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.

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

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

*1: CANopen Consist Network
*2: Programmable controllers

**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
- BECU: Brake Electronic Control Unit
- HVAC: Heating, Ventilation, and Air Conditioning system
- APU: Auxiliary Power Supply Unit
- PCU: Propulsion Control Unit
- DCU: Door Control Unit
- DDU: Driver Display 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.

- **Development Terminal**
  - **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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Specifications are subject to change without notice.