



Senate Subway AVO & SCADA System

Client: Office of the Architect of the Capitol

Location: U.S. Senate, Washington, D.C.



System Features

- DYNAC™ SCADA Software •
- Redundant Servers •
- Redundant High Performance Ethernet Switches •
- PLC's •
- DF-1 Communications Protocol •
- Variable Frequency Drives •
- Fiber Optics •
- Alarm/Event Printers •



U.S. Senate Subway, located in Washington, D.C. is a fully automated, driverless people mover that provides transport between the U.S. Capitol and the U.S. Senate (Hart & Dirksen) office buildings.

Transdyn provided an Automatic Vehicle Operation (AVO) System and a Supervisory Control and Data Acquisition (SCADA) System for the people mover. The AVO system consists of six motor control centers. Each motor control center houses a Programmable Logic Controller (PLC) communicating over serial links to Variable Frequency Drives (VFD's). The VFD's control a series of linear induction motors that apply thrust to the vehicles. The vehicle itself is a passive device. Braking, vehicle detection and speed measurement are accomplished by wayside devices. The AVO system is responsible for speed control, braking, station docking, door control, switch control, and interaction with the Automatic Vehicle Protection (AVP) System.

Transdyn's DYNAC™ software suite polls programmable logic controllers (PLC's) over a redundant fiber optic data highway. The system monitors power, vehicle position and operational modes. The system normally operates in a "pinched-loop" mode with up to four vehicles in operation at any given time with sixty-second headways. "Shuttle" mode is also available allowing dedicated cars to shuttle back and forth on a single track.

Transdyn provided servers, workstations, redundant Ethernet switches and upgraded alarm/event printers.

The new system increases the overall performance of the SCADA system and provides an enhanced graphical user interface for the operators.