

Automated Fare Collection System

The Automated Fare Collection System is an electronic payment technology that allows users to pay public transportation fares using a contact card.

The transportation card is convenient because it can be used on subways and buses nationwide. It is economical because it offers fare discounts when transferring between subways and buses, and it can also reduce traffic congestion and carbon emissions by increasing the use of public transportation.



▲ A citizen is paying the fare by tapping her transportation card on the terminal while boarding the subway.

Issues to Tackle

- ☑ Purchasing a ticket every time you use the subway or paying cash and receiving change when using the bus slow down the boarding process, so it needs to be improved.
- ☑ A fare payment method is needed that integrates various transportation modes for convenient use and provides benefits to citizens when using public transportation.

Expected Benefits

- ☑ Citizens can use public transportation with a single prepaid or postpaid transportation card, eliminating the burden of purchasing tickets or paying cash.
 - * After the integrated operation of the transportation card system, the transportation card payment rate for public transportation increased from 68% to 99%.
- ☑ The activation of public transportation through providing various transportation card benefits has led to reduced traffic congestion and a decrease in carbon emissions.

💡 Key Services

- Users can pay for bus, subway, and taxi fares and transfer with a single prepaid or postpaid transportation card (linked to a credit card).
- A smartphone app and website provide usage history and receipt printing services.
- By checking the location at the time of boarding and disembarking, distance-based transfer fares are applied.

⚙️ Use Cases

- Since its first introduction in 1996, Seoul has been implementing the system sequentially on buses, subways, and taxis nationwide and improving integrated functions such as compatibility between regions and transportation modes.
- Starting with buses in the Werrington area of New Zealand in 2008, T-money exported the railway automatic fare collection system (AFC) in 2022, laying the foundation for the introduction of a public transportation transfer system and various fare systems in New Zealand.
- South Korea's transportation card system has been exported to numerous international cities, including Kuala Lumpur in Malaysia, Bangkok in Thailand, Bogotá in Colombia, and Athens in Greece.

Key Components

Configuration



Technology

- 1. Transportation cards and devices with embedded IC chips**
 - The media used by users to pay public transportation fares
- 2. Fare payment terminal (common)**
 - When boarding a bus or subway, touch the transportation card to pay the fare for boarding/alighting and generate transfer information.
- 3. Bus driver display (bus)**
 - A driver terminal integrates functions such as payment confirmation for transportation cards, fare discounts, adding passengers, and providing station guidance.
- 4. Integrated bus terminal (bus)**
 - A terminal that transmits data such as transportation card usage history, payment information, bus location, and operational details to the control center (BMS, BIS linkage).
- 5. GPS-based system (bus)**
 - GPS device for tracking transit card usage location.
- 6. Exit or alighting terminal (common)**
 - Tap your transportation card at the bus stop or subway exit to pay the fare by linking it to the distance traveled.
- 7. Tagless system that does not require physical transportation card contact**
 - A contactless public transportation payment system that detects beacons using low-power wireless communication technology based on Bluetooth 4.0 and allows fare payment without a separate tag.

Technology Companies

ATEC MOBILITY
www.atecmobility.com

STRAFFIC
www.traffico.co.kr

TMONEY
www.t-money.co.kr

