SOUTHERN MACHINERY

Mastering SFY03 Route Configuration

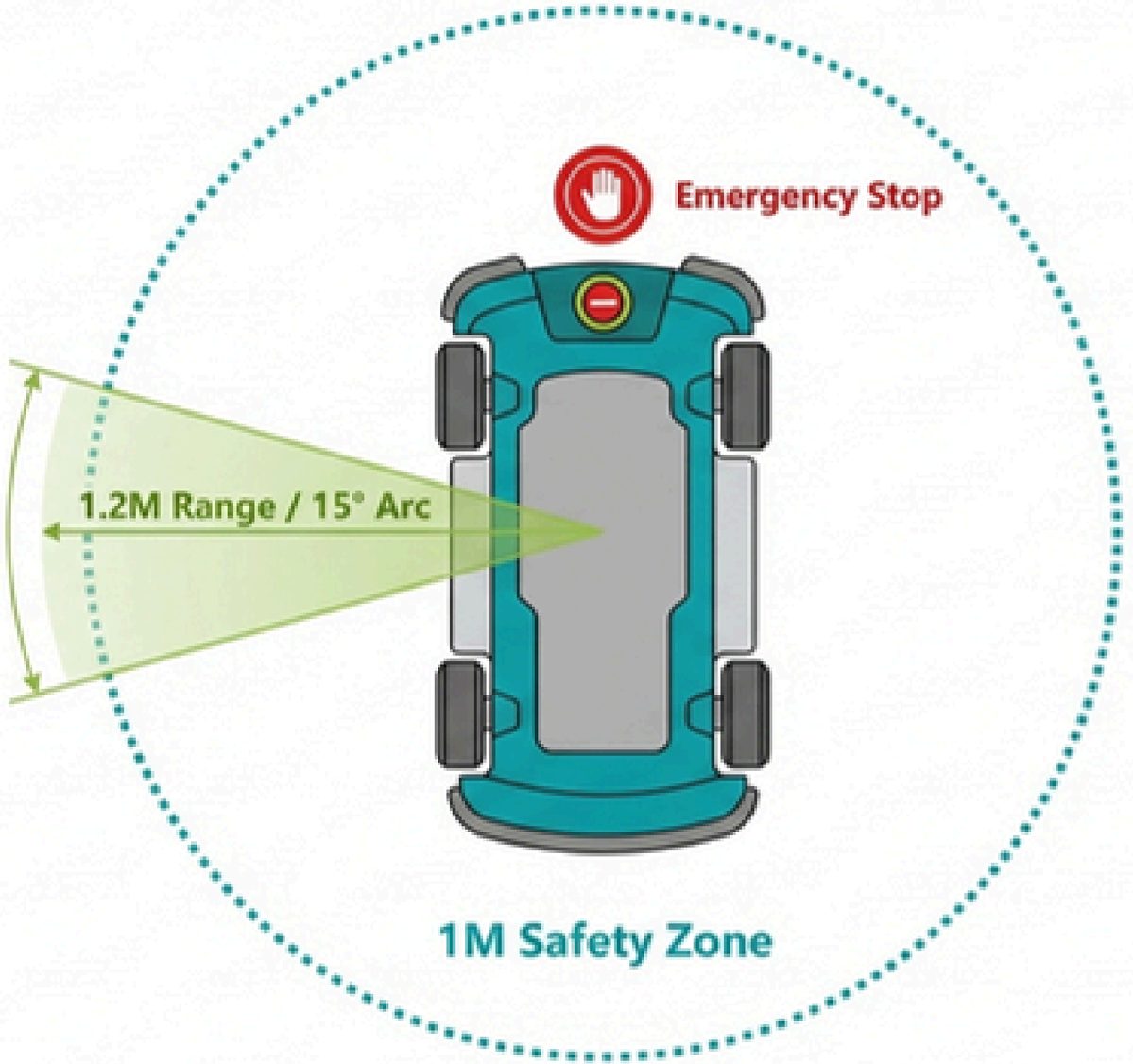
Precision Logistics for SMT Assembly Lines

SOUTHERN MACHINERY

Operational Safety & Environment Protocols

Verify environmental clearance before power-on.

- **Pedestrian Clearance:** Maintain 1-meter safe distance.
- **Obstacle Detection:** Front laser covers 15° arc / 1.2M range.
- **Emergency:** Press Urgent Stop Knob. Rotate to reset.
- **Chassis Clearance:** Keep floor free of debris (25mm clearance).



SOUTHERN MACHINERY

Laying the Navigation Path

Install magnetic strips to define the physical route. Surface must be clean and dry.

Stopping Point Installation

Intermediate Site Installation

Technical Note

Material: 30mm (Default) or 50mm Magnetic Strip.
Polarity: N-pole face up.

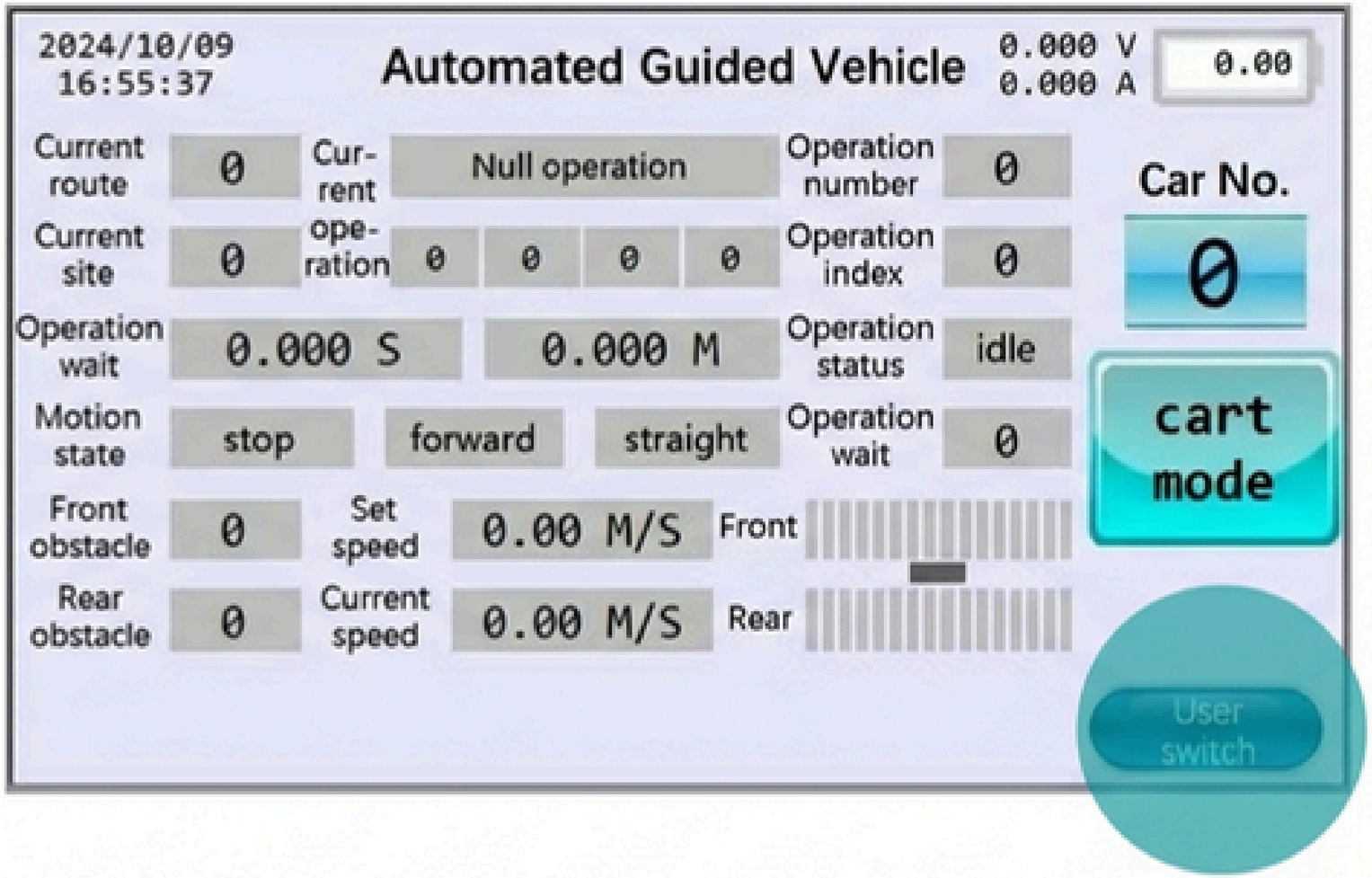
Station Definition via RFID

Bridging the Physical Floor to the Digital Map

The physical card on the floor becomes the Digital Site Number in the system.
Cards trigger Operations like Stop, Turn, or Speed Change.

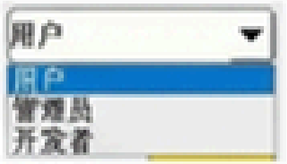
Accessing the Control System

Power on via Mains Switch. Interface orientation matches forward vehicle direction.

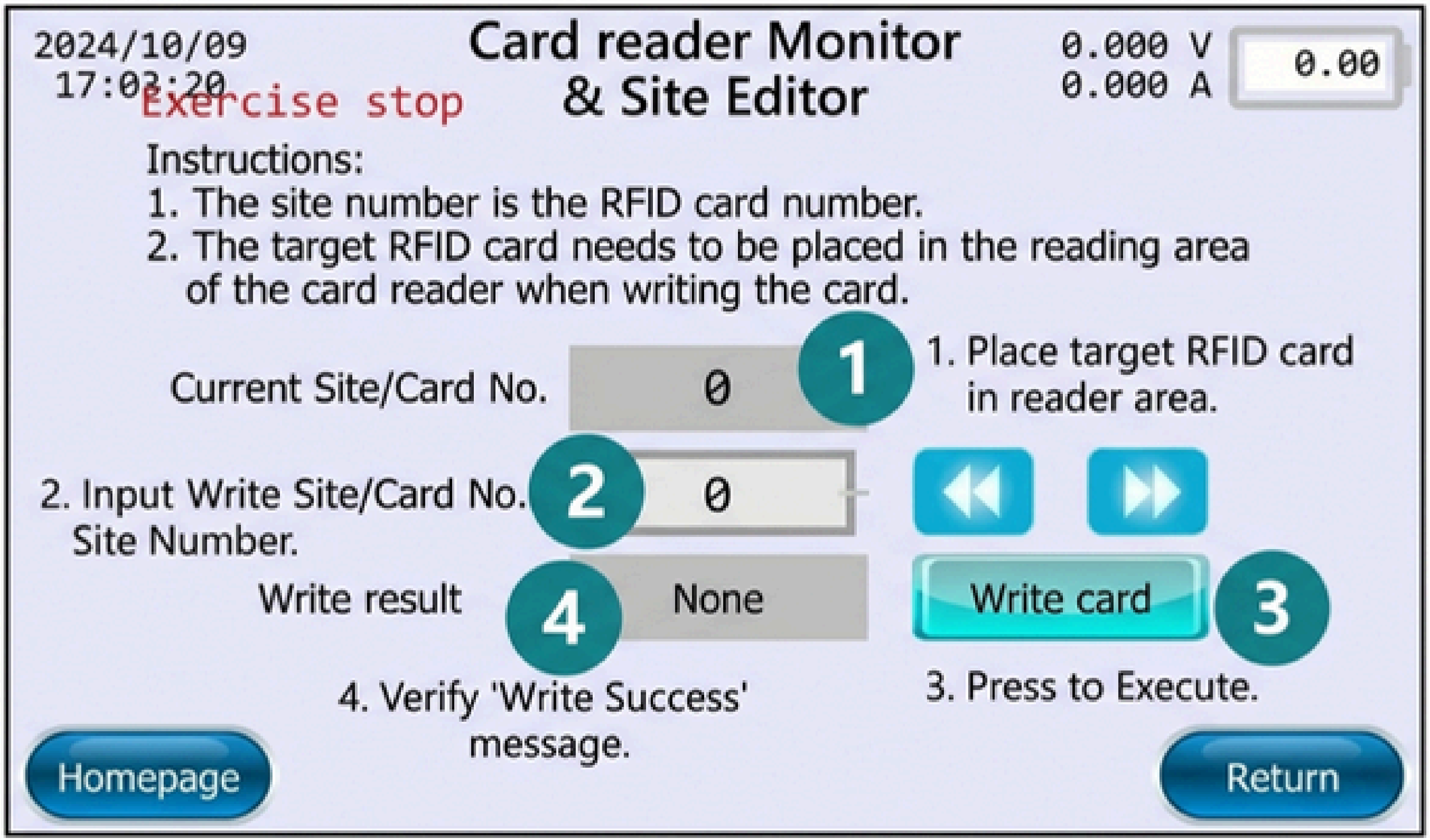


Login Workflow

1. Navigate to ‘User Switch’ menu.
2. Select Level: User (Operator), Admin (Manager), or Developer (Technician).
3. Enter password to unlock editing.



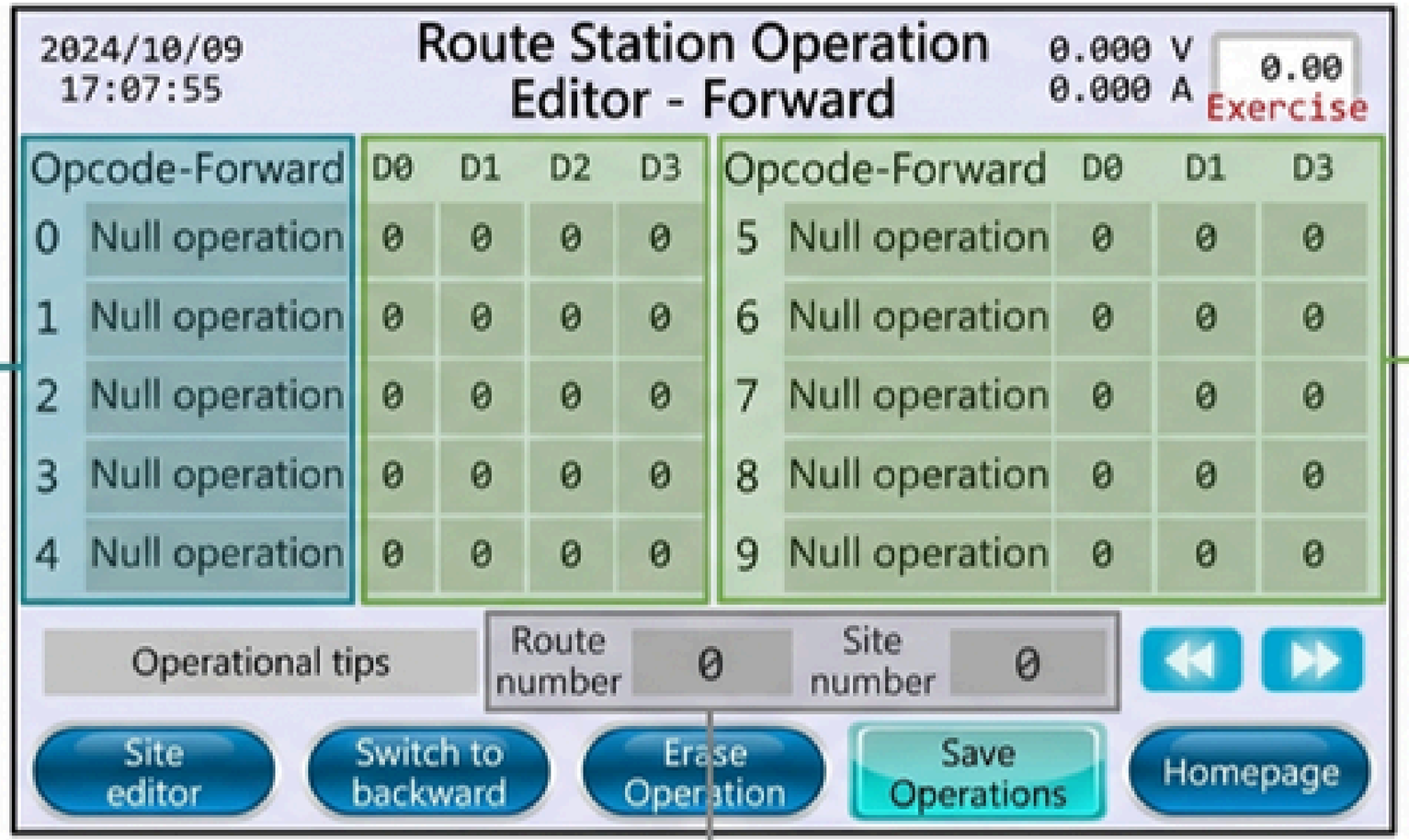
Registering Physical Sites



The Route Editor Interface

Concept: Mapping physical actions to digital site numbers.

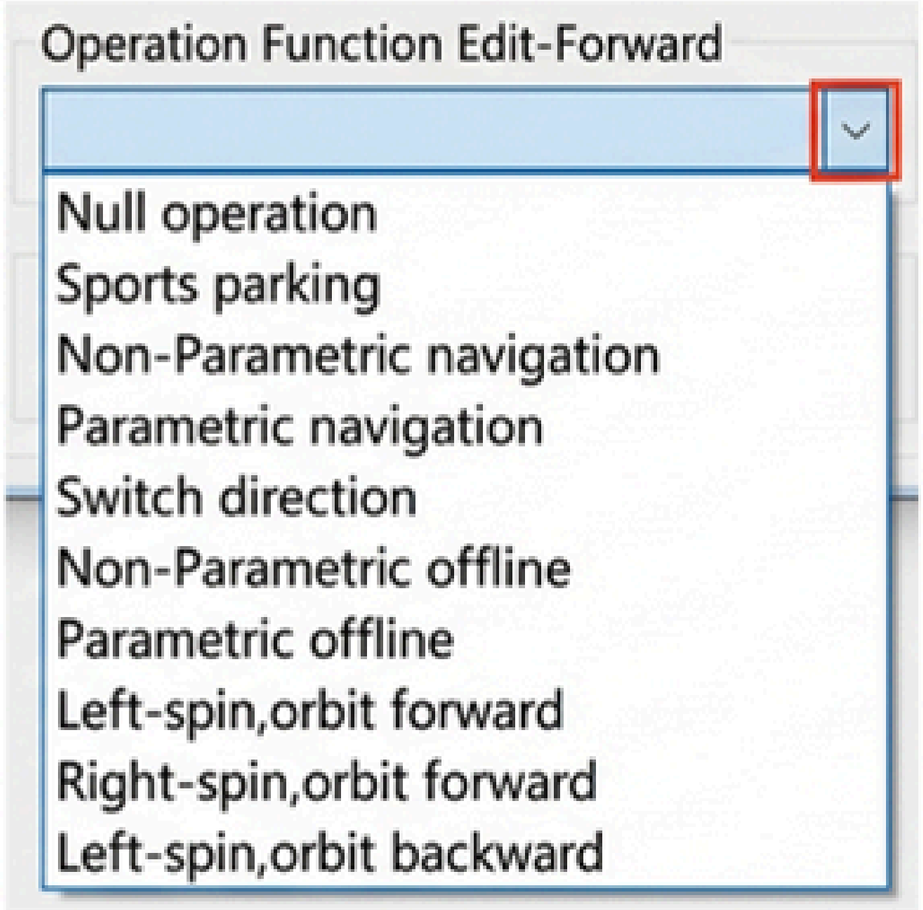
OpCode: The specific action (Stop, Turn, Speed).



Parameters: Values for Speed, Time, or Distance.

Location ID:
Matches the physical RFID tag.

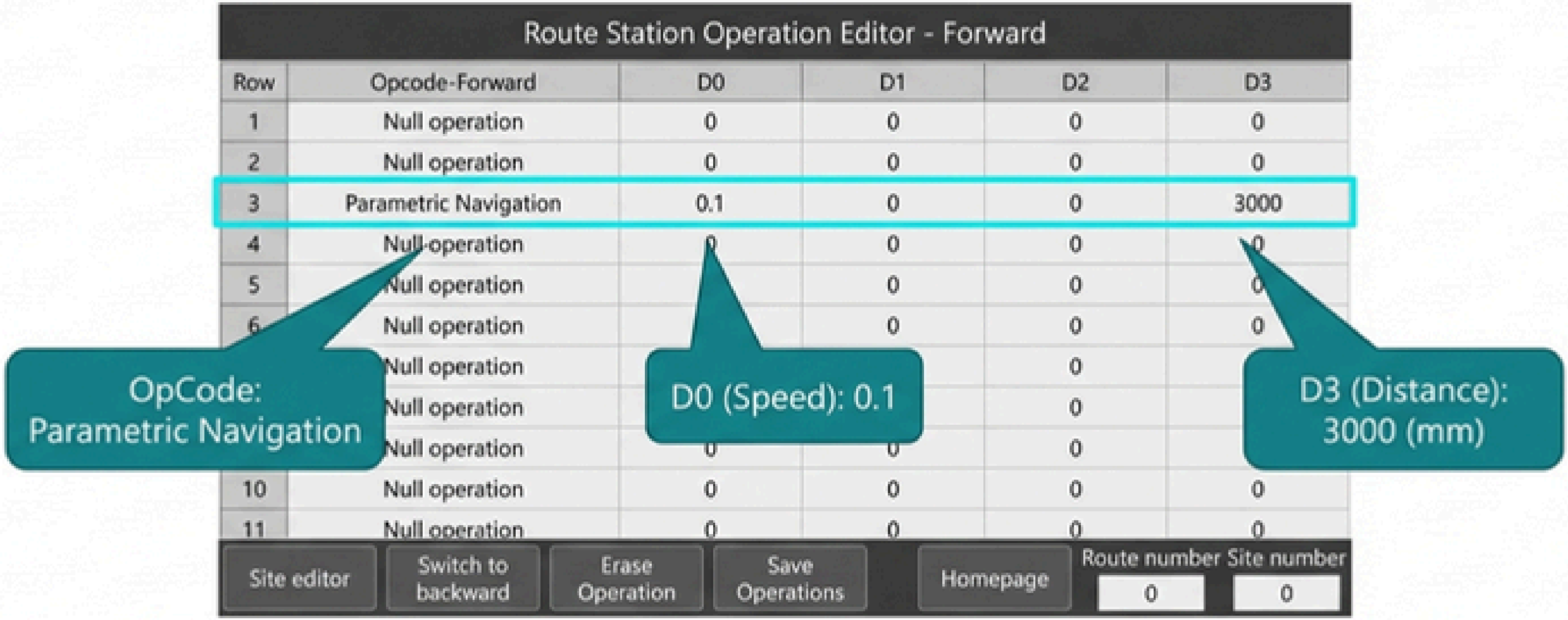
Understanding Operation Codes (OpCodes)



OpCode	Function
Null Operation	Pass through without action.
Sports Parking	Stop at the station.
Parametric Navigation	Change speed or behavior settings.
Switch Direction	Toggle from Forward to Backward state.
Spin	Execute in-place rotation.

Programming Logic: Speed Control Example

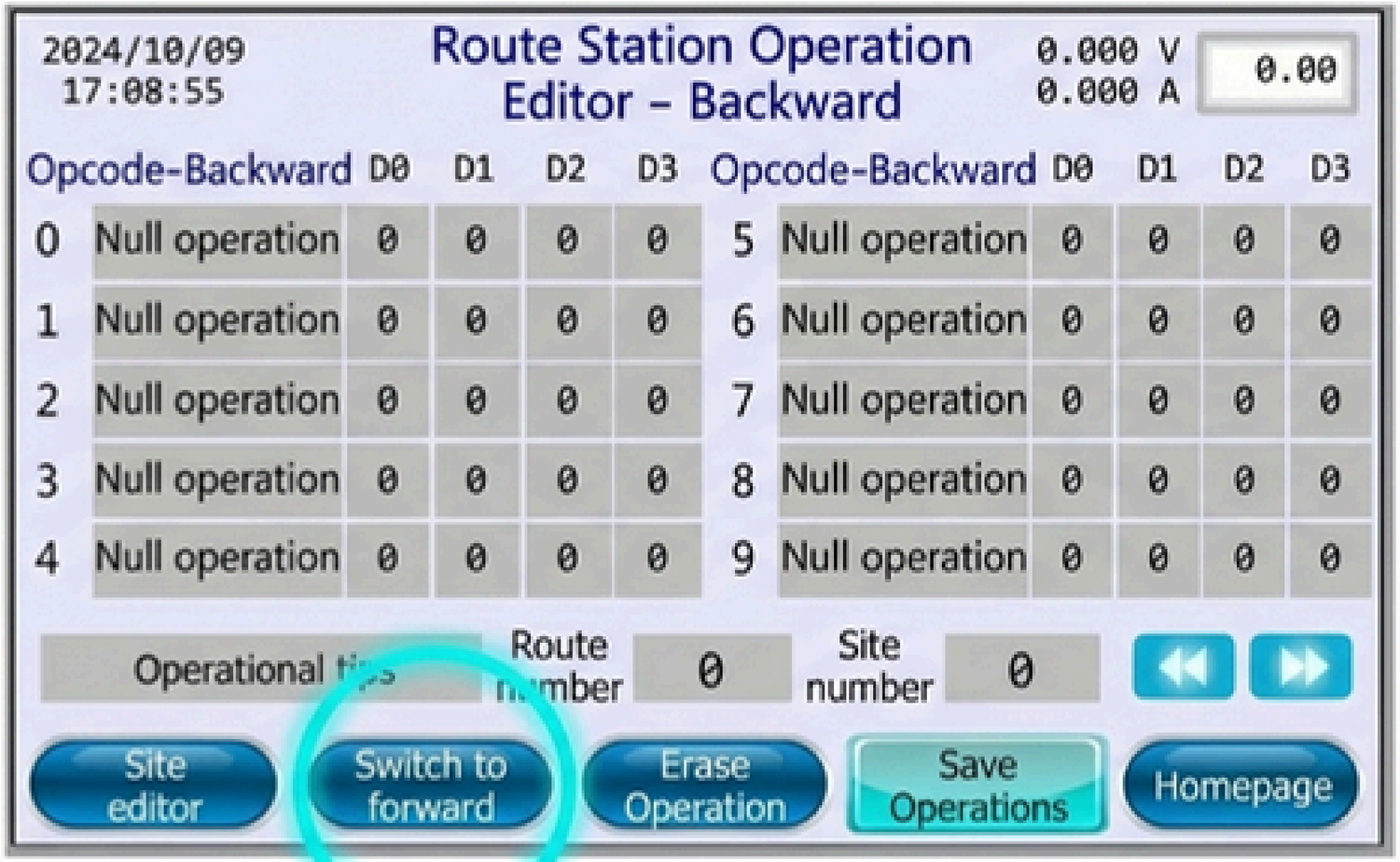
Scenario: At Station 11, slow down to 0.1 M/S for precision docking, continuing for 3 meters.



Precise parameter tuning allows for smooth deceleration before docking.

Configuring the Backward Loop

Routes must be programmed for both Forward and Backward travel to complete the logistics cycle.



Logic Rule: If AGV is in 'Backward' motion state, it ignores all 'Forward' instructions.

Always use 'Switch Direction' OpCode at line ends.

SOUTHERN MACHINERY

Global Parameter Tuning

2024/10/09
17:09:18

Run Monitor

0.000 V
0.000 A
0.00

Front 14 0
Rear 1 15

Run mode: stop

Run: Forward | Backward

Turn: Left | Middle | Right

Set speed: 0.00 M/S

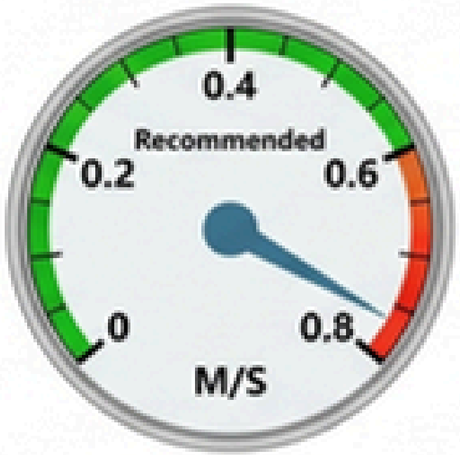
System music
User music
Music channel
Music volume

Front obstacle: 0
Rear obstacle: 0
Current route: 0
Current site: 0

Site redo

Return

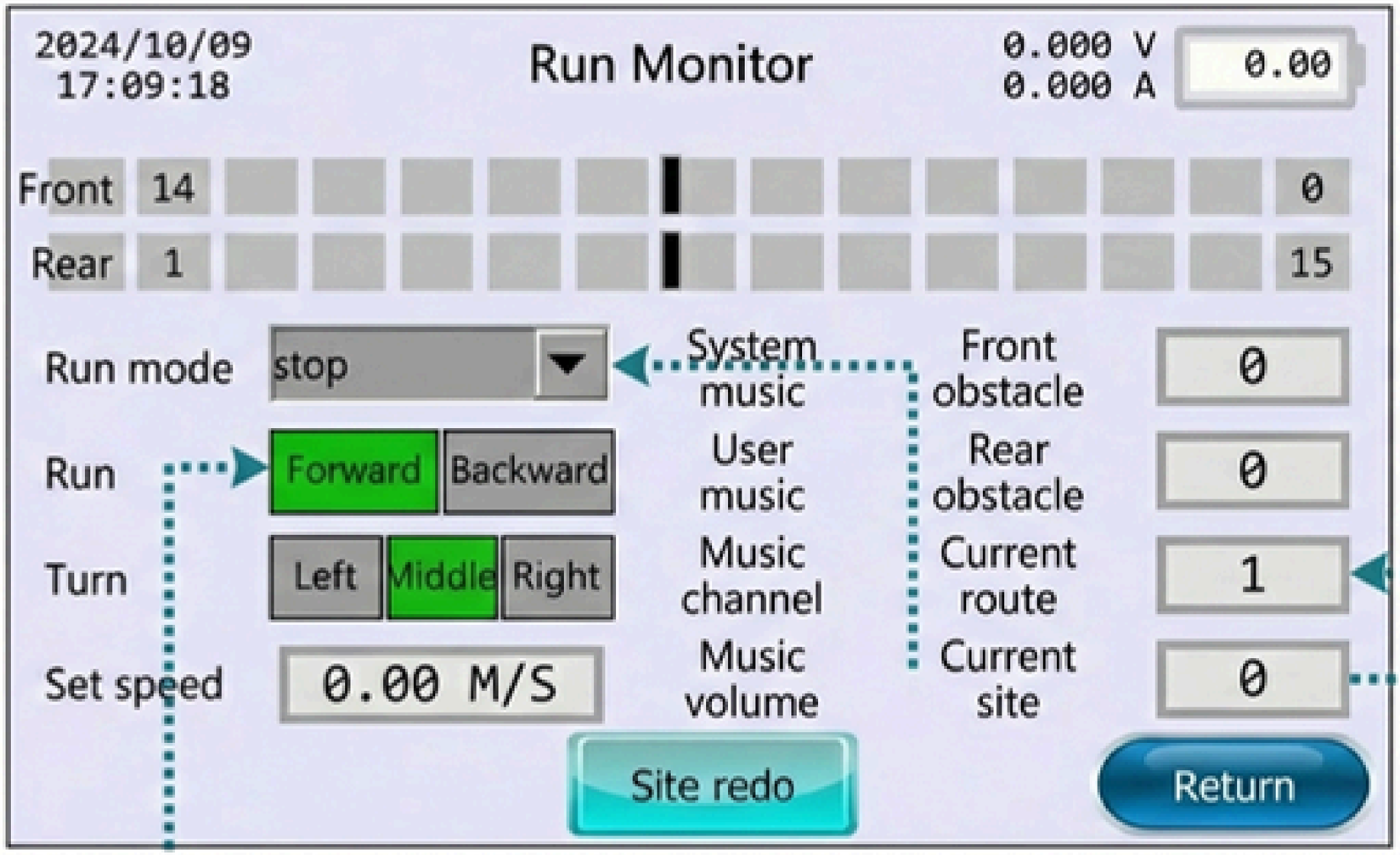
Speed Limit



Obstacle Zone

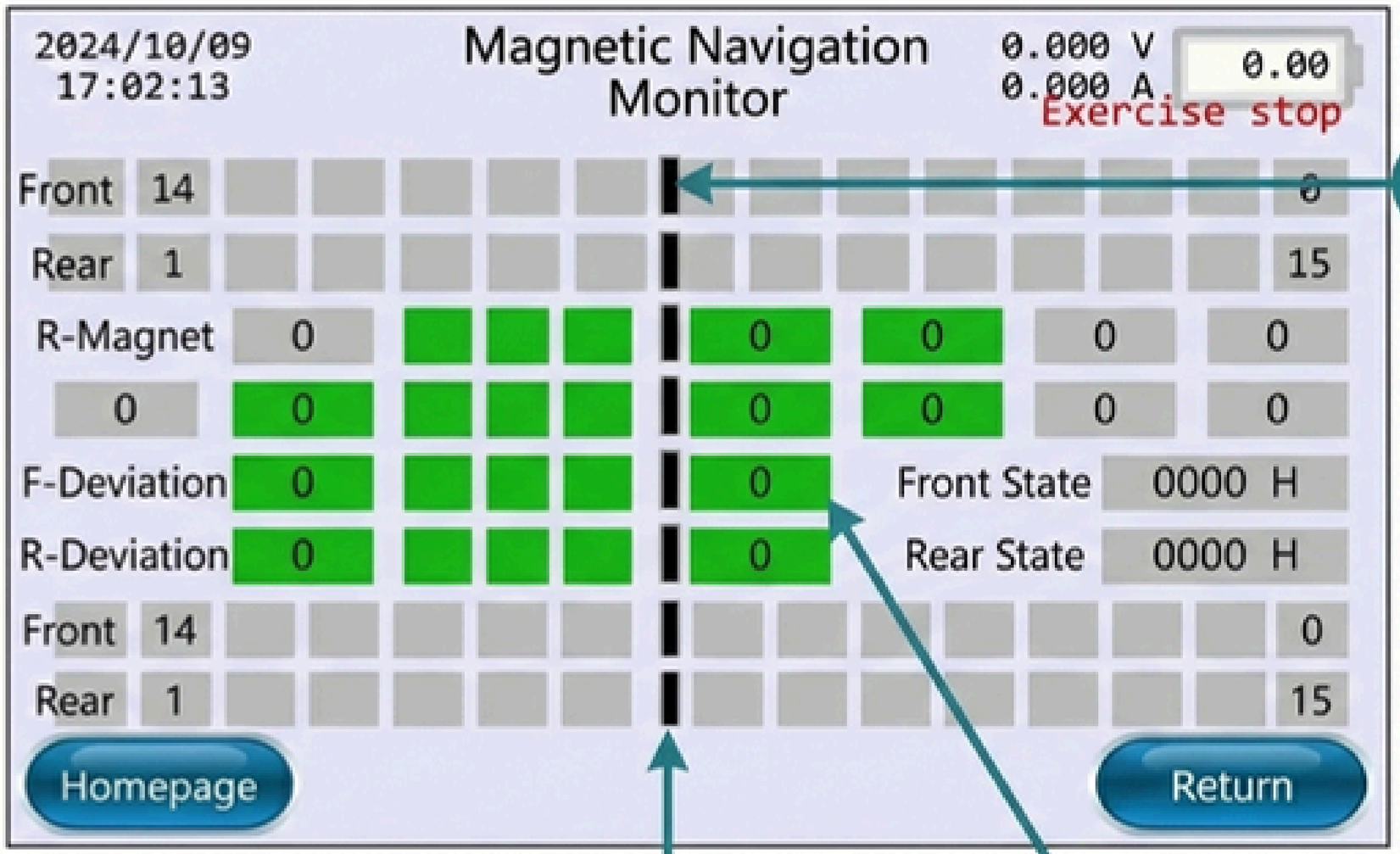
Forced Close: Value 50 disables detection.
Use only in controlled docking bays.

Initializing the Logistics Mission



1. Input Route Number (e.g., 1).
2. Input Start Site (e.g., 0).
3. Toggle to Navigation.
4. Confirm Forward/Backward orientation.

Real-Time Diagnostics & Monitoring



NOTE

Deviation Bar: Must remain Optimal Battery Voltage (24V System) to prevent mid-route shutdown.

1 Deviation

2 Active Sensor Status.

Troubleshooting Common Anomalies

Symptom	Likely Cause	Corrective Action
AGV Offline / Stops	Lost magnetic strip	Switch to "Cart  ", manually push to strip, reset.
Obstacle Stop (Clear Path)	Dust on laser or Zone too large	Clean lens or adjust 'Obstacle Area' value.
Read Failure (Skip Station)	RFID card misalignment	Check card is centered under reader path.

Southern Machinery Support Network

SOUTHERN MACHINERY

Empowering Smart EMS Factories Since 2011

Smart Factory Engineering Team

Primary Contact: Jason Wu
Email: jasonwu@smthelp.com
WeChat/WhatsApp: +8613602562576

Call to Action: Contact us for custom OpCode development and integration.