D0 Tracks

CVS package: d0track

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1 Introduction

Problem Statement

Provide a convenient interface to a global track (**GTrack**).

Design Requirements

- Maintain the existing physical decoupling between generic tracking classes (e.g. GTrack) and D0 specific classes (e.g.. D0SMTHit).
- Minimize the copying of large objects.
- Minimize the number of calculations performed to extract information for a given track.
- Provide a convenient user interface.

Package Description

The class **D0Track** provides a convenient interface to a GTrack. A D0Track is created from a reference to a GTrack, and supplies methods to access a wide variety of information associated with a GTrack. A D0Track is an example of the *facade* pattern, as described in **Design Patterns**, Gamma, et. al. It insulates the user from the many subsystems which make up the global tracking system.

The D0Track class has been designed to use helper classes which do the actual work. These helper classes are only instantiated when needed. The following helper classes comprise the current system:

- **GTrackClusterFacade** (package *d0track_clusters*) - Provides access to detector clusters on a global track.

Users with special needs may choose to use the helper classes directly, however most users should use the D0Track class.

D0Track and its helper classes comprise the **d0track** software system, and are all defined in the *d0track* namespace.

Usage Requirements

Users are required to manage the individual GTrack's which are used to create D0Track's. If a D0Track is created, and its corresponding GTrack is subsequently deleted, the behavior of the D0Track is ill-defined.

2 Class Documentation

Names

2.1 namespace d0track class **D0Track**

Provides a convenient user interface to a GTrack

Public Members

D0Track (const GTrack&) *Constructor.*

~D0Track () *Destructor.*

inline const GTrack& **getGTrack** () *Return a reference to the corresponding GTrack.*

const CftClusterList& **getCftClusters** () *Get the CFT clusters.*

const SmtClusterList& **getSmtClusters** () *Get the SMT clusters.*

Provides a convenient user interface to a GTrack.

A **D0Track** supplies a high-level interface to a global track (**GTrack**). It can be considered a *Facade*, as described in **Design Patterns**, Gamma, et. al.

A D0Track is created from a reference to a GTrack. It has methods which can return D0 detector specific clusters.

3 Example of usage

No example available yet.

4 Other relevant packages

This package directly depends on the following packages:

- `d0track_clusters`
- `gtrbase`
- `cuts`

Other relevant packages:

- `cuts`

Class Graph