# Digital Twin Platform for BDS-3 Satellite Navigation Using Digital Twin Intelligent Visualization Technology

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**Abstract :** The research of Beidou-3 satellite navigation is on the rise, but in actual work, it is inevitable that satellite data is insecure, research and development is inefficient, and there is no ability to deal with failures in advance. Digital twin technology has obvious advantages in the simulation of life cycle models of aerospace satellite navigation products. In order to meet the increasing demand, this paper builds a Beidou-3 satellite navigation digital twin platform (BDSDTP). The basic establishment of BDSDTP was completed by establishing a digital twin double, Beidou-3 comprehensive digital twin design, predictive maintenance (PdM) mathematical model, and visual interaction design. Finally, this paper provides a time application case of the platform, which provides a reference for the application of BDSDTP in various fields of navigation and provides obvious help for extending the full cycle life of Beidou-3 satellite navigation.

**Keywords :** BDS-3, digital twin, visualization, PdM

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