ATC / ITS Roadside Cabinet
Area Context of ITS Cabinet within the ITS Architecture: Shown in RED

Published Standards:
1. ntcip.org
2. sae.org/technical/standards/J2735
3. ite.org/standards/ITScabinet/
4. ite.org/standards/ATCcontroller/
5. ite.org/standards/atcapi/
6. ite.org/standards/Led.asp

Institute of Transportation Engineers
Specializing in Intelligent Transportation Systems and Connected & Autonomous Vehicles
Modular Cabinet for Most Roadside Applications:
ITS Cabinet Architecture: Modular Design

Serial Interface Unit (SIU)
- (4) Opto Inputs
- (54) Input / Outputs
  - Detectors
  - Load Switches

Serial Bus 1
- Controller ↔ SIUs
- Read Field Inputs
- Control Field Outputs

Serial Bus 2
- Controller ↔ Detectors
- Read Detector Settings
- Control Detector Settings

Serial Bus 3
- CMU ↔ AMUs
- Signal Head Voltage
- Signal Head Current

Cabinet Monitor Unit (CMU)
- Voltage & Current, 32 Phases
- Cabinet Temperature
- Controller Health
- Door Switch
- Circuit Breakers
Serial Interface Unit (SIU)

SIU Operation:
- (54) Inputs at Power Up
- Become Outputs if Set by Controller
Auxiliary Monitor Unit (AMU)

Data Key Memory
- Conflict Programming
- Replaces Diode Cards

Serial Bus 3 to CMU

AMU: “Serial Multi-Meter”
- Signal Head Voltage
- Signal Head Current
Modular Buses

Expansion Beyond Signal Control
- 120 VAC Outlets
- DC Power & Communications
- Raw / Clean Power Inputs
Cabinet Option: 4-Door

Fits a standard NEMA base
Cabinet Option: 2 Door

Fits a standard 332 base
Cabinet Option: Pole Mount

Fits a standard 336 pole
ITS Cabinet Version 2 Project

User Needs, 2008 Austin TX

2009 ConOps
- Salt Lake City UT

2009 Requirements

2010: High Level Design
- Houston TX

2011: Requirement Traceability To High-Level Design

2013: Detailed Design Field Tests

2014: Completion
- Draft Standard
- Traceability Matrix
ITS Cabinet Version 2 Project

Realized User Needs:

• High Density Load Switch and Flasher tailored to 120VAC LEDs
• High Density Load Switch and Flasher tailored to 48 VDC LEDs
• High Density Detector input assembly
• Interface to battery backup during power loss
• Alternate energy sources, off grid during power outages
• Smaller size of internal cabinet subassemblies allows:
  • The use of smaller cabinets
  • More room for equipment in existing cabinet sizes
• Eliminates shock hazard of downed signal heads, such as hurricanes
• Eliminates shock hazard inside cabinet for safety testing and certification
• Elimination of arc-flash hazard, eliminates need for resistant apparel
Follow Along with ITS Cabinet V2 Standard Progress

http://www.ite.org/standards/ITScabinet/

- User Needs Presentations from Agencies
- Concept of Operations
- Requirements Specification
- High Level Design Concepts from Manufacturers
- Watch for ITS Cabinet V2 Draft Standard this summer
- Planned Ballot in 2014 by AASHTO, ITE and NEMA