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The ATLAS Data Carousel Project Status

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The High Luminosity upgrade to the LHC, which aims for a ten-fold increase in the luminosity of proton-proton collisions at an energy of 14 TeV, is expected to start operation in 2028/29, and will deliver an unprecedented volume of scientific data at the multi-exabyte scale. This amount of data has to be stored and the corresponding storage system must ensure fast and reliable data delivery for processing by scientific groups distributed all over the world. The present LHC computing and data management model will not be able to provide the required infrastructure growth even taking into account the expected hardware technology evolution. To address this challenge, the Data Carousel R&D project was launched by the ATLAS experiment in the fall of 2018. State-of-the-art data and workflow management technologies are under active development, and their current status is presented here.

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