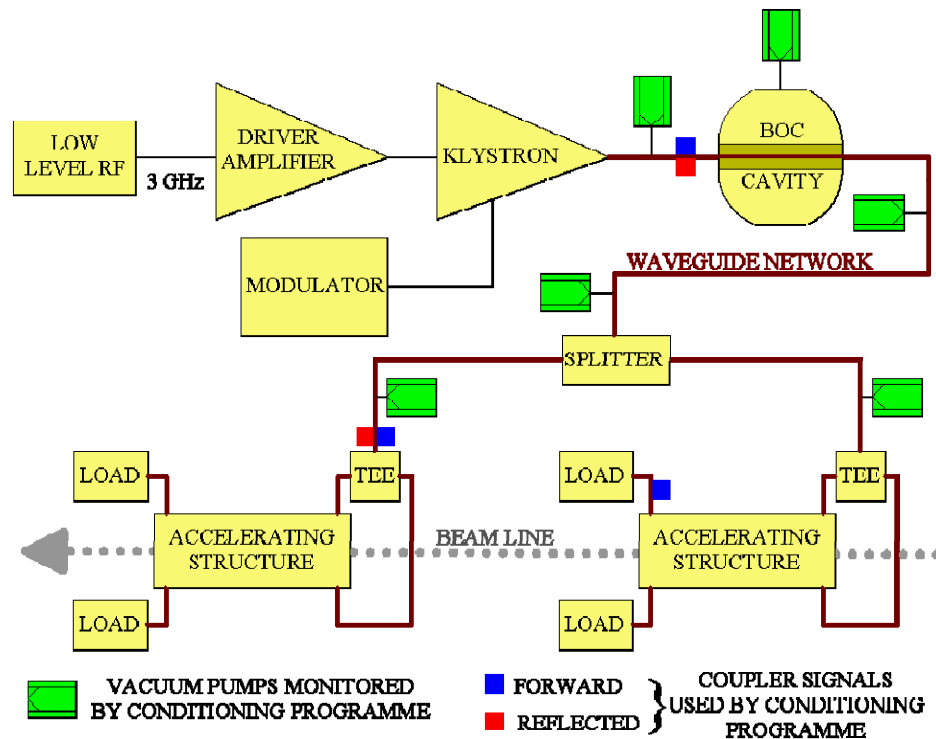


CTF3 conditioning systems

- The 3 GHz klystron conditioning system
- The 30 GHz structure conditioning system
- The TBTS conditioning system

3 GHz klystron conditioning system

Checks:



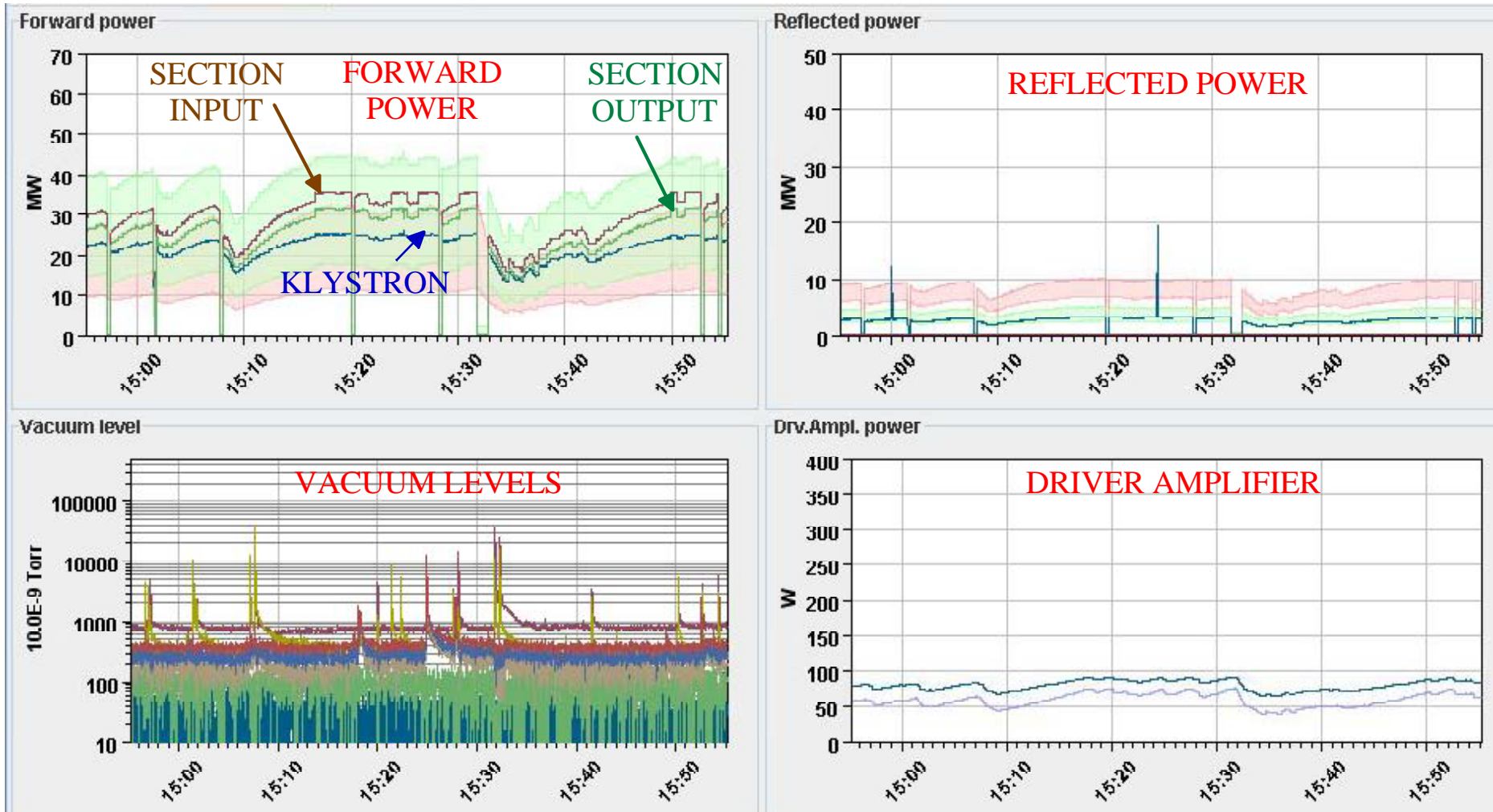
* Layout was done by Jonathan Sladen (CERN)

- Klystron
- Anomalous forward power
- Reflected power
- Vacuum levels
- Timing inhibit interlock
- Vacuum pumps

Control:

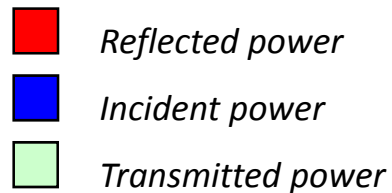
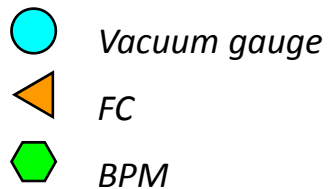
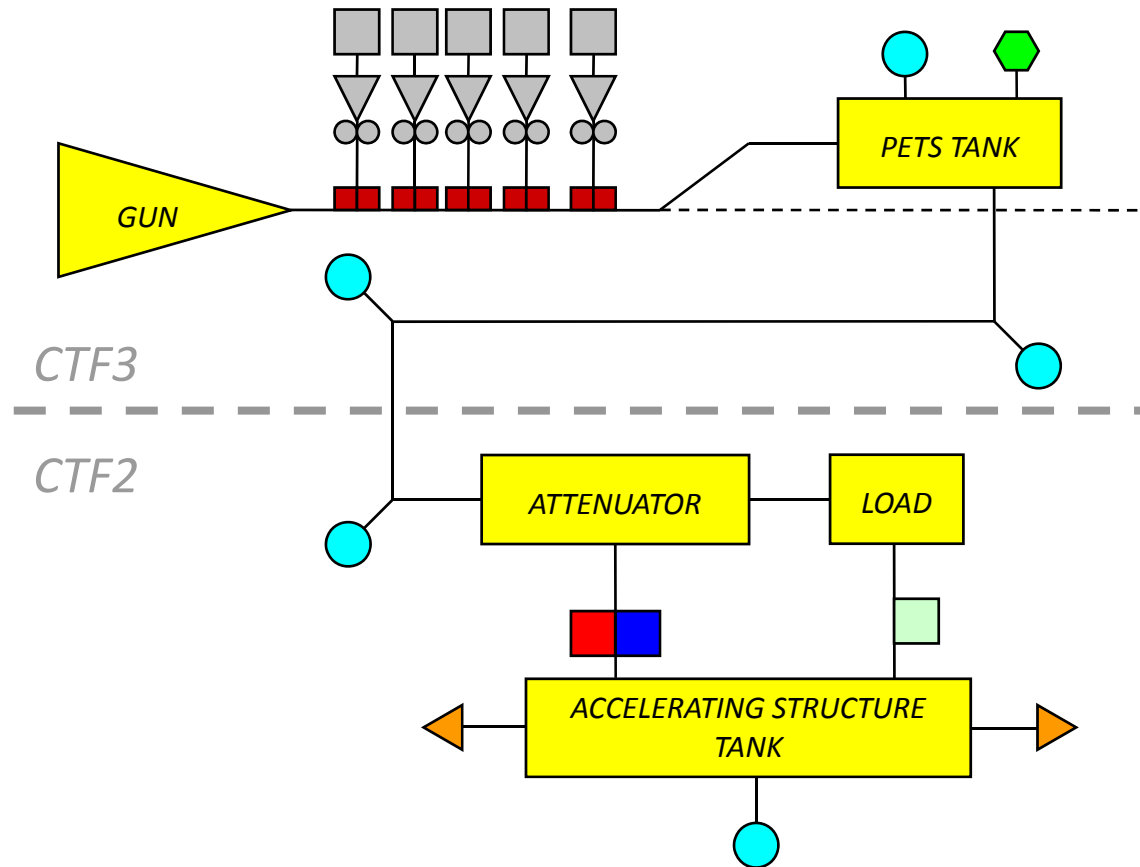
- PFN
- Driver Amplifier

3 GHz klystron conditioning system



30 GHz structure conditioning

Checks:

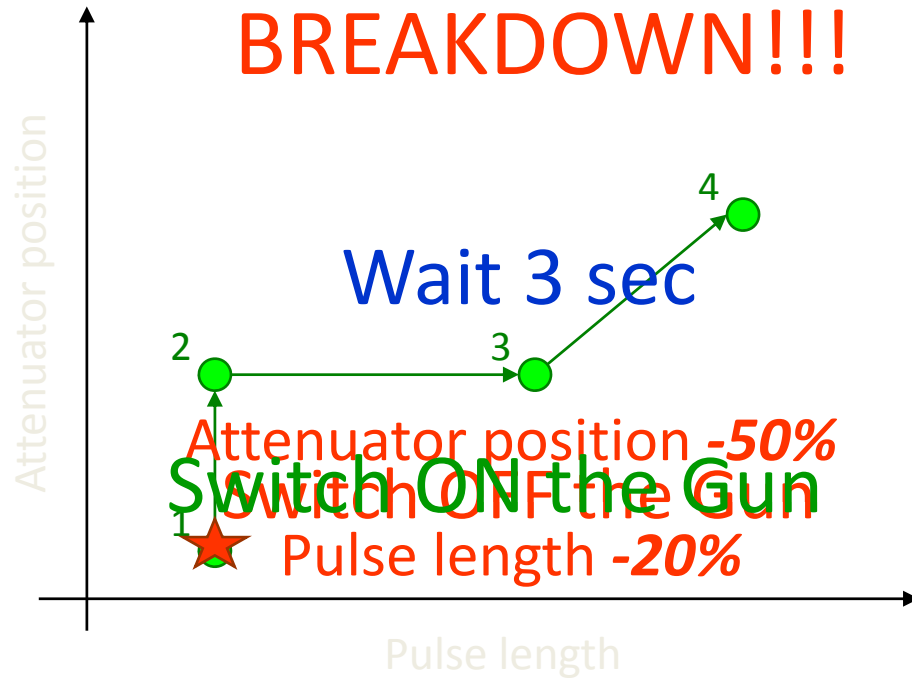


- Gun
- Missing energy
- Reflected energy
- FC signal
- Vacuums
- Gun inhibitor
- Loss

Control:

- Gun
- Attenuator
- Pulse length

30 GHz structure conditioning



Checks:

- Gun
- Missing energy
- Reflected energy
- FC signal
- Vacuums

#	Pulse length (ns)	Stepping Motor Position	Time (sec)	Steps
1	165.00	7500.00	20.00	5
2	190.00	7500.00	20.00	5

Feedback 53.00 ns 1.20 MW



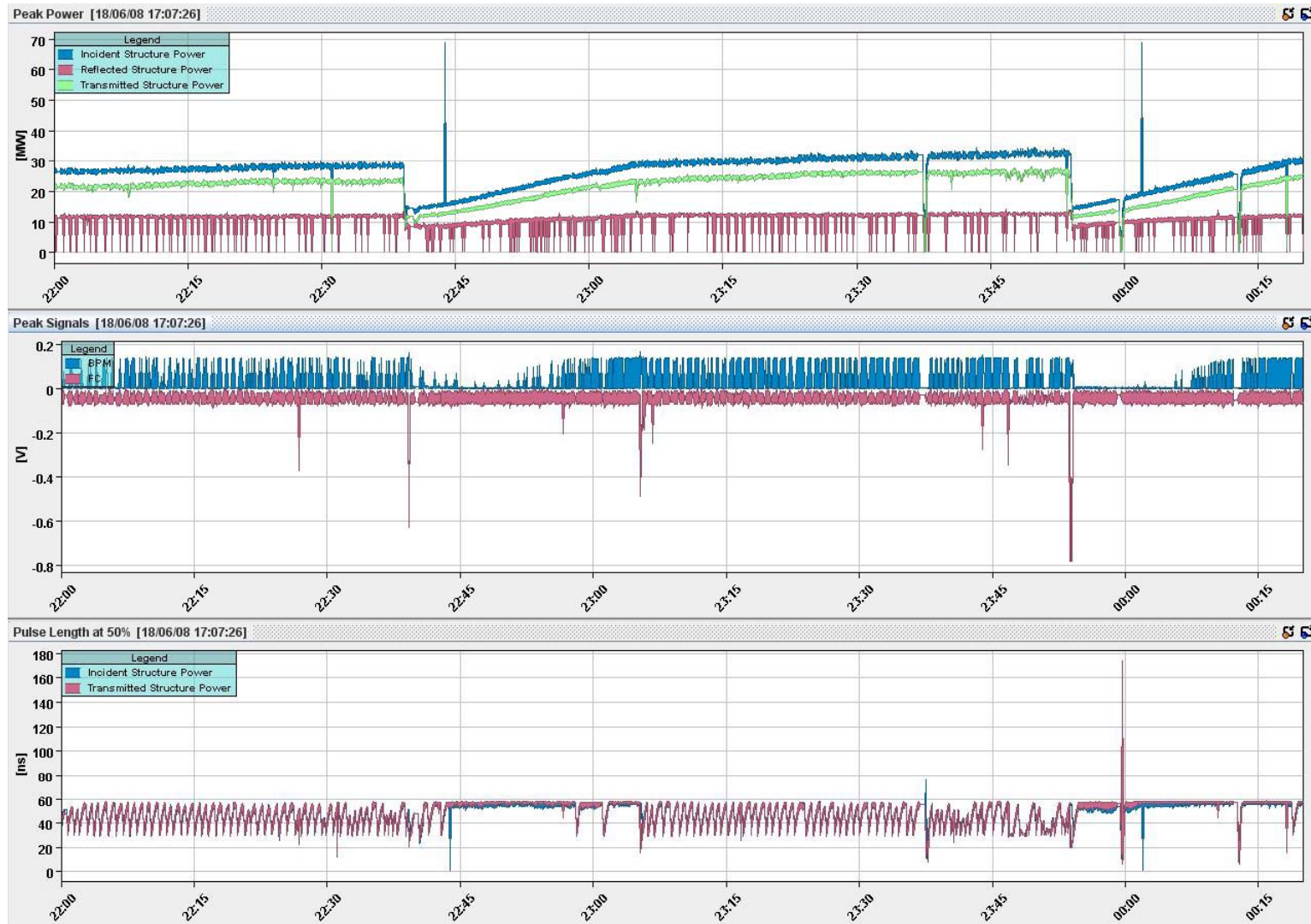
10/14/2008

by Dubrovskiy Alexey

Control:

- Gun
- Attenuator
- Pulse length

30 GHz structure conditioning

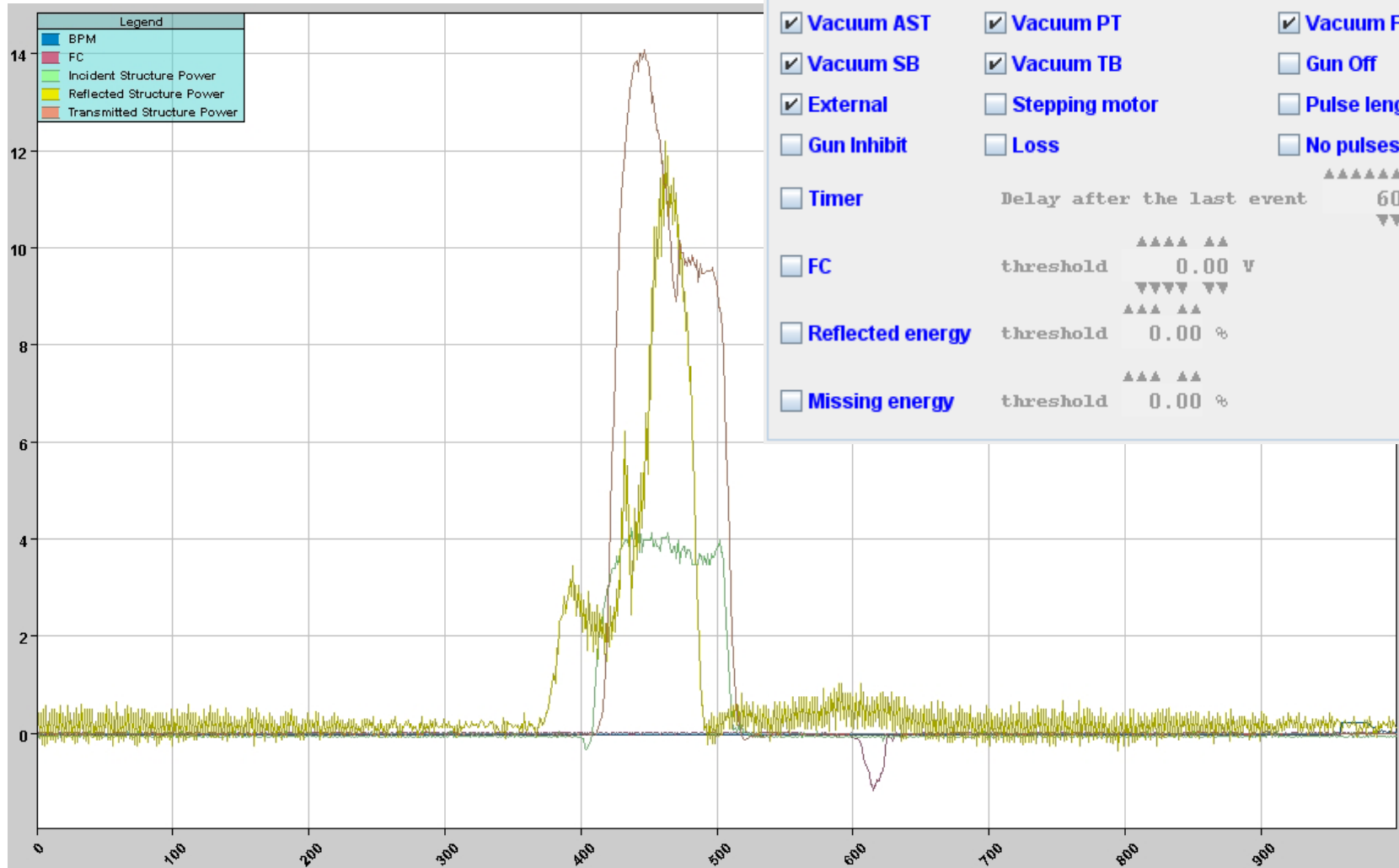


Interlocks

Enable / Name	Number events	Pulse length	Stepping Motor	Wait	Threshold	Enable Threshold	Incid. Power Threshold
<input checked="" type="checkbox"/> FC	1	60.00 %	100.00 %	10.00 sec	-0.50		
<input type="checkbox"/> Missing energy	1	50.00 %	50.00 %	0.00 sec	25.00 %		0.10
<input type="checkbox"/> Reflected energy	0	50.00 %	50.00 %	0.00 sec	25.00 %		0.10
<input checked="" type="checkbox"/> Vacuum AST		55.00 %	100.00 %	10.00 sec		50.00 %	
<input checked="" type="checkbox"/> Vacuum PT		55.00 %		10.00 sec		50.00 %	
<input checked="" type="checkbox"/> Vacuum FB		55.00 %		10.00 sec		50.00 %	
<input checked="" type="checkbox"/> Vacuum SB		55.00 %		10.00 sec		50.00 %	
<input checked="" type="checkbox"/> Vacuum TB		55.00 %		10.00 sec		50.00 %	
<input checked="" type="checkbox"/> CPI Loss		100.00 %	100.00 %	180.00 sec			
<input type="checkbox"/> Gun Inhibit		100.00 %	100.00 %	30.00 sec			
<input type="checkbox"/> Pulse OFF		100.00 %	100.00 %	5.00 sec			
<input type="checkbox"/> No pulses		100.00 %	100.00 %	60.00 sec	10.00 sec		



Events



Event setting

Minimum number of pulses between events **100**

FC interlock Reflected energy interlock Missing energy interlock

Vacuum AST Vacuum PT Vacuum FB

Vacuum SB Vacuum TB Gun Off

External Stepping motor Pulse length

Gun Inhibit Loss No pulses

Timer Delay after the last event **60.00 sec**

FC threshold **0.00 V**

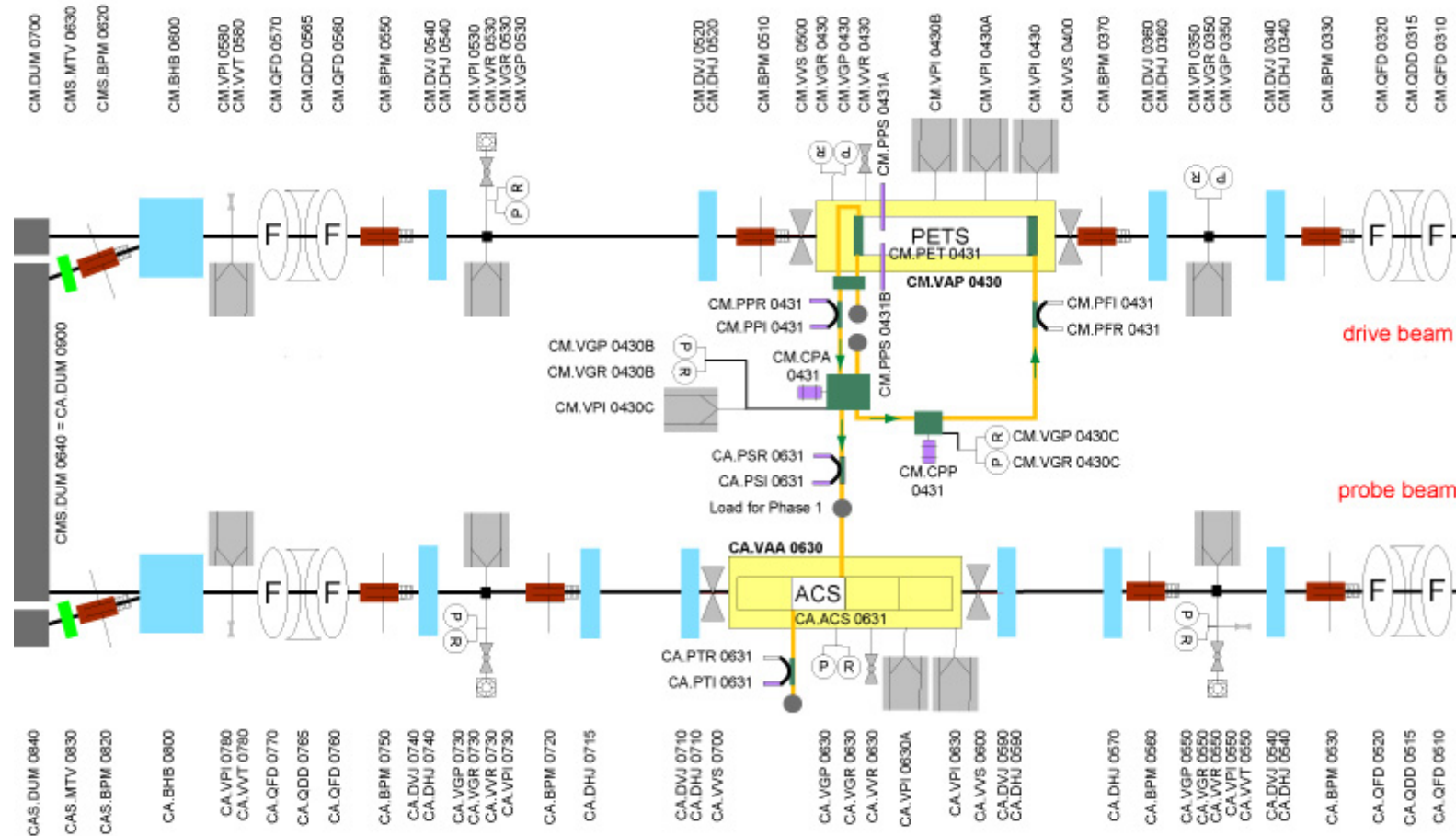
Reflected energy threshold **0.00 %**

Missing energy threshold **0.00 %**

TBTS conditioning

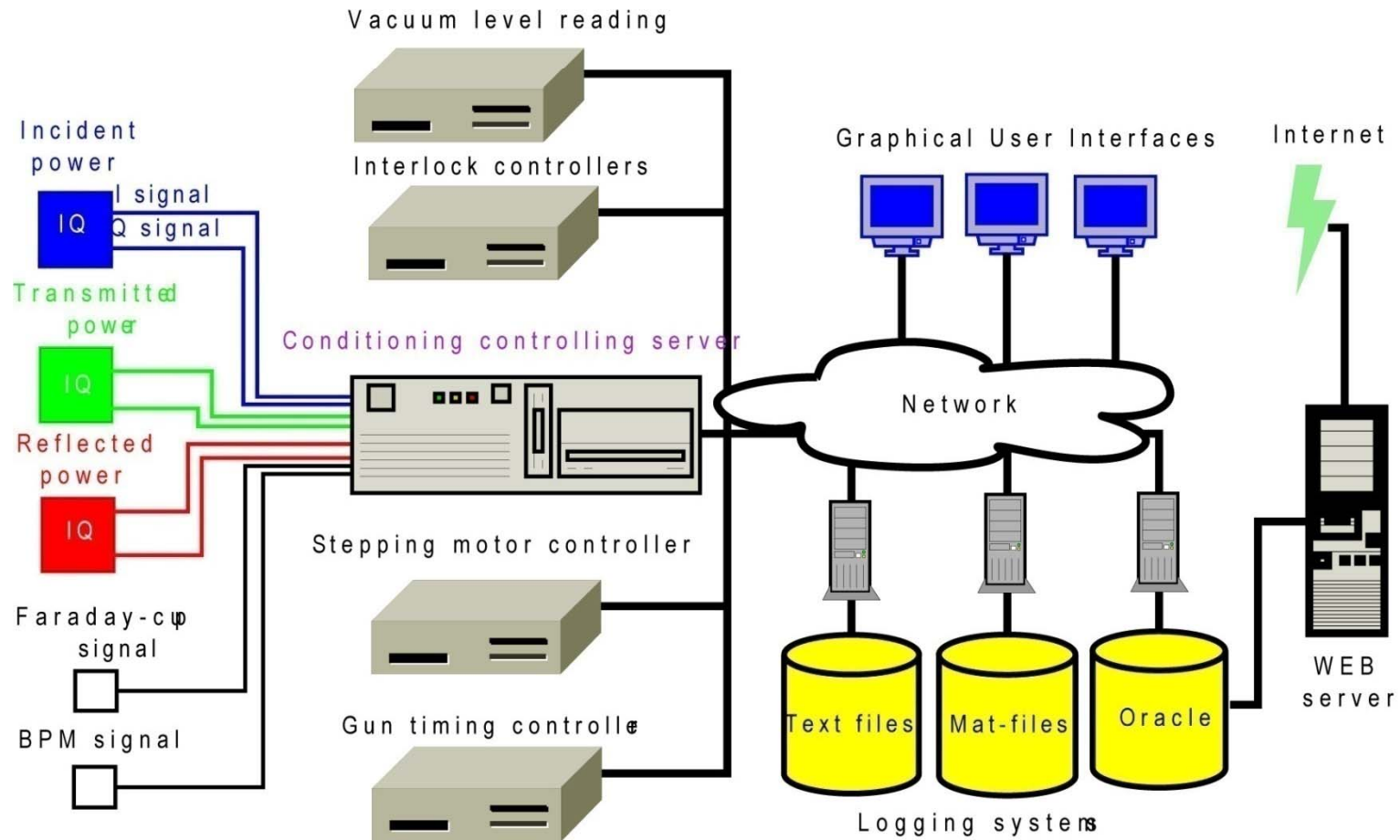
CERN EDMS Id. 894313
RR-2008/09/10

CTF3 Two-beam Test-Stand
Instrumentation

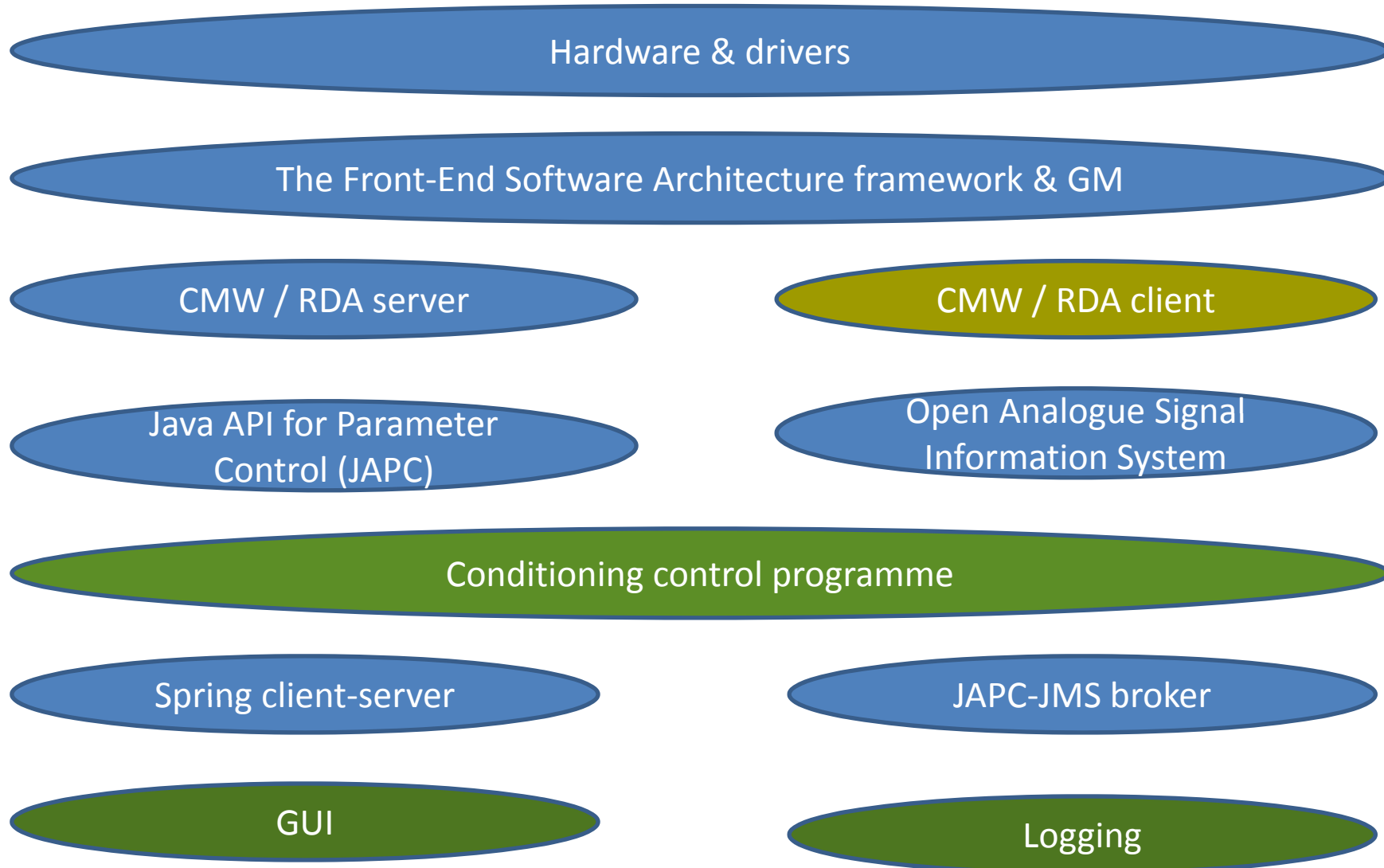


* Layout is made by Roger Ruber

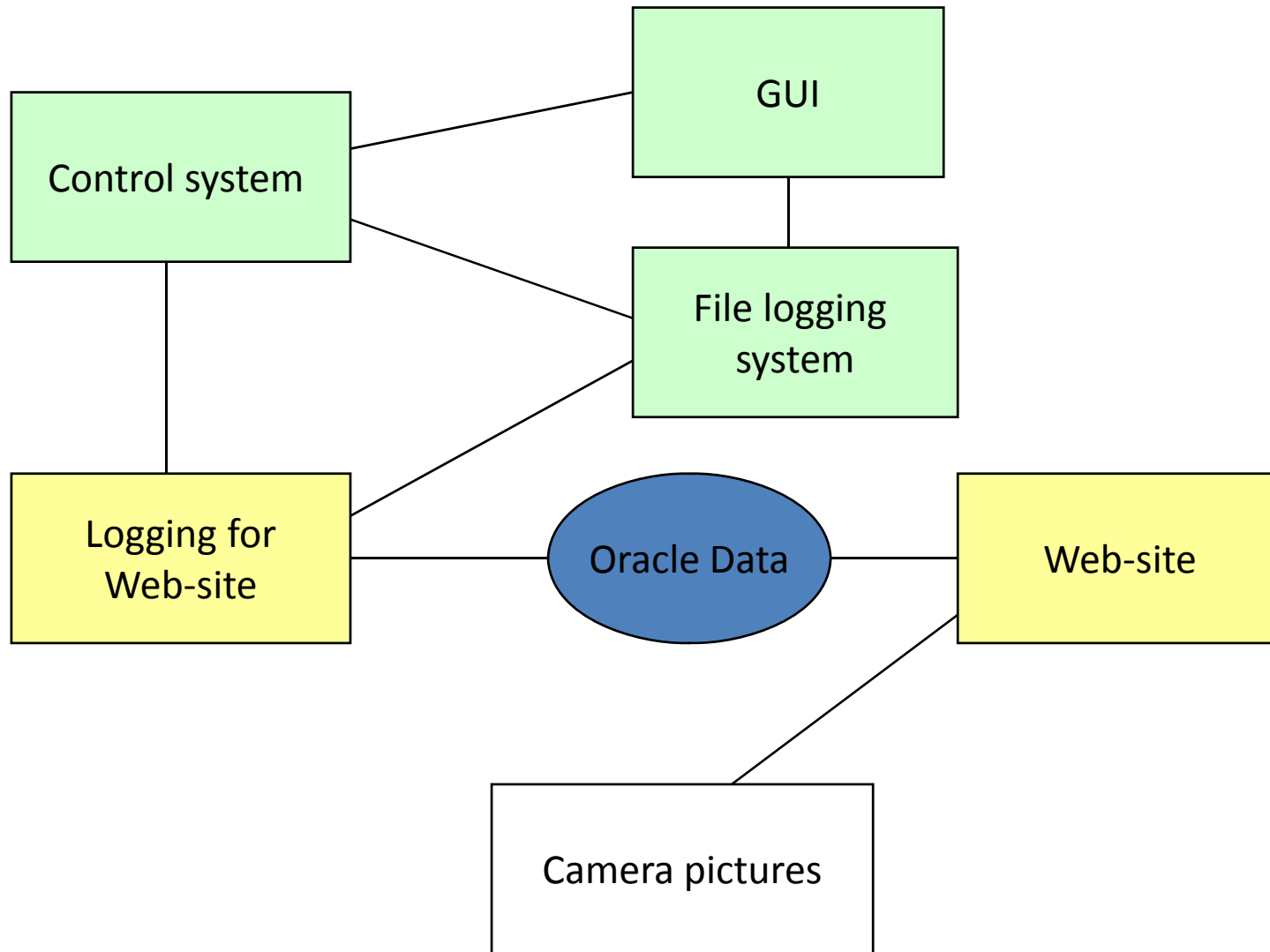
Computers architecture



Software lays



Software network



<http://cern.ch/project-clic-rfcond30/>

Breakdown is online!

- Conditioning status and power summary
- Power and FC plots, picture from the camera
- Conditioning overview for last 3 days
- Automatic reports for every experiment and for every structure

History is online!

Conditioning is online!