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## ATLAS analysis workflows using the EventIndex and the Event Picking Server for massive event picking and enhanced processing

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The ATLAS detector produces a wealth of information for each recorded event. Standard calibration and reconstruction procedures reduce this information to physics objects that can be used as input to most analyses; nevertheless, there are very specific analyses that need full information from some of the ATLAS subdetectors, or enhanced calibration and/or reconstruction algorithms. For these use cases, a novel workflow has been developed that involves the selection of events satisfying some basic criteria, their extraction in RAW data format using the EventIndex data catalogue and the Event Picking Server, and their specialised processing. This workflow allows us in addition to commission and use new calibration and reconstruction techniques before launching the next full reprocessing (important given the longer and longer expected time between full reprocessing campaigns), to use algorithms and tools that are too CPU or disk intensive if run over all recorded events, and in the future to apply AI/ML methods that start from low-level information and could profit from rapid development/use cycles. This presentation describes the tools involved, the procedures followed and the current operational performance.

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