C.C.S for A.F.C
Central Computer System
Automatic Fare Collection System

NIPPON SIGNAL
THE NIPPON SIGNAL CO., LTD.
Realizing of high performance by distributed processing

The AFC center computer system

Engages in duty management for station staff. This system generates duty schedule tables, and performs results management and calculating of payroll.

Generates determination conditions for fares and various tickets used in station equipment from the database. This system delivers data to each station equipment and updates fares and determination conditions.

Collects income and expenditure data and use data from each station equipment, and outputs various statistical data for the management.

管理车站值班员的考勤。可制作值班表，进行实际考勤管理和工资计算。

系统根据数据库生成站务机器使用的票价及各种车票、卡的判断条件，并向各站务机器发送数据，更新营运及判断条件。

汇总各站务机器的收支数据，使用数据，输出经营上需要的各种统计数据。
The information processing technologies for station equipment made rapid progress, it is now possible to collect various information correctly, promptly, and in detail. It is indispensable conditions for the head office system in the enterprise that controls every station to unify enormous information collected from station equipment in each station, and to build up the system equipment environment with high reliability, which can provide necessary information at any time, and high cost performance.

The AFC Center Computer System from the Nippon Signal has lately attracted considerable attention as a distributed center system for the next generation that takes reduction of operating costs and maintenance expenditure into consideration.

Remote Supervisory Control System

Allows remote supervisory control of unmanned stations and gates. With remote operations, this system performs supervisory and control for each station equipment, interaction with passengers over intercoms, and video monitoring by cameras.

Maintenance Management System

Administers operating conditions for each station equipment. This system collects operating data and failure data generated at each station equipment, accelerates the recovery work, and grasps replacement timing for maintenance parts. It changes various parameters for station equipment.

IC Card Management System

Performs distribution management for IC cards, collecting of use conditions, and control of availability for each card.

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**Head Office System 本社系统**

- Revenue server and Operation server are installed in the computer room.
- Totals fare adjustment data among railway companies, generates data, and outputs MT and assignment tables to be delivered to stations of other companies.
- Receives fare adjustment data from stations of other railway companies and generates data for accounting system.
- Supports generating common fare data and delivers that data to each station.
- Installs operation terminals in each section to operate each server and provides appropriate functions according to the application.

**Head Office System**

- Issues cards.
- Issues various tickets.
- Revenues are accumulated, saved, and transferred data.
- Sets various parameters and delivers them to station equipment.
- Generates and delivers common fare data.

**Revenue Server**
- Collecting and managing revenue type server.
- Collects totals, and saves OD data and transfer data.
- Sets various parameters and sends them to station equipment.
- Generates and delivers common fare data.

**Operation Terminal for Maintenance**
- Computers execute operating revenue server and operation server, (Data input and report output).
- Operates operation terminals.

**Operation Terminal for Revenue**
- The passenger section operates revenue server and operation server, (Data input, report output, and MT output).
- Operates operation terminals.

**Operation Terminal for Service**
- Installed in the transportation room and engages in tasks related to revenue server and operation server, (Data input and report output).
- Operating service terminals.

**Card Encoder**
- Issues cards.
- Issues various tickets.

**Operation Terminal**
- Operates operation terminals.

**Operation Server**
- Collects totals, and saves OD data and transfer data.
- Sets various parameters and delivers them to station equipment.

**Operation Terminal for Service**
- Installed in the transportation room and engages in tasks related to revenue server and operation server, (Data input and report output).
- Operating service terminals.
### Major Output Reports (Total Number of Reports: Approximately 70 types)

<table>
<thead>
<tr>
<th>Revenue System</th>
<th>Operation System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue report</td>
<td>Operating data of each terminal equipment</td>
</tr>
<tr>
<td>Income report</td>
<td>(automatic vending machine, automatic</td>
</tr>
<tr>
<td>Income report</td>
<td>gate, automatic fare adjustment machine,</td>
</tr>
<tr>
<td>Income report</td>
<td>etc.)</td>
</tr>
<tr>
<td>Revenue report</td>
<td>Number of passengers table for each</td>
</tr>
<tr>
<td>report</td>
<td>automatic gate</td>
</tr>
<tr>
<td>Return report</td>
<td>O table of lost and stolen commuter passes</td>
</tr>
<tr>
<td>for workers</td>
<td>for workers</td>
</tr>
</tbody>
</table>
| Common fare data sending status table |}

### Network System

- Stations are connected through optical integrated transmission channels for networking. The head office system executes revenue management and operation management.
- Terminal equipment of each station is also connected through optical integrated transmission channels.
- As the coupon ticket printing and issuing machine can freely change settings for the station, issuing data is installed in the data calculator of that station from the floppy disk.
- The led office system is executed through the optical transmission channel.

### Head Office System

- Card encoder
- Operation terminal for Maintenance
- Revenue server
- Switching HUB
- Operation server
- Operation terminal for Revenue
- Operation terminal for Service
- Router

### System Diagram

- Station Controller / 数据汇总机
- System Monitoring / 系统监视盘
- Automatic Gate / 自动检票机
- Automatic Ticket Vending Machine / 自动售票机
- Automatic Coupon Vending Machine / 自动售票机
- Automatic Fare Adjustment Machine / 自动补票机
- Card Processor / 磁卡读写器
- Coupon Vending Machine / 员工福利证发售机
- Ticket Office Machine / 车票印刷发行机

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Remote Monitoring System for Watching Security
远程监视系统守护安全

Highly Reliable Barrier-free Equipment
可放心使用的无障碍通道

Barrier-free 无障碍通道
<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>Image</th>
<th>Chinese Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Station Controller</td>
<td><img src="image1" alt="Station Controller" /></td>
<td>数据汇总机</td>
</tr>
<tr>
<td>System Monitoring</td>
<td><img src="image2" alt="System Monitoring" /></td>
<td>系统监视盘</td>
</tr>
<tr>
<td>Automatic Ticket Vending Machine</td>
<td><img src="image3" alt="Automatic Ticket Vending Machine" /></td>
<td>自动售票机</td>
</tr>
<tr>
<td>Automatic Gate</td>
<td><img src="image4" alt="Automatic Gate" /></td>
<td>自动检票机</td>
</tr>
<tr>
<td>Automatic Fare Adjustment Machine</td>
<td><img src="image5" alt="Automatic Fare Adjustment Machine" /></td>
<td>自动补票机</td>
</tr>
<tr>
<td>Automatic Coupon Vending Machine</td>
<td><img src="image6" alt="Automatic Coupon Vending Machine" /></td>
<td>自动月票发售机</td>
</tr>
<tr>
<td>Card Processor</td>
<td><img src="image7" alt="Card Processor" /></td>
<td>磁卡读写器</td>
</tr>
<tr>
<td>Multi-functional Processing Machine</td>
<td><img src="image8" alt="Multi-functional Processing Machine" /></td>
<td>多功能终端机</td>
</tr>
<tr>
<td>Coupon Vending Machine</td>
<td><img src="image9" alt="Coupon Vending Machine" /></td>
<td>月票发行机</td>
</tr>
</tbody>
</table>

Each Equipment with High Performance Backs Up Railway Company for New Century

具有成熟使用经验的各种设备使新世纪的铁路如虎添翼
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