



# DIP Data Exchange with LHC experiments General Status

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# Outline

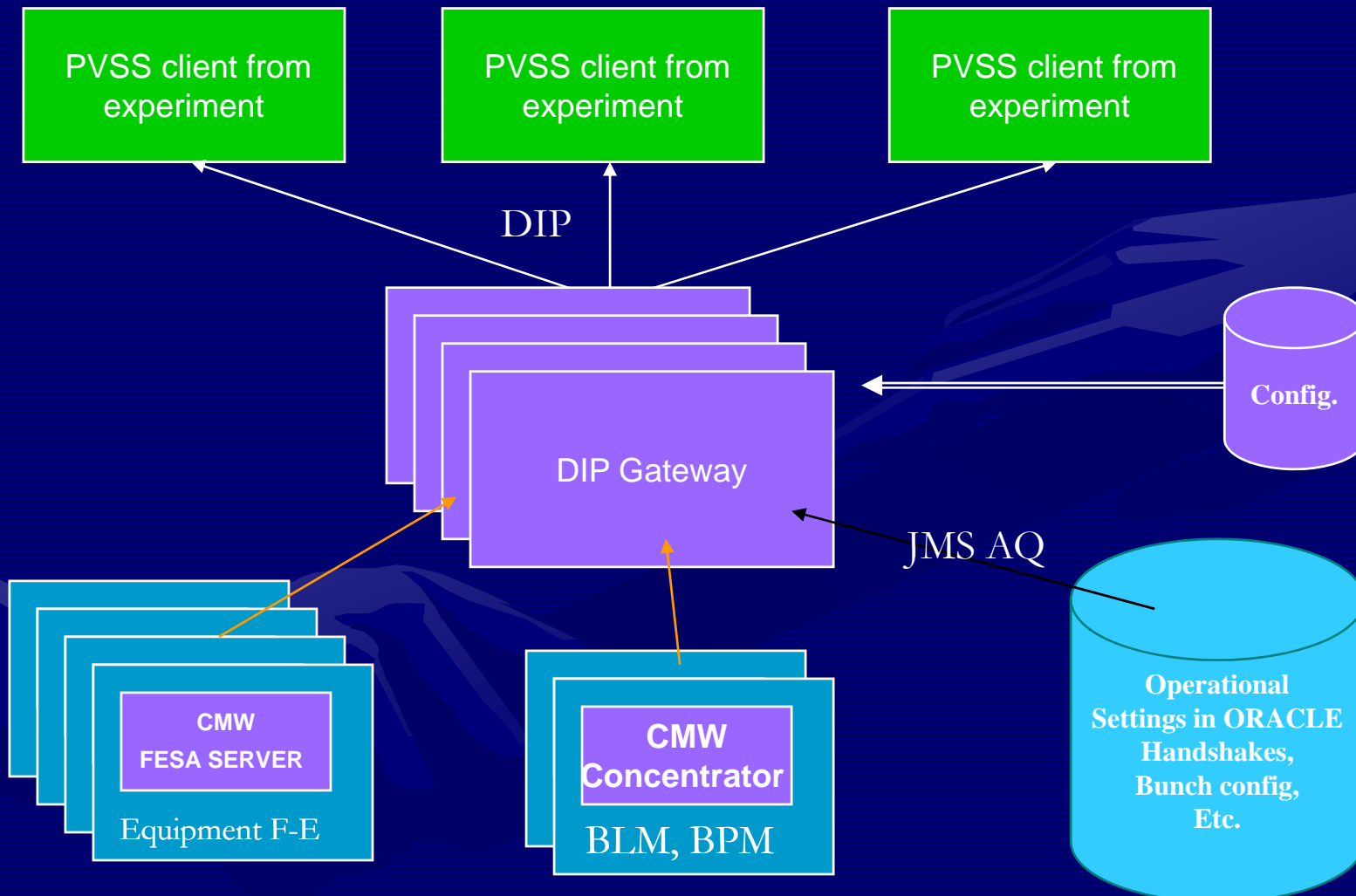
- General infrastructure for data exchange and troubleshooting
- Documentation and contacts for publication items
- Status of individual publications

# DIP gateway infrastructure

- Several gateway Java processes running on 3 Linux machines in the CCC configured via an XML configuration
  - Subscribes directly to LHC CMW equipment servers
  - Subscribes to concentrated values for BLM and BPM
  - Subscribes to DB setting changes for configuration data (Handshakes, Mode, Bunch Configuration etc.)
  - Subscribes to DIP Experiment Data (Handshakes, Luminosity, ...) to implement a standard AB/CO CMW server interface for the LHC operation.
- Additional publications can easily be added if necessary
  - From existing CMW servers (e.g. BI)
  - From Database (LSA configuration)
- This service is maintained in the same way as other AB/CO controls services
  - LHC operation can restart a gateway server
  - In case of more complex faults, expert service, best-effort

# DIP publish/subscribe infrastructure

## Machine to experiments



# DIP Infrastructure

- DIP is supported by IT/CO  
<http://itcofe.web.cern.ch/itcofe/Services/DIP/welcome.html>
- DIP DNS is a server running on IT/CO servers, required to establish a subscription
- IT/CO supports the PVSS DIP driver
- DIP LHC data can be subscribed only from sets which are exposed to TN (network security restrictions)

# LHC data providers

- Same source as for the LHC operation, notably for LHC Logging
  - CMW equipment servers
  - Concentrators for BLM and BPM
  - Database (LSA operational software is using DB directly, not via subscription)

# Data distribution troubleshooting

- Check with data browser if the data is available in DIP
  - It can be a problem with your PVSS system
  - It can be a problem with DIP DNS
- Ping the data source machine (mapping will be made available on the LEADE Twiki)
- If ping works and data not visible in the Java browser, contact LHC operation, ask them to restart the server (mapping will be made available in the LEADE Twiki)

# Data exchange documentation sources

- All publications are documented on LEADE Twiki
  - <https://twiki.cern.ch/twiki/bin/view/Leade/WebHome>
  - Reference to equipment documentation and field explanation from LEADE Twiki when available
- The meaning of published fields is (is being) documented by Anne-Laure Perrot and is available at
  - <http://ts-dep-lea-int.web.cern.ch/ts-dep-lea-int/dataexchange-DIP.htm>
  - Will be linked from LEADE Twiki
- Mailing list [lhc-exp-coms@cern.ch](mailto:lhc-exp-coms@cern.ch) for announcement of new publications and changes
  - Let me know if you want to be added
- DIP Java browser (requires Java and Java Webstart to be installed)



# DIP publications from LHC

- Beam control and configuration
- Beam measurements
  - BLM thresholds have been added
  - Luminosity
    - BRANA (Gas) awaiting hardware
    - BRANP for additional measurements in the meantime
  - Intensity for the time being for both A and B instance. In future only one will be published (only when arbiter flag set)

Exceed Dip Browser 5.4.0

DNS <defaultDNS>

- LHC
  - Beam
  - Handshake
    - LHC\_ADJUST
    - LHC\_BEAMDUMP
    - LHC\_INJECTION
  - Machine
  - RunControl
    - BeamMode
    - BeamType
      - Beam1
      - Beam2
    - CirculatingBunchConfig
      - Beam1
      - Beam2
    - FillNumber
    - InjectionBunchConfig
      - Beam1
      - Beam2
    - MachineMode
    - SafeBeam
      - Beam1
      - Beam2
  - Safety
    - MaxSPSProbeBeamA
    - MaxSPSProbeBeamB
  - Timing
    - BeamMode
    - MachineMode
    - PostMortem
- LIN

Found as much as 26406 publications

Terminal Dip Browser 5.4.0 Mon Sep 29 15:02

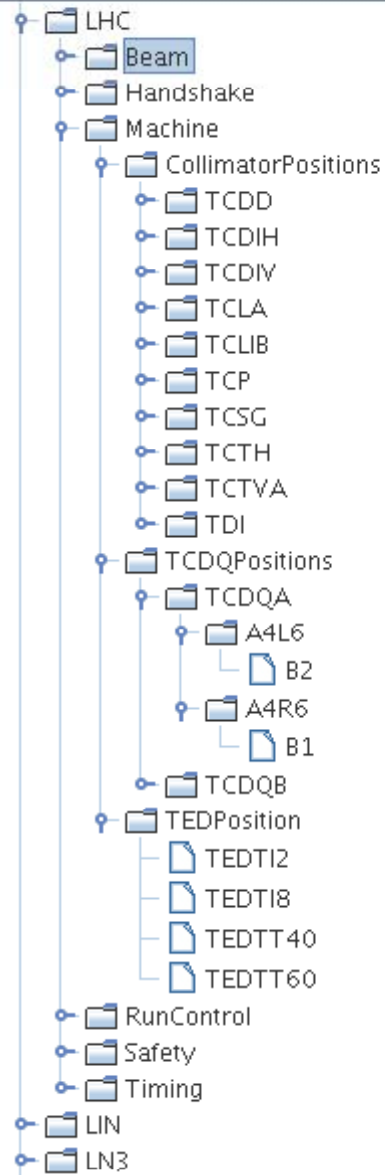
start Inbox - Micro... 3 Internet ... Exceed Java - Db2Di... Microsoft Po... 3:02 PM

IS <defaultDNS>

- LHC
  - Beam
    - BLM
    - BPM
    - Energy
  - Intensity
    - Beam1
    - Beam2
  - IntensityInj
    - TI2
    - TI8
  - IntensityPerBunch
    - Beam1
    - Beam2
  - LuminosityAverage
    - BRANA
    - BRANB
    - LHC
      - BRANA
      - BRANB
      - BRANP
  - LuminosityPerBunch
    - BRANA
    - BRANB
  - LuminosityScan
  - Size
    - Beam1
    - Beam2
  - TriggeredIntensity
    - Beam1
    - Beam2
- Handshake
- Machine

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<defaultDNS>



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Taskbar area containing icons for various applications and system information. From left to right: Start button, several application icons (including a globe and a printer), a taskbar with two 'Terminal' windows (the second is highlighted in yellow), a 'Dip Browser 5.4.0' window, and system tray icons for network status, volume, and date/time (Mon Se 15:11). A tooltip for the 'Terminal' window shows 'Microsoft PowerPoint - [LHC data exchange Status Oct 2008]'. The system tray also displays 'Microsoft PowerPoint - [LHC data exchange Status Oct 2008]'.

# Historical data

- Virtually all data distributed by DIP (and much more) is logged by the LHC Logging system
- This data can be accessed via TIMBER
- Since this data is compressed and filtered before being stored in the DB, it is available after 5-15 minutes