

TCE launches AI-powered cognitive digital twin platform

By Staff Report | February 20, 2026 5:31 pm [SHARE](#) [f](#) [X](#) [in](#) [✉](#) [🗨](#)



Tata Consulting Engineers (TCE) is developing a new Cognitive Digital Twin and Industrial AI platform based on NVIDIA technology, with the goal of integrating AI into industrial, energy, and infrastructure projects to improve efficiency, safety, and lifecycle performance.

Tata Consulting Engineers (TCE), a Tata Group subsidiary and India's largest private sector pure play engineering and consulting firm, today launched its Cognitive Digital Twin and Industrial AI platform. The platform, which is based on NVIDIA Accelerated Computing and the NVIDIA Omniverse libraries, is intended to embed Industrial AI and engineering-grade Cognitive Digital Twins throughout manufacturing, energy, and infrastructure, allowing for data-driven decision-making throughout the entire lifecycle of industrial assets.

The platform's foundation is TCE's Cognitive Twin framework, which is based on NVIDIA libraries and open models and allows for high-fidelity, real-time, AI-driven digital twins that mirror, simulate, and optimise physical systems. These digital twins serve as living representations of complex industrial environments, combining engineering data and operational knowledge to improve precision, reliability, and performance.

By integrating open NVIDIA Cosmos and NVIDIA Nemotron models, NVIDIA Omniverse libraries, NVIDIA NIM microservices, and NVIDIA AI Enterprise, the platform enhances TCE's standing as an engineering-led execution partner for Industrial AI. It also combines extensive experience in engineering design, project delivery, and asset lifecycle management. Pilot implementations are underway with National High Speed Rail Corporation Limited, the implementing agency for India's high-speed rail programme, Torrent Power, an integrated power utility company, and Power Grid Corporation of India Limited, India's central transmission utility, demonstrating a shift from static digital models to cognitive digital twins that actively support operational decision making and long-term engineering outcomes.

Cognitive Digital Twins are included at the concept and FEED stages to address operational requirements such as safety, dependability, maintainability, and energy efficiency early in the design process. This allows for more informed capital investment decisions while also improving long-term operational performance once assets are operational.

The platform allows industry to move beyond isolated AI studies and directly integrate AI into factories, power systems, and key infrastructure. The emphasis is on outcomes that matter on the ground, such as safety, quality, dependability, precision, sustainability, and energy efficiency, with Cognitive Digital Twins supporting both engineering decisions and operational performance.

TCE, an engineering design and consultancy firm, integrates Cognitive Digital Twins and Industrial AI into assets from the start rather than applying AI after systems are constructed. This lifecycle-first approach guarantees that Industrial AI becomes integrated into the way assets are designed, delivered, and operated.

The platform covers high-impact Industrial AI use cases such as safety monitoring, quality inspection, dependability and predictive maintenance, energy optimisation, and digital twin-based operations. It aligns with global priorities such as manufacturing competitiveness, infrastructure modernisation, energy transition, and operational resilience, as well as NVIDIA's vision for AI factories, physical AI, and real-world industrial digital twins.

Commenting on the launch, Amit Sharma, Managing Director & Chief Executive Officer, of TCE said, "Industrial AI must be engineered into assets, not added later. As an engineering organisation, we have the unique ability to embed Cognitive Digital Twins at the design stage and carry them through construction, commissioning and operations. Built on NVIDIA technology, this platform brings Industrial AI into the heart of factories, power systems and infrastructure, delivering outcomes that matter in the real world."

"The industrial landscape is undergoing a fundamental transformation as AI moves decisively from the digital realm into the physical world. Leveraging NVIDIA accelerated AI infrastructure, NVIDIA Omniverse libraries, and open NVIDIA Cosmos and NVIDIA Nemotron models, TCE is a leader in advancing the safety, efficiency, and sustainability of critical industrial infrastructure," said Vishal Dhupar, Managing Director, Asia South, NVIDIA. The launch marks an important step in the evolution of Industrial AI adoption. By embedding Cognitive Digital Twins and AI across the full lifecycle of industrial assets, Tata Consulting Engineers is laying the foundation for safer, more reliable, more efficient and more sustainable industrial systems.