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## Analysis Environments for CMS

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The CMS offline software suite uses a layered approach to provide several different environments suitable for a wide range of analysis styles.

At the heart of all the environments is the ROOT-based event data model file format. The simplest environment uses “bare” ROOT to read files directly, without the use of any CMS-specific supporting libraries. This is useful for performing simple checks on a file or plotting simple distributions (such as the momentum distribution of tracks).

The second environment supports use of the CMS framework’s smart pointers that read data on demand, as well

as automatic loading of the libraries holding the object interfaces. This environment fully supports interactive ROOT sessions in either CINT or PyROOT. The third environment combines ROOT’s TSelector with the data access

API of the full CMS framework, facilitating sharing of code between the ROOT environment and the full framework.

The final environment is the full CMS framework that is used for all data production activities as well as full access

to all data available on the Grid. By providing a layered approach to analysis environments, physicists can choose

the environment that most closely matches their individual work style.

### **Submitted on behalf of Collaboration (ex, BaBar, ATLAS)**

CMS

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