

Trigger Slow Control



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[General]

- GDL, GRL/CDC, and ECL are included in TRG RC and we have experienced some problems during Phase III.
- Many of them are solved and TRG SLC has been stabilized, but some more update is required for TRG expert shifts to easily operate.

[Solved]

- nsmd2 updated for the comparability with the latest daq_slc version
- Experimental parameter recording by run
 - Sometimes not recorded well due to the daqdbprovider process
 - Solved after applying Mikhail's pull-request (#130: Bugfix/daqdbprovider thread safety)
- KLM TRG is included in TRG RC scheme during phase III
 - KLM TRG ready signal is not included in the TRG ready signal, yet (because it always NOTREADY, currently.).

[Under consideration]

- TOP TRG
- Initialization via SLC TRG main panel
 - TRG experts are frequently confused.
- Configuration DB to Condition DB conversion
 - It seems there is no official way to convert
- GIT / cvmfs related: not much progress

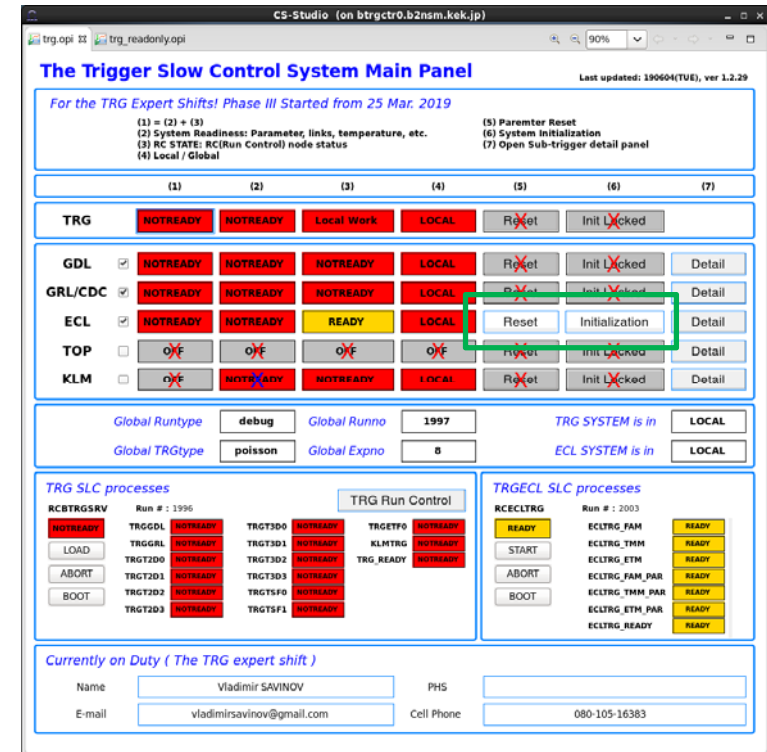
Sub-TRG	RC	Archiver	Conf. DB	Ready sig.	Person in charge
GDL	O	O	O	O	T. Koga & H. Nakazawa
GRL/CDC	O	O	O	O	Y. T. Lai
ECL	O	O	O	O	E. J. Jang & C. H. Kim
TOP	X	X	X	X	Savinov Vladimir
KLM	O	O	O	X	D. Liventsev
Neuro	X	X	X	X	S. Baehr

< When the **SLC problem** happens >

- Because SLC itself shows problem in this case, the initialization button does not work properly (the progress bar stuck).
- SLC reboot with 'slcctr reboot'
- Initialization button again
- TRG(ECL) is recovered.

< When a real TRG ECL problem happens >

- Initialization / Reset works in this case
- TRG(ECL) is recovered.



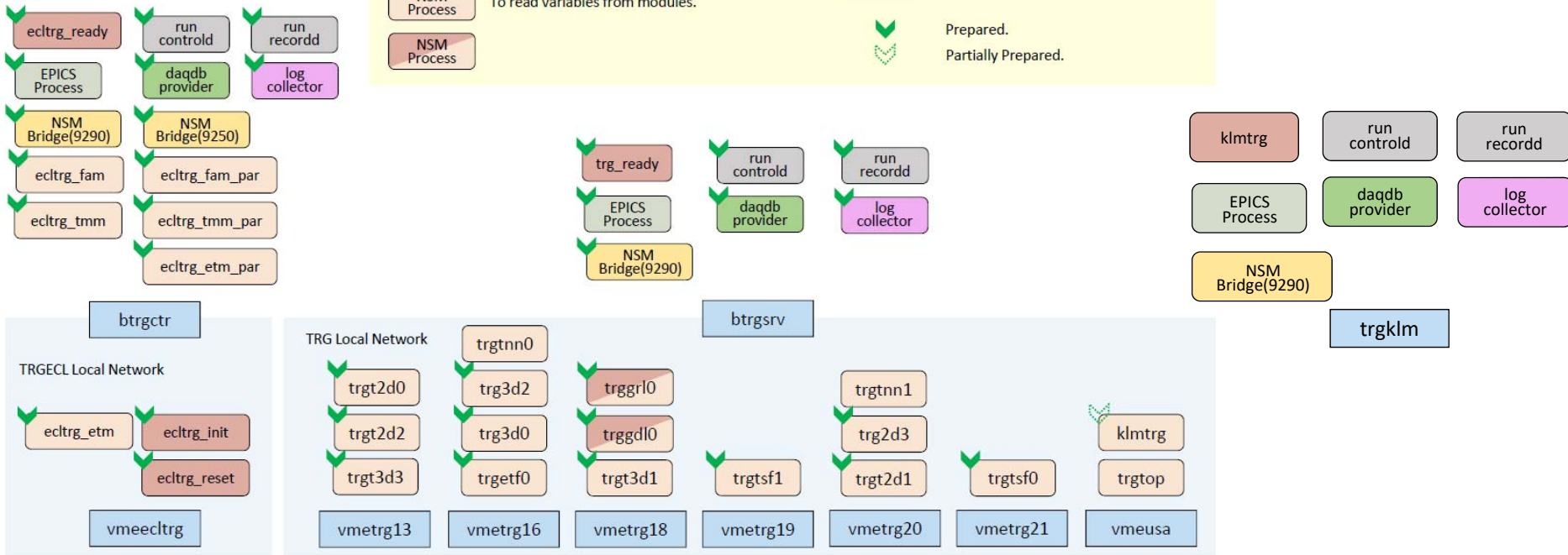
- Right procedure
 - Try 'slctr reboot(recover)' first
 - Click the initialization button

- Unfortunately, there is no module(a code) to let expert shifts to distinguish the type of the problem, currently.

- It would be better to just have a script to initialize TRGECL, first(not through SLC would be more stable).
 - I will just deactivate the initialization button (for a while) to avoid the confusion.

[Update log]

Server			
EPICS Process	To read variables from NSM processes on VMECPUS. To convert them to EPICS Archiver format.	run control	Let local RC node join global/local run
NSM Bridge	To connect local NSM to global(b2nsm server): 9290 Port(TRG), 9250 Port(ECL)	run recordd	Dumping parameters in a RC node to configuration DB (by global/local run #)
NSM Process	To send status and to react. Status: READY or not. Action: INIT(reboot and parameter downloading), Action: RESET(parameter downloading only)	log collector	Collecting logs
NSM Process	To read variables from modules.	daqdb provider	Forwarding server
NSM Process			Prepared.
			Partially Prepared.



Due to the way how TOP TRG operate, the trgklm server should have same structure as btrgctr / btrgsrv.
Not just add a node on vmeusa (full SLC setting on trgklm server is necessary).

- TRG rebooting script
 - Make it easier (including initialization)
 - Integrating scripts on btrgctr and btrgsrv
 - Include TRG SLC script in the Belle II whole SLC rebooting script (?)
- Add neuro related node
- TOP TRG SLC whole setting
- Version management
 - GIT / cvmfs
- TRG SLC is now on 'usable' level, but not that good enough.

Too complicated (only for the real expert)	only for trained experts	usable	quite good	Good enough
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CS-Studio (on btrgctr0.b2nsm.kek.jp)

trg.opi trg_readonly.opi 90%

The Trigger Slow Control System Main Panel

Last updated: 190604(TUE), ver 1.2.29

For the TRG Expert Shifts! Phase III Started from 25 Mar. 2019

(1) = (2) + (3)
 (2) System Readiness: Parameter, links, temperature, etc.
 (3) RC STATE: RC(Run Control) node status
 (4) Local / Global

(5) Parameter Reset
 (6) System Initialization
 (7) Open Sub-trigger detail panel

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
TRG	NOTREADY	NOTREADY	Local Work	LOCAL	Reset	Init Locked	
GDL ☒	NOTREADY	NOTREADY	NOTREADY	LOCAL	Reset	Init Locked	Detail
GRL/CDC ☒	NOTREADY	NOTREADY	NOTREADY	LOCAL	Reset	Init Locked	Detail
ECL ☒	NOTREADY	NOTREADY	READY	LOCAL	Reset	Initialization	Detail
TOP ☐	OFF	OFF	OFF	OFF	Reset	Init Locked	Detail
KLM ☐	OFF	NOTREADY	NOTREADY	LOCAL	Reset	Init Locked	Detail

Global Runtype: debug Global Runno: 1997 TRG SYSTEM is in: LOCAL
 Global TRGtype: poisson Global Expno: 8 ECL SYSTEM is in: LOCAL

TRG SLC processes

RCBTRGSRV Run #: 1996

TRGGDL NOTREADY TRGT3D0 NOTREADY TRGETF0 NOTREADY
 TRGGRL NOTREADY TRGT3D1 NOTREADY KLMTRG NOTREADY
 TRGT2D0 NOTREADY TRGT3D2 NOTREADY TRG_READY NOTREADY
 TRGT2D1 NOTREADY TRGT3D3 NOTREADY
 TRGT2D2 NOTREADY TRGTSF0 NOTREADY
 TRGT2D3 NOTREADY TRGTSF1 NOTREADY

LOAD ABORT BOOT

TRG Run Control

TRGECL SLC processes

RCECLTRG Run #: 2003

ECLTRG_FAM READY
 ECLTRG_TMM READY
 ECLTRG_ETM READY
 ECLTRG_FAM_PAR READY
 ECLTRG_TMM_PAR READY
 ECLTRG_ETM_PAR READY
 ECLTRG_READY READY

START ABORT BOOT

Currently on Duty (The TRG expert shift)

Name: Vladimir SAVINOV PHS:
 E-mail: vladimirsavinov@gmail.com Cell Phone: 080-105-16383

CS-Studio (on btrgctr0.b2nsm.kek.jp)

trg.opi 80%

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 (3) RC STATE: RC(Run Control) node status
 (4) Local / Global
 (5) Parameter Reset
 (6) System Initialization
 (7) Open Sub-trigger detail panel

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
TRG	READY	READY	RUNNING	GLOBAL	Reset	Init Locked	
GDL ☒	READY	READY	RUNNING	GLOBAL	Reset	Init Locked	Detail
GRL/CDC ☒	READY	READY	RUNNING	GLOBAL	Reset	Init Locked	Detail
ECL ☒	READY	READY	RUNNING	GLOBAL	Reset	Initialization	Detail
TOP ☐	OFF	OFF	OFF	OFF	Reset	Init Locked	Detail
KLM ☐	OFF	NOTREADY	RUNNING	GLOBAL	Reset	Init Locked	Detail

Global Runtype: physics Global Runno: 2637 TRG SYSTEM is in: GLOBAL
 Global TRGtype: gdl Global Expno: 8 ECL SYSTEM is in: GLOBAL

TRG SLC processes

RCBTRGSRV Run #: 2637

TRGGDL RUNNING TRGT3D0 RUNNING TRGETF0 RUNNING
 TRGGRL RUNNING TRGT3D1 RUNNING KLMTRG RUNNING
 TRGT2D0 RUNNING TRGT3D2 RUNNING TRG_READY RUNNING
 TRGT2D1 RUNNING TRGT3D3 RUNNING
 TRGT2D2 RUNNING TRGTSF0 RUNNING
 TRGT2D3 RUNNING TRGTSF1 RUNNING

TRG Run Control

STOP
ABORT
BOOT

TRGECL SLC processes

RCECLTRG Run #: 2637

ECLTRG_FAM RUNNING
 ECLTRG_TMM RUNNING
 ECLTRG_ETM RUNNING
 ECLTRG_FAM_PAR RUNNING
 ECLTRG_TMM_PAR RUNNING
 ECLTRG_ETM_PAR RUNNING
 ECLTRG_READY RUNNING

STOP
ABORT
BOOT

Currently on Duty (The TRG expert shift)

Name: Vladimir Savinov PHS: skype: vladimir-savinov, +1(412)9014498
 E-mail: vladimirsavinov@gmail.com Cell Phone: 080-105-16383

CS-Studio (on btrgctr0.b2nsm.kek.jp)

trg.opi trg_readonly.opi 90%

The Trigger Slow Control System Main Panel

Last updated: 190604(TUE), ver 1.2.29

For the CR Shifts! Phase III Started from 25 Mar. 2019

☒ Alarm on/off

(1) = (2) + (3)
 (2) System Readiness: Parameter, links, temperature, etc.
 (3) RC STATE: RC(Run Control) node status
 (4) Local / Global

	(1)	(2)	(3)	(4)
TRG	NOTREADY	NOTREADY	Local Work	LOCAL
GDL ☒	NOTREADY	NOTREADY	NOTREADY	LOCAL
GRL/CDC ☒	NOTREADY	NOTREADY	NOTREADY	LOCAL
ECL ☒	NOTREADY	NOTREADY	READY	LOCAL
TOP ☐	OFF	OFF	OFF	OFF
KLM ☐	OFF	NOTREADY	NOTREADY	LOCAL

< What should be checked for physics run >
 Please check TRG ready(the blue emphasized) signal
 >> (NOTREADY)
 [During a run]
 You will hear cat crying sound.
 Please Click "ABORT" on the main CR panel.
 Inform the TRG expert shift.
 [Before a run]
 You cannot start a new run.
 >> (READY)
 [During a run] TRG system is fine.
 [Not during a run] A new run can be started.

Global Runtype: debug Global Runno: 2008 TRG SYSTEM is in: LOCAL
 Global TRGtype: poisson Global Expno: 8 ECL SYSTEM is in: LOCAL

TRG SLC processes

RCBTRGSRV Run # : 1996

NOTREADY	TRGGDL NOTREADY	TRGT3D0 NOTREADY	TRGETF0 NOTREADY
LOAD	TRGGRL NOTREADY	TRGT3D1 NOTREADY	KLMTRG NOTREADY
ABORT	TRGT2D0 NOTREADY	TRGT3D2 NOTREADY	TRG_READY NOTREADY
BOOT	TRGT2D1 NOTREADY	TRGT3D3 NOTREADY	
	TRGT2D2 NOTREADY	TRGT5F0 NOTREADY	
	TRGT2D3 NOTREADY	TRGT5F1 NOTREADY	

TRGECL SLC processes

RCECLTRG Run # : 2003

READY	ECLTRG_FAM READY
START	ECLTRG_TMM READY
ABORT	ECLTRG_ETM READY
BOOT	ECLTRG_FAM_PAR READY
	ECLTRG_TMM_PAR READY
	ECLTRG_ETM_PAR READY
	ECLTRG_READY READY

Currently on Duty (The TRG expert shift)

Name: Vladimir SAVINOV PHS:
 E-mail: vladimirsavinov@gmail.com Cell Phone: 080-105-16383

Run control 33

100%

TRG Local Run Control Panel

Current Global Run # 2638

The Last Local Run # 2604

The Last Run # 2638

TRG main

RC_TRG Run #: 2604 TRG@RC.cosmic:2...

NOTREADY FORE_TRG **NOTREADY**

NOTREADY HLT_TRG **NOTREADY**

LOAD TRG **RUNNING**

ABORT TTD_TRG **NOTREADY**

BOOT

FTSW #185 **RUNNING** resetft statft

Trigger type AUX Run start at 2019-06-17 11:42:04

Trigger limit Run time 2312[sec]

Dummy rate Trigger in 1896.2 [Hz]

Max time 1997 [Hz] Trigger out 1885.8 [Hz]

Max trig 1 [us] Input count 4308003

Output count 4281422

STORE_TRG **NOTREADY**

Run type eb2rx input

Event rate [Hz] Event size [kB] 0

0 1 2 Event counter 0

Flow rate [MB/s] File size [MB] 0

0 100 200 # of files 0

TRG Run #: 2638

RUNNING TRG01 **RUNNING**

RUNNING TRG02 **RUNNING**

STOP BTRGSRV **RUNNING**

ABORT

BOOT

Hostname Status Bytes Rate [MB/s]

trq01 Label #####

RCBTRGSRV Run #: 2638

RUNNING TRGGDL **RUNNING** RGT2D3 **RUNNING** RGTSF0 **RUNNING**

RUNNING TRGGRL **RUNNING** RGT3D0 **RUNNING** RGTSF1 **RUNNING**

STOP TRGT2D0 **RUNNING** RGT3D1 **RUNNING** RGETF0 **RUNNING**

ABORT TRGT2D1 **RUNNING** RGT3D2 **RUNNING** LMTRG **RUNNING**

BOOT TRGT2D2 **RUNNING** RGT3D3 **RUNNING** _READY **RUNNING**

copper

TRG01

Hostname	Status	Bytes	Rate [MB/s]	HSLB-a	HSLB-b	Module
✓ cpr11001	RUNNING	1473659520	0.61	✓ 4276913	0	a=2D0,b=2D1
✓ cpr11003	RUNNING	1473652096	0.61	✓ 4280075	0	a=3D0,b=3D1
✓ cpr11005	RUNNING	1473652096	0.61	✓ 4276910	0	a=NN0,b=NN1
✓ cpr11007	RUNNING	1473659264	0.61	✓ 4276910	0	a=TSF0,b=TSF4
✓ cpr11009	RUNNING	1884915456	0.78	✓ 4276954	0	a=TSF1,b=TSF5
✓ cpr15001	RUNNING	11874940928	4.94	✓ 4282109	0	a=GDL

TRG02

Hostname	Status	Bytes	Rate [MB/s]	HSLB-a	HSLB-b	Module
✓ cpr11002	RUNNING	1471954048	0.62	✓ 4276884	0	a=2D2,b=2D3
✓ cpr11004	RUNNING	1471957760	0.62	✓ 4275495	0	a=3D2,b=3D3
✓ cpr11006	RUNNING	1471955328	0.62	✓ 4276888	0	a=NN2,b=NN3
✓ cpr11008	RUNNING	1882747264	0.79	✓ 4276894	0	a=TSF2,b=TSF3
✓ cpr11010	RUNNING	1061171136	0.45	✓ 4282125	0	a=TSF6,b=ETF
✓ cpr15002	RUNNING	1951067520	0.82	✓ 4282182	0	a=GRL

Include All COPPERs A

Include All COPPERs B

Exclude All COPPERs

by S. Yamada-san and T. Koga-san

- 5 k are given for TRG group (~ 5 k are planned to be archived)
- TRGECL archiving PV list : <https://confluence.desy.de/pages/viewpage.action?pageId=94155341>
 ※ PV lists: <https://confluence.desy.de/display/BI/List+of+Archived+PVs>

PV	#	Comment	Archived?	Contact Person
FAM temp.	104	52x2	Y	C.H. Kim E.J. Jang
TMM temp.	14	7x2	Y	
TC noise	576	-	Y	
TC pedestal	576	-	Y	
TC hit-rate	576	-	Y	
TC hit-rate average	~100	FW, BR, BE, ALL, θ and ϕ	Y	
TRG bits	44	-	Y	
Luminosity	2	Accelerator, Detector	Y	
Total	~2000	-	-	-

- The PV lists of other sub-triggers

PV	#	Comment	Archived?	Contact Person
trggdl	960	inp/ftd/psn/dam_r/a_rate → (672)	Y	T.Koga and H.Nakazawa
trggrl	7	rate_2D(4), rate_ECL(1), rate_KLM(1), rate_TOP(1)	Y	Y.T. Lai
trgtsfn	2336	TSF hit rates (2336)	646/2336	Y.T. Lai
trgt3n	12	track rate from IP, track rate outside IP, valid cot (12=3x4)	N	-
trgetf	1	event timing rate (1)	Y	Y.T. Lai
top	16	top L1 trigger hit rate	Y	Savinov Vladimir
klmtrg	4	total1DRate – Barrel FWD/BWD, Endcap FWD/BWD	Y	D. Liventsev
Total	~3000	-	-	-

~ 1500

※ PV lists: <https://confluence.desy.de/display/BI/List+of+Archived+PVs>

- TRGECL (on btrgctr server)
 - ~ 55 k
- Other (on btrgsrv server)
 - ~ 3 k

- T. Koga-san, H.Nakazawa-san and Y. T. Lai
- RC nodes are well established
 - READY signals are prepared.
- Well developed GUIs
- Configuration DB recording
 - daqdbprovider problem 1 or 2 times per a 1 or 2 day
- ~ 1500 PVs are archived.
- DQM is prepared by T. Koga

- E.J. Jang & C.H. Kim
- RC nodes are well established
 - A READY signal is prepared.
- Well developed GUIs
- Configuration DB recording
 - No daqdbprovider problem.
- ~2000 PVs are archived.
- DQM is prepared by I.S. Lee

- Savinov Vladimir
- No RC node
 - No READY signal.
- No detailed GUIs, yet (not urgent).
- No configuration DB recording.
- **16 PVs are archived.**
- No DQM

- Dmitri Liventsev
- A RC node “KLMTRG” is prepared.
 - Always shows NOTREADY, though. Need to be updated.
- No detailed GUIs, yet (not urgent).
- Configuration DB recording
 - daqdbprovider problem 1 or 2 times per a 1 or 2 day
- 4 PVs are archived.
- No DQM

Thomas Kuhr gave us a GIT project.

Project settings

Project details

SECURITY

Project permissions

Branch permissions

Access keys

Audit log

WORKFLOW

Branching model

Hooks

PULL REQUESTS

Merge checks

Merge strategies

Default reviewers

Project details

Delete project

Project name*

Project key*

Changing this project's key will change the clone URL of all contained repositories. You can update each repository's remote with the following command: `git remote set-url REMOTE_NAME NEW_URL`

Description

Project avatar 

Change avatar

Save Cancel