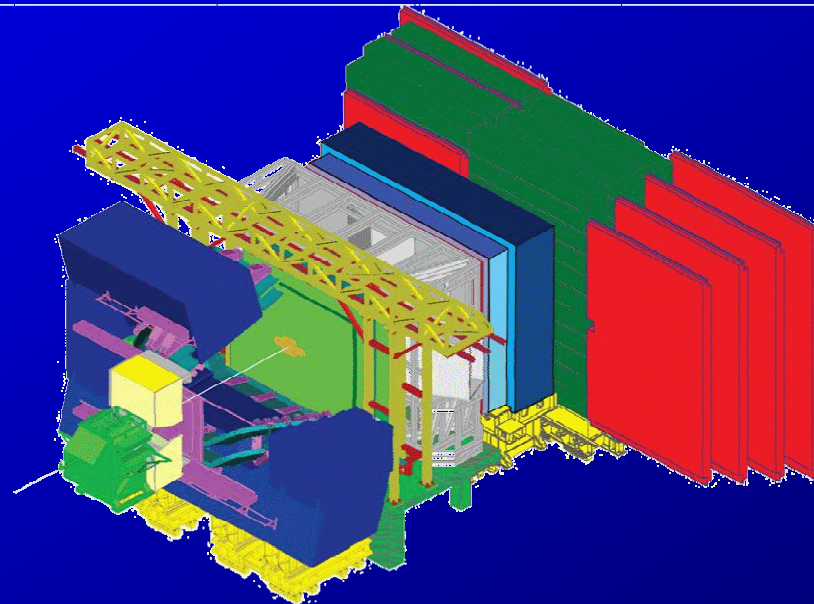# How to work with different databases implementing misalignments

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LHCb Alignment Working Week, CERN, 7-12 Jan. 2008

CONDITIONS DATABASES:

➢ **suggest as a first general reading the Wiki**

  "LHCb Conditions Database How-To" under

   https://twiki.cern.ch/twiki/bin/view/LHCb/CondDBHowTo

➢ **contains useful info**

➢ **Steve has written a lot of info at**

  https://twiki.cern.ch/twiki/bin/view/LHCb/MisAlignedCond

➢ **explains how to create a misaligned conditions DB with the scripts**

  he produced

➢ **it probably allows you to make almost everything you want**

➢ **"custom-made use cases: see next slides …**

Copies of CondDB:

- ➤ **There are tools under the package CondDBUI ($CONDDBUIROOT/) to perform several tasks**

- ➤ **(see also https://twiki.cern.ch/twiki/bin/view/LHCb/HowToCreateCondDB)**

- ➤ **a copy of a DB is still made most easily with "cp" ;-)**

- ➤ **copy the LHCBCOND.db from the official location**

  /afs/cern.ch/lhcb/software/releases/DBASE/Det/SQLDDDB/vXrY/db/

DATABASE SLICES:

➢ **Most useful if one only interested in a part of the DB,**

  e.g. Velo conditions

➢ **easiest procedure: open your DB copy and delete everything you are not**

  interested in

➢ **use the browser.py script of the ConDBUI package**

  (see also https://twiki.cern.ch/twiki/bin/view/LHCb/HowToBrowseCondDB)

➢ **open/browse the DB with it and delete the nodes**

➢ **N.B.: you need to first delete the daughter nodes before deleting the**

  parent node

➢ **this is a few minutes work. Nothing major ;-)**

➢ **then you can start introducing e.g. misaligned conditions for your**

  favourite sub-detector using Steve's scripts …

Running with 2 databases

> use case when running (standard) Brunel with a perfect geometry
> for the whole LHCb except e.g. the VELO

> use the standard LHCBCOND.db *and* a private DB containing
> the misalignments one is interested in studying

> Marco Clemencic et al. has provided (Gaudi) functionality for this,
> no need to bother with the technical/hidden bits ;-)

> see my example next slides …

➤ **example of my Brunel jobs for the studies with B2HH**

➤ **all options are the standard Brunel options apart from:**

```
ApplicationMgr.EvtMax = 2000;

EventSelector.FirstEvent = 2001;

HistogramPersistencySvc.OutputFile = "B2HH_Brunel-Monitoring.root";

DstWriter.Output =
"DATAFILE='PFN:/castor/cern.ch/user/e/erodrigu/B2HHMisalignmentStudies/Brunel Bd2PiPi Ve
lo_1sigma-02.dst' TYP='POOL_ROOTTREE' OPT='REC'";

LHCBCOND.DefaultTAG = "DC06-repro0710";

CondDBDispatcherSvc.Alternatives =  [ "/Conditions=CondDBLayeringSvc/CONDLayers" ] ;

CONDLayers.Layers =  [ "CondDBAccessSvc/CONDLocal" , "CondDBAccessSvc/LHCBCOND" ] ;

CONDLocal.ConnectionString =
"sqlite file:/afs/cern.ch/user/e/erodrigu/public/B2HH/B2HH LHCBCOND Velo-
slice_1sigma.db/LHCBCOND";

CONDLocal.DefaultTAG = "DC06-B2hh-Velo-2";
```

➢ **during the job one can check the connection to 2 CondDB databases:**

```
DDDB            INFO Connected to database
"sqlite_file:/afs/cern.ch/lhcb/software/releases/DBASE/Det/SQLDDDB/v2r3/db/DDDB.db/
DDDB"
DDDB            INFO Using TAG "DC06-repro0710"
CONDLocal       INFO Connected to database
"sqlite_file:/afs/cern.ch/user/e/erodrigu/public/B2HH/B2HH_LHCBCOND_Velo-slice_1sig
ma.db/LHCBCOND"
CONDLocal       INFO Using TAG "DC06-B2hh-Velo-2"
LHCBCOND        INFO Connected to database
"sqlite_file:/afs/cern.ch/lhcb/software/releases/DBASE/Det/SQLDDDB/v2r3/db/LHCBCOND
.db/LHCBCOND"
LHCBCOND        INFO Using TAG "DC06-repro0710"
```

➢ **the rest is plain sailing …**

Alignment challenge samples

- at https://twiki.cern.ch/twiki/bin/view/LHCb/AlignmentSamples
- all DSTs, logs, DBs under

  /castor/cern.ch/user/s/sblusk/Brunel/7TeV_FieldOff_MinBias

- I would really suggest people try these samples and check the contents of the DBs asap, to make sure we are doing the right thing
- indeed mistakes are "easy" to make as we are dealing with a lot of new tools, software, etc.