

New York City Sub Regional ITS Architecture Functional Area Meeting Minutes

Functional Areas: Transit Meeting #1
Location: FHWA 1 Bowling Green, New York City
Meeting Date: May 9, 2003
Updated: July 11, 2003, see Paratransit Command Center
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1. Introductions/Service Announcements

2. Presentation / Q&A

- What is a *Regional ITS Architecture* (according to FHWA Rule 940/FTA Policy)?
- NYC Sub Regional ITS Architecture Development Process

3. Transit Issues Discussed During Meeting

- Transit Centers
- Transit Planning
- Transit Security
- Fare Collection

Transit Centers

- NYCT has proposed classification of centers based on National efforts
 - Transit Operations
 - Bus Command Center
 - Subway Command Center (Existing) – Change name to MTA NYCT Rail Control Center
 - MTA NYCT Rail Control Center (near-term/future)
 - Service Delivery, Maintenance for Cars and Wayside, Vehicle Tracking
 - Transit Garage
 - Transit Planning
 - Transit Security
 - Transit Corporate Management
- Transit Garage (Bus Depot)
 - 18 for Bus
 - 5 Divisions – one for each borough
 - Bus Depot reports to the 5 Divisions
 - Road Operations Unit (field personnel, one for each borough) – responsible for the bus (route) once the bus hits the street
 - Dispatch, Vehicle and Schedule Tracking
 - Command Center works with the Road Operations Unit
 - Command Center does not currently receive vehicle location. Current communications is radio.
 - Future: All data goes to the Command Center. Road Operations Vehicles will have a portion of the information sent to them (just the route specific information). Command Center gets all the vehicle locations. Road Operations Units will be equipped with AVL in the future.
 - Maintenance Units (Road Service Trucks)

- Vehicles in communications with Bus Command Center and Road Operations Unit
 - Vehicles gets involved in a break-down
 - Associated with a depot but comes out of the Divisions
 - Road Service Trucks will have AVL in the future.
- Central Road Service
 - Manage maintenance field personnel on the street
- Transit Centers (Subway Yards)
 - 28 Subway Yards
 - 13 have maintenance facilities
 - Would not communicate with trains
 - Communicate maintenance information
 - Future:
 - Communications with NYCT Rail Control Center
 - Preventive maintenance functions
 - Communications between Subway Yards
- MTA LIRR
 - Control Center (LIRR Control Center –204)
 - Schedule Performance
 - Vehicle Tracking
 - TIMACS (Train Information Monitoring and Control System)
 - Maintenance (Repair Shops)
 - Major shops are:
 - Hillside Maintenance Complex (HMS)
 - West Side Yard
 - Richmond Hill
 - M7 Cars
 - GPS on Cars
 - Change buses fairly often (monthly)
 - Substitute Bus
 - IVR System
 - Schedule Information
 - Shows up on web site
 - Web Site
 - Schedule Systems
 - PA System at some stations
- MTA MetroNorth
 - OCC (Operations Control Center – Grand Central)
 - Functions
 - Train Dispatching
 - Communications with trains by radio
 - Control signal system/power
 - Fleet Management
 - Vehicle Location and Tracking
 - 9 Yards, Storage, Maintenance Facilities

- Customer Information Center (separate from OCC)
 - IVR-based
- On-board Event Recorders
 - Record problems, diagnostics
 - Interfaces with the Maintenance Shops
 - If equipment needs to be removed from service, contact OCC
- VIS – Visual Information System
 - Visual Information System (video monitors)
 - Driven by station master's office
 - Future: OCC will provide VIS. Also, train arrival (when it goes past last switch) – will go on the VIS
 - VIS data is being made available on the web site
- 125th Street Station (Stand alone)
 - Stand-alone VIS
- Schedule Group
 - Developing a central repository for schedules
 - Currently on paper manuals only
- Take complaints via e-mail
- Next-generation Cars
 - Automated Station Announcement (next stop)
 - LIRR (GPS), MetroNorth (wheel revolutions)
- Semi-automated PA system
 - Given the train number, station announcements will be provided at the appropriate stations.
 - E.g., in event of delay, will provide the information automatically.

- Staten Island Railroad
 - Mini-Center
 - Currently managed from a tower
 - Coordination with Rail Control Center and Buses

- MetroCard Management Center
 - MetroCard Maintenance System
 - Vending Machines are networked
 - Work tickets (work orders) sent to maintainer
 - Maintainer has communications capability (data) for tracking work orders, including mobile terminals.

- NYCT Central Electronics Shop
 - Repair all electronic components
 - E.g., MetroCard, Rail Car electronics, Bus electronics, etc. – just the electronic parts are sent to the electronics shop. Electronic boards are pulled and repaired.
 - Equipment Repair Terminator
 - Future: MTA B&T Equipment (e.g., signs). Becoming a regional electronic repair shop across MTA.

- Paratransit Command Center
 - Centralized Reservation and Scheduling
 - Monitors Vehicles

- Planning AVL on all paratransit revenue vehicles
- Will be connected to the centralized command center (schedule system)
- Monitor Carriers
 - 8 Private Carriers
 - AVL data will come into the Paratransit Command Center
 - Private Carriers will also receive the AVL and schedule information on their vehicle's Mobile Data Terminals (MDTs)

Note: This section on the Paratransit Command Center was modified based on input from Mr. Bobby Samuel of NYCT received on July 11, 2003. bosamue@nycet.com, 646-252-2895

- Traveler Information Centers
 - For NYCT, they have one large center and buses and have a smaller one.
 - MTA NYCT Traveler Information Center
 - MTA NYCT Bus Customer Relations Center
 - All communications is via telephone
 - Provide customer routes
 - Receive customer complaints
 - Field MetroCard questions
 - Future:
 - Communicate with the bus and rail Command Centers
 - Live update of information (including the web site)
- Long Island Bus
 - Reviewed the Market Packages with the MTA Policy Representative
 - Markups are available
- NYSDOT Input – Jim Davis
 - Outer boroughs
 - Commuter Bus
- PANYNJ PATH
 - 5 Rail Yards
 - Hoban Control Center
 - Schedule Performance
 - Vehicle Tracking
 - Fare Policy
 - Maintenance Facility (Harrison Car Maintenance Facility)

Transit Operations Planning

- Concept of a “continuous feed system”
 - Takes service information and automatically feeds to the scheduling system and makes adjustments to schedules
 - NYCT Bus – Schedule changes 4 times per year
 - Inputs include:
 - Ridership information
 - MetroCard Operations Data Warehouse
 - Automatically collect entrances (not sure about exits)

- Data Warehouse/Data Mart
- NYCT Subway – Turnstile counters (both entrance and exits)
- Various field personnel collecting data with handheld terminals (perhaps wireless communications) – Manual Exit Counts

Transit Planning Element

- Schedule Information
 - Inputs:
 - Some manual inputs, some automated
 - Operations
 - Bus stop data inventory key input
 - Operations Planning maintains the stop data
 - Use mobile devices for inventory of bus stop
 - Spatial representation standard (GIS)
 - NYCDOT maintains bus stops
 - Outputs:
 - Goes to each bus and rail command center (AVL)
 - Traveler Information Center
 - Depots
 - Trips123/TRANSCOM Regional Architecture Server
 - Transit Enterprise Data (standard – TCIP)
- Schedule Coordination
 - Long Island Bus and Long Island Railroad
 - LI Bus has a TIMACS terminal
 - Hudson Valley Transit Operators and MetroNorth, NY Waterways, and Haverstraw Ferry
 - NY Waterway Hoboken to Wall Street and W. 38th Street
 - Static and real-time schedule status (e.g., delays)
 - Future:
 - Coordination between LIRR and MetroNorth
 - Concept of a Multi-modal Facility-based
 - Paratransit schedule with??

Transit Security

- Surveillance
 - On-board
 - Station
 - Other?
- Traveler or Operator Alarms
 - On-board
 - Station
 - Other?
- Sensor Systems
 - On-board
 - Station
 - Other?
- Other Security Systems?
- Maintenance Yards/Bus Depots

- Information relayed back to Command Centers
- Motion detectors/sensors
- Bus Depots – CCTV

Fare Collection

- Regional Smart Card
 - MTA NYCT and PATH Project?
 - Updated Market Packages with stakeholders present.