Akila and UM6P Build First Campus-Scale Digital Twin Using NVIDIA Omniverse and NVIDIA Metropolis

The 50-building smart campus integrates VLMs, LLM interfaces and mobility data to pioneer a new model for intelligent built environments.

Ben Guerir, Morocco — November 5, 2025 — Akila has launched a campus-scale digital twin for Mohammed VI Polytechnic University (UM6P), establishing an AI infrastructure that spans 50 buildings across a 55-hectare site, home to more than 7,000 students. Built leveraging NVIDIA Blueprint for smart city AI, a reference architecture to build, train, and deploy city-scale AI. The project maps to the blueprint workflow showcasing a new benchmark for how simulation, real-time intelligence and semantic data can be fused at scale to enable smarter, more responsive environments.

This is the first time Akila's full platform has been deployed at campus scale, transforming UM6P into a **living laboratory** for future smart-city systems. A deep technical integration was needed to make the solution possible including NVIDIA Omniverse libraries for synthetic data generation, vision AI ingestion from real-world sensors with NVIDIA Metropolis, the NVIDIA AI Blueprint for Video Search and Summarization (VSS) and NVIDIA Cosmos Reason to deploy video analytics AI agents for ongoing alerts and efficient operations.

The digital twin integrates diverse data sources — from building systems to utilities and mobility flows — within a structured, continuously updated Omniverse environment. It also introduces new layers of **mobility and vehicle data**, intelligently linked to the 3D model and **natural language interfaces**, giving campus operators unprecedented operational insight.

A distinctive capability of the platform is its use of a custom **video language models (VLMs)** trained with NVIDIA Cosmos Reason, enabling a contextually aware AI agent to deliver real-time video intelligence across the entire campus. Combined with Akila's semantic graph, these models can analyze crowd movement, traffic flows and incident patterns, then feed the results back into simulations to support predictive and operational decision-making.

Stakeholders can also query the twin through **LLM-powered interfaces**, asking complex questions in natural language and receiving contextualised answers and automated reports. Whether it's occupancy trends, mobility anomalies or energy deviations, campus managers can get precise, actionable intelligence on demand.

"What we're building at UM6P is the AI infrastructure of the future — one that connects simulation, real-time intelligence and semantic data to create something far more powerful than the sum of its parts. NVIDIA Blueprint for smart city AI and the incorporated technologies have accelerated our ability to integrate these layers at campus scale, turning the digital twin into a living, intelligent system."

Philippe Obry
Vice President, Akila

"With UM6P, we're creating a uniquely data-rich and queryable digital environment. Any stakeholder can retrieve detailed, AI-generated insights about their area of focus, or generate automated reporting on demand. It's a degree of control made possible by Akila's unified AI infrastructure — and a perfect showcase of what a smart campus can be."

Pierre-Manuel Patry
Head of EMEA, Akila

By linking simulation, video intelligence, semantic structuring and natural language interfaces, Akila and UM6P are demonstrating how **NVIDIA technologies can be operationalized to build next-generation AI infrastructure** for the built environment — scalable from a single campus to entire smart cities.

Akila will be presenting this deployment live at the **Smart City Expo World Congress 2025 in Barcelona** from November 4-6, 2025. Akila can be found at the Mindware booth, and encourages all visitors to join us for a preview of our work in campus-scale digital twin.