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# ***Deployment of COOL Database in LHCb***

Marco Clemencic

[marco.clemencic@cern.ch](mailto:marco.clemencic@cern.ch)



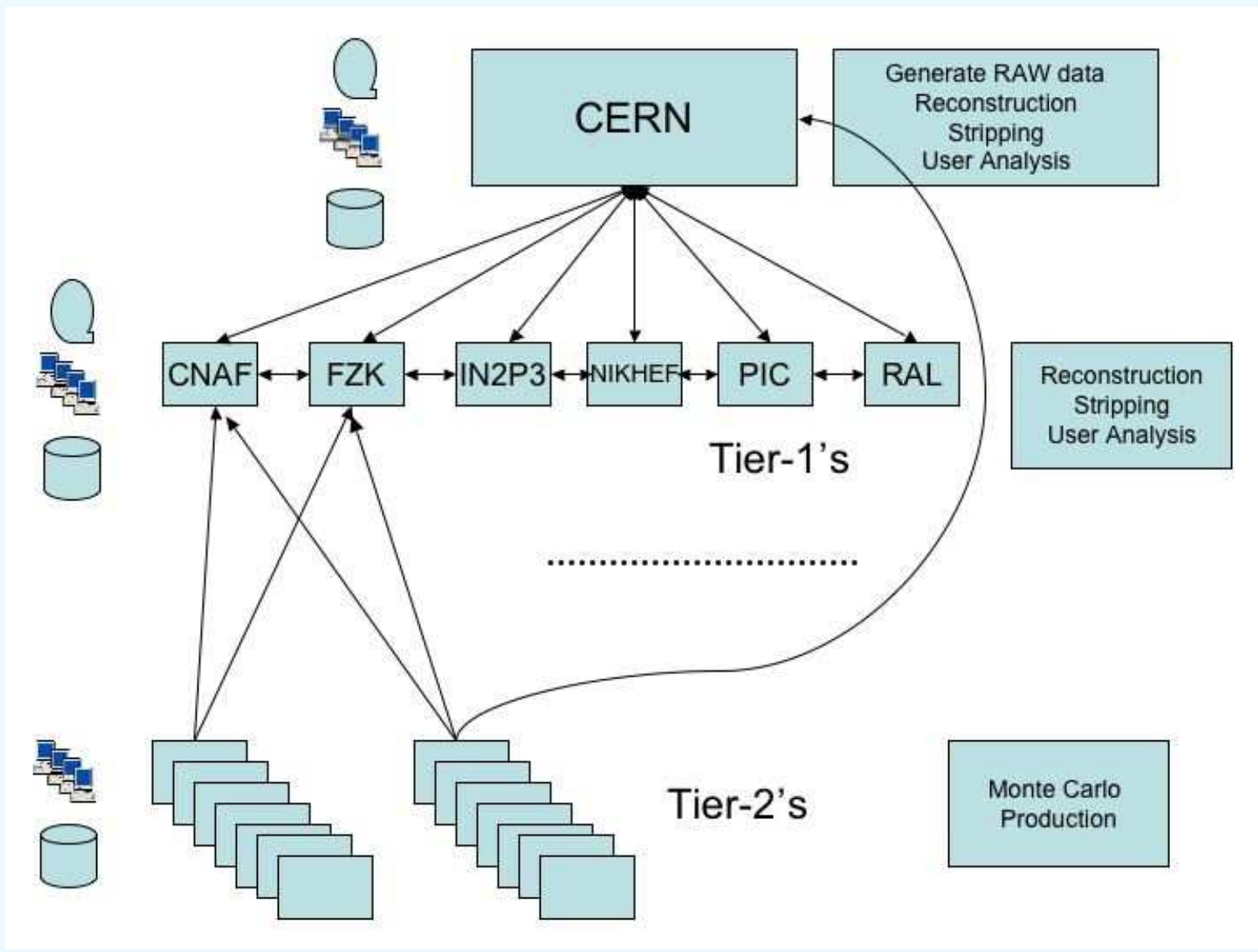
# Overview

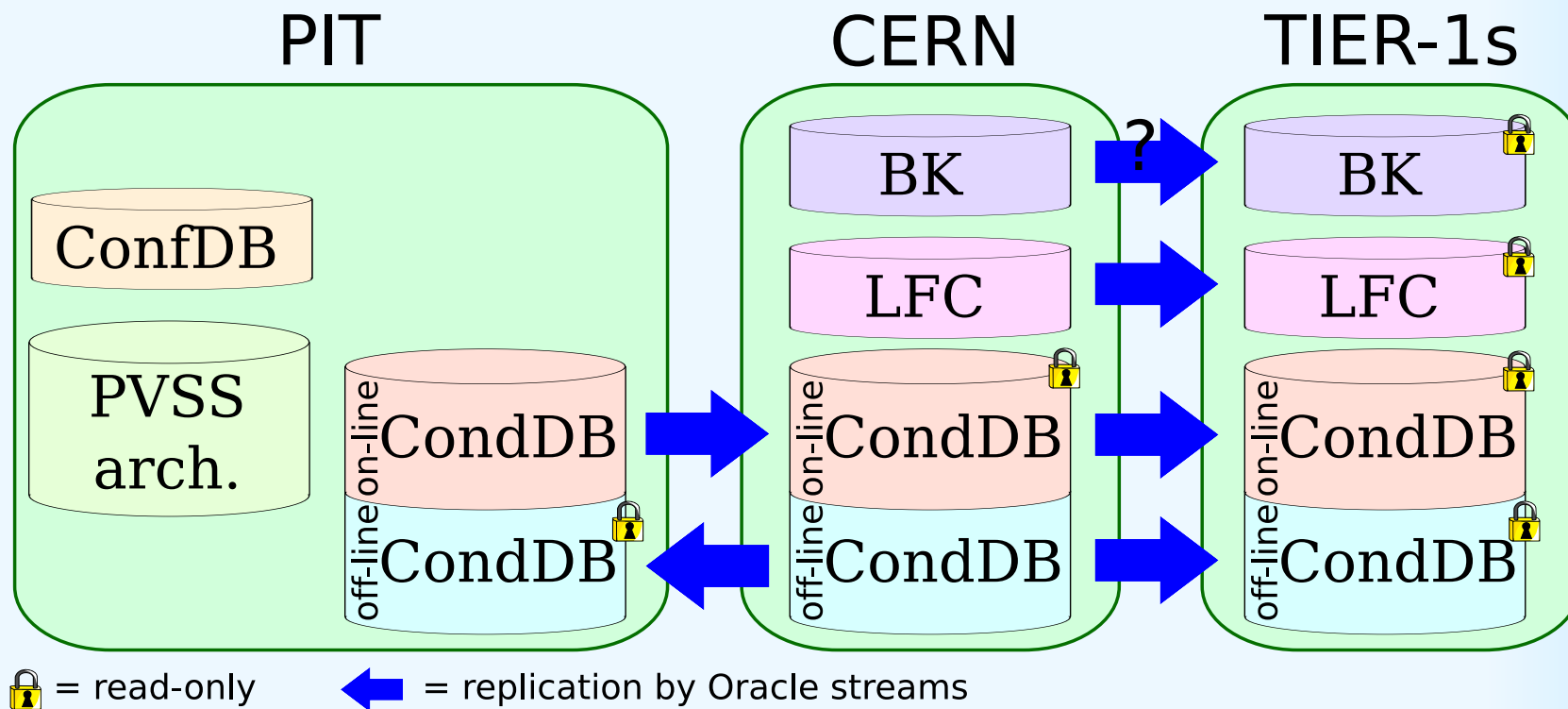
- ▶ Introduction
- ▶ COOL in LHCb
- ▶ Toward Production
- ▶ Summary

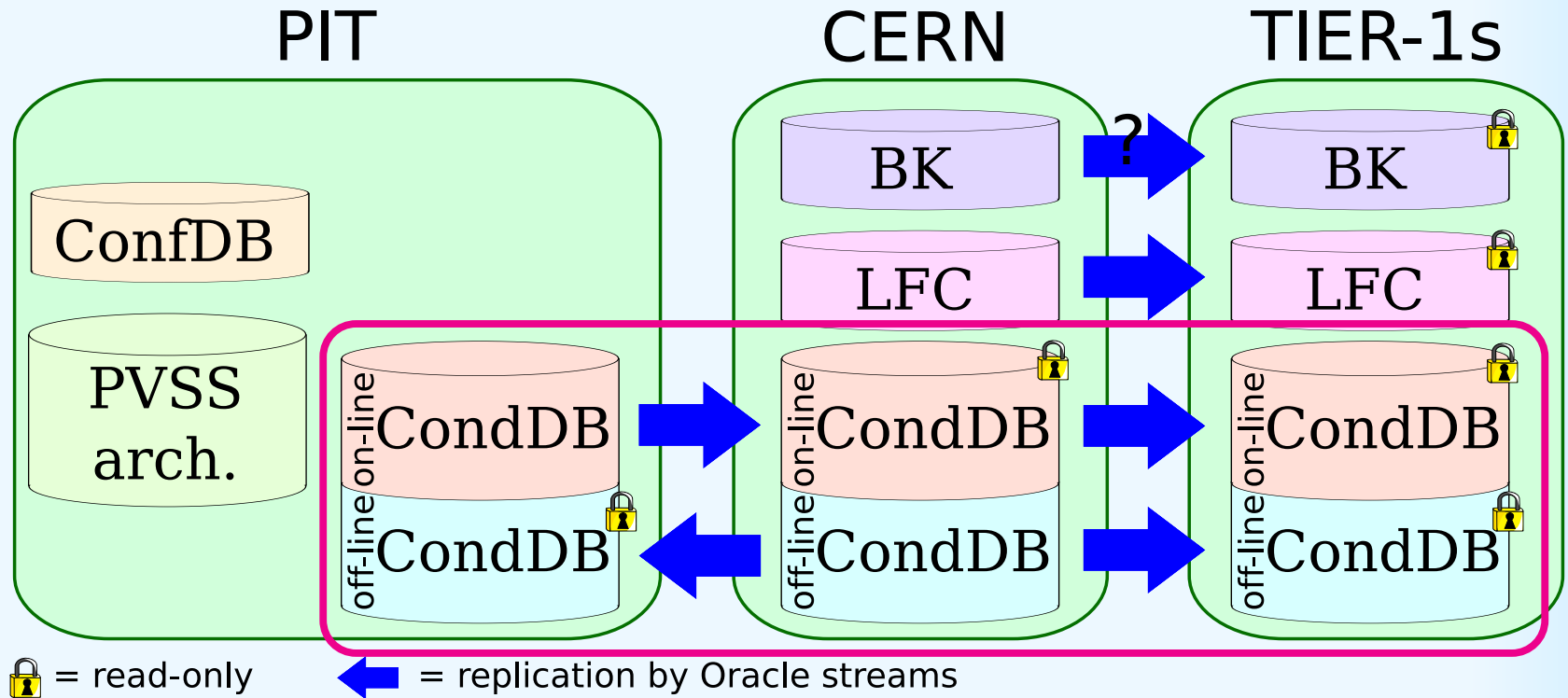


# *Introduction*

# Computing Model







***COOL in LHCb***

- ▶ Content
  - ▶ Conditions needed by recons. and analysis
  - ▶ Detector description
- ▶ Format
  - ▶ XML strings
- ▶ Access Pattern
  - ▶ Recons. jobs process  $\sim 20$  s of events each
  - ▶ Load of the whole DB in the first few minutes, then rare access
- ▶ Database schema
  - ▶ All the tables under 1 schema



- ▶ ~1k condition objects (= XML files)
  - ▶ Still under construction
  - ▶ Not using ChannelId
- ▶ Currently ~65 MB
  - ▶ ~10 MB for conditions
  - ▶ ~55 MB for det. desc.
  - ▶ Expected other  $O(10)$  MB per year
- ▶ On-line conditions unknown

- ▶ We have two “master databases”
  - ▶ **CERN**  
Entry point for multi version conditions  
(alignments, calibrations, ...)
  - ▶ **PIT**  
Entry point for single version conditions  
(probes readings, h/w configurations, ...)
- ▶ Two well separated set of tables to avoid conflicts

- ▶ Two paths:
  - ▶ From CERN to PIT and Tier-1s
    - ▶ Via Oracle streams
    - ▶ Automatic or manual
    - ▶ Only tagged versions
  - ▶ From PIT to CERN, from CERN to Tier-1s
    - ▶ Via Oracle streams
    - ▶ Automatic or manual
- ▶ Special procedure for Tier-2s
  - ▶ Shipping slices with MC job configuration

# *Toward Production*



## Goal

- ▶ Reconstruction and Alignment Challenge in October
  - ▶ Get ready for a full scale production with CondDB

- ▶ Preparation
  - ▶ Accounts and tools
  - ▶ Usable database instance
- ▶ Tests
  - ▶ Connection tests
  - ▶ Content validation  
(recons. job)

- ▶ Preparation
  - ▶ Credential deployment
  - ▶ Streaming
- ▶ Tests
  - ▶ Large scale tests  
(recons. jobs on the GRID)

- ▶ Preparation
  - ▶ LHCb managed RAC
  - ▶ Cross replication via streams
- ▶ Tests
  - ▶ Replication chain  
PIT → CERN → Tier-1s



# *Summary*

- ▶ LHCb conditions database not yet final
  - ▶ List of conditions not complete
  - ▶ Preliminary distribution of data between folders (current det. desc. contains ~3k files)
- ▶ Important tests for the upcoming months to
  - ▶ Gain experience with
    - ▶ Hardware requirements and problems
    - ▶ Deployment issues
  - ▶ Obtain a production ready setup by October
    - ▶ For the Alignment Challenge
    - ▶ Hopefully based on COOL 1.4 API