TABLE I: New paths are introduced in addition to standard '1e32' paths. Description of the newly introduced paths is given at the end of the table. Available HLT bandwith is 150 Hz = ((1 GB/s / 3) - 100 MB/s for AlCa triggers) / 1.5 MB/event. L1 bandwidth is 12 kHz.

HLT paths, thresholds and L1 seeds			
Status	**HLT Trigger**	**L1 conditions: Seed / Prescale**	**HLT conditions: Threshold / Prescale**
new	HLT1MuonL1Open	$L1_SingleMuOpen$ /	- /
1e32	HLT1MuonLevel1	$L1_SingleMu7, L1_DoubleMu3$ /	- /
1e32	HLT1MuonPrescalePt3	$L1_SingleMu3$ /	3 /
1e32	HLT1MuonPrescalePt5	$L1_SingleMu5$ /	5 /
1e32	HLT1MuonPrescalePt7x7	$L1_SingleMu7$ /	7 /
1e32	HLT1MuonPrescalePt7x10	$L1_SingleMu7$ /	10 /
1e32	HLT1MuonLevel2	$L1_SingleMu7$ /	16 /
new	CandHLT1MuonPrescaleVtx2cm	$L1_SingleMu7$ /	16 /
new	CandHLT1MuonPrescaleVtx2mm	$L1_SingleMu7$ /	16 /
new	HLT1MuonIso9	$L1_SingleMu7$ /	9 /
new	HLT1MuonIso13	$L1_SingleMu10$ /	13 /
new	HLT1MuonIso15	$L1_SingleMu10$ /	15 /
1e32	HLT1MuonIso	$L1_SingleMu7$ /	11 /
new	HLT1MuonNonIso9	$L1_SingleMu7$ /	9 /
new	HLT1MuonNonIso11	$L1_SingleMu7$ /	11 /
new	HLT1MuonNonIso13	$L1_SingleMu10$ /	13 /
new	HLT1MuonNonIso15	$L1_SingleMu10$ /	15 /
1e32	HLT1MuonNonIso	$L1_SingleMu7$ /	16 /
new	HLT2Muon3	$L1_DoubleMu3$ /	(3,3) /
1e32	HLT2MuonIso	$L1_DoubleMu3$ /	(3,3) /
1e32	HLT2MuonNonIso	$L1_DoubleMu3$ /	(3,3) /
1e32	HLT2MuonJPsi	$L1_DoubleMu3$ /	(3,3) /
1e32	HLT2MuonUpsilon	$L1_DoubleMu3$ /	(3,3) /
1e32	HLT2MuonZ	$L1_DoubleMu3$ /	(7,7) /
1e32	HLTNMuonNonIso	$L1_DoubleMu3$ /	(3,3,3) /
1e32	HLT2MuonSameSign	$L1_DoubleMu3$ /	(3,3) /
new	CandHLT2MuonPrescaleVtx2cm	$L1_DoubleMu3$ /	(3,3) /
new	CandHLT2MuonPrescaleVtx2mm	$L1_DoubleMu3$ /	(3,3) /
1e32	HLTB1JetMu	$L1_Mu5_Jet15$ /	20 /
1e32	HLTB2JetMu	$L1_Mu5_Jet15$ /	120 /
1e32	HLTB3JetMu	$L1_Mu5_Jet15$ /	70 /
1e32	HLTB4JetMu	$L1_Mu5_Jet15$ /	40 /
1e32	HLTBHTMu	$L1_HTT250$ /	300 /
new	HLTB2JetMu60	$L1_Mu5_Jet15$ /	60 /
new	HLTB3JetMu40	$L1_Mu5_Jet15$ /	40 /
new	HLTB4JetMu30	$L1_Mu5_Jet15$ /	30 /
new	HLTBHTMu250	$L1_HTT200$ /	250 /
1e32	HLTBJPsiMuMu	$L1_DoubleMu3$ /	$*$ (4,4) $M_{\mu\mu} \in [1,6]$ /
new	HLTBJPsiMuMuRelaxed	$L1_DoubleMu3$ /	$*$ (3,3) $M_{\mu\mu} \in [1,6]$ /
new	HLTTauTo3Mu	$L1_DoubleMu3$ /	$*$ (3,3,3) $M_{\mu\mu} \in [0.2,3]$ $M_{\mu\mu\mu} \in [1.2,2.2]$ /
1e32	HLTXMuonBJet	$L1_Mu5_Jet15$ /	(7,35) /
1e32	HLTXMuonBJetSoftMuon	$L1_Mu5_Jet15$ /	(7,20) /
1e32	HLTXMuonJets	$L1_Mu5_Jet15$ /	(7,40) /
1e32	CandHLTXMuonNoL2IsoJets	$L1_Mu5_Jet15$ /	(8,40) /
1e32	CandHLTXMuonNoIsoJets	$L1_Mu5_Jet15$ /	(14,50) /
1e32	HLTXElectronMuon	$\star$	(8,7) /
1e32	HLTXElectronMuonRelaxed	$\star$	(10,10) /
1e32	HLTXMuonTau	$L1_Mu5_TauJet20$ /	(15,20) /
new	HLT1Level1jet15	$L1_SingleJet15$ /	- /
new	HLT1jet30	$L1_SingleJet15$ /	30 /
new	HLT1jet50	$L1_SingleJet30$ /	50 /
new	HLT1jet80	$L1_SingleJet50$ /	80 /
new	HLT1jet110	$L1_SingleJet70$ /	110 /
new	HLT1jet180	$L1_SingleJet70$ /	180 /

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–continued from previous page (HLT paths, thresholds and L1 seeds)

Status	HLT Trigger	L1 conditions: Seed / Prescale	HLT conditions: Threshold / Prescale
new	HLT1jet250	$L1_SingleJet70$ /	250 /
new	HLT2jetAve15	$L1_SingleJet15$ /	$15^{\S}$ /
new	HLT2jetAve30	$L1_SingleJet30$ /	$30^{\S}$ /
new	HLT2jetAve50	$L1_SingleJet50$ /	$50^{\S}$ /
new	HLT2jetAve70	$L1_SingleJet70$ /	$70^{\S}$ /
new	HLT2jetAve130	$L1_SingleJet70$ /	$130^{\S}$ /
new	HLT2jetAve220	$L1_SingleJet70$ /	$220^{\S}$ /
1e32	HLT2jet	$L1_SingleJet150, DoubleJet70$ /	150 /
1e32	HLT3jet	†	85 /
1e32	HLT4jet	‡	60 /
1e32	HLT2jetAco	$L1_SingleJet150, DoubleJet70$ /	125 /
1e32	HLT1jet1METAco	$L1_SingleJet150$ /	(100,60) /
1e32	HLT1jet1MET	$L1_SingleJet150$ /	(180,60) /
1e32	HLT2jet1MET	$L1_SingleJet150$ /	(125,60) /
1e32	HLT3jet1MET	$L1_SingleJet150$ /	(60,60) /
1e32	HLT4jet1MET	$L1_SingleJet150$ /	(35,60) /
1e32	HLT1MET1HT	$L1_HTT300$ /	(350,65) /
1e32	HLT1SumET	$L1_ETT60$ /	120 /
new	HLT1Level1MET20	$L1_ETM20$ /	- /
new	HLT1MET25	$L1_ETM20$ /	25 /
new	HLT1MET35	$L1_ETM30$ /	35 /
new	HLT1MET50	$L1_ETM40$ /	50 /
new	HLT1MET65	$L1_ETM50$ /	65 /
new	HLT1MET75	$L1_ETM50$ /	75 /
1e32	HLT2jetvbfMET	$L1_ETM30$ /	(40,60) /
1e32	HLTS2jet1METNV	$L1_SingleJet150$ /	(-,60) /
1e32	HLTS2jet1METAco	$L1_SingleJet150$ /	(-,70) /
1e32	HLTSjet1MET1Aco	$L1_SingleJet150$ /	(-,70) /
1e32	HLTSjet2MET1Aco	$L1_SingleJet150$ /	(-,70) /
1e32	HLTS2jetAco	$L1_SingleJet150$ /	(-,-) /
1e32	HLTJetMETRapidityGap	$L1_IsoEG10_Jet20_ForJet10$ /	20 /
new	HLT4jet30	$L1_QuadJet15$ /	30 /
new	HLTXMuonNoIso3Jets30	$L1_Mu3_TripleJet15$ /	(3,30) /
new	HLTXElectron3Jet30	$L1_EG5_TripleJet15$ /	(5,30) /
new	HLT1ElectronEt12_L1R_HI	$L1_SingleEG8$ /	12 /
new	HLT1Electron8_L1R_NI	$L1_SingleEG5$ /	8 /
new	HLT1Electron10_L1R_NI	$L1_SingleEG8$ /	10 /
new	HLT1ElectronEt15_L1R_NI	$L1_SingleEG12$ /	15 /
new	HLT1ElectronLWEt12_L1R_NI	$L1_SingleEG8$ /	12 /
new	HLT1ElectronLWEt15_L1R_NI	$L1_SingleEG10$ /	15 /
new	HLT2Electron5_L1R_NI	$L1_DoubleEG5$ /	(5,5) /
new	HLT1ElectronEt15_L1R_LI	$L1_SingleEG12$ /	15 /
new	HLT1ElectronLWEt15_L1R_LI	$L1_SingleEG12$ /	15 /
new	HLT1ElectronLWEt18_L1R_LI	$L1_SingleEG15$ /	18 /
new	HLT2ElectronLWonlyPMEt8_L1R_NI	$L1_DoubleEG5$ /	∘ 8 /
new	HLT2ElectronLWonlyPMEt10_L1R_NI	$L1_DoubleEG5$ /	∘ 10 /
new	HLT2ElectronLWonlyPMEt12_L1R_NI	$L1_DoubleEG10$ /	∘ 12 /
1e32	HLT1Electron	$L1_SingleIsoEG12$ /	15 /
1e32	HLT1ElectronRelaxed	$L1_SingleEG15$ /	18 /
1e32	HLT2Electron	$L1_DoubleIsoEG8$ /	10 /
1e32	HLT2ElectronRelaxed	$L1_DoubleEG10$ /	12 /
new	HLT1Photon10_L1R	$L1_SingleEG8$ /	10 /
new	HLT1PhotonEt25_L1R_HI	$L1_SingleEG12$ /	25 /
new	HLT1PhotonEt20_L1R_LI	$L1_SingleEG12$ /	20 /
new	HLT1PhotonEt30_L1R_LI	$L1_SingleEG12$ /	30 /
new	HLT1PhotonEt40_L1R_LI	$L1_SingleEG12$ /	40 /
new	HLT1PhotonEt45_L1R_LI	$L1_SingleEG12$ /	45 /
new	HLT2PhotonEt20_L1R_LI	$L1_DoubleEG10$ /	20 /
new	HLT1PhotonEt15_L1R_NI	$L1_SingleEG10$ /	15 /

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–continued from previous page (HLT paths, thresholds and L1 seeds)

Status	HLT Trigger	L1 conditions: Seed / Prescale	HLT conditions: Threshold / Prescale
new	HLT1PhotonEt25_L1R_NI	$L1_SingleEG10$ /	25 /
new	HLT1PhotonEt30_L1R_NI	$L1_SingleEG15$ /	30 /
new	HLT1PhotonEt40_L1R_NI	$L1_SingleEG15$ /	40 /
new	HLT2PhotonEt8_L1R_NI	$L1_DoubleEG5$ /	8 /
new	HLT2PhotonEt10_L1R_NI	$L1_DoubleEG5$ /	10 /
new	HLT2PhotonEt20_L1R_NI	$L1_DoubleEG10$ /	20 /
1e32	HLT1Photon	$L1_SingleIsoEG12$ /	30 /
1e32	HLT1PhotonRelaxed	$L1_SingleEG15$ /	40 /
1e32	HLT2Photon	$L1_DoubleIsoEG8$ /	(20,20) /
1e32	HLT2PhotonRelaxed	$L1_DoubleEG10$ /	(20,20) /
1e32	HLT1EMHighEt	$L1_SingleEG15$ /	80 /
1e32	HLT1EMVeryHighEt	$L1_SingleEG15$ /	200 /
1e32	HLT2ElectronZCounter	$L1_DoubleIsoEG8$ /	(10,10) /
1e32	HLT2ElectronExclusive	$L1_ExclusiveDoubleIsoEG6$ /	(6,6) /
1e32	HLT2PhotonExclusive	$L1_ExclusiveDoubleIsoEG6$ /	(10,10) /
1e32	HLT1PhotonL1Isolated	$L1_SingleIsoEG10$ /	12 /
1e32	HLTB1Jet	$\Diamond$	180 /
1e32	HLTB2Jet	$\Diamond$	120 /
1e32	HLTB3Jet	$\Diamond$	70 /
1e32	HLTB4Jet	$\Diamond$	40 /
1e32	HLTBHT	$\Diamond$	470 /
new	HLTB1Jet120	$\Diamond$	120 /
new	HLTB2Jet60	$\Diamond$	60 /
new	HLTB3Jet40	$\Diamond$	40 /
new	HLTB4Jet30	$\Diamond$	30 /
new	HLTBHT320	$\Diamond$	320 /
1e32	HLT1Tau	$L1_SingleTauJet80$ /	15 /
1e32	HLT1Tau1MET	$L1_TauJet30_ETM30$ /	15 /
1e32	HLT2TauPixel	$L1_SingleTauJet40$ /	15 /
new	HLT1TauRelaxed	$L1_SingleTauJet80$ /	15 /
new	HLT1Tau1METRelaxed	$L1_TauJet30_ETM30$ /	15 /
new	HLT2TauPixelRelaxed	$L1_DoubleTau20$ /	15 /
1e32	HLTXElectronBJet	$L1_IsoEG10_Jet20$ /	(10,35) /
1e32	HLTXElectron1Jet	$L1_IsoEG10_Jet30$ /	(12,40) /
1e32	HLTXElectron2Jet	$L1_IsoEG10_Jet30$ /	(12,80) /
1e32	HLTXElectron3Jet	$L1_IsoEG10_Jet30$ /	(12,60) /
1e32	HLTXElectron4Jet	$L1_IsoEG10_Jet30$ /	(12,35) /
1e32	HLTXElectronTau	$L1_IsoEG10_TauJet20$ /	(12,20) /
1e32	HLTMinBias	$L1_MinBias_HTT10$ /	- /
1e32	HLTMinBiasPixel	$L1_ZeroBias$ /	- /
new	HLTMinBiasHcal	$\Diamond\Diamond$	- /
new	HLTMinBiasEcal	$SingleEG2$, $L1_DoubleEG1$ /	- /
1e32	HLTZeroBias	$L1_ZeroBias$ /	- /

(∗): Conditions on tracks seeded by L2 muons

(⋆): $L1_Mu3_IsoEG5$, $L1_Mu5_IsoEG10$, $L1_Mu3_IsoEG12$

(§): 2JetAve paths use **uncorrected** jets at HLT

(†): $L1_SingleJet150$, $L1_DoubleJet70$, $L1_TripleJet50$

(‡): $L1_SingleJet150$, $L1_DoubleJet70$, $L1_TripleJet50$, $L1_QuadJet30$

(∘): Only Pixel-matching, no track match required

($\Diamond$): $L1_SingleJet100$, $L1_DoubleJet70$, $L1_TripleJet50$, $L1_QuadJet30$, $L1_HTT300$

($\Diamond\Diamond$): $L1_SingleHFTowCount1/12$, $L1_DoubleHFTowCount1/20$, $L1_SingleHFRing0Sum3/20$...

($\Diamond\Diamond$): $L1_DoubleHFRing0Sum3/20$, $L1_SingleHFRing0Sum6/20$, $L1_DoubleHFRing0Sum6/20$

HLT Requirements for new introduced paths (in GeV)

Muons: $|\eta| < 2.5$, $L2Pt + 3.9Err <$A, $L3Pt + 2.2Err <$A

1jetA: $recoJetCalPt <$A

1ElectronA_L1R_HI: $Et <$A, $HCAL < 3$, $E/p < 1.5(2.45)$, $TrkIso < 0.06$
1ElectronA_L1R_LI: $Et <$A, $HCAL < 6$, $E/p < 3.0(4.90)$, $TrkIso < 0.12$
1ElectronA_L1R_NI: $Et <$A

1PhotonA_L1R_HI: $Et <$A, $ECAL < 1.5$, $HCAL < 6(4)$, $TrkIso = 0$

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–continued from previous page (HLT paths, thresholds and L1 seeds)

Status	HLT Trigger	L1 conditions: Seed / Prescale	HLT conditions: Threshold / Prescale
1PhotonA_L1R_LI: $Et <$A, $ECAL < 3.0$, $HCAL < 12(8)$, $TrkIso \leq 2$			
1PhotonA_L1R_NI: $Et <$A			