

## Upgrading Automatic Traveler Information Systems on Older Rail Vehicles

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## Agenda

- Passenger Expectations and Technology
- The Railway Operating Environment
- Design Challenges and Solutions
- Training and Operations

# TRANSITECH

- **Passenger Expectations and Technology**
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## Passenger Expectations

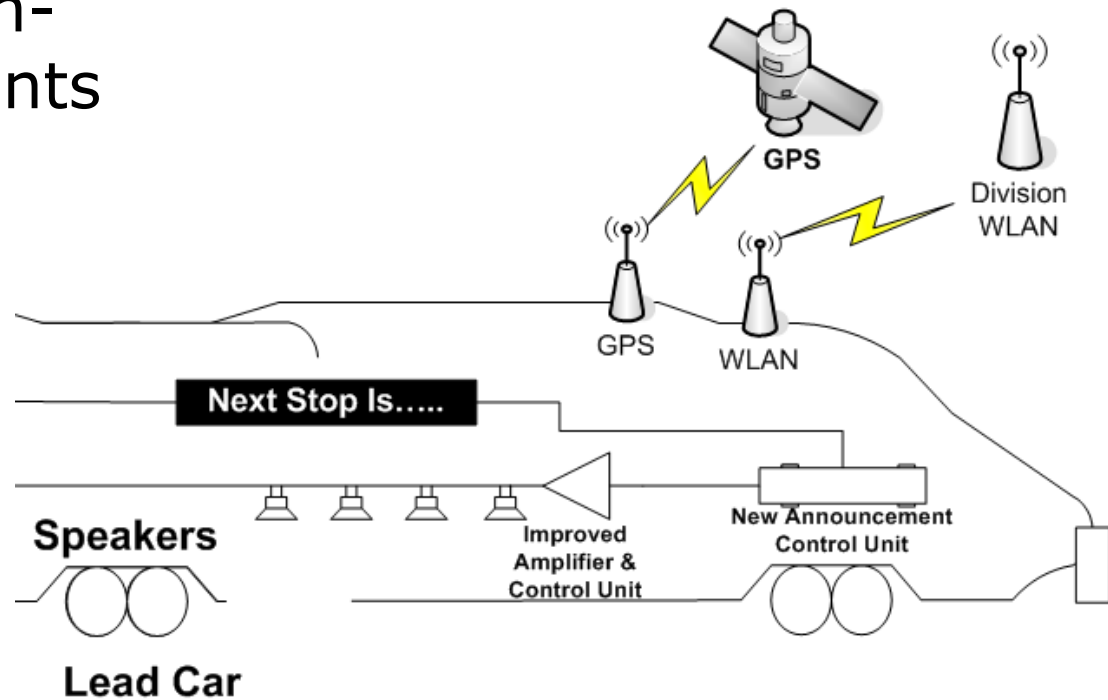
- **The Good:** Your bus fleet and new rail fleet have state-of-the-art automatic traveler information systems
- **The Bad:** You have an existing fleet of older rail vehicles that you cannot replace any time soon; a mid-life overhaul may be within reach but not without its own high costs for basic refurbishment
- **The Challenge:** Your ridership has come to expect a consistent level of service throughout your system, and you are concerned about transit equity and accessibility

***Now What....?***

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## The Technology

- Automated, location-based announcements
- ADA compliant electronic message signs
- Wireless system administration
- Integration with existing scheduling software



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## The Railway Operating Environment

- **High voltage**
  - 650 to 1000V or more
  - Section gaps
  - Isolation
- **Electrical Noise**
- **Couplers**
  - Button contacts
  - Usually no provision for data
- **Limited space**  
to install equipment



## The Railway Operating Environment

- **Dirt and dust:**
  - Brakes pantograph
  - Dirty equipment cooling air
  - Can coat circuit boards causing failures
- **Heat or lack of ventilation**
- **Smoke and flammability requirements**





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## Environment

- High voltage
- Couplers transfer signals between cars
- Dusty, dirty, grimy
- Vibration
- Hot, poor ventilation
- Limited space
- Limitations to existing PA systems.

## Design Challenges

- Insufficient wiring
- No spare coupler pins
- Equipment commonality with the rest of the fleet
- Integration with legacy scheduling systems
- Electrical & mechanical system integration
- Integration path with existing tracking and communications systems.

## Potential Solutions

- Compact solid-state power supplies with built-in filtering and isolation
- Train data networks and high bandwidth coupler connections
- Sealed equipment requiring no ventilation
- Design should facilitate ease of installation, minimize the time to install equipment, and result in consistent high quality installation.

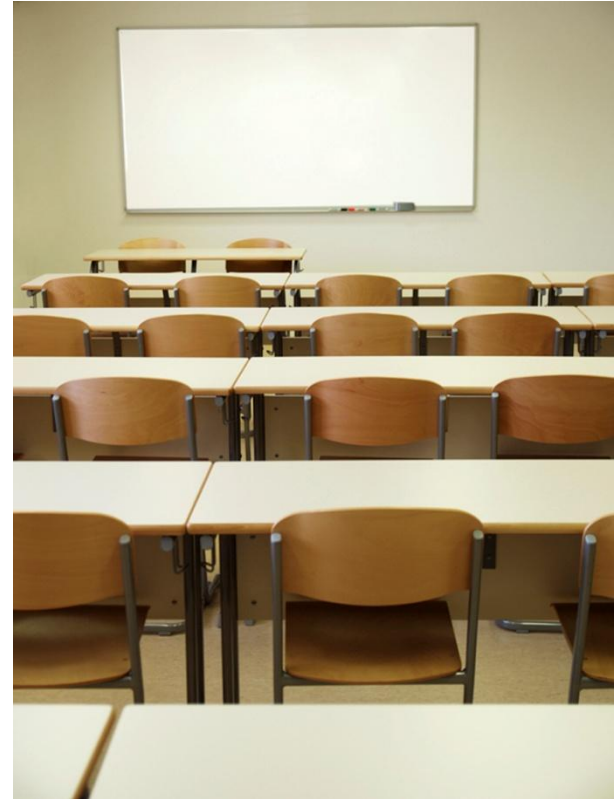
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## Training

- It is necessary to provide train operators and maintenance personnel with sufficient training prior to system cutover
- Existing regulations at some agencies preclude operators from taking a train with equipment they have not been trained on
- Train operators should be able to discern between using automatic operation versus manual over ride when appropriate



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## Operations

- **System cutover**
  - Plan early and often
  - Will the new system go “live” as vehicles are equipped, or be delayed until the entire fleet is retrofitted?
- **Now is the time** for public outreach



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## Thank You!

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