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# Use case to perform a detector calibration analysis with data from the 2007 pilot run.

## Outline of use case

The 2007 pilot run will be used to calibrate the detector with physics collisions data for the first time. It is likely that the number of events will be small and spread over many runs. The raw data will be buggy (mis-cablings, encoding errors etc.) and the code will not have all the required functionality. Many reprocessings will therefore be necessary

## Selection

In the early days it is likely that the HLT will be in 'monitoring mode', classifying events but not necessarily rejecting them. Early datasets will contain events of the following types:

- Interaction trigger (physics collision or beam gas).
- Calibration trigger (e.g. calorimeter laser events)
- Beam crossing trigger (downscaled, for occupancy studies, muon halo etc.)

Some of these triggers will not require propagation to Tier0/Tier1 but can be processed directly in the online monitoring farm. Others will be of interest only for calibrating specific detectors, with sub-detector specific code. Only the interaction triggers will be reconstructed through Brunel - they will be used for detector alignment and hopefully a first look at physics quantities.

## Issues

Although the physics collision rate will be small, the trigger rate may well be as large as 2kHz. The pilot run data will have to be easily accessible by many diverse people. The official production chain (which will need to be commissioned) is only one of many possible applications wanting to access the raw data. Reprocessing will be frequent and should be made possible with minimal overhead

## Number of streams from the detector

Pros and cons for this particular analysis for having one or more streams from the detector.

## Information required on trigger, stripping and luminosity

### Number of streams in the stripping

Pros and cons for this particular analysis of many/few streams.

### Information stored for each event

Pros and cons for storing composite candidates and/or other *extra* data in the DST for the selection.