

MEETING DATE
AGENDA ITEM

08/08/05

Consideration to Authorize the Award of a Contract, not to Exceed \$4,125,000, to Orbital Transportation Management Systems to Design, Furnish, Install and Test the Culver City SmartBus System

ATTACHMENTS

1 SmartBus Overview

Pages
1-12

System Overview



Key System Features

- **Orbital's proposed system is based on a field-proven CAD/AVL system**
- **Real-time incident management, post incident analysis capability**
- **Communications efficiency**
- **AVL/RSA – vehicle performance and thresholds reported to enable decision making**
- **System configuration capability (Orbital will tailor OrbCAD to meet CCB's needs)**
- **Yard Management**
- **Safety**

On Board Systems



SmartMDT Vehicle Subsystem

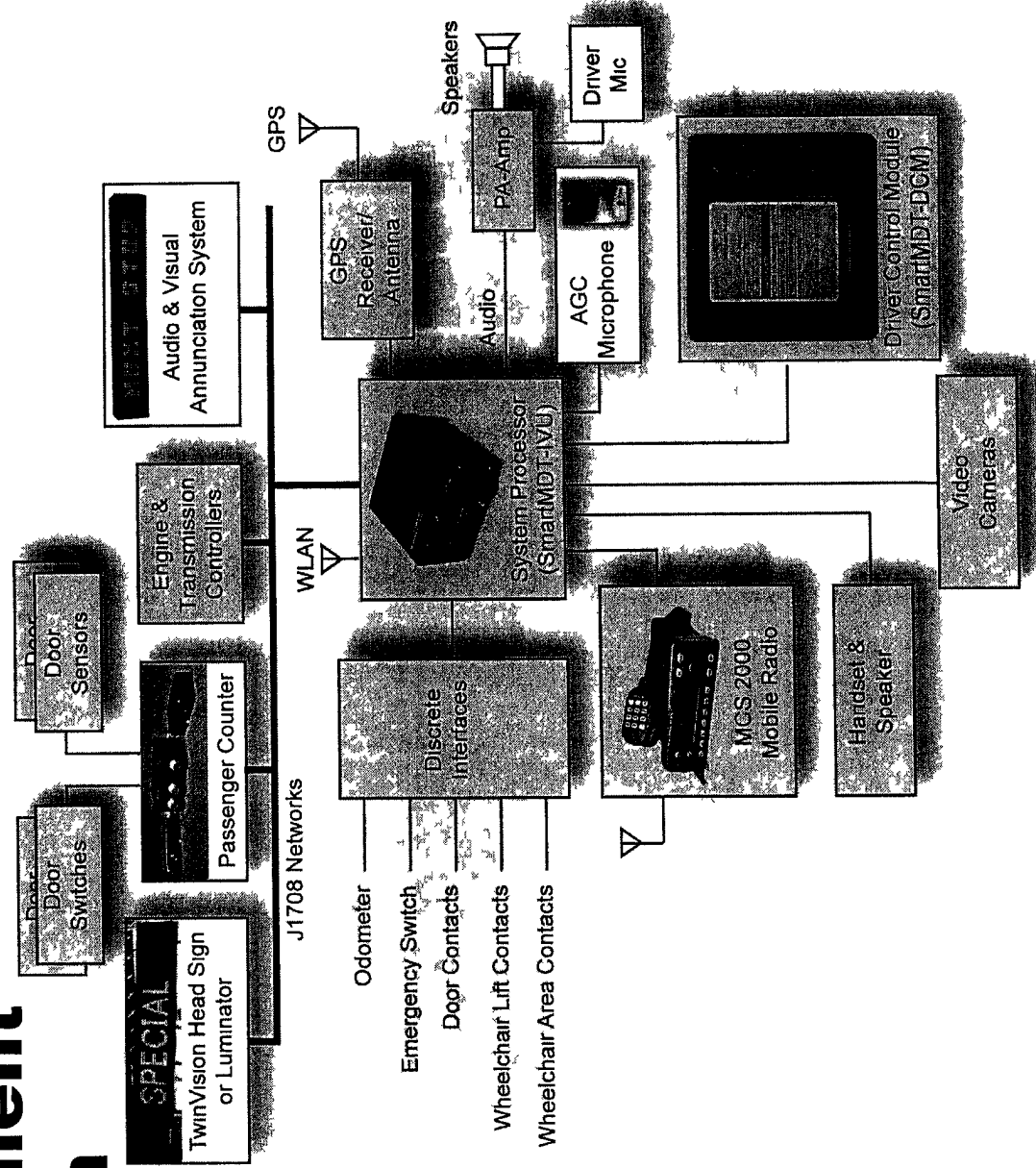
- Single point of control, log-on and display
- Management of voice and data communications
- GPS-based vehicle location
- Route and Schedule Adherence
- Interface for silent alarm
- Integrated annunciator, sign and APC functions
- Peripheral interfaces to support
 - Serial communications
 - RS-232, 422, & 485
 - J1708/1587
 - Data communications
 - Radio interface
 - Wireless LAN
 - Discrete inputs and outputs





Transportation Management Systems

On-Bus Equipment Block Diagram



Dispatch Center





Transportation Management Systems

OrbCAD SmartBus System

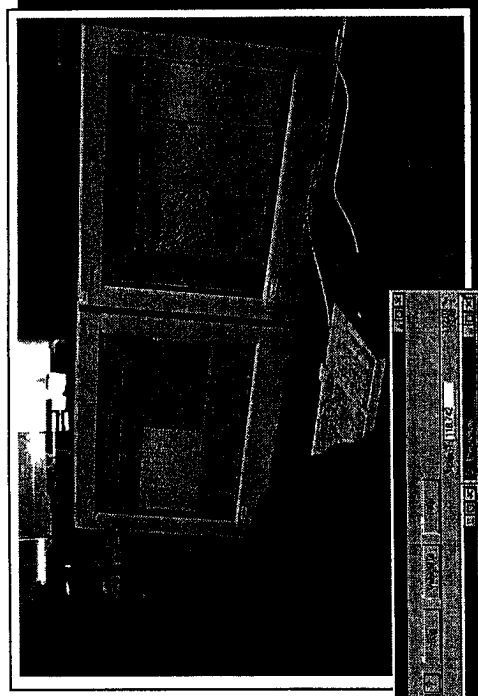
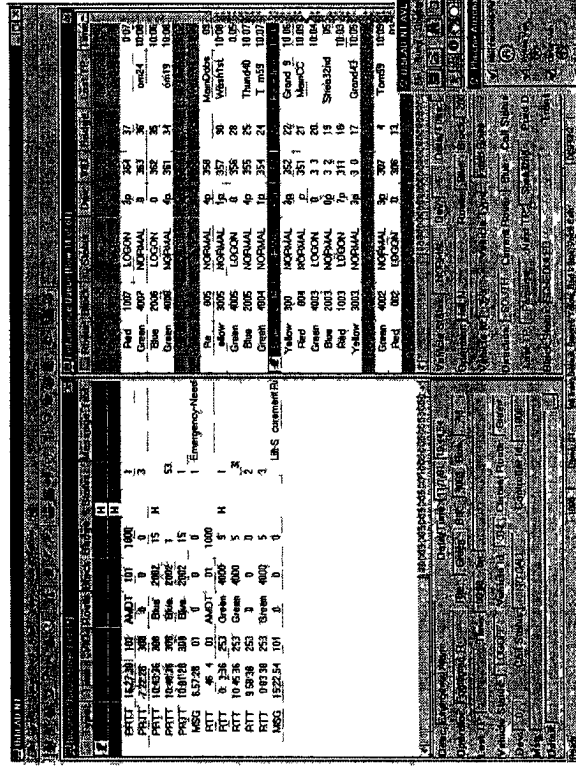
- Transit dispatch (CAD/AVL) product
- Windows-based server, database and client workstation software components
- Capabilities include
 - Two-way data messaging
 - Voice/data control
 - Prioritized message queue
 - Vehicle location display on map
 - Vehicle status (on/off route, on/off schedule)
 - Complete data logging
 - Emergency alarm processing
 - Much more!



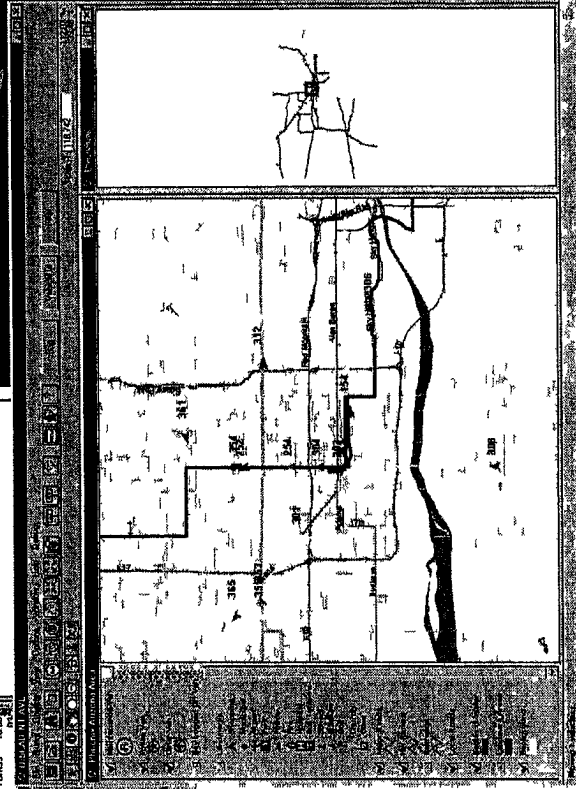


Transportation Management Systems

OrbCAD CAD/AVL Workstation Displays



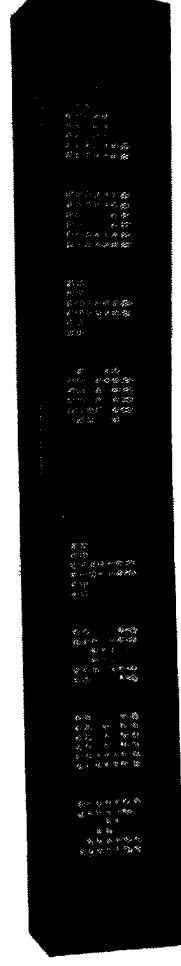
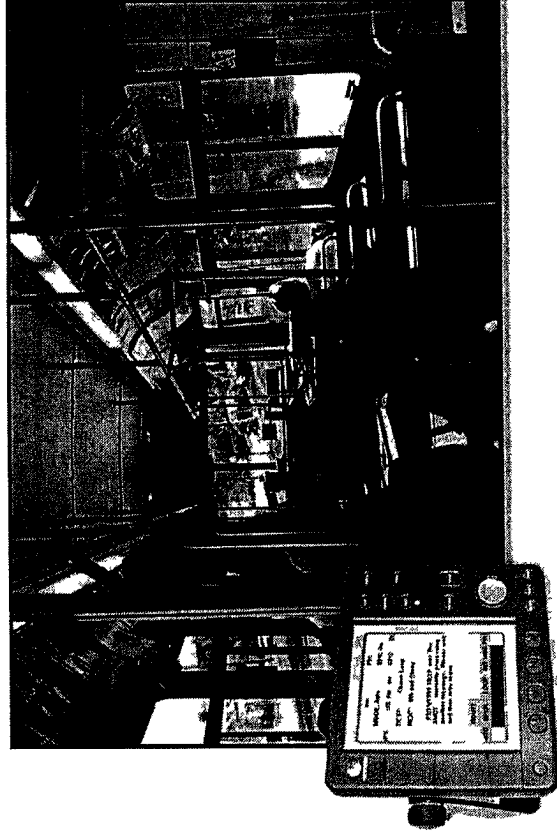
Incident and Performance Queues



AVL Map Display

SmartStop Voice Annunciator

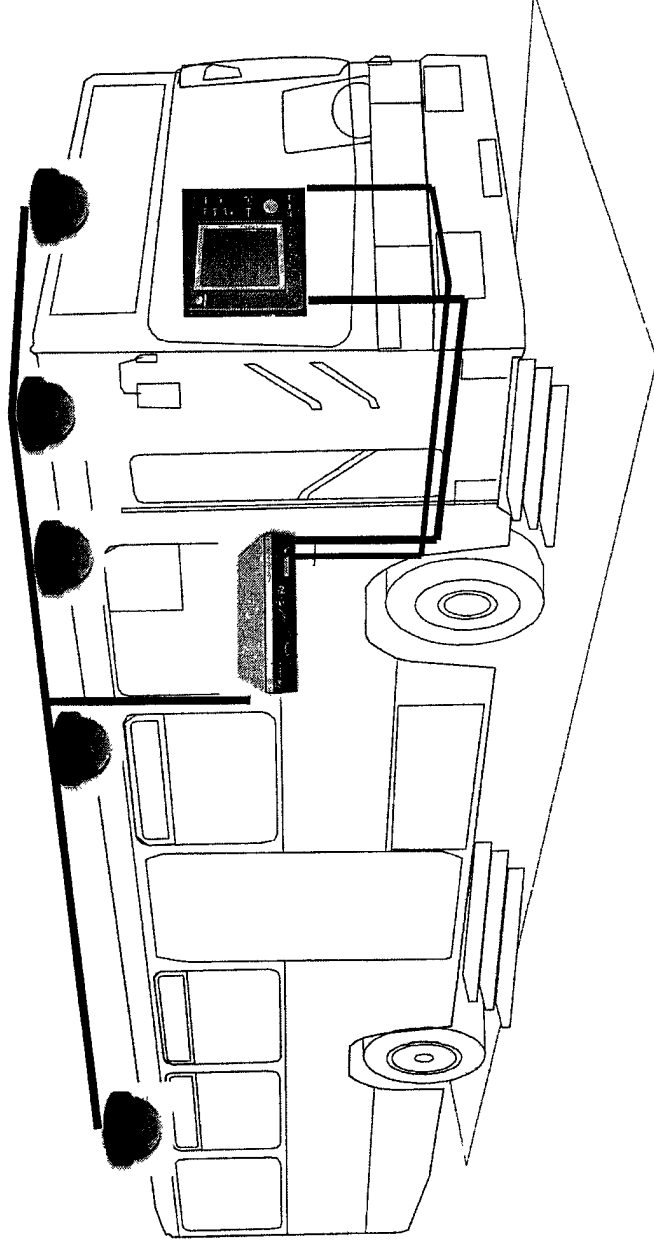
- In-vehicle voice annunciation and sign control
- Position-based triggering of announcements and sign text
- Additional operator control (via SmartMDT) for public service announcements
- Automatic volume level control
- Integrated control of both internal next stop sign and external destination sign
- Automatic download of new announcement data via wireless LAN





Transportation Management Systems

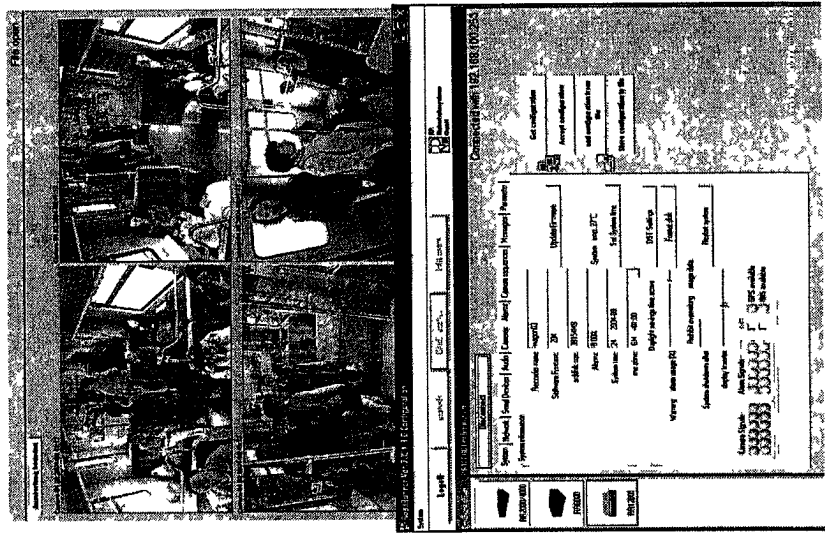
CCB Video Security Subsystem



- BNC cables from RP12001 Mobile DVR to RP500 Series Cameras
- Ethernet line between SmartMDT and RP12001 Mobile DVR (Supports video download through SBS WLAN and Time Synchronization based on input from Orbital GPS unit)
- Silent Alarm Switch (SAS) input to RP12001 Mobile DVR Triggers alarmed video at 6 fps rate

Mobile Video Manager (MVM)

- **Workstation containing MVM software for.**
 - DVR configuration
 - Video / audio playback & review
 - User account configuration
- **Standard Windows 2000/XP based PC**
- **Utilized on:**
 - Office workstation connected to disk docking station
 - Laptop in field connected directly to DVR
- **Permits configuration and review of both “alarmed” and standard video**
 - Alarmed video saved from overwriting
 - Standard video overwritten after disk is full





Orbital

Transportation Management Systems

OrbCAD Feature: MDT

- MDT implemented utilizing Citrix and Verizon Express Network high speed cellular data service
- Provides full access to standard OrbCad features to the mobile users
- Currently deployed at LACMTA, VTA, ACT, and SamTrans

