BIS channels to disable for machine checkout week

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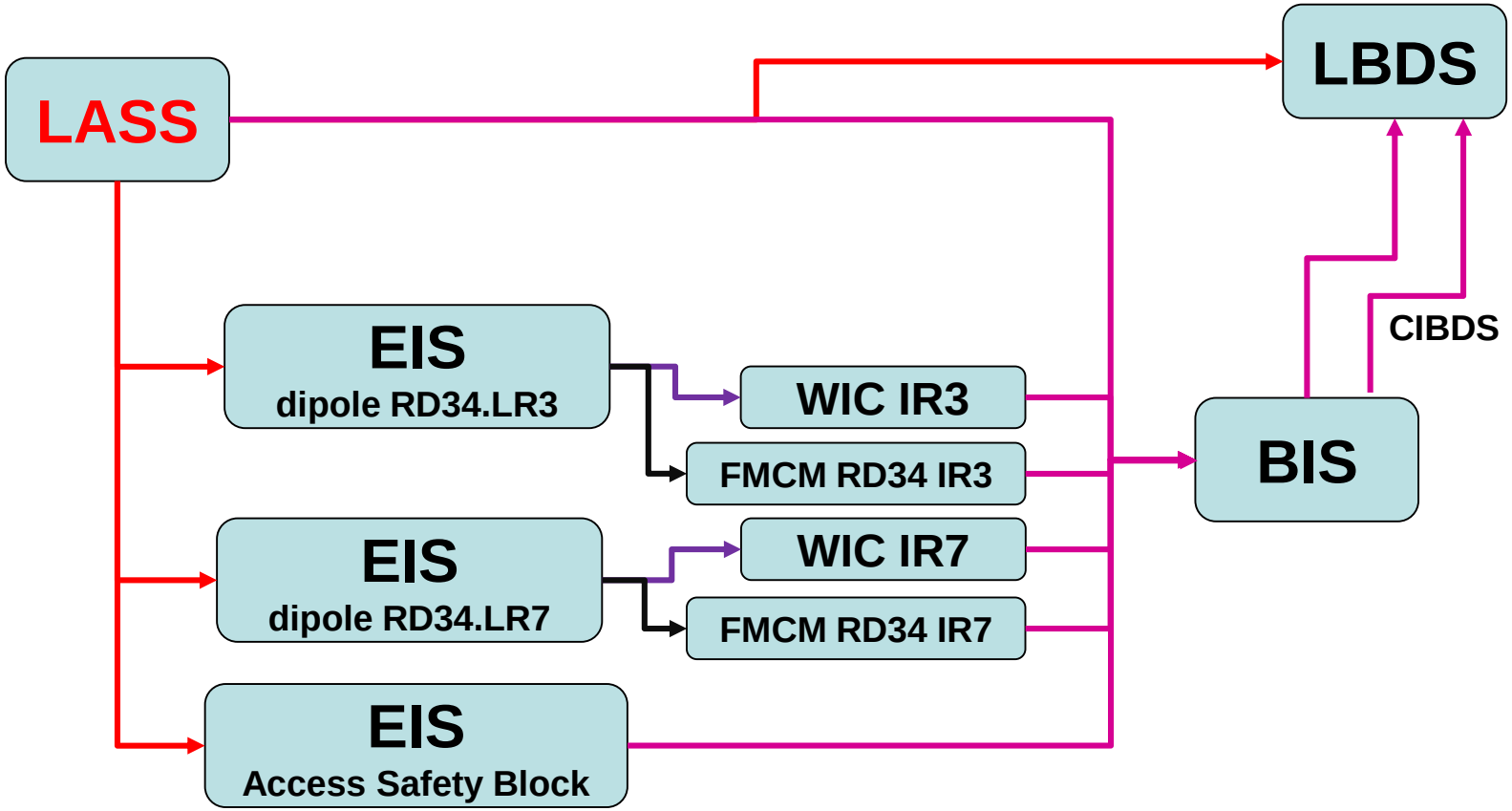
Checkout week 13

- A large fraction of **week 13** is dedicated to MP checkout tests for injection and LBDS.
  - The local BIS loop in point 6 will be disconnected in week 12, LBDS back in almost nominal configuration.
- Unfortunately we are sure that some NON-maskable inputs to the BIS loops will be FALSE some / a large fraction of the time.
  - Access to the LHCb cavern,
  - Training and powering tests S23,
  - Dump line vacuum (window intervention),
  - IP8 vacuum (VELO).
- Intervention planning:
  - **Disable** channels: **week 12** (Mo-Thu)
  - **Restore** nominal configuration: **week 14** (Mo-Wed) – TBC !

Side remark – access system

- The access system has one direct input into the CCC BICs, but some INDIRECT effect though un-maskable inputs of other systems (EIS = Element Important de Securite, directly interlocked with LASS).



Side remark – access system

- Trigger chain tests are performed by BE-OP-LHC for the BE DSO at every restart.
  - Machine to injection, then move LASS to access mode.
  - See : https://edms.cern.ch/document/2476616

BIS inputs trigger sequence in October 2021 – remarkably similar to the one of 2015:

- LASS : **first trigger @ 20:23:54.781**
- CIBDS : +140 **microsec**,
- LBDS TSU : +160 **microsec**,
- LBDS PLCs: +62 (B1) and +91 **millisec** (B2),
- WIC and FMCM: +280-340 **millisec**,
- Access SB: +630 **millisec**,

Ring BIS channels to disable

- Status – Friday 18.03.2022.
- Points 2, 3, 6, 7 and 8.

BIC device name	Location	Channel #	Channel description	Motivation
CIB.CCR.LHC.B1	CCR	5	Access	Access LHCb
CIB.CCR.LHC.B2	CCR	5	Access	Access LHCb
CIB.UA27.R2.B1	2	1	Vacuum B1	Training S23
		5	PIC_UNM	Training S23
CIB.UA27.R2.B2	2	1	Vacuum B2	Training S23
		5	PIC_UNM	Training S23
CIB.UJ33.U3.B1	3	1	Vacuum B1	Training S23
		4	ACCESS_SB	Access LHCb
		5	PIC_UNM Left	Training S23
		6	PIC_UNM Right	Training S23
		7	WIC	Access LHCb >> RD34.LR3
CIB.UJ33.U3.B2	3	1	Vacuum B2	Training S23
		4	ACCESS_SB	Access LHCb
		5	PIC_UNM Left	Training S23
		6	PIC_UNM Right	Training S23
		7	WIC	Access LHCb >> RD34.LR3
CIB.UA63.L6.B1	6	1	Vacuum B1	Dump line vacuum
CIB.UA63.L6.B2		1	Vacuum B2	Dump line vacuum
CIB.UA67.R6.B1		1	Vacuum B1	Dump line vacuum
CIB.UA67.R6.B2		1	Vacuum B2	Dump line vacuum
CIB.TZ76.U7.B1	7	7	WIC	Access LHCb >> RD34.LR7
CIB.TZ76.U7.B2		7	WIC	Access LHCb >> RD34.LR7
CIB.UA83.L8.B1	8	6	Vacuum B1B2	LHCb VELO
CIB.UA83.L8.B2		6	Vacuum B1B2	LHCb VELO
CIB.UA87.R8.B1		6	Vacuum B1B2	LHCb VELO
CIB.UA87.R8.B2		6	Vacuum B1B2	LHCb VELO

plus the experiments in the injection BICs

- For both injection BIC pairs:
  - remove the input of the second BIC (experiments…) into the first (‘master’) BIC,
  - remove input from the BIS loop to decouple injection and LBDS tests.

CIB.SR2.INJ1.1	2	1	INJ1-2	MKI/injection commissioning decouple from experiments
		2	LHC Beam 1 permit	Decouple injection and LBDS tests
CIB.SR8.INJ2.1	8	1	INJ2-2	MKI/injection commissioning decouple from experiments
		2	LHC Beam 2 permit	Decouple injection and LBDS tests