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The Upgrade of the ALICE Inner Tracking System: ITS3

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The ALICE experiment at the LHC is continuously upgrading its detector systems to address the evolving challenges of future heavy-ion physics. This presentation introduces the upgrade of the ALICE Inner Tracking System to ITS3, which is planned for installation during Long Shutdown 3 and will be operational in LHC Run 4. Building on the state-of-the-art ITS2, the ITS3 project aims to significantly reduce the material budget, improve pointing resolution, and enhance tracking performance close to the interaction point. Key innovations include the use of bent, wafer-scale monolithic pixel sensors fabricated in a 65 nm CMOS process, enabling a more uniform material distribution and a closer placement to the beam pipe. An overview of the project timeline and expected performance improvements will be presented.

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