MITSUBISHI ELECTRIC
Changes for the Better

for a greener tomorrow eco Changes

TCMS for LRV
(Train Control and Monitoring System for Light Rail Vehicles)

Mitsubishi Electric has developed the TCMS mainly for the light rail vehicle using CANopen.

This system is a user-configurable system enabling reducing cost of installation and maintenance.

System Configuration

The system can be configured using devices and development tools supplied by Mitsubishi Electric.

Open System

This system conforms to IEC 61375-3-3 (*1) and IEC 61131-3. (*2)

*1:CANopen Consist Network
*2:Programmable controllers

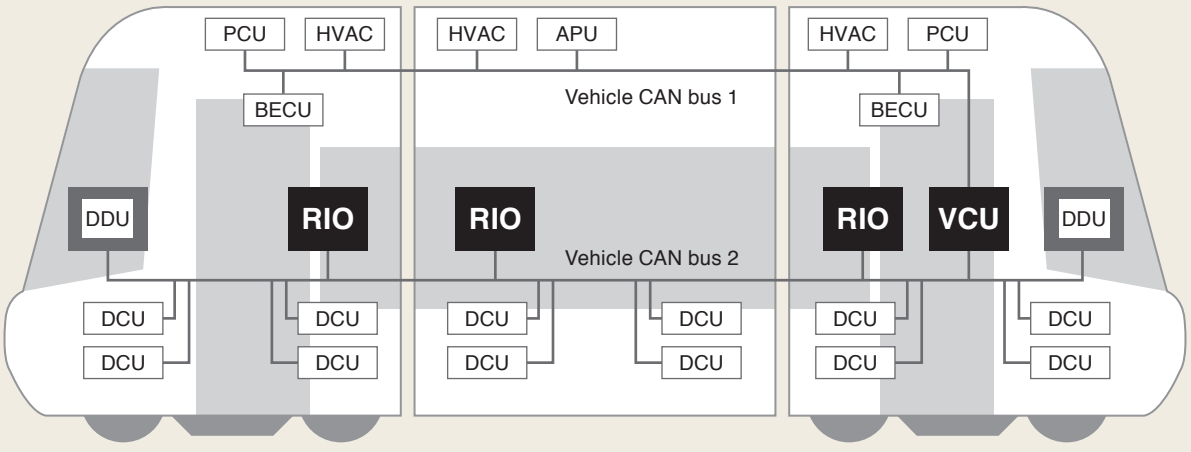
Component

Mitsubishi Electric supplies VCU and RIO as the components of this system.

Development Tool

Mitsubishi Electric supplies tools to configure the devices and to develop applications.

Example of System Configuration



VCU Vehicle Control Unit

RIO Remote I/O unit

DDU Driver Display Unit

BECU Brake Electronic Control Unit

DCU Door Control Unit

APU Auxiliary Power Supply Unit

HVAC Heating, Ventilation, and Air Conditioning system

PCU Propulsion Control Unit

System Configuration Procedure for the Customer

Design
Determining configuration based on the system specifications.

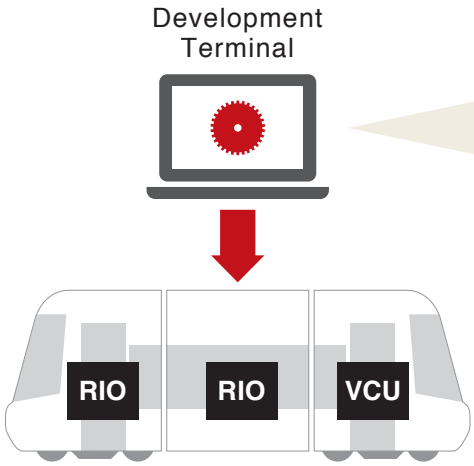
Procure
Selecting and ordering components such as enclosures, boards and power supplies.

Configure
Configuring and confirming the unit operation of the device. *

Install
Installing the devices on vehicles.

Test
Confirming correct system operation.

* Mitsubishi Electric can support or perform this process, if necessary

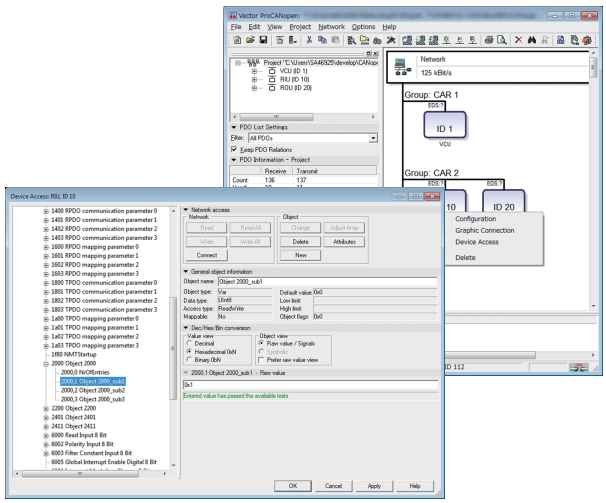


CANopen Setting — Configuring the settings for the interface between devices using a CANopen tool.

PLC Programming — Developing the application using a PLC tool (VCU only)

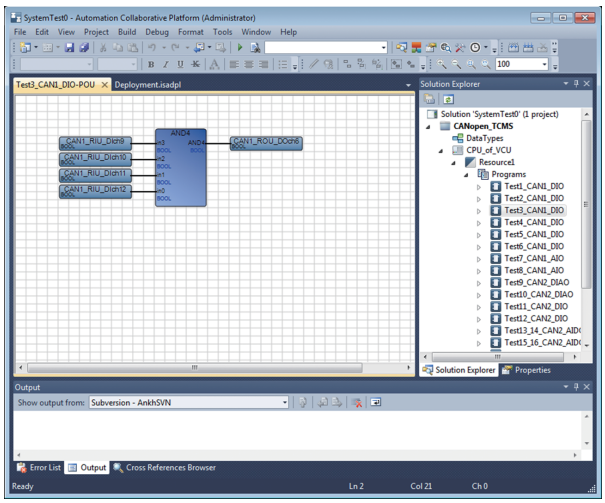
Setting Writing — Writing the above settings in the devices

● CANopen Tool



- Mitsubishi Electric recommends the Vector ProCANopen shown above. This tool allows the user to adjust the settings and write to the devices
- The tool is commercially available and the customer can utilize the existing CANopen tool, if any

● PLC Tool



- ISaGRAF® is used.
  This tool allows the user to develop applications and write them to the devices
- The tool is commercially available

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