

## **8. Development of Integrated Shield Tunnel Information Management System - Enhancement of Quality of Shield Tunneling and Maintainability of Shield Tunnels -**

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An “integrated shield tunnel information management system” was developed and applied to shield tunneling. The system controls data in an integrated manner on the control of segments and other materials; construction control for excavation, measurement and other work; quality control and maintenance. The system is mainly composed of excavation and measurement control systems. Data on excavation and on the position of the shield machine is transferred to subsystems that were also developed. A ubiquitous construction management environment can be created using ICT (information and communication technology). The efficiency and speed of construction management for shield tunneling are increased, and the quality and maintainability of shield tunnels are enhanced.

**Key words :** ICT (information and communication technology), life cycle costs, maintenance, shield tunnels