



# CMS ONLINE-TO-OFFLINE DATA REPLICATION

Saima Iqbal and Lee Lueking (Fermilab)

LCG 3D Database Workshop  
Oct 18, 2005

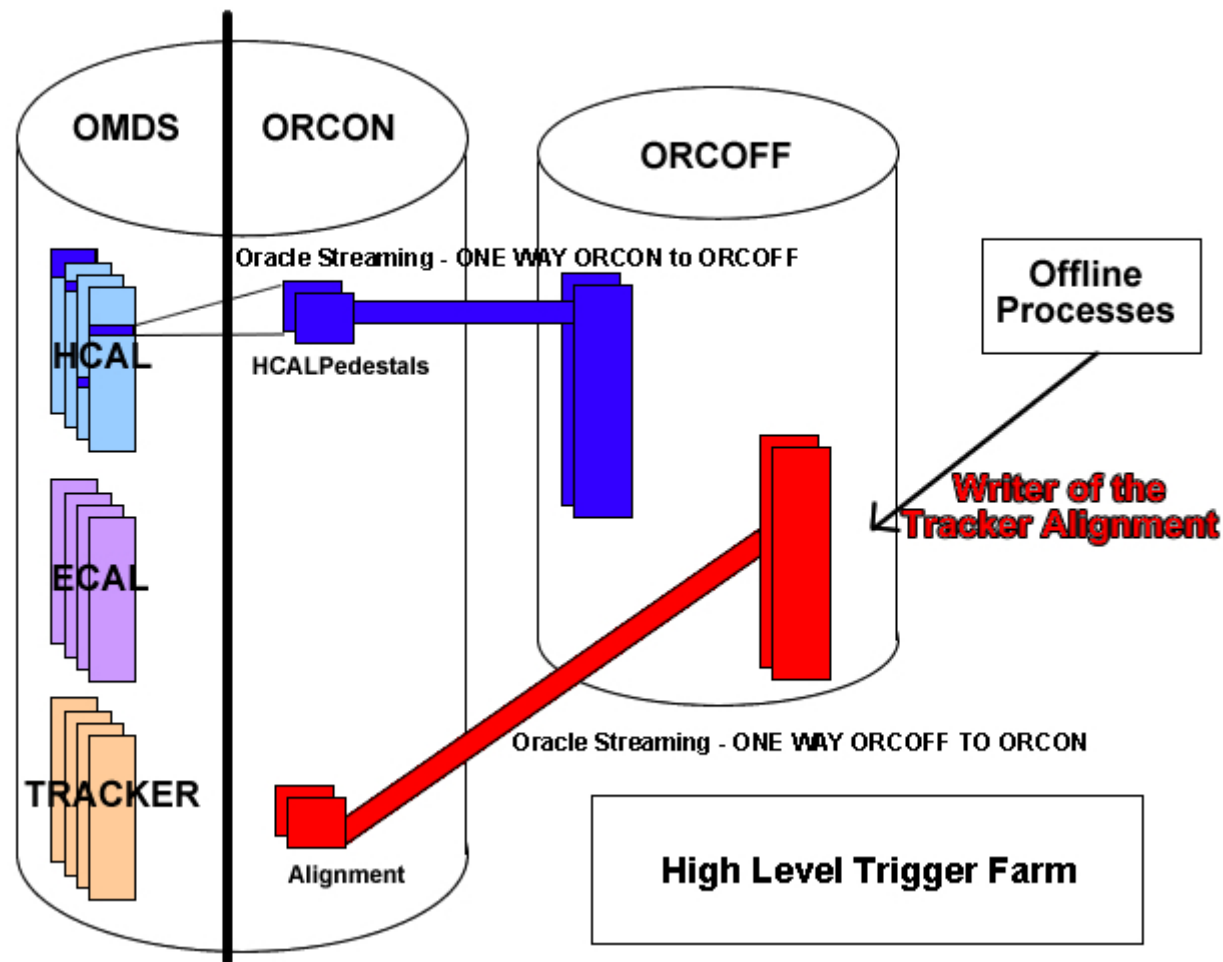


# Outline

- Infrastructure for CMS Online-To-Offline (o2o) Data transform/transfer
- Elicited requirements for o2o
- o2o application implementation
- Plan to use IT services at CERN for o2o data transfer



# CMS Databases and Data Flows



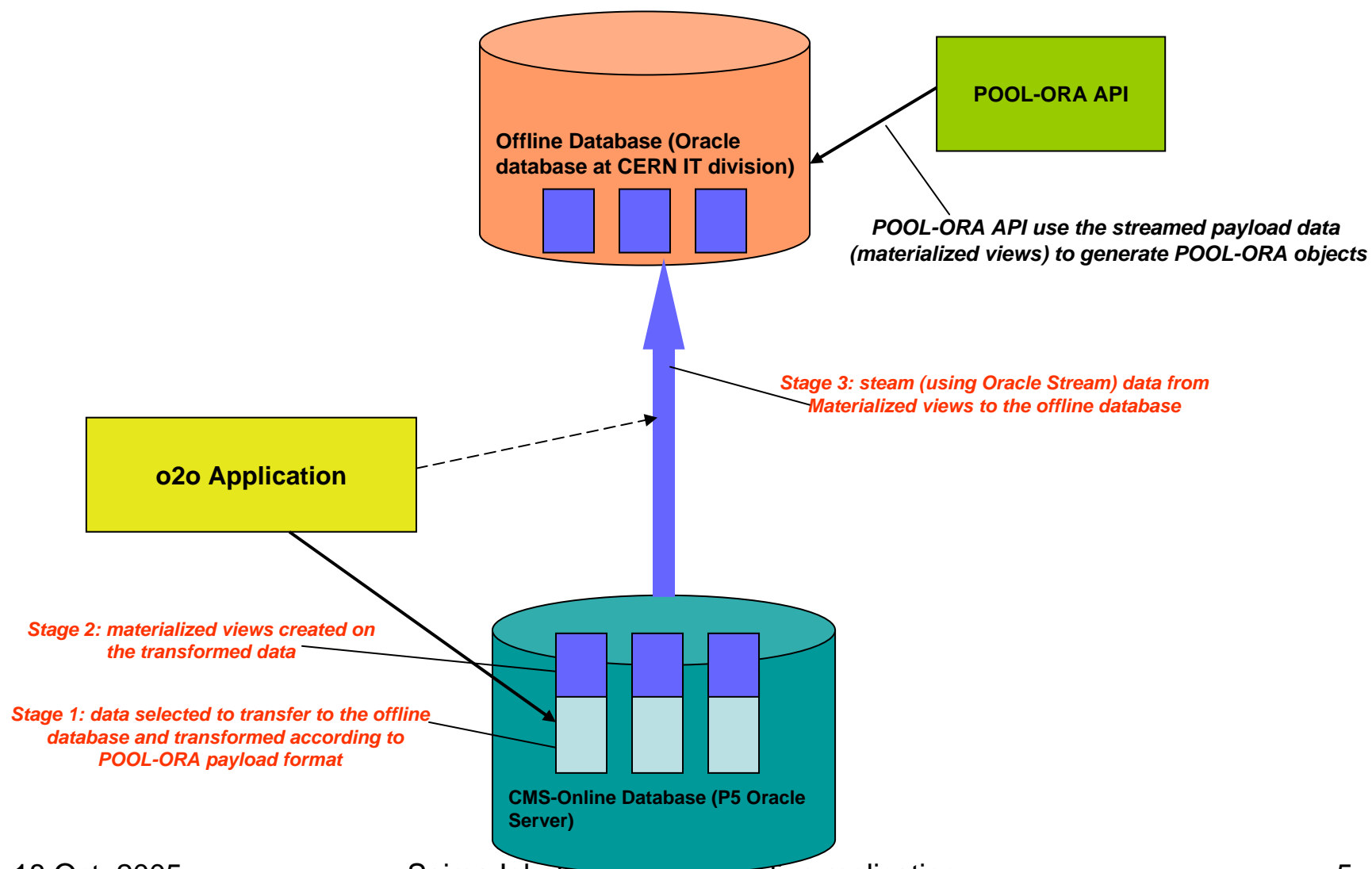


# Elicited Requirements for o2o

- *Req1-* Data from Online database needed offline will be selected and transferred to the Offline database.
- *Req2-* The transfers will be triggered periodically either by a Cron job or other driving mechanism. This will be configurable.
- *Req3-* A failsafe mechanism must assure that only data not previously transferred will be moved, and all data which is attempted to transfer is completely moved with no failures.
- *Req4-* This data transfer and transformation process must be transparent to the offline Clients.
- *Req5-* The tool developed for this transform and transformation of data should be independent of online or offline software.
- *Req6-* If the IOV (Interval-Of-Validity) information is maintained in the online database and is required to generate the offline objects, then it too will be transferred in the o2o process.
- *Desirable-* The procedures for transferring the o2o data must be easily managed and maintained. Therefore, using a common, configurable, tool for all types of data, and for all sub-detectors is desirable.



# o2o Application (*current status/implementation*)





# Test Plan to use Oracle Stream for o2o Data Transfer

*Following is a test plan test Oracle Stream for o2o data transfer:*

- **Functionality Test**: Test data transfer by using Oracle Stream in between CMS online Oracle database server and an Oracle database server at IT
- **Scalability/Performance Test**: Test scalability/Performance of developed application and Oracle Stream for the data of the range of GB
- **Data Transfer Monitoring**: Test the reliability of data transfer in between P5 and servers at IT
- **Failure Mode Tests**: Test Oracle Stream with different failure modes
- **Reverse Streaming**: Test data stream from Offline-to-Online database



# Summary

- Initial implementation/functionality of o2o application is in place
- A test plan is proposed to use Oracle Stream resources at CERN IT
- Looking forward to implement Oracle Stream test plan to test o2o data transfer
- Use this o2o setup for stress test in November



- Questions