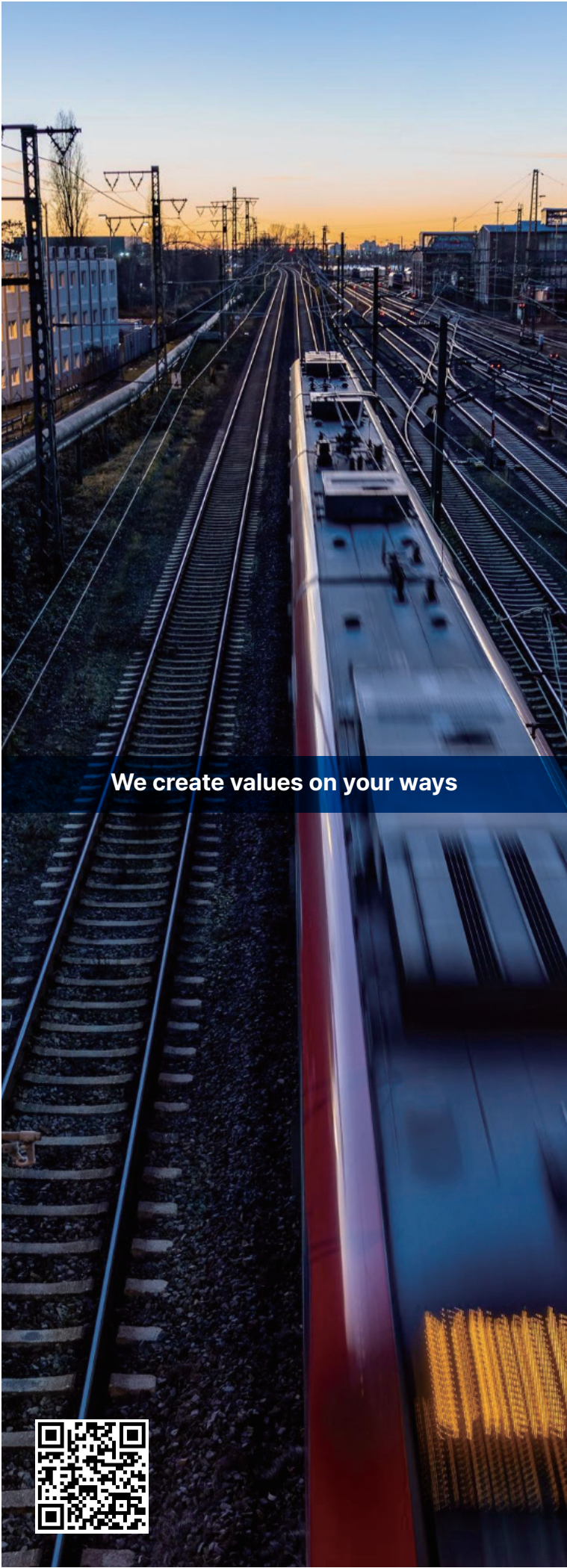

Smart Safe Speedy



We create values on your ways

STraffic
ST-KMX Solution (K-CBTC)
Railway Signaling System



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ABOUT US

Based on transportation IT technology, STraffic is advancing as a global challenger to being the best in Korea. And now, our technological advancement goes beyond Korea and is now heading towards the world.

General Information



Established in	January 2013
Representative Director	Chan Jong Moon
Consolidated companies	SSCC(Seoul Neo Smart Card Co., Ltd) STTC(ST Telecommunications Co., Ltd) STA(STRAFFIC AMERICA, LLC) STI(STRAFFIC INDIA PRIVATE LIMITED)
Capital	USD 10M(Based on 2023)
Sales Amount	USD 107M(Based on 2023)
Patents	Registered : 48, Pending : 3
KOSDAQ	Listed in 2017
Employees	275

Business Areas

Road Transport Solution

Autonomous driving future smart city

MaaS Solution

Mobility as a Service

Railway Signaling-Safety Solution

Lead global standards

Railway Communication Solution

LTE-R Advancement of Complex Terminals

Automatic Fare Collection

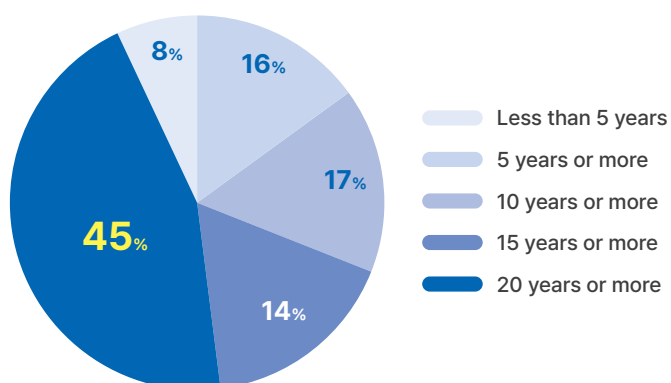
Pioneer global smart city transportation system

Airport Solution

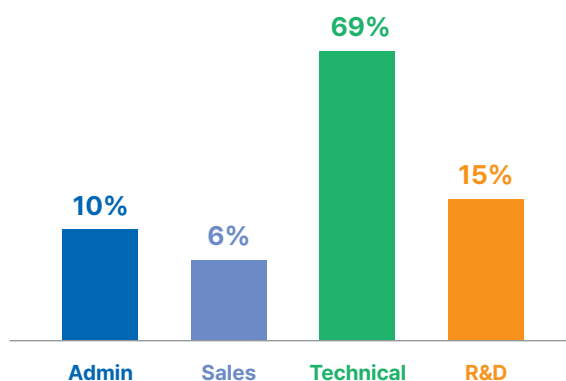
Frictionless- Secure border control

Human Resources

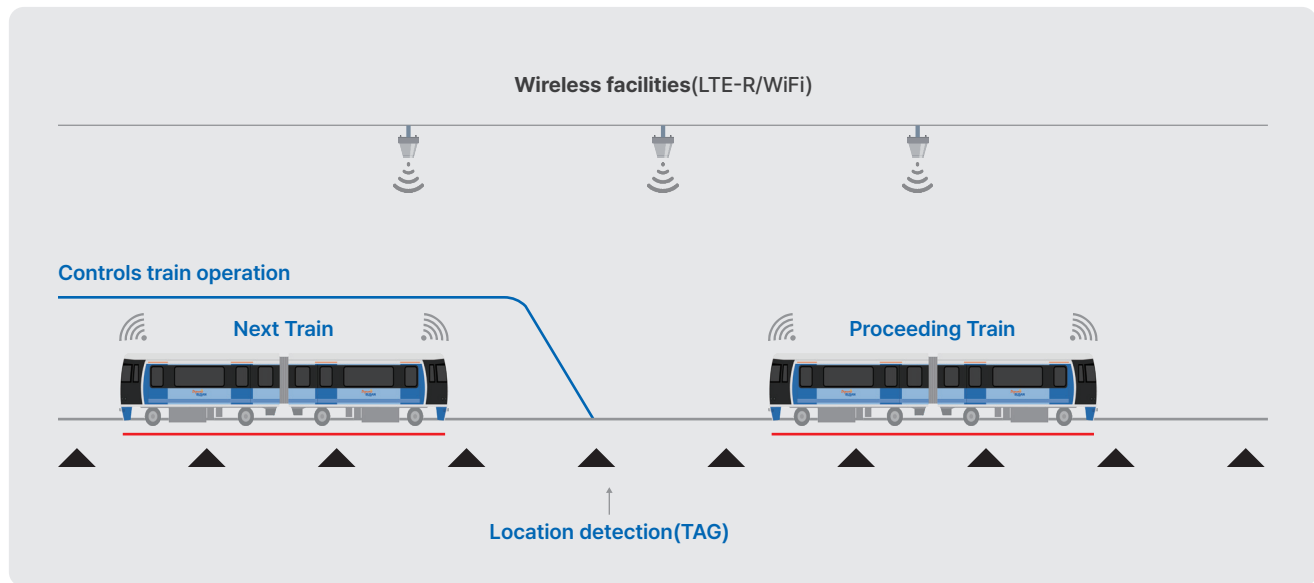
Work experience



Organization



- Tracking the train location using wireless communication and ensures safe operation
- Build a system necessary for safe operation using driverless automation and the moving block system (MBS)



Key points

Fully Automatic Train Operation (ATO)

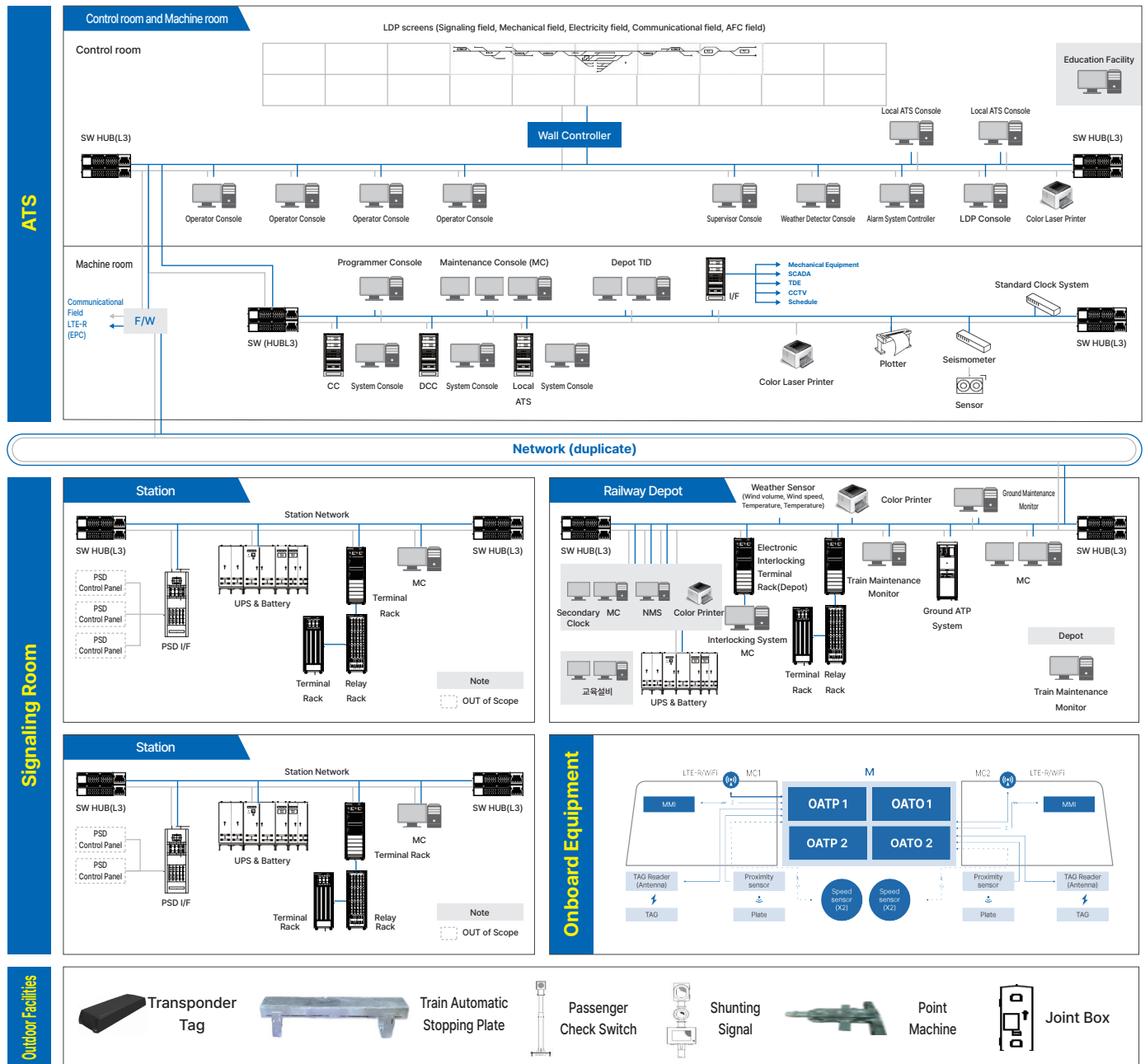
High-precision train position detection without using track circuits

Tracking the real-time location of trains

Highly reliable and continuous two-way wireless data communication between on-board and wayside

Benefit	Description
Function compatibility	· Compliance with the Korean Railway Standard 'Wireless Communication-Based Train Control System for Urban Railways' (KRS SG 0069 -15)
Safety Integrity Level (SIL4)	· GA SIL4 Certification for ST-KMX solution through TUV Rheinland, an International Independent Safety Assessment Organization (ISA) · Satisfying Safety and Reliability by applying the Fail-Safe design principle
High operational efficiency	· Increasing track capacity through moving blocks (high-density train operation) · Reduction of train operation time (scheduled time) based on speed profile · Energy saving through automatic operation and optimized train scheduling · Satisfying 99.9% driverless operation availability
Data analysis for Maintenance	· Supporting data analysis tools to improve maintainability based on experience and expertise for train signaling system
Cost reduction for maintenance	· Maintenance costs reduction by downsizing wayside facilities (track circuits, signals and so on)
Interoperability	· Verifying the interoperability through mixed operation between the existing system (ATC) and CBTC-based ST-KMX(solution result from National project sponsored by the MLIT and KRRI) · Wifi and LTE-R wireless communication expandability
Secure network-based	· Enhancement of remote monitoring based on security network (LTE-R): MMS, real-time monitoring console

ST-KMX includes control systems, Onboard & Wayside systems, outside facilities, and various power supplies and meets every requirement and performance for fully automatic train operation.



ST-KMX Main Features

Functions Modularization

- Functions separation in safe and unsafe
- Modularization Consist in function-by-function
- Components compatibility based on a module and part levels in H/W

Multiplex Configuration

- Use the same products for both the primary and secondary systems
- Increase availability by having a secondary system replace the primary system in case of a breakdown

Self-Diagnosis

- Communication and failure indication alarm status can be checked in case of module or sub-device failure
- Can test functions and built-in ports module-by-module

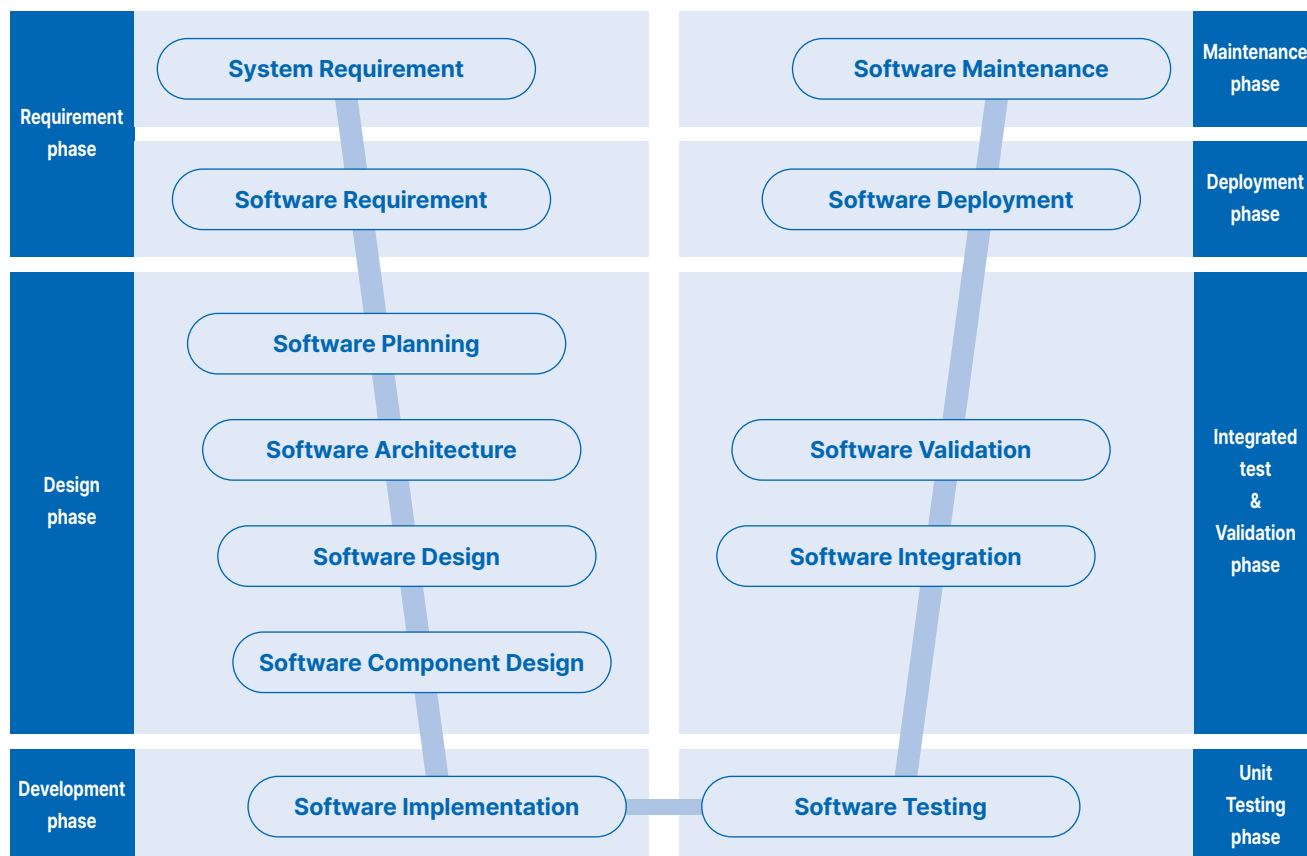
Storage & Processing Speed

- Designed to have ample storage capacity, including hard disks and memories
- Hardware and software configuration unaffected by minimum headway

In Compliance with Standard IEC 62279, and offering SIL4 certificated products

Applying safety software development methodology for railway control and system protection

- When developing **ST-KMX**, we apply development methodology in compliance with IEC 62279 standard
- **ST-KMX** is safely developed with V-Model Life Cycle, a method specialized for railway application program development



Onboard ATC(ATP/ATO)

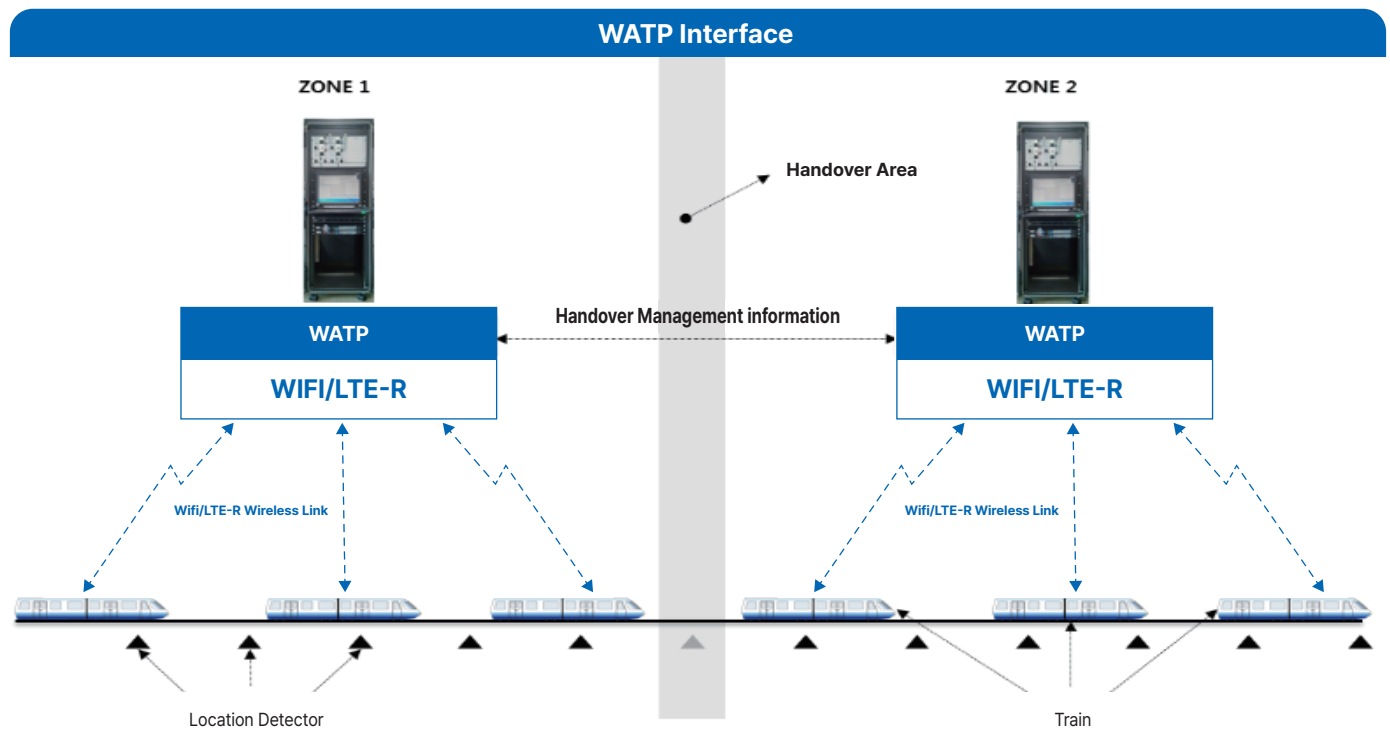


Wayside ATP



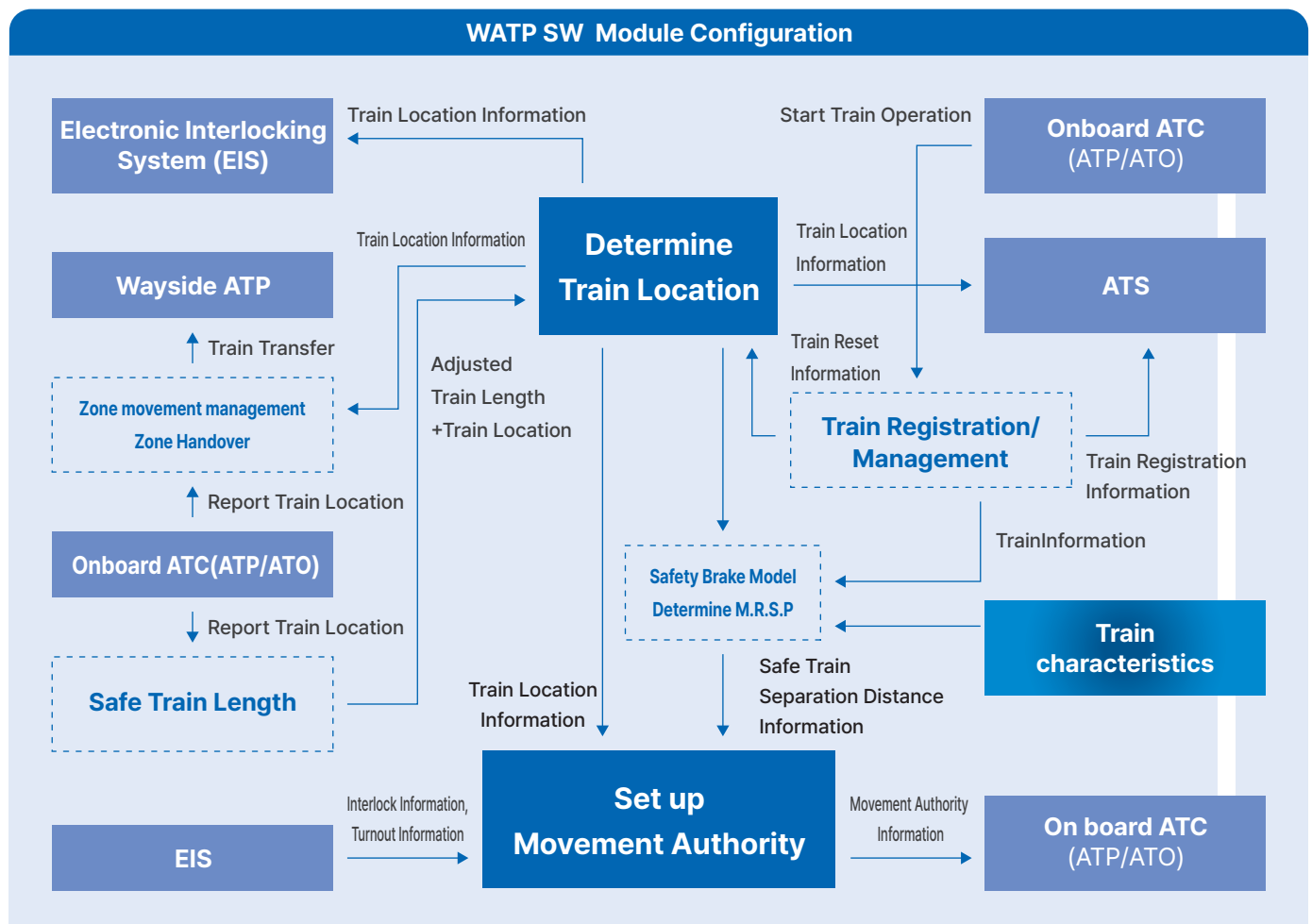
WATP Interface Configuration

In compliance with international standard IEC 62278, 62279, 62425, SIL4 certification acquired through design and verification
Interface configuration based on KRS SG 0069



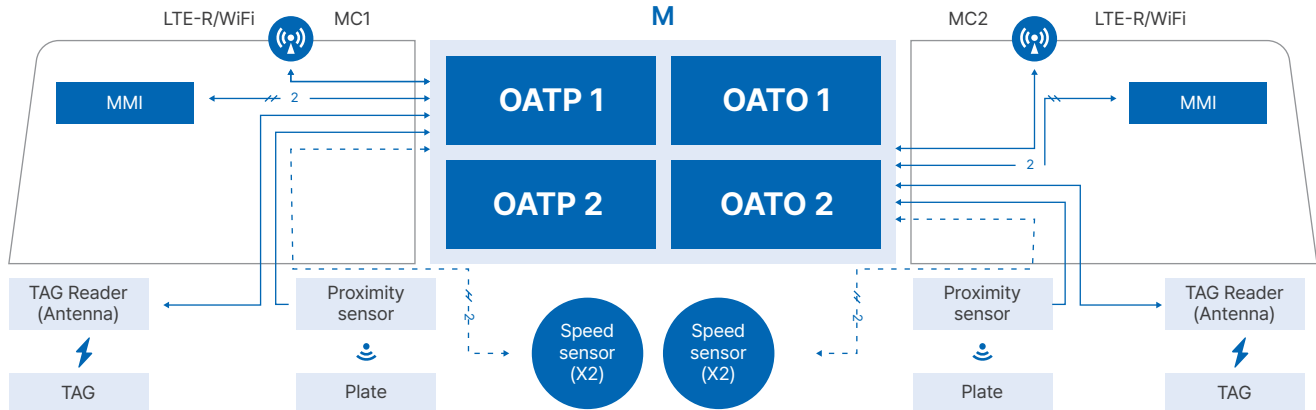
WATP SW Modularization

Determine train location in real-time Fail-Safe protection with movement authority calculation and train interval control



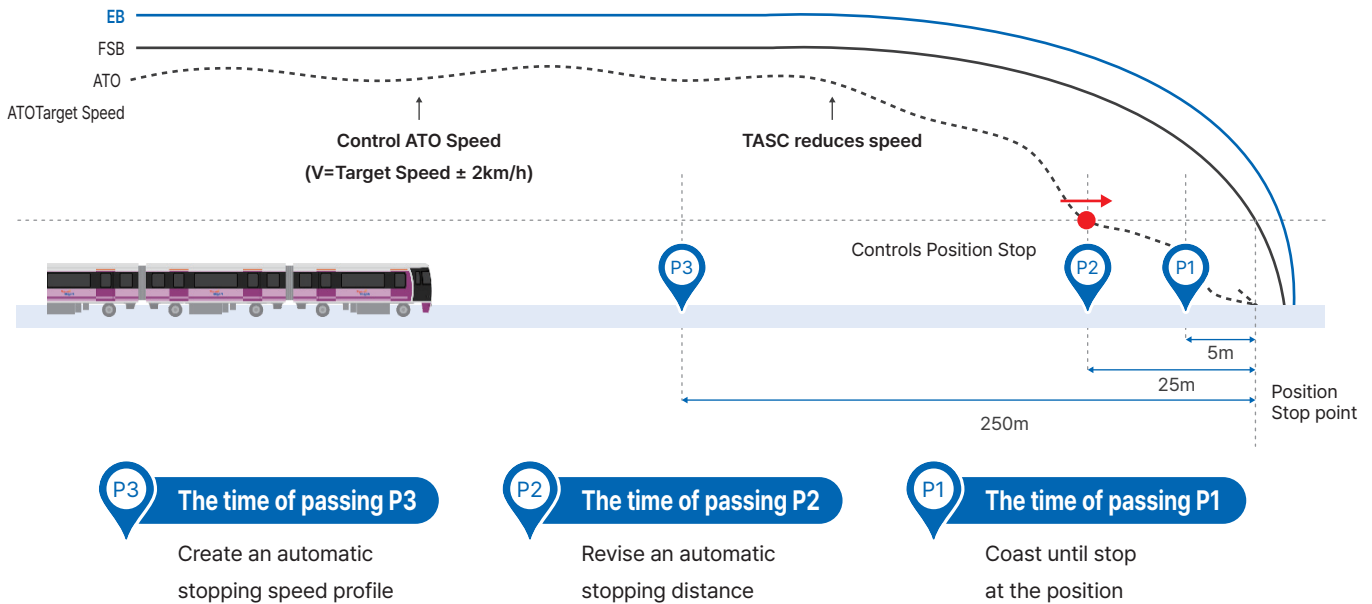
Onboard ATP/ATO System Interface

Redundant interface configuration to ensure accurately train location track and control in real time, availability, reliability, and safety



ATO Train Automatic Stopping Controller (TASC)

Control Moving Block System and Train Automatic Stopping by tracking the train's location in real-time to control ATO



P3 The time of passing P3
Create an automatic stopping speed profile

P2 The time of passing P2
Revise an automatic stopping distance

P1 The time of passing P1
Coast until stop at the position

Onboard ATP/ATO System Configuration

System redundancy or cab redundancy configuration to suit customer needs and vehicle characteristics

Compact size for easy installation and management



Size(WxHxD) : 470 x 630 x 398[mm]



Size(WxHxD) : 382 × 1,162 × 398[mm]



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