SWARCO
CYBERCABINET ®

The SWARCO *CyberCabinet* is a simulation tool for transportation specialists and engineers to emulate, test, and validate intersection configurations using advanced controllers without needing a full traffic signal cabinet. It simulates multiple modern cabinets, including the ATC 5301, Caltrans TEES 2020 33X, NEMA TS2 Type 1 with a 16-channel MMU, and ITS version 1. The SWARCO *CyberCabinet* delivers faster, higher-quality results than traditional shop tests, improving onsite deployment and reducing call-backs once the intersection is up and running.

KEY BENEFITS

- Uses a built-in editor to develop an icon-based overhead view of the target intersection

- Provides clickable actions for detector inputs, pedestrian buttons, high and low priority service, volume and occupancy detector simulators and other multi-modal detection types with all types having individual control icons

- Displays the controller channel signal outputs using a library of MUTCD compliant traffic signal icons and output scenarios

- Verifies and validates the actual cabinet monitor unit or malfunction monitor unit for TS2 operation (CMU/MMU2) configuration programmed into the cabinet signal monitor

PRODUCT DESCRIPTION

The SWARCO *CyberCabinet* is the most advanced simulation solution designed for traffic systems professionals and engineers to emulate the functionalities of various traffic control cabinets without the need for physical hardware.

Running on Microsoft Windows, the *CyberCabinet* solution replicates the behavior of crucial cabinet components like the Cabinet Monitor Unit (CMU) and Serial Interface Units (SIUs). This enables engineers to test and configure cabinets using virtual environments, significantly reducing the need for physical setups.

The software supports multiple cabinet configurations and operates in two primary modes: CU Direct and SIU Direct, providing flexible options for real-time monitoring and troubleshooting.

CYBERCABINET®

VIRTUAL CABINET CONFIGURATION

ATC 5301 Standard Cabinet
- 5 Input SIUs
- 2 Output SIUs
- 32-channel cabinet monitor unit (CMU) capable of importing the EDI CMU-2212 MonitorKey configuration information

ITS Cabinet
- 5 Input SIUs
- 2 Output SIUs
- 32-channel CMU

NEMA TS2 Standard Cabinet
- 4 Detector BIUs
- 4 T&F BIUs
- 16-channel NEMA TS2 MMU2 emulator with archived MMU data import

TEES 332 Cabinet
- 1 Input FIO
- 1 Output FIO
- 18-channel CMU

REPLAY MODE

Controller sequences can be replayed and saved to repeat and analyze a signal sequence in detail.

SERIAL COMM TRACE LOG

A Serial Bus #1 'sniffer' captures the HDLC frames and displays the frame data and timestamp for detailed real-time analysis.

SIU DIRECT MODE

Used to monitor/control a physical SIU-2218 device in a test cabinet.

Map View

MAIN VIEW MODES

Controller operation can be viewed and exercised at the SIU/BIU device level (Device View), or with a higher level overhead view of the intersection (Map View).

Device View
The Device View presents SIU/BIU inputs and outputs as separate forms (devices) with a control for each I/O pin; name field, status icon, and checkbox.

Map View
The Map View elevates the display to a bird's eye view of the intersection geometry. Active icons are used to drive detector, ped, and preempt inputs. Programmable signal face icons display RYG controller outputs.

Map Editor
A built-in Map Editor is used to construct the Map View for a target intersection using active detector and signal icons and road furniture.

CMU FUNCTIONALITY

A 32-channel CMU function is configured from the actual intersection datakey parameters to validate compatibility with the controller database.

Fault Detection
Conflict, Lack of Signal, Multiple, Yellow Clearance, Yellow and Red Clearance, SB#1 Timeout, Local Flash, and ATC cabinet type 62 controller non-latched flash fault.
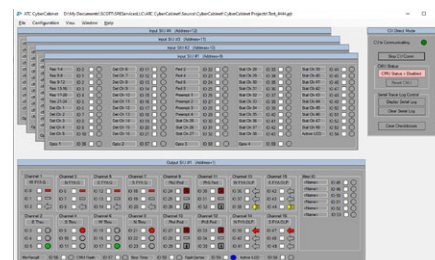
Flashing Yellow Arrow (FYA)
Full support of Flashing Yellow Arrow configurations derived from NEMA TS2, ATC 5301, Caltrans TEES cabinet and malfunction monitor units. FYA using ATC 5301 based virtual channels are also supported.

Fault Log
A previous fault log is maintained to review any fault events captured by the CMU.

Datakey Load and Read
The CMU datakey parameters can be read from a file or directly from the datakey. MMU2 parameters can be read from a CFG file.

Device View

swarco