NIT-K launches NOMAD, an AI platform, on its beachfront campus in Surathkal

The Hindu Bureau
MANGALURU

The National Institute of Technology – Karnataka (NIT-K), Surathkal, has launched Node for Open-source Mobile AI Deployment (NOMAD), a fully operational AI research platform designed for deployment in field conditions.

NOMAD is built to function in remote, resource-constrained, and disaster-affected environments where conventional cloud infrastructure is unreliable or unavailable.

As AI systems increasingly depend on centralised data centres, real-world environments – disaster zones, coastal regions, and field research sites – face persistent challenges in connectivity, power, and infrastructure. NOMAD addresses this gap by enabling reliable, on-site AI computing at the edge, supporting real-time data processing and decision-making in conditions where infrastructure cannot be guaranteed, a release from NIT-K said on Saturday.

NOMAD is housed within a repurposed shipping container at NIT-K's beachfront SEARCH research station in Surathkal.
SPECIAL ARRANGEMENT

Housed within a repurposed shipping container at NIT-K's beachfront SEARCH research station in Mangaluru, NOMAD operates as a self-sufficient system. Power is ensured through four independent sources – grid supply, rooftop solar, a towable 15kW solar-battery unit, and a diesel generator with UPS backup. Connectivity is secured through triple redundancy, integrating institutional fibre, broadband, and a wireless bridge, the release said.

The compute stack combines open-source clusters and edge devices with high-capacity storage, while institutional High Performance Computing (HPĆ) resources are being integrated into the facility. The workspace supports both advanced research and teaching, with immersive learning capabilities.

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NIT-K launches NOMAD on its campus

NOMAD is co-located within the NIT-K SEARCH complex along the Arabian Sea coast, enabling continuous, on-site field work with living quarters. Conceived by U. Pruthviraj, Associate Professor in the Department of Water Resources and Ocean Engineering, NIT-K, NOMAD's current focus includes edge AI architecture, AI-driven water systems, and coastal disaster intelligence – particularly enabling local data processing during events such as landslides and flooding, where timely insights are critical, but connectivity is unreliable. The initiative is supported and actively mentored by NIT-K alumnus Padmanand Warrier (Electrical and Electronics Engineering, 1981 batch), a technology leader with a distinguished track record in large-scale systems and innovation.

The Hindu, Date: 12/04/2026, p. 01