

Signaling Equipment Replacement on Greater Jakarta Area

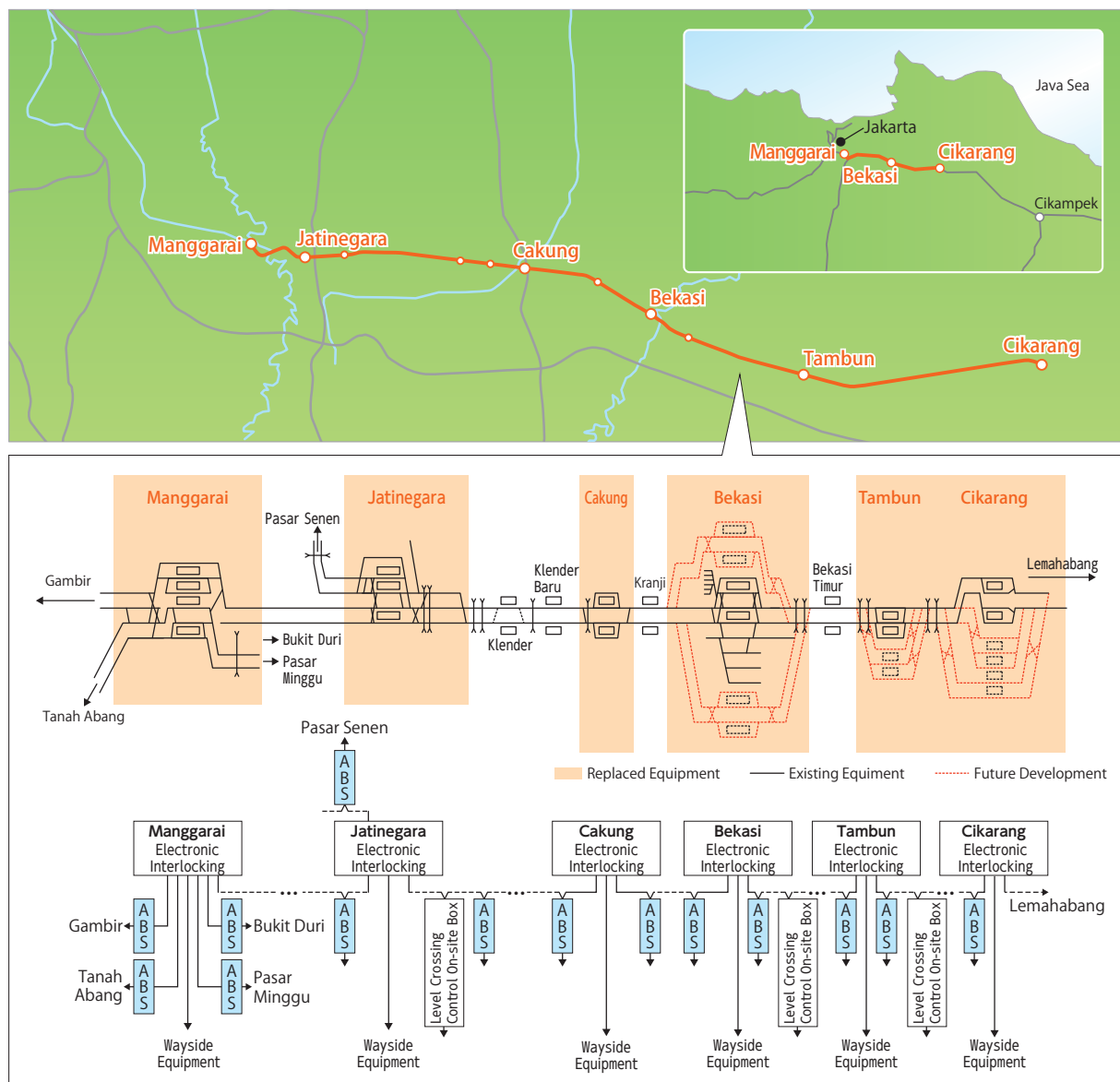
Enhancing Transportation Capacity in and around the capital of Indonesia

Topics

- Electronic Interlocking and Train Detection equipment replacement on a mixed of commuter and intercity line operated by PT-Kereta Api Indonesia (PT-KAI).
- Partnership and technology transfer with PT-Len Railway Systems (PT-LRS) as the local partner for future development stage.
- Track Length: 33 km with 6 interlocking stations.

Overview

As part of the construction to convert the partial parts of Bekasi Line on Greater Jakarta train system into a double-double-track line, in September 2017, the European-made existing electronic interlocking system was replaced with Kyosan's K5BMC-type electronic interlocking. The project spanned from Manggarai Station, one of the main transit hubs of the system, to Cikarang Station, the western terminus outside Jakarta. This replacement was resulted in major increase on the capacity of the line which not only served commuter services within Greater Jakarta, but also the intercity services connecting Jakarta to other major cities on Java Island. The supply and installation were carried out in collaboration with PT-LRS, including technology transfer and provision of the necessary software tools for future system development stages of the system.



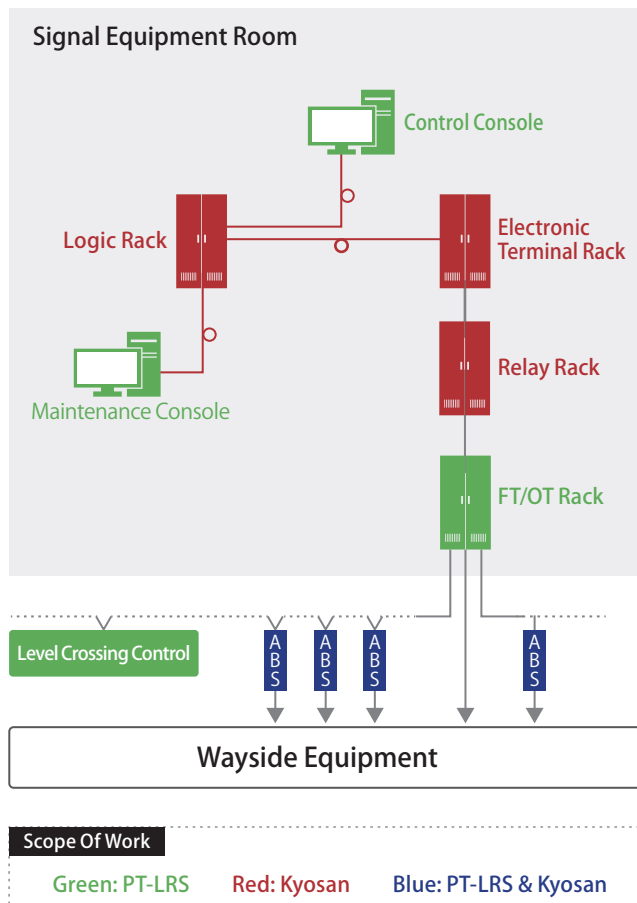
Features

1. **Proven High Availability:** Demonstrates reliable performance without major issues over several years of operation.
2. **Seamless System Integration:** Replacement train detection system designed for smooth interfacing with existing systems beyond the replacement area.
3. **Adaptive Logic Software:** Flexible software solution using Logic Data Complier (LDC) capable of accommodating local signaling rules in addition to future changes in track layout.
4. **Automatic Blocking System (ABS):** Installation of ABS on the tracks between interlocking station to increase the capacity while maintaining safety.
5. **Wayside Equipment Compatibility:** Ensures seamless integration with existing wayside equipment through relay-based interfacing.

Configuration

The configuration of the electronic interlocking at each station is as follows.

1. **Logic Rack and Electronic Terminal Rack**
K5B-type features a dual-system configuration and meets Safety Integrity Level 4 standards, ensuring high availability rate. It can accommodate a range of station sizes, from major hubs like Manggarai to smaller stations like Cakung.
2. **Relay Rack**
Provides flexibility for interfacing with existing wayside equipment, such as signal indicators and point machines.
3. **Maintenance Console**
Monitors the condition of each piece of equipment during operation and records any failure events for analysis, enabling faster recovery and maintaining a high availability rate.



Logic Rack



Electronic Terminal Rack