

# Draft of the menu for 1e33

Rates in Hz at 1e33

## Hadronic triggers

HLT	L1seed	P'ed / un'p'ed	rate (Hz)	comments	Group	PD
<b>inclusive jets :</b>						
L1SingleJet16	L1_SingleJet16	p'ed	1		JetMET, QCD	Commissioning
Jet30	L1_SingleJet16	p'ed	1	p = 1500 x 120	JetMET, QCD	Jet
Jet60	L1_SingleJet36	p'ed	1	p = 10 x 800	JetMET, QCD	Jet
Jet80	L1_SingleJet52	p'ed	1.3	p = 1600	JetMET, QCD	Jet
Jet110	L1_SingleJet68	p'ed	1.5	p = 300	JetMET, QCD	Jet
Jet150	L1_SingleJet92	p'ed	1.6	p = 60	JetMET, QCD	Jet
Jet190	L1_SingleJet92	p'ed	1.6	p = 20	JetMET, QCD	Jet
Jet240	L1_SingleJet92	p'ed	1.7	p = 6	JetMET, QCD	Jet
Jet300	L1_SingleJet92	p'ed	1.1	p=3	JetMET, QCD	Jet
Jet370	L1_SingleJet92	un'p'ed	1.1		JetMET, QCD	Jet
Jet470	L1_SingleJet92	un'p'ed	0.3		JetMET, QCD	Jet
Jet700_NoJetID	L1_SingleJet92	un'p'ed	1.1		JetMET, QCD	Jet
<b>DiJetAve paths now use corrected energies :</b>						
DiJetAve30	L1_SingleJet16	p'ed	1	p = 1500 x 60	JetMET	Jet
DiJetAve60	L1_SingleJet36	p'ed	1	p = 10 x 400	JetMET	Jet
DiJetAve80	L1_SingleJet52	p'ed	1.1	p = 800	JetMET	Jet
DiJetAve110	L1_SingleJet68	p'ed	1.1	p = 150	JetMET	Jet
DiJetAve150	L1_SingleJet92	p'ed	1.2	p = 30	JetMET	Jet
DiJetAve190	L1_SingleJet92	p'ed	2.9	p = 10	JetMET	Jet
DiJetAve240	L1_SingleJet92	un'p'ed	1		JetMET	Jet
DiJetAve300	L1_SingleJet92	un'p'ed	0.5		JetMET	Jet

<b>Multijet paths :</b>						
DoubleJet80_ForwardBackward_v1	L1_DoubleForJet44EtaOpp			un'p'ed	< 0.1	
DoubleJet70_ForwardBackward_v1	L1_DoubleForJet32EtaOpp			un'p'ed	0.1	Monitoring of the above.
DoubleJet60_ForwardBackward_v1	L1_DoubleForJet32EtaOpp			un'p'ed	0.3	Monitoring of the above.
DoubleJet30_ForwardBackward_v1	L1_DoubleForJet32EtaOpp			p'ed	1.4	p = 10. Monitoring the above.
ExclDijet60_HFAND	L1_SingleJet36FwdVeto			un'p'ed	0.2	Fwd veto condition: HFCCountRing1Plus2 && HFCCountRing1Minus2 && HFCCountRing2Plus2 && HFCCountRing2Minus2 && < 2 ; also have (p'ed) ExclDijet30U_HFAND for monitoring
ExclDiJet60_HFOR	L1_SingleJet36			p'ed	0.03	p = 10 x 20. Monitoring.

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QuadJet40	L1_QuadJet20_Central	p'ed	1.6	p = 50. Monitor for tau+quadjet
QuadJet60	L1_QuadJet20_Central	unp'ed	8	[Exotica] for RPV gluino
QuadJet70	L1_QuadJet20_Central	unp'ed	3	[Exotica] for RPV gluino - backup of above.
QuadJet50_BTagIP	L1_QuadJet20_Central	unp'ed	11	[Top] New. The first IP-based b-tagging path.
QuadJet50_Jet40_v1	L1_QuadJet20_Central	unp'ed	6	[Top] 5 jets > 20 GeV and 4 jets > 25 GeV
<b>HT, Meff etc triggers : [ the rates below account for the fact that HF is excluded from Meff, HT :</b>				
Meff640	L1_HTTP100	unp'ed	3.4	Backup of the above
Meff520	L1_HTTP100	p'ed	1.2	p = 10. Monitor of above.
Meff440	L1_HTTP100	p'ed	1	p = 25. Monitor of above.
HT150	L1_HTTP50	p'ed	0.7	p = 2000. Monitor of HT440.
HT200	L1_HTTP75	p'ed	0.6	p = 1000. Monitor of HT440.
HT250	L1_HTTP100	p'ed	0.5	p = 225. Monitor of HT440.
HT300	L1_HTTP100	p'ed	0.7	p = 105. Monitor of HT440.
HT350	L1_HTTP100	p'ed	0.8	p = 100. SUSY, Exotica.
HT400	L1_HTTP100	p'ed	1.3	p = 20.
HT450	L1_HTTP100	p'ed	1.5	p = 10.
HT500	L1_HTTP100	unp'ed	8.9	
HT550	L1_HTTP100	unp'ed	5.3	
HT150_AlphaT0p60	L1_HTTP75 ?	p'ed	1.8	p=5
HT200_AlphaT0p53	L1_HTTP75	p'ed	2.8	p=2
HT250_AlphaT0p53	L1_HTTP100	unp'ed	2.1	
HT300_AlphaT0p52	L1_HTTP100	unp'ed	2.4	
HT350_AlphaT0p51	L1_HTTP100	unp'ed	3.0	
HT400_AlphaT0p51	L1_HTTP100	unp'ed	1.1	
DiJet100_PT100	L1_SingleJet52	p'ed	1.1	p = 10. (L1 rate ~ kHz at 5e32)
DiJet130_PT130	L1_SingleJet52	unp'ed	2.6	Need to go to a high L1 seed to stay unprescaled.
DiJet70_PT70	L1_SingleJet36	p'ed	1	p = ? Monitor of the above. Still needed
HT250_MHT60	L1_HTTP100	p'ed	1	p=20 (22 Hz unp'ed 1e33)
HT300_MHT75	L1_HTTP100	unp'ed	7	Backup of the above. This was supposed to be changed into HT300_MHT70

				already in the 5e32 menu.
HT250_MHT70	L1_HTTP100	unp'ed	12	Replace the above backup ?
HT300_PFMHT55_BTagIP	L1_HTTP100	unp'ed	2	(no PU SF)
HT300_PFMHT75_BTagIP	L1_HTTP100	unp'ed	0.7	(no PU SF)
HT300_PFMHT55	L1_HTTP100	p'ed	0.6	p=20. Monitoring the above.
HT300_BTagIP	L1_HTTP100	p'ed	0.7	p=20. Monitoring the above.
<b>Razor triggers: changes are coming... Will add about 10 Hz</b>				
R032_MR100	L1_DoubleJet36Central (20U)	unp'ed	10	"Razor" for SUSY backup: R0.35_MR100 ; R0.10_MR50 and R0.35_MR100 p'e
R035_MR100	L1_DoubleJet36Central (20U)	unp'ed		Backup of the above
R032	L1_DoubleJet36Central (20U)	p'ed		Monitor of the above
MR100	L1_DoubleJet36Central (20U)	p'ed		Monitor of the above
HT250_DoubleDisplacedJet60	L1_HTTP100	unp'ed	2.5	Exotica.
L1DoubleJet36Central	L1_DoubleJet36_Central	p'ed	1	p = ? Collect a sample to design a trigger for Hbb
L1MultiJet	L1_HTTP50 or L1_TripleJet28_Central or L1_QuadJet20_Central	p'ed	1	p = ? Collect a sample to design a trigger for Hbb
<b>Misc. (Exotica requests) :</b>				
JetE30_NoBPTX_NoHalo_v1	L1_SingleJet20_NotBptxOR_NotMuBeamHalo	unp'ed	?	Stopped gluino, monitor trigger.
JetE30_NoBPTX_v1	L1_SingleJet20_NotBptxOR	p'ed	?	<b>p ~ 80.</b> Control trigger, o estimate of halo events in HCAL that are not identified by CSC.
JetE30_NoBPTX3BX_NoHalo_v1	L1_SingleJet20_NotBptxOR_NotMuBeamHalo	unp'ed	?	Backup. Veto on BPTX in +/- 1 BX
<b>b-tag triggers:</b>				
BTagMu_DiJet110_Mu5	L1_Mu3_Jet28_Central	p'ed	1.3	p=3
BTagMu_DiJet70_Mu5	L1_Mu3_Jet28_Central	p'ed	1.5	p=20
BTagMu_DiJet40_Mu5	L1_Mu3_Jet20_Central	p'ed	1.6	p=110
BTagMu_DiJet20_Mu5	L1_Mu3_Jet16_Central	p'ed	1.6	p=320

## MET triggers

HLT	L1seed	P'ed / unp'ed	rate (Hz)	comments	Group	PD
MET100	L1_ETM30	p'ed	0.4	p=20. Monitor	JetMET, Higgs	METBTag
MET120	L1_ETM30	unp'ed	4.5	Keep unp'ed for ZH -> nnbb	JetMET, Higgs	METBTag
MET200	L1_ETM30	unp'ed	1.5		JetMET	METBTag
pfMHT150	L1_ETM50	unp'ed	2.3	PF missing HT.	JetMET	METBTag

MET + Jet triggers:						
DiJet60_MET45 (30U)	L1_ETM20	p'ed	0.6	p = 150. NB: L1 seed will also be p'ed.	EXO ?	METBTag
CentralJet80_MET65	L1_ETM30	p'ed	1.3	p = 20.	EXO	METBTag
CentralJet80_MET80	L1_ETM30	p'ed	1.7	p = 5.	EXO	METBTag
CentralJet80_MET100	L1_ETM30	unp'ed	3.0		EXO	METBTag
CentralJet80_MET160	L1_ETM30	unp'ed	0.9		EXO	METBTag
L1ETM30	L1_ETM30	p'ed	1	p = ? Collect a sample to designe a trigger for Hbb	Higgs	MultiJet ?

## Muons

HLT	L1seed	P'ed / unp'ed	rate (Hz)	comments	Group
<b>Inclusive muon paths :</b>					
Mu30	L1_SingleMu12	unp'ed	11	backup	MUO
Mu24	L1_SingleMu12	unp'ed	20	Backup: Mu30, ~Mu35 ( ~ 5 Hz)	MUO
Mu20	L1_SingleMu12	p'ed	1.1	p = 30. e.g. to monitor Mu20 + jets	MUO
Mu15	L1_SingleMu10	p'ed	1.1	p = 80. monitor Mu+IsoTau	MUO
Mu12	L1_SingleMu7	p'ed	1.1	p = 210. intermediate th.	MUO
Mu8	L1_SingleMu3	p'ed	1	p = 5 x 240. For fake rate studies.	many
Mu5	L1_SingleMu3	p'ed	1	p = 5 x 1200. e.g. to monitor Mu5_HT120U	
Mu3	L1_SingleMuOpen	p'ed	1.1	p = 30 x 800. e.g. to monitor DoubleMu3_HT	SUSY
Mu3_Dijet30	?	p'ed	1	p=? Monitor Doublemu+HT...	SUSY
Mu3_Trijet30	?	p'ed	1	p=? Monitor Doublemu+HT...	SUSY
Mu3_QuadJet30	?	p'ed	1	p=? Monitor Doublemu+HT...	SUSY
IsoMu30	L1_SingleMu12	unp'ed	6.3	backup for IsoMu17	MUO
IsoMu24	L1_SingleMu12	unp'ed	8.6	backup for IsoMu17	MUO
IsoMu17	L1_SingleMu10	p'ed	1.8	p = 10.	MUO
IsoMu15	L1_SingleMu10	p'ed	1,3	p = 20.	MUO
IsoMu12	L1_SingleMu7	p'ed	1.0	p = 70.	MUO
<b>Quarkonia paths:</b>					
DoubleMu2_Bs	L1_DoubleMu0	unp'ed	4.8	Mass window: 4.8 - 6.0	Onia
Dimuon6p5_JPsi	L1_DoubleMu0	p'ed	1.5	Monitoring (p=10). Mass window: 2.9 -	Onia

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				3.3.		
Dimuon6p5_JPsi_Displacced	L1_DoubleMu0	unp'ed	5	Mass window: 2.9 - 3.3.	Onia	
Dimuon6p5_LowMass	L1_DoubleMu0	p'ed	3.7	Monitoring (p=10). Mass window: 1.0 - 5.0	Onia	
Dimuon6p5_LowMass_Displaced	L1_DoubleMu0	unp'ed	12	Mass window: 1.0 - 5.0	Onia	
Dimuon5_Barrel_Upsilon	L1_DoubleMu0	unp'ed	6.6	Dimuon5 or Dimuon0 ??? eta < 1.3. Mass window: 8.5 - 11.5	Onia	
Dimuon6p5_Barrel_PsiPrime	L1_DoubleMu0	unp'ed	2.0	eta < 1.3. Mass window: 3.35 - 4.00	Onia	
Dimuon10_Barrel_JPsi	L1_DoubleMu0	unp'ed	4.0	eta < 1.3. Mass window: 2.75 - 3.35	Onia	
+ several low pt efficiency triggers, prescaled to a total of 3.6 Hz :						
Mu5_Track2_JPsi	L1_SingleMu3	p'ed	0.4	p = 20. To DoubleMu PD ?	Onia	
Mu5_L2Mu2_JPsi	L1_DoubleMu_0_5	p'ed	0.2	p = 2. To DoubleMu PD ?	Onia	
Mu7_Track7_JPsi	L1_SingleMu7 ?	p'ed	0.9	p = 4. To DoubleMu PD ?	Onia	
<b>Multi-muon paths:</b>						
HLT_Mu5_TKMuo0_OST_Jpsi_Tight_B5Q7	L1SingleMu5_eta1p5_Q7	p'ed ?	3	p = 2. For DT monitoring [ could also be of interest for QQ, for eff. studies ]	DT	Cor
DoubleMu7	L1_DoubleMu3	unp'ed	9	Z(mumu).	EWK	
DoubleMu6	L1_DoubleMu3	p'ed	1.7	p = 10.	EWK	
DoubleMu3	L1_DoubleMu0	p'ed	1.9	p = 85.		
TripleMu5	L1_DoubleMu3	unp'ed	0.3		SUSY	
DoubleMu4_Acoplanarity03_v1	L1_DoubleMu3	unp'ed	8.3	Require that the 2 muons are back-to-back in phi at the HLT	FWD	
L2DoubleMu23_NoVertex_v1	L1_DoubleMu5	unp'ed	2.4	for exotica	EXO	
<b>Paths for muon monitoring:</b>						
L1SingleMuOpen_v1	L1_SingleMuOpen	p'ed	1	In Comm. PD	MUO	Cor
L1SingleMuOpen_DT	L1_SingleMuOpen	p'ed	1	Restrict to the DT acceptance. In Comm. PD	DT	Cor
L1SingleMu10_v1	L1_SingleMu10	p'ed	1		MUO	
L2Mu10_v1	L1_SingleMu10	p'ed	1		MUO	
L1SingleMu20	L1_SingleMu20	p'ed	1	Needed ???	MUO	
L2Mu20	L1_SingleMu10	p'ed	1	Needed ???	MUO	
L1DoubleMu0	L1_DoubleMu0	p'ed	1	p = 2800	MUO	
L2DoubleMu0	L1_DoubleMu0	p'ed	1	p = 1000	MUO	

## Electrons

HLT	L1seed	P'ed / unp'ed	rate (Hz)	comments	Group	
<b>Single electron paths :</b>						
Ele32_CaloIdVT_CaloIsoT_TrkidT_TrkIsoT	L1_SingleEG15	unp'ed	15	Main inclusive single elec.	Egamma	Si
Ele41_CaloIdVT_CaloIsoT_TrkidT_TrkIsoT	L1_SingleEG15	unp'ed	7	Backup of the above.	Egamma	Si
Ele27_CaloIdVT_CaloIsoT_TrkidT_TrkIsoT	L1_SingleEG15	p'ed	1	p = 30. Previous th. Keep p'ed ?	Egamma	Si
Ele52_CaloIdVT_TrkIdT_v1	L1_SingleEG20	unp'ed	5		EXO	Si
Ele65_CaloIdVT_TrkIdT_v1	L1_SingleEG20	unp'ed	2.5	Backup of the above.	EXO	Si
Ele45_CaloIdVT_TrkIdT_v1	L1_SingleEG20	p'ed	1	p = 10. Keep p'ed ?	EXO	Si
Ele90_NoSpikeFilter_v1	L1_SingleEG20	unp'ed	7	No id, no isol - Exotica	EXO	Si
Ele27_CaloIdVT_CaloIsoT_TrkIdT_TrkIsoT_PFMht27	L1_SingleEG15	unp'ed	11	W -> e for calibration. Not approved yet.	ECAL	
<b>Double electron paths :</b>						
Ele17_CaloIdL_CaloIsoVL_Ele8_CaloIdL_CaloIsoVL_v1	L1_SingleEG12	unp'ed	13	[Higgs, SUSY, ] will evolve to EG12+EG5 L1 seed.	Higgs	Do
Ele17_CaloIdT_TrkIdVL_CaloIsoVL_TrkIsoVL_Ele8_CaloIdT_TrkIdVL_CaloIsoVL_TrkIsoVL_v1	L1_SingleEG12	unp'ed	2	Backup of the above. For 5e33.	Higgs	Do
Ele17_CaloIdL_CaloIsoVL_Ele15_HFL_v1	L1_SingleEG12	unp'ed	5	ECAL+HF, Z -> ee increased acceptance. Will tighten selection.	EWK	Do
Ele32_CaloIdT_CaloIsoT_TrkIdT_TrkIsoT_SC17	L1_SingleEG12	unp'ed	1.7	sample, also T&P sample (for electrons >20GeV)	Egamma	Do
DoubleEle10_CaloIdL_TrkIdVL_Ele10_v1	L1_TripleEG5	unp'ed	1		SUSY	Do
TripleEle10_CaloIdL_TrkIdVL_v1	L1_TripleEG5	unp'ed	0.3	higher lumi	SUSY	Do
DoubleEle33	L1_SingleEG20	unp'ed	3		EXO	Do
<b>Utility electron paths :</b>						
Ele17_CaloIdVT_CaloIsoVT_TrkIdT_TrkIsoVT_SC8_Mass30_v1	L1_SingleEG12	p'ed	1			

				p = 5. Z tag probe (for electrons 1 GeV)
Ele17_CaloIdVT_CaloIsoVT_TrkIdT_TrkIsoVT_Ele8_Mass30_v1	L1_SingleEG12	unp'ed	2.2	p = 5. Z tag probe (for electrons 1 GeV)
Ele8_v1	L1_SingleEG5	p'ed	1	p = 30 x 50 for very low electron fake rates (same as mu-ele triggers)
Ele8_CaloIdL_CaloIsoVL_v1	L1_SingleEG5	p'ed	1	p = 30 x 20 main trigger electron fake rates (same as di-ele)
Ele8_CaloIdL_TrkIdVL_v1	L1_SingleEG5	p'ed	1	p = 30 x 16 for fake rate studies; monitoring SUSY dilepton paths
Ele8_CaloIdT_TrkIdT_Dijet30	L1_SingleEG5	p'ed	1	p=? Monitor of SUSY dilepton+H paths
Ele8_CaloIdT_TrkIdT_Trijet30	L1_SingleEG5	p'ed	1	p=? Monitor of SUSY dilepton+H paths
Ele8_CaloIdT_TrkIdT_Quadjet30	L1_SingleEG5	p'ed	1	p=? Monitor of SUSY dilepton+H paths
Ele17_CaloIdL_CaloIsoVL_v1	L1_SingleEG12	p'ed	1	p = 800. seed trigger for electron fake rates, for h range (same cuts as di-ele)
Ele15_CaloIdVT_CaloIsoT_TrkIdT_TrkIsoT_v1	L1_SingleEG12	p'ed	1	p = 130. Monitor for e+tau trigger
Ele8_CaloIdL_CaloIsoVL_Jet40_v1	L1_EG5_Jet36_deltaPhi1	p'ed	1	for electron fake rates (same cuts as di-ele)
Photon20_CaloIdVT_IsoT_Ele8_CaloIdL_CaloIsoVL_v1	L1_SingleEG12	p'ed	1.7	p = 5. for electron fake rates (same as di-ele)

L1SingleEG5	L1_SingleEG5	p'ed	1	ECAL DPC = 300 (L1) 1000 (HLT) a rate of ~
DoubleEle8_CaloIdL_TrkIdVL	?	p'ed	1	p=? Monito DoubleEle ...

## Photons

HLT	L1seed	P'ed / unp'ed	rate (Hz)	comments	Group
<b>Single photon paths :</b>					
Photon75_CaloIdVL_IsoL_v1	L1_SingleEG20	unp'ed	6		QCD, EXO
Photon75_CaloIdVL_v1	L1_SingleEG20	p'ed	1.5	p=10. P'ed version of Id+Iso trg.	SUSY
Photon125	L1_SingleEG20	unp'ed	2.2	No CaloEleId or Isol	EXO
Photon200_NoHE	L1_SingleEG20	unp'ed	0.3	No CaloEleId or Isol	EXO
Photon30_CaloIdVL_v1	L1_SingleEG15	p'ed	1.4	p = 350.	QCD
Photon20_CaloIdVL_IsoL_v1	L1_SingleEG12	p'ed	1.1	p = 1000. SUSY RA6. 1k at 1e33. Prescale to 0.5 Hz	SUSY
Photon30_CaloIdVL_IsoL_v1	L1_SingleEG15	p'ed	1	p = 210.	QCD
Photon50_CaloIdVL_IsoL_v1	L1_SingleEG20	p'ed	1.4	p = 20. SUSY RA6. 20 Hz at 1e33	SUSY
<b>Double Photons:</b>					
Photon32_CaloIdL_Photon26_CaloIdL_v1	L1_SingleEG12	unp'ed	9	Susy RA3 signal trigger, nonisolated backup to Hgg	SUSY
Photon26_CaloIdL_IsoVL_Photon18_CaloIdL_IsoVL	L1_SingleEG12	unp'ed	3.5		Higgs
Photon26_IsoVL_Photon18_v1	L1_SingleEG12	p'ed	0.4	p=100	Higgs
Photon26_CaloIdL_IsoVL_Photon18_v1	L1_SingleEG12	unp'ed	15		Higgs
Photon26_IsoVL_Photon18_IsoVL_v1	L1_SingleEG12	unp'ed	8.6		Higgs
Photon26_Photon18_v1	L1_SingleEG12	p'ed	0.8	p=100. Monitor.	Higgs
Photon26_CaloIdL_IsoVL_Photon18_R9Id	L1_SingleEG12	unp'ed	10		Higgs
Photon26_R9Id_Photon18_CaloIdL_IsoVL	L1_SingleEG12	unp'ed	10		Higgs
Photon20_R9Id_Photon18_R9Id_v2	L1_SingleEG12	unp'ed	6		Higgs
Photon36_CaloIdL_Photon22_CaloIdL	L1_SingleEG12	unp'ed	10		Higgs



DoublePhoton33_HEVT	L1_SingleEG20	unp'ed	5	No ID; very tight H/E	EXO
DoublePhoton50	L1_SingleEG20	unp'ed	1.5		EXO
DoublePhoton5_IsoVL_CEP_v1	L1_DoubleEG2_FwdVeto	unp'ed		few Hz	FWD

## Tau triggers

HLT	L1seed	P'ed / unp'ed	rate (Hz)	comments	Group	PD
IsoPFTau35_Trk20_MET50	L1_SingleTau52 OR L1_SingleJet68 [TBD]	unp'ed	6		Higgs	Tau
IsoPFTau35_Trk20_MET60	L1_SingleTau52 OR L1_SingleJet68 [TBD]	unp'ed	5	For 2e33...	Higgs	Tau
DoubleIsoPFTau25_Trk5_eta2p1	L1_DoubleTauJet32 OR L1_DoubleJet44_Central [TBD]	unp'ed	14	Z to tautau.	Higgs, EXO, EWK	Tau
DoubleIsoPFTau35_Trk5_eta2p1	L1_DoubleTauJet32 OR L1_DoubleJet44_Central [TBD]	unp'ed	7	Backup of the above.	Higgs, EXO, EWK	Tau

## Cross-triggers with a muon or an electron/photon or a tau

HLT	L1seed	P'ed / unp'ed	rate (Hz)
<b>Electron + Had :</b>			
Ele10_CaloIdL_CaloIsoVL_TrkIdVL_TrkIsoVL_HT200_v1	L1_EG5_HTT75	unp'ed	11
Ele10_CaloIdT_CaloIsoVL_TrkIdT_TrkIsoVL_HT200_v1	L1_EG5_HTT75	unp'ed	5
HT200_Ele5_CaloIdVL_TrkIdVL_CaloIsoVL_TrkIsoVL_PFMHT35	L1_HTT100	unp'ed	1.8
HT250_Ele5_CaloIdVL_TrkIdVL_CaloIsoVL_TrkIsoVL_PFMHT35	L1_HTT100	unp'ed	1.8
DoubleEle8_CaloIdL_TrkIdVL_HT150	L1_DoubleEG5_HTT50	unp'ed	5
DoubleEle8_CaloIdT_TrkIdVL_HT150	L1_DoubleEG5_HTT50	unp'ed	1
Ele25_CaloIdVT_TrkIdT_CentralJet30_BTagIP	L1_SingleEG12	unp'ed	2
Ele25_CaloIdVT_TrkIdT_CentralTriJet30	L1_SingleEG12	unp'ed	2.5
Ele25_CaloIdVT_CaloIsoT_TrkIdT_TrkIsoT_CentralDiJet30	L1_SingleEG12	unp'ed	3.5
Ele25_CaloIdVT_TrkIdT_CentralJet30_v1	L1_SingleEG12	p'ed	1
Ele25_CaloIdVT_TrkIdT_CentralDiJet30_v1	L1_SingleEG12	p'ed	1
Ele25_CaloIdL_CaloIsoVL_TrkIdL_TrkIsoVL_CentralJet30	L1_SingleEG12	p'ed	1

Ele25_CaloIdVT_CaloIsoT_TrkIdT_TrkIsoT_CentralJet30	L1_SingleEG12	p'ed	1
Ele15_CaloIdVT_CaloIsoT_TrkIdT_TrkIsoT_DiJet_35_25_Deta2	L1_SingleEG12	unp'ed ?	6.4
Ele15_CaloIdVT_CaloIsoT_TrkIdT_TrkIsoT_DiJet_35_25_Deta3	L1_SingleEG12	unp'ed	6.4
Ele15_CaloIdVT_TrkIdT_DiJet_35_25_Deta2	L1_SingleEG12	p'ed	0.8
Ele17_CaloIdVT_CaloIsoT_TrkIdT_TrkIsoT_CenJet30_CenJet25_PFMHT20	L1_SingleEG12	unp'ed	5.6
Ele17_CaloIdVT_TrkIdT_CenJet30_CenJet25	L1_SingleEG12	p'ed	1

Photon + Had :				
Photon70_CaloIdL_HT200	L1_SingleEG20	unp'ed	11	[SUSY]
Photon70_CaloIdL_HT300	L1_SingleEG20	unp'ed	5	[SUSY]. B
Photon60_CaloIdL_HT200	L1_SingleEG20	p'ed	1.7	p = 10. [SUSY] above.
Photon70_CaloIdL_MHT30	L1_SingleEG20	unp'ed	9.5	[SUSY]
Photon70_CaloIdL_MHT50	L1_SingleEG20	unp'ed	5	[SUSY]. B
Electron/Photon + Muon				
Mu15_Photon20_CaloIdL_v1	L1_MuOpen_EG5	unp'ed	2.6	[Exotica]
Mu15_DoublePhoton15_CaloIdL_v1	L1_MuOpen_EG5	unp'ed	0.15	[Exotica]
Mu17_Ele8_CaloIdL_v1	L1_SingleMu7	unp'ed	3	[SUSY, H seed to L1 needed...]
Mu8_Ele17_CaloIdL_v1	L1_MuOpen_EG5	unp'ed	7	[SUSY, H on TSG di Loose Mu]
Mu10_Ele10_CaloIdL_v1	L1_SingleMu7	unp'ed	11	[SUSY, H seed to L1 needed...]
DoubleMu5_Ele8_v1	L1_MuOpen_EG5	unp'ed	1.6	[SUSY, E w.r.t. Ele8]
DoubleMu5_Ele8_CaloIdL_TrkIdVL_v1	L1_MuOpen_EG5	unp'ed	0.6	Backup of
Mu5_DoubleEle8_v1	L1_MuOpen_EG5	unp'ed	9.2	[SUSY, E w.r.t. Ele8]
Mu5_Ele8_CaloIdL_TrkIdVL_Ele8_v1	L1_MuOpen_EG5	unp'ed	3.7	Backup of
Mu8_Photon20_CaloIdVT_IsoT_v1	L1_MuOpen_EG5	unp'ed	1.7	For fake ra
Muon + Had :				
IsoMu17_CentralJet30_BTagIP	L1_Mu7_Jet20_Central	unp'ed	0.3	Single-top
Mu17_CentralJet30_BTagIP	L1_Mu7_Jet20_Central	p'ed	0.8	p=10. Sing
Mu17_CentralJet30_BTagIPL25cut	L1_Mu7_Jet20_Central	unp'ed	7	Single-top
IsoMu17_DiCentralJet30	L1_Mu7_Jet20_Central	unp'ed	1.2	Replace M

Mu17_TripleCentralJet30_v1	L1_Mu7_Jet20_Central	unp'ed	7	Top
Mu17_CentralJet30	L1_Mu7_Jet20_Central	p'ed	1	p= ? Top,
Mu17_DiCentralJet30	L1_Mu7_Jet20_Central	p'ed	1	p= ? Top,
IsoMu17_CentralJet30	L1_Mu7_Jet20_Central	p'ed	1	p= ? Top,
Mu5_HT200	L1_Mu0_HTT50	unp'ed	1.1	p = 20. Ba
HLT_HT200_Mu5_PFMHT35	L1_HTT100	unp'ed	2.7	Arlo et al
HLT_HT250_Mu5_PFMHT35	L1_HTT100	unp'ed	2.7	Backup of
Mu8_HT200	L1_Mu0_HTT50	unp'ed	12	Backup of
Mu3_Ele8_CaloIdL_TrkIdVL_HT150	L1_Mu0_HTT50	unp'ed	6	[SUSY] T
Mu3_Ele8_CaloIdT_TrkIdVL_HT150	L1_Mu0_HTT50	unp'ed	2.5	Backup of
DoubleMu3_HT150	L1_Mu0_HTT50	unp'ed	2.2	Backup: D
DoubleMu3_HT200	L1_Mu0_HTT50	unp'ed	1.3	Backup of
Mu8_Jet40_v1	L1_Mu3_Jet20_Central	p'ed	1.6	p = 120. F
<b>Muon + Tau:</b>				
HLT_IsoMu12_LooseIsoPFTau10	L1_SingleMu7	unp'ed	7	
HLT_IsoMu15_LooseIsoPFTau10	L1_SingleMu7	unp'ed	3	Backup of
HLT_IsoMu15_LooseIsoPFTau20	L1_SingleMu10	unp'ed	1.5	Backup. T data taking
<b>Electron + Tau:</b>				
Ele15_CaloIdVT_CaloIsoT_TrkIdT_TrkIsoT_LooseIsoPFTau15_v1	L1_SingleEG12	unp'ed	11	Main trigg tau + e.
Ele18_CaloIdVT_CaloIsoT_TrkIdT_TrkIsoT_LooseIsoPFTau20_v1	L1_SingleEG12	unp'ed	5	Backup of
Ele15_CaloIdVT_TrkIdT_LooseIsoPFTau15_v1	L1_SingleEG12	p'ed	1	Monitoring
<b>Tau + Jet, Tau + MET:</b>				
QuadJet40_IsoPFTau40	L1_TripleJet28 ?	unp'ed	6.5	[Top]. Not QuadJet20 is not viab CPU).
QuadJet45_IsoPFTau45	L1_TripleJet28 ?	unp'ed	4.5	( ?? )
QuadJet40_IsoPFTau40_PFMHT20	L1_TripleJet28 ?	unp'ed	5	For 2e33...
HT200_DoubleLooseIsoPFTau10_Trk3_PFMHT35	L1_HTT100	unp'ed	1.8	Arlo et al
HT250_DoubleLooseIsoPFTau10_Trk3_PFMHT35	L1_HTT100	unp'ed	1.8	Arlo et al

## , ZeroBias and Commissioning

All paths below were prescaled at the HLT, unless explicitly stated otherwise.

See also Stephanie's twiki with DPG trigger needs.

### Paths already implemented in 5e32 menu:

#### For the Commissioning PD:

HLT_BeamGas_BSC_v1	L1_BeamGas_Bsc	Need 2-3 Hz
HLT_BeamGas_HF_v1	L1_BeamGas_Hf	Need 1 Hz.
HLT_L1_PreCollisions_v1	L1_PreCollisions	Few Hz's before collisions.
HLT_L1_Interbunch_BSC_v1	L1_InterBunch_Bsc	Need ~ 0.1 Hz. For afterglow studies.
HLT_IsoTrackHE_v3	L1_SingleJet52	~ 5 Hz ?
HLT_IsoTrackHB_v2	L1_SingleJet52	~ 5 Hz ?
HLT_Mu5_TkMu0_OST_Jpsi_Tight_B5Q7_vX	L1_SingleMu5_Eta1p5_Q80	~ 3 Hz. For DTs
HLT_L1SingleMuOpen	L1_SingleMuOpen	For DTs.
HLT_L1SingleMuOpen_DT	L1_SingleMuOpen	For DTs.
HLT_L1SingleEg5	L1_SingleEG5	For ECAL DPG. Needs 10 Hz at the beginning.
HLT_Activity_Ecal_SC7	-	For ECAL DPG. Needs 1 Hz, to monitor the turn-on of L1EG.

#### For the Minimum Bias PD :

HLT_L1Tech_BSC_minBias_OR_v1	TT4 and L1Tech_BSC_minBias_OR	Need 10 Hz.
HLT_PixelTracks_Multiplicity125_v1	L1_ETT180, will change	
HLT_PixelTracks_Multiplicity110_v1	L1_ETT180, will change	
HLT_Random_v1	-	Need 5 Hz ?
HLT_ZeroBias_v1	-	Need 5 Hz.
HLT_Physics_v1	-	That's a L1A pass-through that excludes random and calibration L1As. For HLT CPU studies, PD development (rates), ECAL payload monitoring, etc.. Need 5 Hz. More would be welcome...

#### For the Cosmics PD:

HLT_L1Tech_BSC_halo_v1		
HLT_BeamHalo_v1		
HLT_L1TrackerCosmics_v2		
HLT_RegionalCosmicTracking_v1		
HLT_L1MuOpen_AntiBPTX_v2		
HLT_L3MuonsCosmicTracking_v1		

**Alca and Calibration streams :**

- HLT\_Calibration\_v1
- HLT\_EcalCalibration\_v1
- HLT\_HcalCalibration\_v1
- AlCa\_EcalPi0\_v2
- AlCa\_EcalEta\_v2
- AlCa\_EcalPhiSym\_v2
- AlCa\_RPCMuonNoHits\_v2
- AlCa\_RPCMuonNoTriggers\_v2
- AlCa\_RPCMuonNormalisation\_v2

-- EmmanuellePerez - 12-Apr-2011

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