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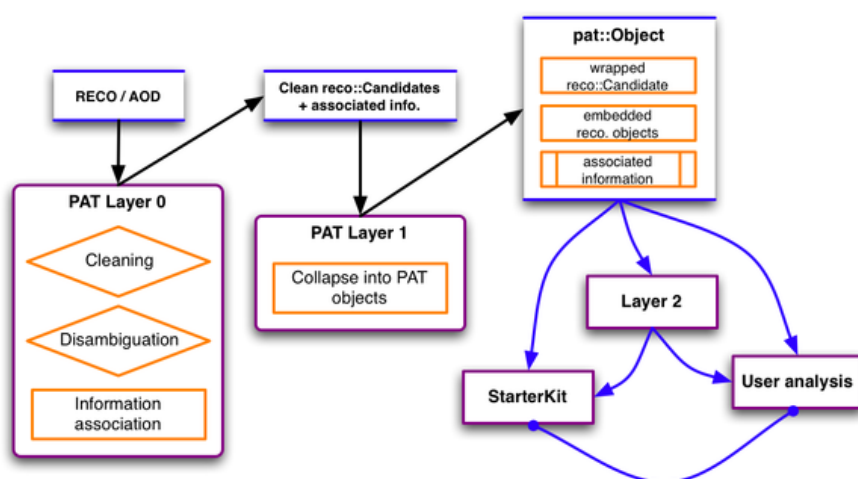
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# PAT Workflow

The PAT workflow is divided in a series of layers as shown on the figure below:

- **Layer 0** performs the "cleaning" tasks on the standard reconstructed object (in AOD or RECO formats), computes related information (e.g., Monte Carlo and trigger matching), and takes care of the low-level handling of references.
- **Layer 1** collapses the output of layer 0 into compact objects containing all the necessary information.
- **Layer 2** performs event-hypothesis dependent tasks: this is where the analysis starts.

*The PAT workflow*



The PAT consists of framework **plugin modules**: cleaners for layer 0, producers for layer 1. These plugins themselves call standalone algorithms and helper classes.

**Notes:**

- all classes are defined in the namespace `pat::`;
- the configuration files can be found in `CMS.PhysicsTools/PatAlgos/python`, ordered by task.

## Tasks performed inside the PAT

The tasks performed inside PAT are:

- Monte Carlo and trigger matching
- Lepton isolation and particle identification
- Objects cleaning (e.g., jet-electron overlap removal)
- The definition of global event variables (e.g., total event charge, object multiplicity)

They are represented in the following structure:

- Layer 0: cleaning and association on AOD content
  - ◆ More details about the PAT cleaning and the Monte Carlo and trigger matching
- Layer 1: production of PAT objects from information gathered at **Layer 0**.
  - ◆ More details about PAT data formats and PAT trigger information
- Layer 2: easy access to event hypothesis structures using **Layer 1** objects.
  - ◆ More on event hypothesis

-- RogerWolf - 13 May 2009

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