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Developing a production database for the High Granularity Timing Detector for ATLAS Phase-II upgrade

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The increase of the particle flux (pile-up) with luminosities of L \boxtimes 7.5 × 10³4cm⁻-2s⁻-1 is one of the main experimental challenges for the HL-LHC physics program. A powerful new way to mitigate the effects of pileup is to use high-precision timing information to distinguish between collisions occurring close in space but well-separated in time. A High-Granularity Timing Detector, based on low gain avalanche detector technology, is therefore proposed in front of the LAr end-cap calorimeters for pile-up mitigation and for luminosity measurement. It will cover the pseudo-rapidity range from 2.4 to 4.0. Two silicon sensors double-sided layers will provide precision timing information for MIPs with a resolution better than 30 ps per track in order to assign each particle to the correct vertex. About an order of ten thousand silicon sensor modules will be produced. The module production to be carried out at several sites, will involve the assembly of many components that are produced by various vendors. The history of the production of these components, their quality control checks and tests are to be tracked and recorded. This poster presents the work that concerns the development of a production database that store these information. The development of applications that are used for uploading and retrieving of data from the database, and a user interface for interacting with the database are presented too.

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