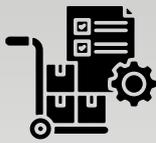


REVOLUTIONIZING DATA CENTER OPERATIONS WITH MOBILE ROBOTS



Human-Centric | Safe | Intelligent | Efficient

Data Center Physical Operations



Move

- Rack movement
- IT assets tracking
- Server & parts replacement



Sense

- Spares and delivery
- Environmental monitoring
- Cable removal & insertion



Touch

- Inventory management
- Facility inspection
- IT assets circularity

Pain Point

Untraceability of Manual Inspection Results

Manual inspections are labor-intensive and require highly skilled O&M personnel. Signature records lack complete traceability, making it difficult to ensure accountability and accuracy.

Non-Uniform Fault Judgment Base

Standardized implementation of O&M management mechanisms & processes is often inconsistent. This makes it challenging to quickly locate & resolve faults, leading to time-consuming & labor-intensive troubleshooting.

Difficulty in Monitoring System Maintenance

Fixed-point monitoring systems have different interface standards & lack a remote command platform, making it impossible to confirm on-site situations promptly

With 10x capacities, traditional operations face challenges in **Complexity, Safety, Efficiency, & Cost**. We believe **ROBOTICS & PHYSICAL AUTOMATION** will be the solution to address these challenges.

Key Solutions

Comprehensive & Accurate Operations

The mobile robot is equipped with a vertical lifting & lowering module, allowing it to switch inspection targets at different heights with in the same task point. This capability, combined with real-time calculations & feedback, ensures comprehensive & accurate inspections, achieving 99% identification accuracy.



Solutions Through Robotic Automation



"Hot-Swap" Robot: Custom-designed robots can now navigate to a specific rack, identify the failed drive via a light signal, pull it, and insert a new one without taking the server offline.



Chain of Custody: Automation ensures that every failed drive is tracked, scanned, and placed in a secure bin for shredding. This removes the risk of a human "misplacing" a drive containing sensitive data.



Efficiency at Scale: A robot can work 24/7 in total darkness and at higher temperatures than a human could tolerate, allowing the data center to run "hotter" (saving on AC costs).

Robotic Hard Disk Replacement



*image used are for illustration purposes only

Features of The Mobile Robot



Small-Size Chassis Design

Adapts to narrow environments and realizes self-leading navigation



24/7 Real-Time Monitoring

Operates continuously without interruption, monitoring the on-site environment and issuing fault alarms for abnormal situations



High-Tech Integration

Utilizes real-time monitoring, multi-sensor fusion, autonomous navigation, intelligent identification, & wireless communication



Data Collection & Analysis

Collects and analyzes images, sound, temperature, and other data to complete complex inspection tasks



Labor Intensity Reduction

Improves the intelligent level of operation & inspection management, reducing the labor intensity of O&M personnel



Autonomous Patrolling & Browsing

The robot autonomously patrols and monitors the data center environment



Remote Control & Communication

Offers remote control capabilities & seamless communication



On-Site Assistance

Provides real-time assistance to technicians during operations



Staff Protection

Ensures the safety of staff working alone in the data center.



RFID Inventory

Conducts RFID inventory checks to track equipment and assets.



Environmental Monitoring

Detects and reports on temperature and moisture levels



Thermal Imaging

Captures thermal images of equipment to identify potential issues



Dedicated Interface

Features a user-friendly interface for easy operation



Data Recording

Remote inspection data on the robot & on a remote server for future reference and analysis

Impact of the Mobile Robot



Operational Efficiency

The mobile robot significantly increases operational efficiency by automating routine tasks enabling faster and more accurate data collection and analysis. This reduces the time needed for inspections and minimizes human error, leading to more reliable data center management

By replacing manual inspections with automated processes, the inspection robot helps reduce labor costs and decreases the likelihood of costly downtime caused by undetected issues. The robot's 24/7 operation ensures continuous monitoring, preventing potential failures before they escalate.



Cost Savings



Improved Safety

The robot enhances safety for O&M personnel by taking over potentially hazardous inspection tasks, especially in narrow or hard-to-reach areas. It also provides real-time assistance and monitoring, ensuring a safer working environment.

With its advanced sensors and real-time data processing capabilities, the inspection robot ensures high accuracy in monitoring and fault detection. This leads to more reliable and actionable insights, improving decision-making and overall data center performance.



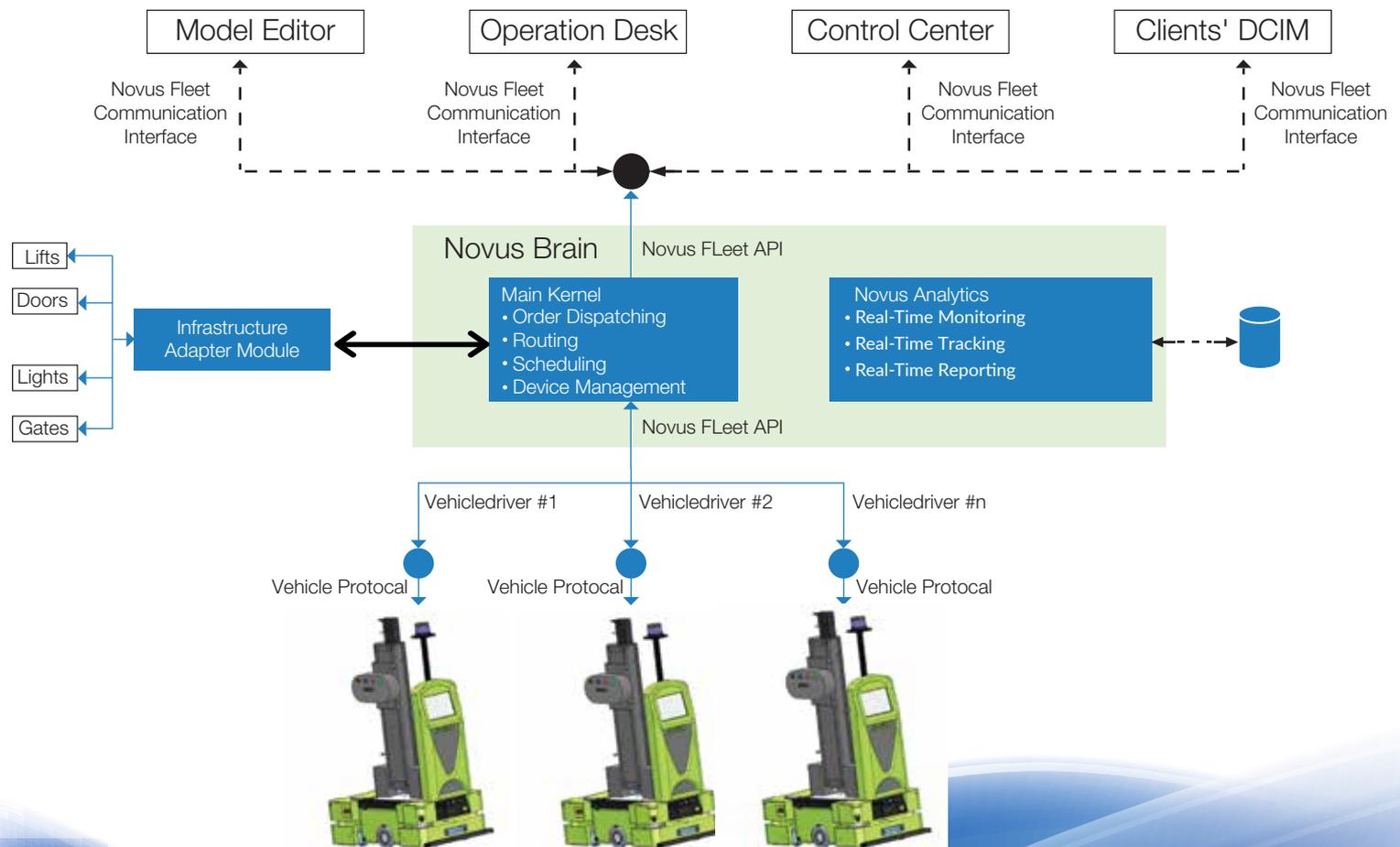
Enhanced Data Accuracy



Environmental Sustainability

The mobile robot's ability to optimize energy use & reduce waste contributes to more sustainable data center operations. By ensuring equipment operates efficiently & identifying potential issues early, the robot helps minimize the environmental impact of data center activities.

Solution's Architecture



Conclusion

Experience the Future of Data Center Operations

The mobile robot from Novus Hi-Tech offers unparalleled benefits, including increased accuracy, & reduced labor intensity, & enhanced operational efficiency. Transform your data center management with our innovative robotic solution





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