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Validation of software releases for CMS

The CMS software stack currently consists of more than 2 million lines of code developed by over 250 authors with a new version being released every week. CMS has setup a central release validation process for quality assurance which enables the developers to compare the performance to previous releases and references.

This process provides the developers with reconstructed datasets of real data and MC samples. The samples span the whole range of detector effects and important physics signatures to benchmark the performance of the software. They are used to investigate interdependency effects of software packages and to find and fix bugs.

This talk will describe the composition of the Release Validation sample sets and list the development groups who requested and use these samples. It especially points out the difficulties to compose coherent sample sets from the various requests for release validation samples. All samples have to fit within the available resource constraints. This is achieved by exploiting synergies between the different requester use cases and sample requests. Common to all use cases are the event processing workflows used to produce the samples. They are modified compared to the production workflows to be better suited for validation and described in more detail.

Overall, the talk will emphasize the importance of a central release validation process for projects with a large code basis and significant number of developers. It will summarize the extent and impact of the 2008 release validation sample production and can function as an example for future projects.

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