

# Korea's First Case of Unattended Train Operation (UTO) Transition on Incheon Line 2

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# 01. Project Overview

## General Information

Start of Operation	Operating Distance	Number of Stations	Headway	Daily Ridership
July 30, 2016	29.1km	<b>27 stations</b>	Peak - 3 min Off-Peak - 6 min	190,000/day (Max 230,000)

## Project Status

Background	Incheon Line 2 initially operated with onboard crews due to system instability. As the system was stabilized and improved, the need to introduce UTO emerged to ensure financial stability and enhance management efficiency.
Project Period	Apr 2020 - Jan 2024
Scope	The entire section from <b>Geomdan Oryu Station</b> to <b>Unyeon Station</b> (27 stations)

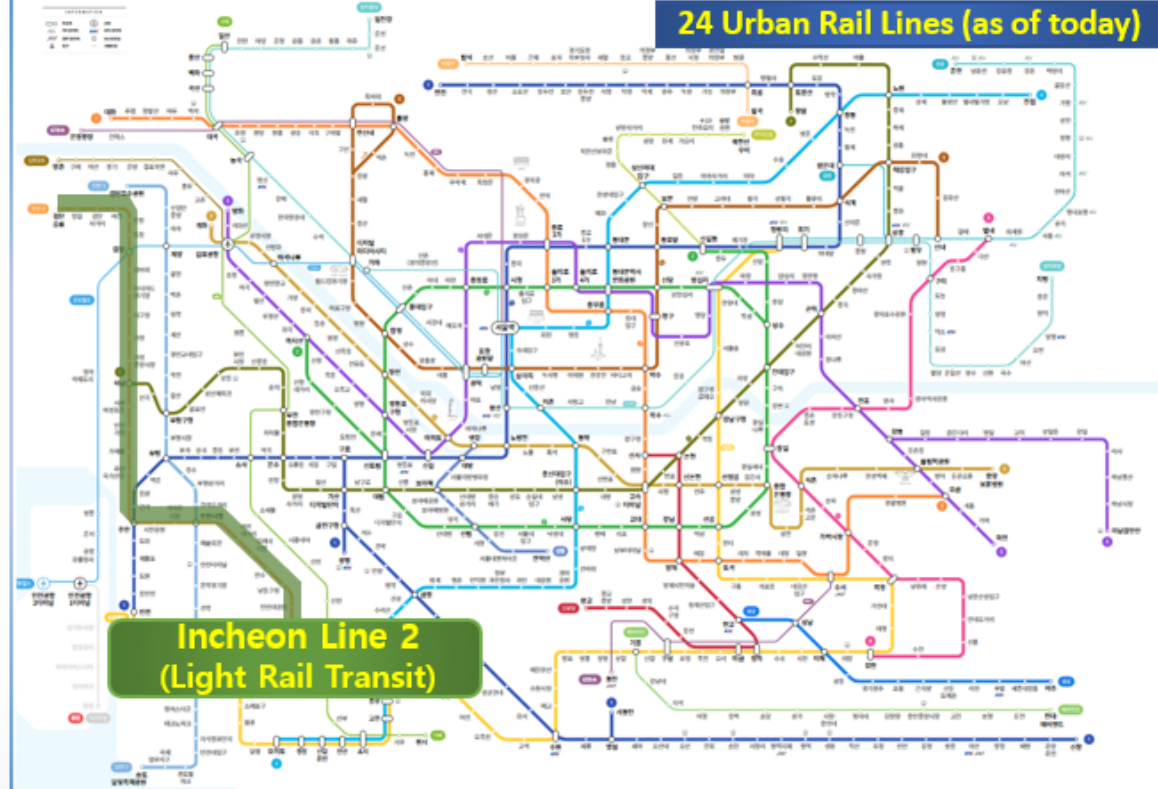
### Phase 1 UTO (18 Stations)



### Phase 2 UTO (27 Stations)



## Seoul Metropolitan Area Line Map



The “Urban Rail Network Construction Plan” for the Seoul Metropolitan Area and Local Governments, which is continuously promoted, includes numerous new light rail projects.



## 02. Project Implementation Process

### Preparation (2020-2022)

### Implementation (2023-2024)



Public Hearing



Media Conference



Labor Agreement



Advisory Committee



Government Approval





# 03. System Improvements for UTO

## Total Solution for Train Control Support



Prevention / Early Detection / Rapid Response

## Mechanical Smart Control System



Automated Control / Monitoring / Analysis

## Integrated Power Monitoring System



Centralization And Automation

## AI-driven Accident Monitoring System



Automatic Injury Detection Alarm

OCC

Successful UTO Transition and Operational Safety Achieved through  
Advanced Expertise and In-House Technology Development (32 Cases in Total)

On-site

Train Operation



Train Stop Position  
Monitoring System, etc.

Signaling



Command and Control  
Program, etc.

Communication



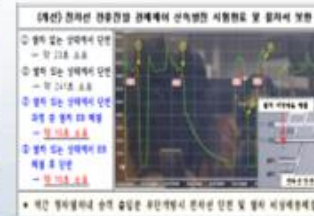
Fault Alarm  
Transmission System, etc.

Train



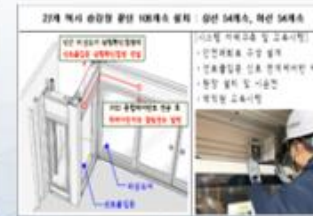
Brake Failure  
Monitoring System, etc.

Electrical



Electrical Shock  
Protection System, etc.

Mechanical



Track Access Door  
Monitoring System, etc.

Track



Track Emergency Evacuation  
Guidance System, etc.



## 04. Project Outcomes

**01**

Korea's First  
UTO Transition with  
Advanced Operation  
Technology

**02**

Annual Savings of  
**3.2 Million USD**  
in Outsourced Train Crew  
Service Costs

**03**

Improvement of  
Safety and Convenience  
Facilities  
Using Saved Funds

**04**

Building a  
Technology and Workforce  
System Capable of  
Continuous Development



**2024 Korea Local Government Management  
Grand Prize (Presidential Award)**

## 05. Future Plans

### 01. Developing



**Continuous System Improvement  
and Nurturing a Specialized Workforce  
to Lead Future  
UTO Development**

### 02. Standardizing



**Establishing Technical Standardization  
Across All Areas of UTO-Optimized  
Organization, Operation, Safety, and  
Maintenance Management**

### 03. Sharing



**Sharing Our Operation & Transition  
Know-how,  
and Collaborating with Urban Rail  
Research and Operating Institutions**

**We will remain committed to advancing urban rail systems**



# Thank You