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ASIC development for HEP - past and future

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Application Specific Integrated Circuits are vital for the LHC experiments and have involved some of the biggest technology innovations applied in the LHC detectors. Using the history of some of the principal ASICs used by the CMS experiment at the LHC as a reference point, ASIC developments for the first LHC generation will be discussed, commenting on the challenges and risks and how they were overcome. Currently many ASICs have been and are being developed for experiment upgrades for the HL-LHC. Quite a number of them are still unfinished and they are generally considerably more ambitious than in the first LHC generation. Hence big challenges still remain. Some of them will be discussed, hoping to identify guidelines for success in even more advanced projects in future.

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