# Integration of test beam software with online software

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# Outline

- Current status of the software
- Possible improvements:
  - integration with CARF
  - new root reader
- And moreover:
  - use of the new I.Reid's code for FED formatting/unformatting
  - prepare for raw mode data taking

# What do we have now?

- PSI-like software
  - main.cpp under our control
  - geometry loading from DDD
    - we can take the whole rod from DDD!
  - Zebra file reading
  - A lot of tuning from TB people for the algorithms.

Perfectly usable at this test beam

# Only point...

- Zebra reader
  - in principle, we should implement a root reader
  - in practice, Laurent doesn't care too much about the format to file.

can be used as it is, practically effortless

# In this way....

- ... we can analyze the test beam.
- but ... can we do more?
- can we use the opportunity to improve our software?

# New mode?

- Use COBRA main
  - PKBuilders, persistency...
- Use COBRA Readout Units to fill the detectors
  - we can make ZS samples persistent
- dispatch a real G3EventProxy* event, do not drive the event loop

# DaqApplication

- New operating mode of COBRA (RecReader, SimReader, DaqFileReader)
- Able to read input stream from file instead of DataBase

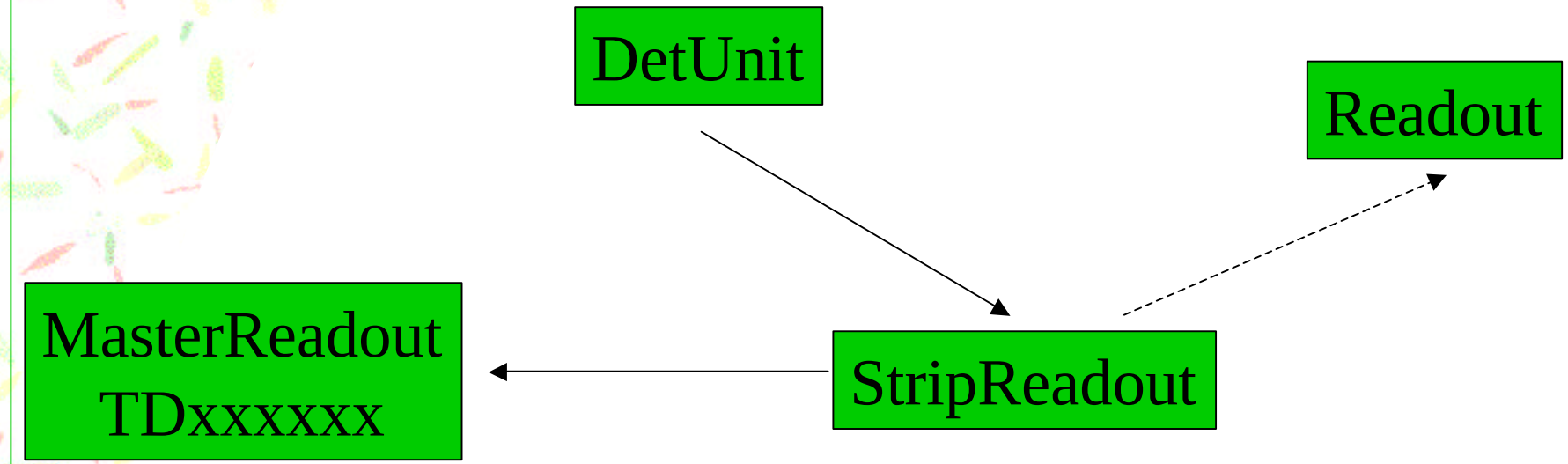
# ok...

- Already implemented by Giacomo Bruno in Zero Suppressed mode
- We miss the raw mode implementation, which is needed for this test beam
- It works nicely ....

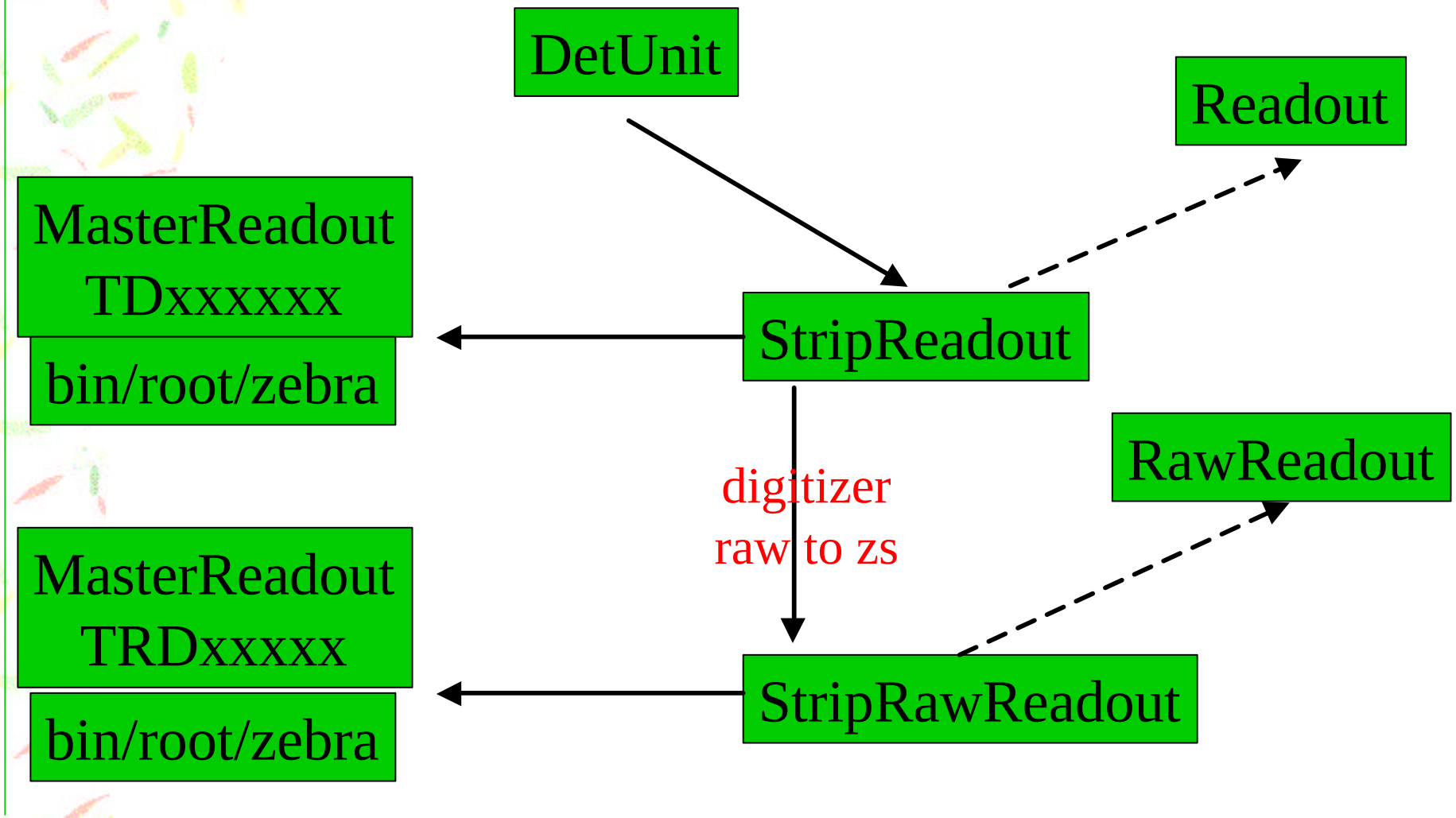
# Raw mode

- Sooner of later we have to cope with this.
- in 2007 we will have data taking in this mode, mainly during debug
  - can we already prepare this?

# Current persistent mechanism



# Proposed splitting



# How can be operated?

- Use case:
  - read the raw stream from disk and fill the RawReadout
  - digitize() calls the chain Ped/CM/ZS and fills the Readout
  - for free: we can make persistent in the standard way the ZS data sample

# again for free...

- source agnostic: the root reader could become a ethernet reader in HLF setup

# What is missing?

- A lot:
  - raw mode structure: RawReadout, RawDigi, StripRawReadout, a RawDigitizer
- a data format for raw mode from disk
  - are we sure it can be the same code which will run in 2007?
- the root reader (Laurent can in principle give the root writer, it should be not that different)

# Proposal...

- We have a lot of milestones by June, so
  - do not promise this will be there; we have the solid baseline of the old and usable software
  - we work silently. If anything will be ready, let's use it
- For sure, the new implementation requires a lot of time and debugging...
- Not an easy work for a novice, but with some help and the documentation from the workshop ☺ ...