
UTCS

Unified Train Control System

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UTCS – What is it?

- Unified Train Control System
- A Traffic Control system that safely and efficiently coordinates -
 - Train movement
 - Work activities by maintenance employees



- Analogous to an Air Traffic Control system



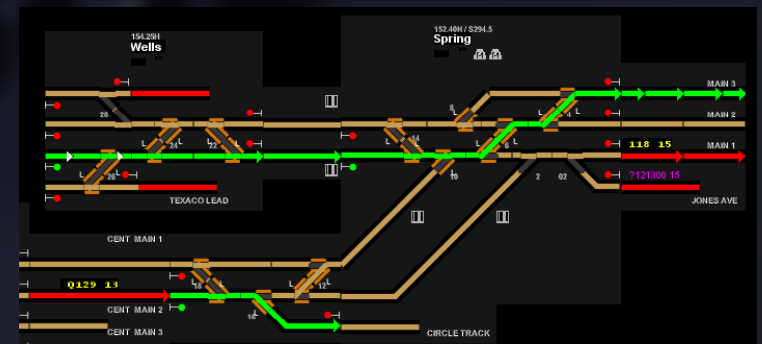
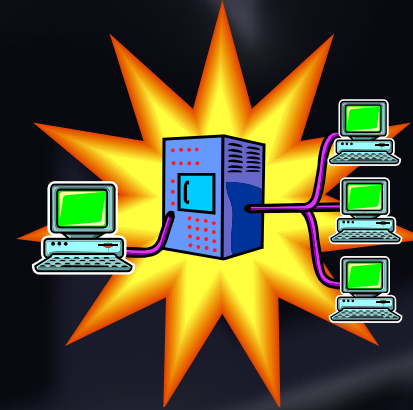
UTCS – Two Components

- Base Dispatching System
- Advanced Movement Planner



UTCS – Base Dispatching System

- Integration
 - Dispatch sub-systems
 - Traffic Control
 - Track Warrant Control
 - Train Clearance
 - Train Sheet
 - NS system feeds
 - TYES (Yard & Inventory Management)
 - Crew Management
 - Train Service Register
 - GPS Location Information
 - Positive Train Control



UTCS – Base Dispatching System

- **Unification**
 - One system supporting distributed dispatching
 - Processes standardized
 - Trains flow seamlessly
- **High Availability/Disaster Recovery**
 - **Hardware**
 - Two server sites
 - Internal redundancy
 - 99.99% availability
 - Dispatch from anywhere



UTCS – Advanced Movement Planner

- **Advanced Movement Planner**
 - Think “Deep Blue”
 - An optimized Network Solution

Operational Objectives

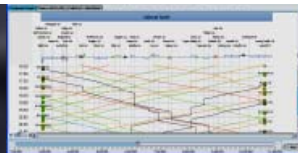


Late
Early

Constraints



Movement Plan



**Movement
Planner**

Real-time Status

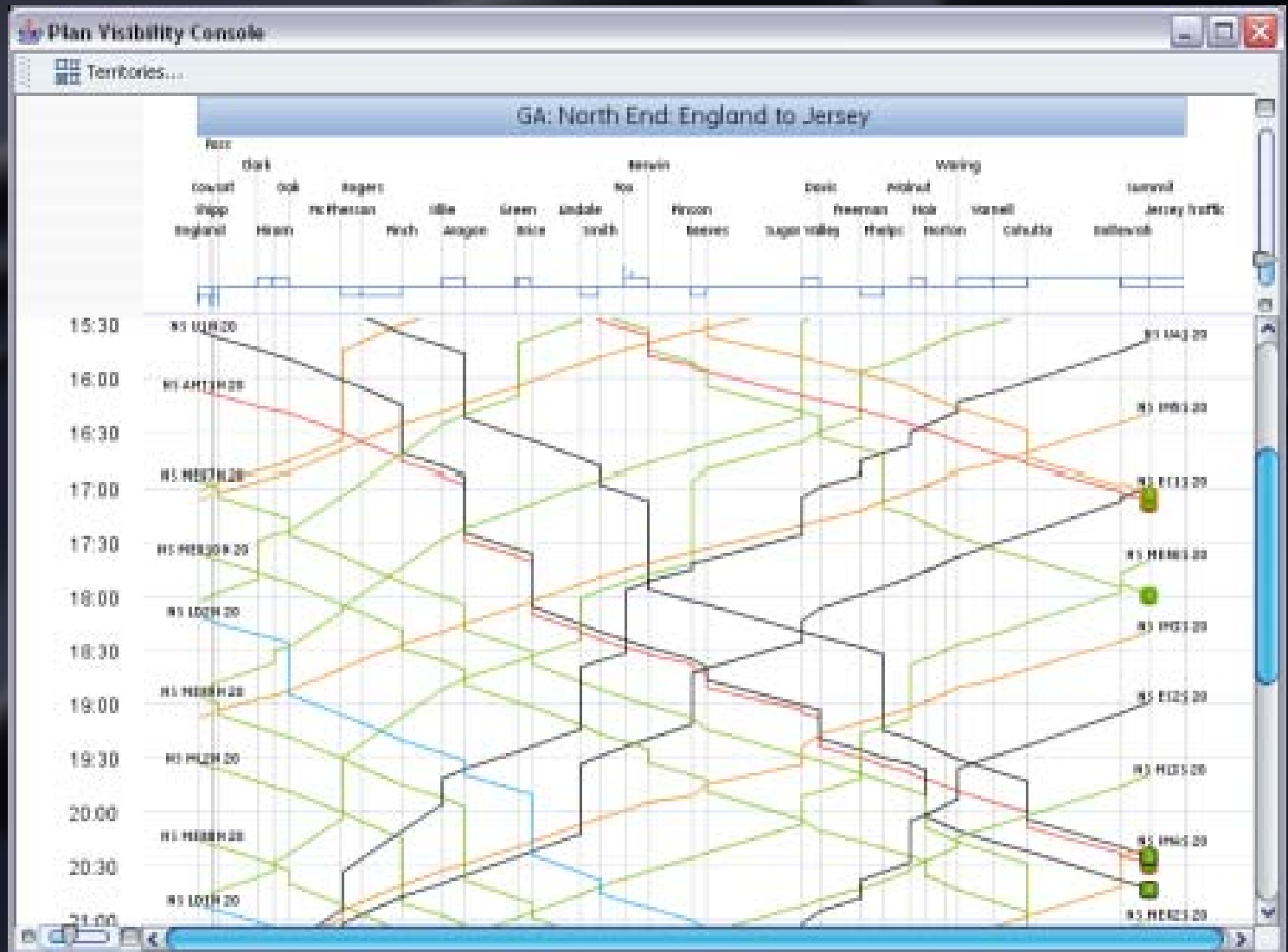


UTCS – Movement Planner (MP)

- **Dispatching Today**
 - Planning and execution by dispatcher
 - Short time horizons
 - Dispatcher territory centric
- **Dispatching with MP**
 - System develops plan and executes
 - Eight hour planning window
 - System planning across territories
- **Factors**
 - Infrastructure, Resource Constraints
 - Operating Plan
 - Operational Objectives
 - Schedule Adherence is the focus

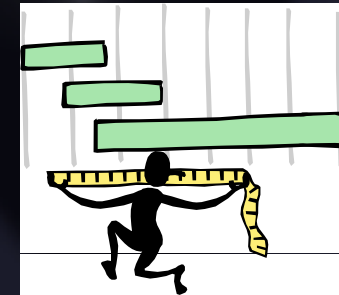


UTCS – MP Features



UTCS – MP Field Trials

- **Weekly trials**
 - Georgia Division
 - Expanding focus and coverage
 - Progressively longer testing periods
 - Auto-router turned on
- **Goals**
 - Verify plan quality and feasibility
 - Identify usability opportunities
 - Establish users new workflow and role
 - Insight for training scenarios



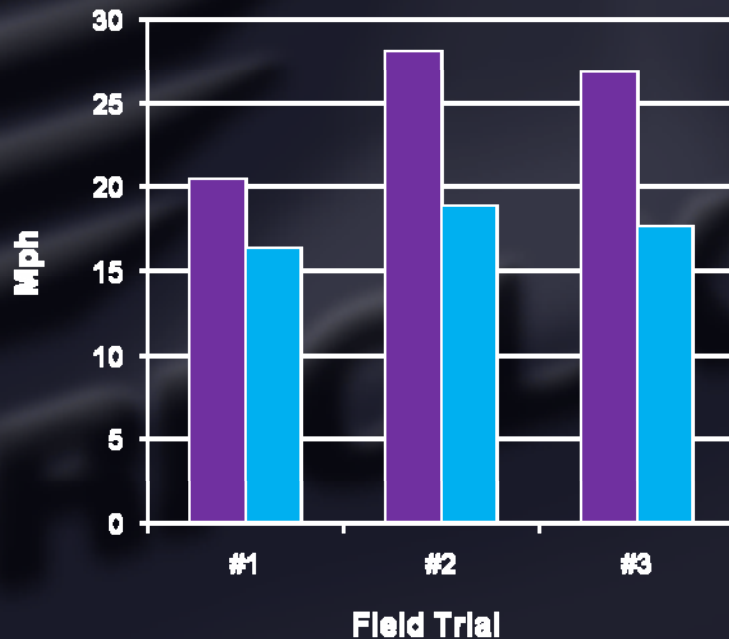
UTCS – MP Field Trials

- **Great potential**
 - Increased velocity
 - Reduced train delay
 - Improved on-time performance

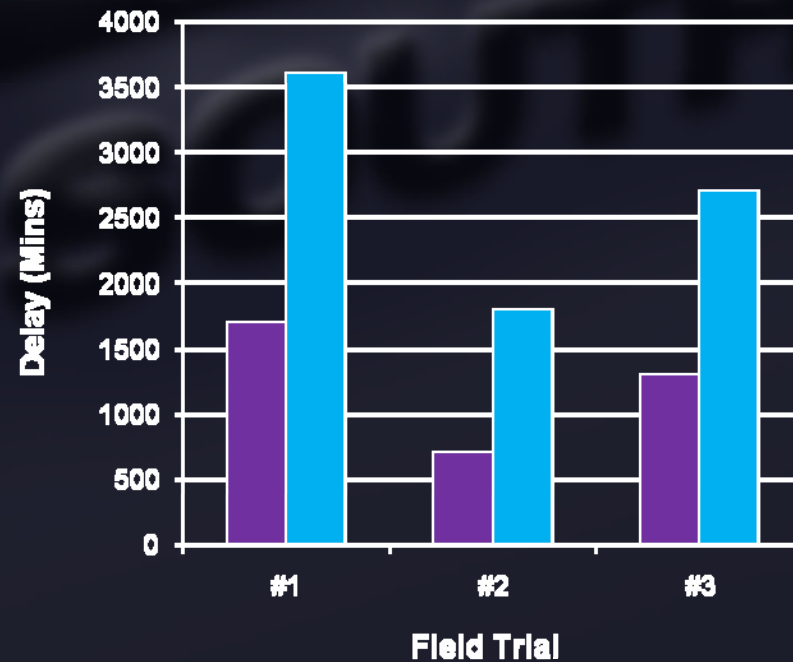
Movement Planner

Dispatcher Alone

Network Velocity



Network Delay



UTCS – Status

- Three of the 11 divisions operating with base dispatching system
 - Georgia
 - Piedmont
 - Alabama
- In place to support the Charleston, SC to Charlotte OTC field trials
- Final stages of development for
 - Base dispatching system
 - Movement planner
- Lab and field testing of software



UTCS – Future

- **Two Path Implementation Scheme**
 - **Base Dispatch System**
 - **Central Division – July 2009**
 - **Movement Planner**
 - **Georgia Division – October 2009**