

PageZero, Page1, FillReport and DataSummary Documentation

by

Irakli Chakaberia

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Abstract

This document describes the plots and fields presented on the *PageZero*, *PageOne*, *Fill-Report* and *DataSummary* pages and gives references to the sources of the data represented by them. These monitoring tools have been developed and are maintained by Web Based Monitoring (WBM) team. For any questions please contact WBM core team by email (wbm-core@cern.ch);

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Preface

This template uses a separate file for each section of your ETDR: title page, abstract, preface, chapters, reference, etc. This makes it easier to organize and work with a lengthy document. The template is configured with page margins required by the Graduate School and will automatically create a table of contents, lists of tables and figures, and PDF bookmarks.

Although the template gives you a foundation for creating your ETDR, you will need a working knowledge of LaTeX in order to produce a final document. You should be familiar with LaTeX commands for formatting text, equations, tables, and other elements you will need to include in your ETDR.

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with LaTeX commands for formatting text, equations, tables, and other elements you will need to include in your ETDR.

Chapter 1

General Concept

The idea behind the tools developed by WBM group is to give prompt visual picture of the important measurements that are done by enormous amount of gadgets and detectors. High energy experiment of XXI century, such as CMS, is very complicated and needs to be monitored very closely. CMS and LHC are constantly monitored by different gadgets and the collisions itself have many aspects to them which needs to be looked at and analysed. This data is recorded and stored in databases. WBM maintains big part of those databases and develops web based tools to visually monitor data stored.

Prompt visualisation of the detector performance and online monitoring of its characteristics is a vital part of run coordination.

1.1 Presenting

The web page that gives you the information is constructed by a java servlet, which securely provides the information to users without them directly accessing the database. Each enquiry usually fetches a big amount of data, so the carefully made query is necessary to minimize the load and time needed for the iteration.

1.2 Creating

To keep database secure and minimize number of queries, servlet usually presents information on webpage by parsing the XLM information or showing images of plots which have been pre-made on the server side. The plots are usually stored on the servers (e.g. FillReport plots), while the information that could be quickly and efficiently fetched from database is generated on the fly and then passed to the client's browser.

In this chapter, there will be examples of various features you may want to incorporate into your document.

Chapter 2

PageZero

Code: PageZero.java

<https://cmswbm.web.cern.ch/cmswbm/cmsdb/servlet/PageZero>

PageZero is a CMS private page, which provides detailed information about current status of CMS detector and LHC. Information is organized into the several tables. The information on the page is updated every 10 minutes on the server side. The last update time is provided on top of the page in UTC time. So is the current UTC time and time of the computer the page is accessed from.

2.1 DCS Status

Detector Control Systems (DCS) Status table provides information about the status of CMS subdetectors in Red and Green colors. Red indicates that high voltage is not supplied to this subdetector or some of its parts, green color shows that this subdetector is completely ON.

Information Source : Database

Schema	Table
CMS_WBM	T_DSC_STATUS
CMS_RUNTIME_LOGGER	DCS_STATUS_CURRENT

2.2 LHC

This table provides the details of LHC status. The information is gathered from the LHC GMT server by parsing the XML.

Information Source : <http://cms-lhgmt.cms:51007>

2.3 Magnet

This table provides information about CMS solenoid, temperature and vacuum.

Information Source : DIP

Variable	DIP Publication
Magnetic Field	dip/CMS/MCS/Field
Current	dip/CMS/MCS/Current
Vacuum	dip/CMS/MCS/Vacuum
Temperature	dip/CMS/MCS/Tmoy

2.4 CMS DAQ/Trigger

2.5 Xing Angle / Number of Bunches

2.6 Luminosity

2.7 Sub-system DAQ Status

Chapter 3

Chapter Title

In this chapter, there will be examples of various features you may want to incorporate into your document. Here's an example of a figure inserted into the text:

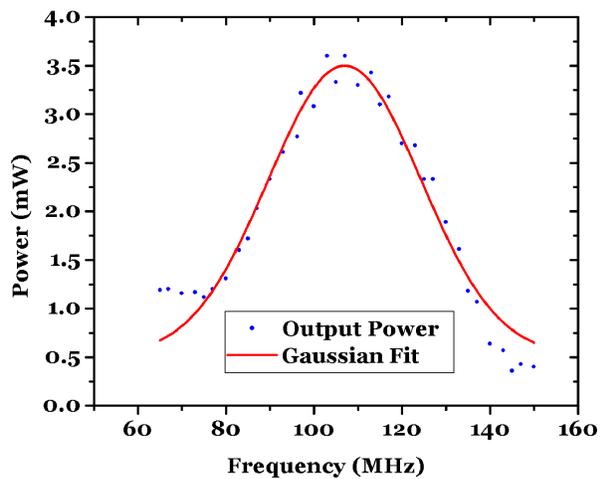


Figure 3.1: *Full caption to appear below the Figure*

Here is an example of a Table:

Column 1 Heading	Column 2 Heading	Column 3 Heading
Col 1 Row 1	Col 2 Row 1	Col 3 Row 1
Col 1 Row 2	Col 2 Row 2	Col 3 Row 2
Col 1 Row 3	Col 2 Row 3	Col 3 Row 3

Table 3.1: *Caption to appear below the table*

3.1 Making References to Figures or Tables

In this paragraph, we want to refer to Fig. 3.1 mentioned at the beginning of this chapter. We also refer to the Table 3.1.

3.2 Making a Reference to a Chapter Subsection

In this section, we refer back to text mentioned in Section 3.1 on page 6.

3.3 Making a Citation

Here's an example of a citation to a single work. ? It's also possible to make multiple citations. ? ?

Chapter 4

This is Chapter 2

In this chapter, I want to refer to Chapter 3, so I'm going to use the slash ref command along with the "makereference" label which I assigned back at the beginning of Chapter 1.

4.1 Page Number References

I should also be able to refer to a specific page number, such as page 5. Of course, I'll need to have a slash label command and a unique name in each section that I want to be able to refer to later in the text.

4.2 Referring to Sections Within Chapter 1

Now, I'm going to refer to different sections within Chapter 1. I gave an example of a figure in section 3.1 and an example of a table in section 3.2. In section 3.3, we looked at examples of bibliographic citations.

Chapter 5

This is Chapter 3

Here are more examples of referring to previous sections. In Chapter 3 there were several sections, including section 3.1, section 3.2, and section 3.3.

Likewise, in Chapter 4, there are sections 4.1 and 4.2.

Chapter 6

Pixel Detector and PIRE Project

Pixel detector is the inner most tracker device.

Appendix A

Title for This Appendix

Appendix B

Title for This Appendix