tmforum

open innovation catalysts

AI-powered network optimization with large models and smart hardware

AI-driven intelligence: Transforming wireless optimization with perception, precision, and performance.

The solution:

This Catalyst demonstrates how CSPs can transform APIs into scalable, revenue-generating assets through dynamic pricing and intelligent discovery. By combining GenAI-driven monetization with a unified portal for reuse, the platform boosts developer productivity, accelerates time to market, and unlocks new enterprise value.

Addressing the challenge:

The team has pioneered an intelligent transformation path by proposing an AI large model and intelligent hardware integrated network digital optimization strategy, which includes the following:

- **Large Language Models (LLMs) + Intent Analysis:** Understand user complaints with high accuracy.
- **Intelligent Hardware:** Real-time field data enhances monitoring and precision.
- **Network Digital Twins + 3D Simulation:** Visualize complex problems and support better decision-making.
- **Closed-Loop Intelligence:** Automates issue detection, resolution, and evaluation.

This solution accelerates industrial digital-intelligent transformation, validating the practical implementation of "LLM-powered intelligent diagnosis + specialized models for precise analysis" in telecom O&M. It establishes critical technical foundations for autonomous networks in the 5G/6G era.

By integrating intelligent hardware with digital twins, the solution advances network optimization toward computable and simulatable digital paradigms. Its closed-loop optimization mechanism sets a new industry benchmark for self-optimizing networks.

Zhihao Li
Wireless Network Optimization Engineer
中国移动 China Mobile

Business impact:

This solution achieved a **29% year-on-year reduction** in customer complaints.

Champions:

CAICT 中国信通院

中国移动 China Mobile

Participants:

HUAWEI

inspur

ZTE

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