



# LHC Logging Project

## Overview, Status and Recent Developments

by  
The LHC Logging Team



# Mandate, Scope, Objectives



- Analysis, design, procurement of Logging Facilities for future LHC Controls System
  - Information management for LHC performance improvement
  - Meet INB requirements for recording beam history
  - Make available long term statistics for management
  - Avoid duplicate logging efforts
- Within the scope is:
  - Analyze experience, capture requirements
  - Implement first version to support QRL
  - Logging data from TT40 extraction tests.
    - The request was presented at the LHC-CP meeting of 08 Oct 2002.
  - Investigate interface with Alarms and Post-Mortem systems
- Objectives
  - Establish logging facility for TT40 and QRL, scalable to LHC
  - Major project review after initial validation

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# http://cern.ch/lhc-logging



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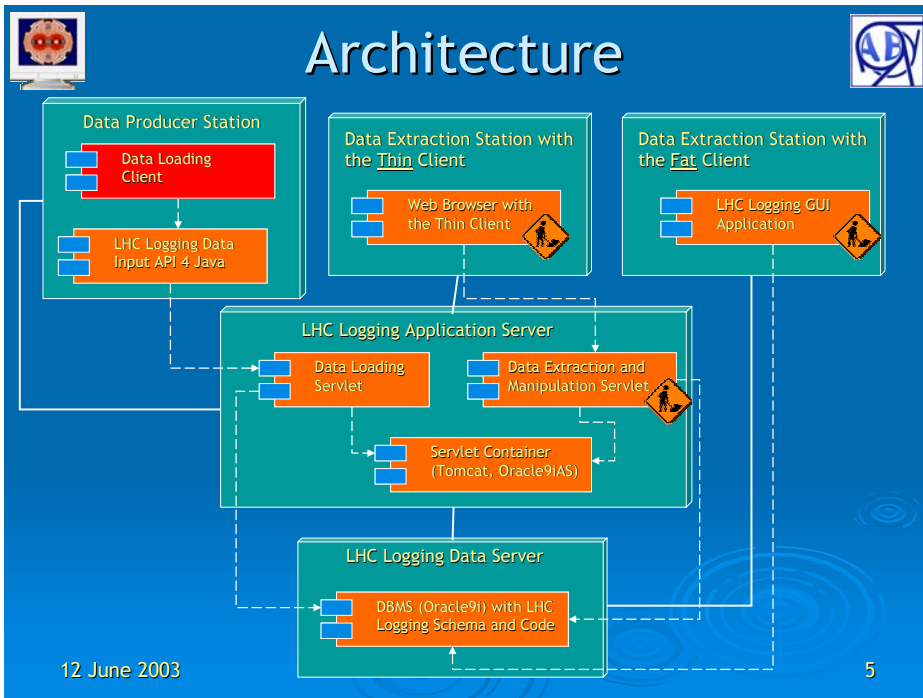
# Project Team



- Ronny Billen
- Maciej Peryt
- Maciek Marczukajtis
  - Fellow.
- Gareth Frederickson
  - Technical Student, until 30 June 2003.

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# Data Input API 4 Java

European Organization for Nuclear Research

## CERN LHC Logging Project

Sub-project of the LHC Controls Project

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### Data Input API

In order to use the API you will need the [JAR file containing the classes](#), source code of the examples and some configuration files. The library depends on [Oracle XML Class Generator for Java](#) and [Oracle XML Parser for Java v2](#). If you do not have these products on your computer, you will have to download them as well. You can find all necessary information to start using the API in the javadoc [documentation](#).

- The library itself [\[download\]](#)
- Oracle XML Class Generator for Java [\[download\]](#)
- Oracle XML Parser for Java v2 [\[download\]](#)
- API Documentation [\[view\]](#)

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- Available on our Web site under "Software"

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# Data Input API 4 Java

All Classes

Packages

- [ch.cern.lhclogging.input](#)
- [ch.cern.lhclogging.util](#)
- [examples](#)

[ch.cern.lhclogging.input](#)

Classes

- [LoggingDataFlat](#)
- [LoggingDataStructured](#)
- [LoggingEntity](#)
- [LoggingMetadata](#)
- [LoggingVariable](#)
- [LoggingVariableData](#)
- [LoggingVariableDataNumeric](#)
- [LoggingVariableMetadata](#)

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Packages	
<a href="#">ch.cern.lhclogging.input</a>	Provides the API for registering metadata and loading data to the LHC Logging System
<a href="#">ch.cern.lhclogging.util</a>	Contains utility classes and interface for various LHC Logging APIs
<a href="#">examples</a>	Provides examples of use of LHC Logging APIs

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- Documentation includes source code and examples.

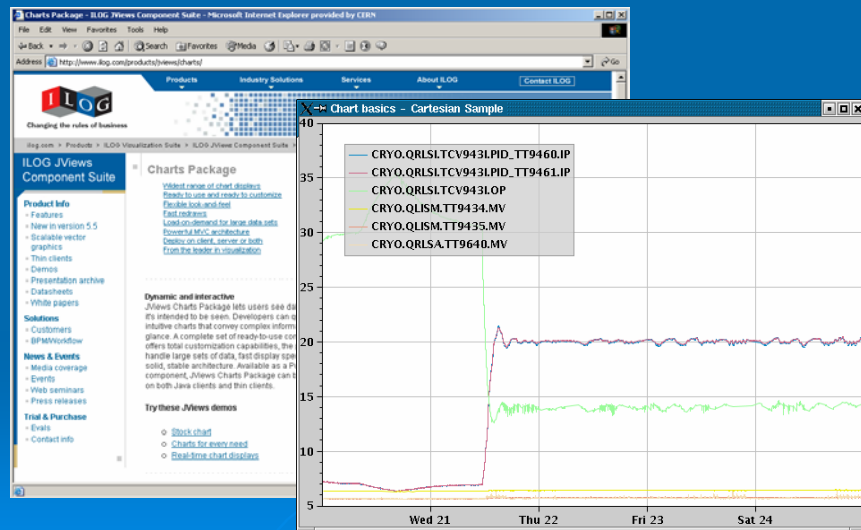
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# Thin Data Extraction Client

- Functionality similar to stride - String2 Data Extractor, but different platform (Java).
- Struts (part of the Apache Jakarta project) as candidate framework for building web applications.
- JSP: standard taglibs used as much as possible.
- Still looking for charts package to be used both in thin and in fat client.
- Will be available for TT40 Extraction Tests.

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# ILOG JViews 5.5 Evaluation



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# ILOG JViews 5.5 Evaluation

- Under evaluation by colleagues from ST/MA.
- First impressions:
  - Very complete functionality.
  - Highly modular, easy to customize.
  - Seems to be very fast, but still some benchmarks to be done.
  - The same API for thin and fat clients.
- We are going to work with AB/CO applications section to standardize on a common toolkit.

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# Next step: TT40 Extraction Tests

- API to be tested by SPS 2001.
- We need to test the full chain with real data:
  - Equipment → CMW → Logging → query.
- Logging on cycle basis: higher data rates than initially assumed.
- Still not clear what data types apart from scalar data will be stored.
  - We expect to store vectors of numbers - like profile data.

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# QRL

- If OK for TT40, then QRL should be satisfied too.
- Loading to be implemented by producers of data using our API - come and see us to get help!
- C++ version of Data Input API to be developed very soon.

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## Pending Issues



- Interfacing with Alarms and Post-Mortem.
  - To be defined what needs to be recorded in the Logging System.
- Application server.
  - Need more powerful machine before September.
- Database server.
  - Running on devdb9: OK for TT40, will have to move to production server next year.

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## Conclusions



- We are (finally) ready to log data.
- TT40: a functionality showcase.
- QRL: waiting for the clients to show up!

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