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# PAT Release Notes (compatible with CMSSW\_3\_9\_X)

Please follow the tag conventions here:

Package	Tag
DataFormats/PatCandidates	V06-02- <i>zz</i>
CMS.PhysicsTools/PatAlgos	V08-03- <i>zz</i>
CMS.PhysicsTools/PatUtils	V03-09- <i>zz</i>
CMS.PhysicsTools/PatExamples	V00-05- <i>zz</i>
CMS.PhysicsTools/Utilities	V07-02- <i>zz</i>

If you are doing developments intended for 38x, please post in SWGuidePATReleaseNotes38X. This is for 39x development.

## V08-03-11 (on top of CMSSW\_3\_9\_9)

- Back-port of PAT trigger information state-of-the-art developments from *CMSSW\_4\_2\_X*:
  - ◆ Switching the PAT trigger matching to the use of the `StringCutObjectSelector`
    - ⚠ backward incompatibility to old matcher configurations;
  - ◆ Changing default of `'pathLastFilterAccepted'` from `'false'` to `'true'`
    - ⚠ possibly backward incompatibility to private analysis code;
  - ◆ Added unsigned work-arounds for boolean arguments in `pat::PATObject` functions for the cut string parser;
  - ◆ Enabling wild-card mechanism in `pat::TriggerObjectStandAlone`;
  - ◆ New methods with short names for cut string parser in `pat::TriggerObjectStandAlone` and `pat::PATObject`;
  - ◆ Switch to `trigger::TriggerObjectType` (backward compatible);
  - ◆ Renaming methods consistently and meaningfully (backward compatible);
  - ◆ establish links between L1 (physics) algorithms and objects
    - ◇ via new data format `pat::TriggerCondition` to hold L1 conditions as applied on trigger boards;
    - ◇ links go to L1 objects as explicitly defined in the configuration of the `PATTriggerProducer` as `InputTags`;
    - ◇ links only established to objects belonging to an object combination, which fires the condition;
    - ◇ added according access functions to `pat::TriggerEvent`;
    - ◇ added according access functions to `pat::TriggerObjectStandAlone` re-using existing data members, which originally hold HLT path and filter information;
    - ◇ added according access functions for embedded trigger matches to `pat::PATObject`;
  - ◆ added logical expression of conditions to the `pat::TriggerAlgorithm`;
  - ◆ added option to exclude HLT objects from certain collections from the PAT trigger objects:
    - ◇ via strings representing `InputTags`
      - format: `"label[:instance[:process]]"`;
      - ◇ incl. wild-card mechanism;
  - ◆ added option to exclude L1 objects from others than the central bunch crossing.

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```
ssh lxplus.cern.ch
cmsrel CMSSW_3_9_9
cd CMSSW_3_9_9/src
cmsenv
```

```
addpkg CommonTools/CandUtils      V00-00-05
addpkg DataFormats/CaloTowers      V02-05-11
addpkg DataFormats/PatCandidates   V06-02-21
addpkg PhysicsTools/PatAlgos       V08-03-11
scram b -j 9
```

## V08-03-10 (as in CMSSW\_3\_9\_9 analysis release)

- removed GT bypass; switched to new GT.

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```
ssh lxplus.cern.ch
cmsrel CMSSW_3_9_9
cd CMSSW_3_9_9/src
cmsenv
addpkg PhysicsTools/PatAlgos
scram b -j 9
```

## V08-03-09

- PAT trigger information:
  - ◆ Extended `patExtraAodEventContent` in order to be ready for later PAT trigger information production.

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```
ssh lxplus.cern.ch
cmsrel CMSSW_3_9_X_2011-02-10-0200
cd CMSSW_3_9_X_2011-02-10-0200/src
cmsenv
addpkg CondFormats/JetMETObjects      V03-01-21
addpkg JetMETCorrections/Algorithms   V02-02-03
addpkg JetMETCorrections/Configuration V03-02-07
addpkg JetMETCorrections/Modules      V05-00-17
addpkg PhysicsTools/PatAlgos          V08-03-09
addpkg FWCore/GuiBrowsers             V00-00-46
scram b -j 9
```

## V08-03-08

- Adaptations to new *L1Offset* corrections (still with payloads in test instance, will need a new GT).
- To bypass the new GT please add the following line to your *cfg*:

```
process.load("PhysicsTools.PatAlgos.patTestJEC_cfi")
```

- Fixes in *GuiBrowsers*.

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```
ssh lxplus.cern.ch
cmsrel CMSSW_3_9_X_2011-01-30-0200
cd CMSSW_3_9_X_2011-01-30-0200/src
cmsenv
addpkg CondFormats/JetMETObjects      V03-01-21
addpkg JetMETCorrections/Algorithms   V02-02-03
addpkg JetMETCorrections/Configuration V03-02-07
addpkg JetMETCorrections/Modules      V05-00-17
addpkg PhysicsTools/PatAlgos          V08-03-08
addpkg FWCore/GuiBrowsers             V00-00-46
scram b -j 9
```

## V08-03-05

- CMS.GlobalTag [↗](#) updated and available from *Configuration/PyReleaseValidation/python/autoCond*.
- Fix to allow unnamed *PSet*s in *VPSets* in *GuiBrowser*

Show [▾](#) Hide [▾](#)

```
ssh lxplus.cern.ch
cmsrel CMSSW_3_9_X_2010-12-19-1300
cd CMSSW_3_9_X_2010-12-19-1300/src
cmsenv
addpkg PhysicsTools/PatAlgos V08-03-05
addpkg PhysicsTools/PatExamples V00-05-02
addpkg PhysicsTools/FWLite V02-03-09
addpkg PhysicsTools/UtilAlgos V08-02-05
addpkg FWCore/GuiBrowser V00-00-42
scram b -j 9
```

## V08-03-02

- Removed *L2L3Residual* from default configuration to be consistent for the use with MC.
- Added *coreTool runOnData* consistently to remove MC Matching and to add *L2L3Residual* correction to run on data.
- Removed embedding of *tagInfos* from default configuration.

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```
ssh lxplus.cern.ch
cmsrel CMSSW_3_9_5
cd CMSSW_3_9_5/src
cmsenv
addpkg CondFormats/JetMETObjects V03-01-14
addpkg DataFormats/PatCandidates V06-02-09
addpkg JetMETCorrections/Algorithms V02-01-02
addpkg JetMETCorrections/Modules V05-00-14
addpkg PhysicsTools/JetMCAlgos V00-13-10
addpkg PhysicsTools/PFCandProducer V04-07-00
addpkg PhysicsTools/PatAlgos V08-03-02
addpkg PhysicsTools/PatExamples V00-05-02
addpkg PhysicsTools/PatUtils V03-09-16
addpkg PhysicsTools/PythonAnalysis V00-05-01
addpkg PhysicsTools/SelectorUtils V00-03-03
addpkg PhysicsTools/UtilAlgos V08-02-05
addpkg PhysicsTools/Utilities V08-01-02
addpkg PhysicsTools/FWLite V02-03-07
scram b -j 9
```

## V08-03-01 (incl. TQAF)

- New tool **pickRelValInputFiles()** in `python/tools/cmsswVersionTools.py` for automatic RelVal input file pick-up to be used in the *PoolSource* filenames parameter (backport from *310X*).

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```
ssh lxplus.cern.ch
cmsrel CMSSW_3_9_5
cd CMSSW_3_9_5/src
cmsenv
addpkg CondFormats/JetMETObjects V03-01-14
addpkg DataFormats/PatCandidates V06-02-09
addpkg JetMETCorrections/Algorithms V02-01-02
addpkg JetMETCorrections/Modules V05-00-14
addpkg PhysicsTools/JetMCAlgos V00-13-10
addpkg PhysicsTools/PFCandProducer V04-07-00
```

```

addpkg PhysicsTools/PatAlgos V08-03-01
addpkg PhysicsTools/PatExamples V00-05-02
addpkg PhysicsTools/PythonAnalysis V00-05-01
addpkg PhysicsTools/SelectorUtils V00-03-03
addpkg PhysicsTools/UtilAlgos V08-02-05
addpkg PhysicsTools/Utilities V08-01-02
addpkg PhysicsTools/FWLite V02-03-07
addpkg TopQuarkAnalysis/Examples V06-07-07
addpkg TopQuarkAnalysis/TopEventProducers V06-07-09
addpkg TopQuarkAnalysis/TopEventSelection V06-07-08
addpkg TopQuarkAnalysis/TopJetCombination V06-07-07
addpkg TopQuarkAnalysis/TopKinFitter V06-07-07
addpkg TopQuarkAnalysis/TopObjectResolutions V06-07-05
addpkg TopQuarkAnalysis/TopSkimming V06-07-05
addpkg TopQuarkAnalysis/TopTools V06-07-07
scram b -j 9

```

## V08-03-00

- Equivalent to V08-02-03. For further development please go on from this tag.
- reverted changes need for new *RecoTau* structures which will not make it into CMSSW\_3\_9\_X releases.

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```

ssh lxplus.cern.ch
cmsrel CMSSW_3_9_5
cd CMSSW_3_9_5/src
cmsenv
addpkg CondFormats/JetMETObjects V03-01-14
addpkg DataFormats/PatCandidates V06-02-08
addpkg JetMETCorrections/Algorithms V02-01-02
addpkg JetMETCorrections/Modules V05-00-14
addpkg PhysicsTools/JetMCAlgos V00-13-10
addpkg PhysicsTools/PFCandProducer V04-07-00
addpkg PhysicsTools/PatAlgos V08-03-00
addpkg PhysicsTools/PatExamples V00-04-26
addpkg PhysicsTools/PythonAnalysis V00-05-01
addpkg PhysicsTools/SelectorUtils V00-03-03
addpkg PhysicsTools/UtilAlgos V08-02-04
addpkg PhysicsTools/Utilities V08-01-02
scram b -j 9

```

## V08-02-03

- PAT trigger information:
  - ◆ automated the `switchOnTriggerMatchEmbedding` Python tool completely, no module imports anymore.

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```

ssh lxplus.cern.ch
cmsrel CMSSW_3_9_5
cd CMSSW_3_9_5/src
cmsenv
addpkg PhysicsTools/IsolationAlgos V01-05-07
addpkg CondFormats/JetMETObjects V03-01-14
addpkg DataFormats/PatCandidates V06-02-08
addpkg DataFormats/TauReco V01-00-02
addpkg JetMETCorrections/Algorithms V02-01-02
addpkg JetMETCorrections/Modules V05-00-14
addpkg PhysicsTools/JetMCAlgos V00-13-10
addpkg PhysicsTools/PFCandProducer V04-07-00
addpkg PhysicsTools/PatAlgos V08-02-03
addpkg PhysicsTools/PatExamples V00-04-26


```

```

addpkg PhysicsTools/PythonAnalysis V00-05-01
addpkg PhysicsTools/SelectorUtils V00-03-03
addpkg PhysicsTools/UtilAlgos V08-02-04
addpkg PhysicsTools/Utilities V08-01-02
addpkg RecoTauTag/Configuration V01-00-11
addpkg RecoTauTag/RecoTau V01-00-19
addpkg RecoTauTag/TauTagTools V01-00-03
scram b -j 9

```

## V08-02-02

- Port of latest developments in B3\_8\_X
-  **Note:** in this version the *PFCandProducer* package still needs adaptations to the newest version of the *RecoTau* package. PF2PAT related unit tests are currently not working due to this reason.
- PAT trigger information:
  - ◆ added more standard collections to be available in the `switchOnTriggerMatchEmbedding` Python tool, incl. all jet collections;
  - ◆ changed automatic HLT process name determination in order to use rather the last process, where the `trigger::TriggerEvent` has been produced, than the latest `trigger::TriggerEvent` present in the event; this is checked every run now, not every event anymore;
  - ◆ reviewed connection of the automatic HLT process determination to the used `l1extra` collection tags;
  - ◆ a bit of code clean-up and synchronisation;
  - ◆ added a bit more Doxygen documentantation.

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```

ssh lxplus.cern.ch
cmsrel CMSSW_3_9_5
cd CMSSW_3_9_5/src
cmsenv
addpkg PhysicsTools/IsolationAlgos V01-05-07
addpkg CondFormats/JetMETObjects V03-01-14
addpkg DataFormats/PatCandidates V06-02-08
addpkg DataFormats/TauReco V01-00-02
addpkg JetMETCorrections/Algorithms V02-01-02
addpkg JetMETCorrections/Modules V05-00-14
addpkg PhysicsTools/JetMCAlgos V00-13-10
addpkg PhysicsTools/PFCandProducer V04-07-00
addpkg PhysicsTools/PatAlgos V08-02-02
addpkg PhysicsTools/PatExamples V00-04-26
addpkg PhysicsTools/PythonAnalysis V00-05-01
addpkg PhysicsTools/SelectorUtils V00-03-03
addpkg PhysicsTools/UtilAlgos V08-02-04
addpkg PhysicsTools/Utilities V08-01-02
addpkg RecoTauTag/Configuration V01-00-11
addpkg RecoTauTag/RecoTau V01-00-19
addpkg RecoTauTag/TauTagTools V01-00-03
scram b -j 4

```

## V08-01-09

- PAT trigger information
  - ◆ Added missing consideration of automatic process name determination to configurable `l1extraParticles` collection tags.

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```

ssh lxplus.cern.ch
cmsrel CMSSW_3_9_2
cd CMSSW_3_9_2/src

```

```
cmsenv
addpkg DataFormats/PatCandidates V06-02-06
addpkg PhysicsTools/PatAlgos V08-01-09
addpkg PhysicsTools/SelectorUtils V00-02-21
checkdeps -a
scram b -j 9
```

## V08-01-08

- PAT trigger information
  - ◆ Option to automatically pick most recent HLT process (set process name to "\*")

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```
ssh lxplus.cern.ch
cmsrel CMSSW_3_9_X_2010-10-29-0200
cd CMSSW_3_9_X_2010-10-29-0200/src
cmsenv
addpkg DataFormats/PatCandidates V06-02-06
addpkg PhysicsTools/PatAlgos V08-01-08
addpkg PhysicsTools/SelectorUtils V00-02-21
checkdeps -a
scram b -j 9
```

## V08-01-07

- PAT trigger information
  - ◆ added L1 seeds to pat::TriggerPath.

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```
ssh lxplus.cern.ch
cmsrel CMSSW_3_9_X_2010-10-29-0200
cd CMSSW_3_9_X_2010-10-29-0200/src
cmsenv
addpkg DataFormats/PatCandidates V06-02-06
addpkg PhysicsTools/PatAlgos V08-01-07
addpkg PhysicsTools/SelectorUtils V00-02-21
checkdeps -a
scram b -j 9
```

## V08-01-05

- Get rid of redundant empty collections for Calo/JPT/PFJets (extended to tagInfos) and now complete (port from B3\_8\_X).
- Calculate xxxEnergyFraction methods based on raw instead of L2L3.

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```
ssh lxplus.cern.ch
cmsrel CMSSW_3_9_X_2010-10-18-1300
cd CMSSW_3_9_X_2010-10-18-1300/src
cmsenv
addpkg DataFormats/PatCandidates V06-02-05
addpkg PhysicsTools/PatAlgos V08-01-05
scram b -j 9
```

## V08-01-04

- In PF2PAT, the momentum of the PFCandidate is set as the default momentum (previously, it was the one from the GsfElectron); the momentum of the GsfElectron can be accessed with the new `ecalDrivenMomentum()` method. No effect on the standard PAT.

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```
ssh lxplus.cern.ch
cmsrel CMSSW_3_9_X_2010-10-18-1300
cd CMSSW_3_9_X_2010-10-18-1300/src
cmsenv
addpkg DataFormats/PatCandidates V06-02-04
addpkg PhysicsTools/PatAlgos V08-01-04
scram b -j 9
```

## V08-01-03

- PAT trigger information
  - ◆ added missing default trigger matching.in Python trigger tools;
  - ◆ bug fix in pat::TriggerEvent::techAlgorithms();
  - ◆ final updates in PhysicsTools/PatExamples for the Sep. 2010 tutorial;
  - ◆ added missing function template for eased user access to pat::helper::TriggerMatchHelper.
- SelectorUtils: from v00-02-18 onwards the SimpleCutBasedElectronIDSelectionFuncor becomes compatible with DataFormats/EgammaCandidates V04-02-00 or later. From v00-03-00 onwards the Egamma recommendation to use the Delta eta cut in the EE (alignment restored) is applied.
- Adding a helper check method for tag infos for pat::Jet

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```
ssh lxplus.cern.ch
cmsrel CMSSW_3_9_0_pre5
cd CMSSW_3_9_0_pre5/src
cmsenv
addpkg DataFormats/EgammaCandidates V04-02-00
addpkg DataFormats/PatCandidates V06-02-03
addpkg PhysicsTools/PatAlgos V08-01-03
addpkg PhysicsTools/PatExamples V00-04-10
addpkg PhysicsTools/PatUtils V03-09-14
addpkg PhysicsTools/SelectorUtils V00-02-21
checkdeps -a
scram b -j 9
```

## V08-01-02

- PAT Muon
  - ◆ embedded signed 2D and 3D impact parameters relative to beamspot and primary vertex, with uncertainties

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```
ssh lxplus.cern.ch
cmsrel CMSSW_3_9_0_pre3
cd CMSSW_3_9_0_pre3/src
cmsenv
addpkg DataFormats/PatCandidates V06-02-01
addpkg PhysicsTools/PatAlgos V08-01-02
addpkg PhysicsTools/PatExamples V00-04-06
addpkg PhysicsTools/SelectorUtils V00-02-13
addpkg JetMETCorrections/Type1MET V04-03-09
checkdeps -a
scram b -j 9
```

## V08-01-01

- PAT trigger information:
  - ◆ addition of a removeCleaningFromTriggerMatching() function to the Python trigger tools.



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```
ssh lxplus.cern.ch
cmsrel CMSSW_3_9_0_pre3
cd CMSSW_3_9_0_pre3/src
cmsenv
addpkg DataFormats/PatCandidates V06-02-00
addpkg PhysicsTools/PatAlgos V08-01-01
addpkg PhysicsTools/PatExamples V00-04-06
addpkg PhysicsTools/SelectorUtils V00-02-13
addpkg JetMETCorrections/Type1MET V04-03-09
checkdeps -a
scram b -j 9
```

## V08-01-00

- PAT trigger information:
  - ◆ removal of default (example) trigger matching from the standard PAT trigger work-flow;
  - ◆ complete review of the Python trigger tool.

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```
ssh lxplus.cern.ch
cmsrel CMSSW_3_9_0_pre3
cd CMSSW_3_9_0_pre3/src
cmsenv
addpkg DataFormats/PatCandidates V06-02-00
addpkg PhysicsTools/PatAlgos V08-01-00
addpkg PhysicsTools/PatExamples V00-04-06
addpkg PhysicsTools/SelectorUtils V00-02-13
addpkg JetMETCorrections/Type1MET V04-03-09
checkdeps -a
scram b -j 8
```

## V08-00-24

- most recent tag, when branching development (documented already in SWGuidePATReleaseNotes38X)
- Bug fix in calo jet ID when using pat jets for **forward jet id, or tight jet id**, when using corrected jets.
- Bug fix in PF jet id when using corrected jets.
- Updating example selections for some speed optimizations.
- PF MET Type I corrections
- Remove accidental cout statement.
- Add JPT jet id

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```
ssh lxplus.cern.ch
cmsrel CMSSW_3_9_0_pre2
cd CMSSW_3_9_0_pre2/src
cmsenv
addpkg DataFormats/CMS.CaloTowers V02-05-08
addpkg DataFormats/PatCandidates V06-02-00
addpkg PhysicsTools/SelectorUtils V00-02-13
addpkg PhysicsTools/PatAlgos V08-00-25
addpkg PhysicsTools/PatExamples V00-04-06
addpkg JetMETCorrections/Configuration V03-00-05
addpkg JetMETCorrections/Type1MET V04-03-08
checkdeps -a
scram b -j 8
```

## V08-00-21

- tag in release cycle

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```
ssh lxplus.cern.ch
cmsrel CMSSW_3_9_0_pre2
cd CMSSW_3_9_0_pre2/src
cmsenv
addpkg PhysicsTools/PatAlgos
checkdeps -a
scram b -j 8
```

-- VolkerAdler - 19-Aug-2010

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This topic: CMSPublic > SWGuidePATReleaseNotes39X

Topic revision: r59 - 2011-04-29 - RogerWolf



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