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Access to Non-Event Data for CMS

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In order to properly understand the data taken for an HEP Event, information external to the Event must be available. Such information includes geometry descriptions, calibrations values, magnetic field readings plus many more. CMS has chosen a unified approach to access to such information via a data model based on the concept of an 'Interval of Validity', IOV. This data model is organized into Records which hold data that have the same IOV and an EventSetup which holds all Records whose IOV overlaps with the Event that is being studied. The model also allows dependencies between Records and guarantees that child Records have IOVs which are intersections of the parent Records' IOVs. The implementation of this model allows the data from a Record to either be created from a persistent store (such as a database) or from an algorithm, where the choice is made by the physicist at job configuration time. The client code that uses the data from a Record is completely uneffected (relinking is not even necessary) by the mechanism used to create the data.

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