Chinese Technology Proven in Japanese Industrial Environments

Translated Industry Report

Introduction

This document is a translated and summarized version of a Japanese industry trade magazine report covering the practical deployment of remote-operation technology in heavy industrial environments. The original report focuses on how tele-operation systems developed by BuilderX have been introduced and used within real operational facilities in Japan through local industry partners.

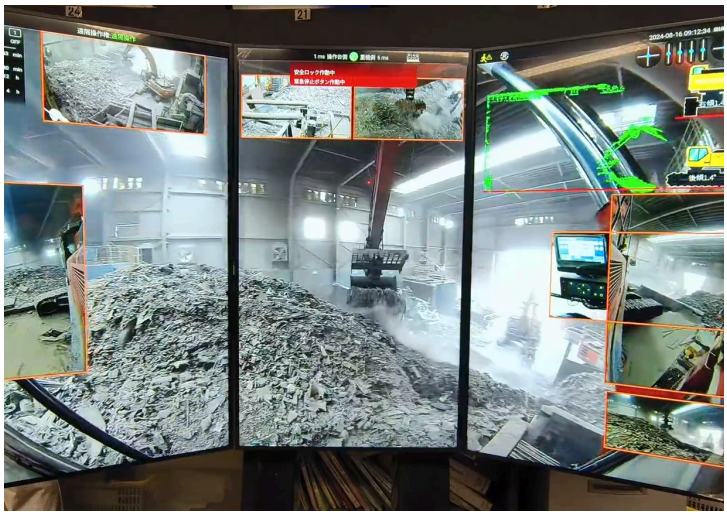
Technology Overview

The report describes a remote-operation system for hydraulic excavators that integrates cameras, sensors, control units, and electromagnetic valves directly into existing machinery. This integration allows real-time remote control of heavy equipment without the operator being physically located inside the machine cabin.

According to the article, the system supports multiple communication methods, including :

- **Optical fiber connections**
- **Satellite communication**
- **Marine communication lines**

The system can automatically select the most suitable communication method depending on site conditions, ensuring stable operation even in complex or remote environments.



Operational Capabilities Reported

The Japanese publication states that the system has demonstrated long-distance operational capability and is compatible with hydraulic excavators from multiple manufacturers. It highlights that the system can be retrofitted to existing machinery within a short installation window, reducing disruption to normal operations while enabling rapid deployment.

The report further explains that a single control station is capable of operating machines across multiple sites and that multiple operators can share operational access. This structure, according to the article, makes continuous and extended operation possible in industrial environments that require sustained productivity.

Work Environment and Safety Impact

The report emphasizes the improvements in working conditions made possible by remote operation. It states that physical strain on operators is significantly reduced and that overall operator safety is improved by allowing personnel to work from distant and controlled environments rather than inside hazardous machine cabins.

Additional functional features highlighted in the article include terrain cross-section visualization, terrain preview displays, slope detection systems designed to prevent machine rollover, and dust-removal visual support technologies that improve visibility in low-visibility environments.

Industry Perspective

Rather than presenting the technology as a competitive disruption, the Japanese report frames this case as an example of performance-driven adoption, where proven reliability and practical effectiveness form the basis of industrial decision-making. The article presents this as a model of cross-border technical collaboration, where operational standards and engineering solutions converge to achieve practical industrial outcomes.

Source Note

Source: Japanese construction and recycling industry trade magazine
Translated and prepared for professional reference purposes.