



Profession in Human Machine Interface

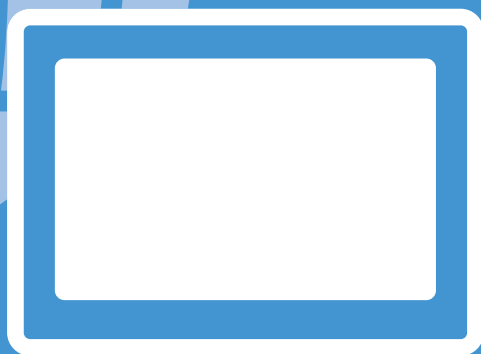
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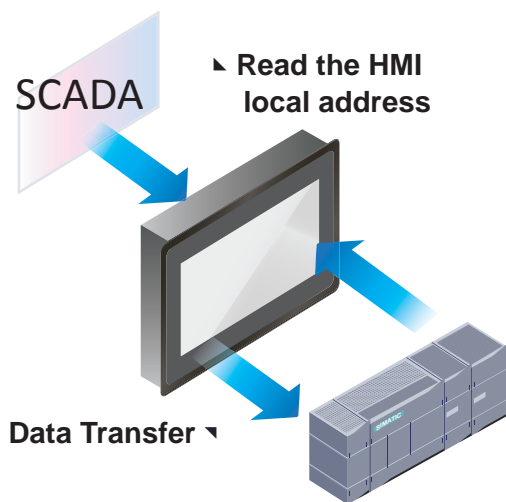
MODBUS TCP/IP Gateway provides
a direct communication channel
between SCADA and PLC



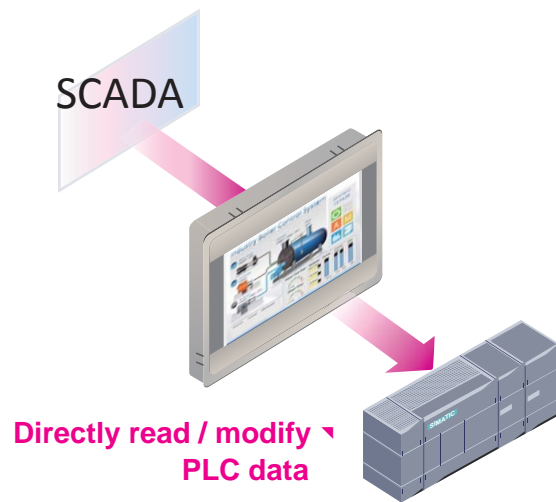
Introduction

Traditionally, when you use the SCADA (Supervisory Control and Data Acquisition) software to access the data of the PLC which is connected with the HMI, it is required to upload PLC data to the LW (local word) of the HMI by the Data Transfer function. Then, the SCADA can read the HMI LW to indirectly obtain PLC data by the MODBUS TCP/IP protocol. However, this solution is very inefficient.

In response to the increasing market demand for connecting the SCADA to the HMI efficiently, WEINTEK developed an efficient way to directly read or modify PLC data from the SCADA software. Since the MODBUS is the most widely used protocol in industrial control, most SCADA software supports the Ethernet Modbus TCP/IP. WEINTEK configuration software - EasyBuilder provides the MODBUS TCP/IP Gateway feature in setting up the address mapping between the MODBUS and the PLC. Then, this feature enables the SCADA software can directly read or modify PLC data by using MODBUS TCP/IP protocol.



▲ Traditional Method to access the PLC data

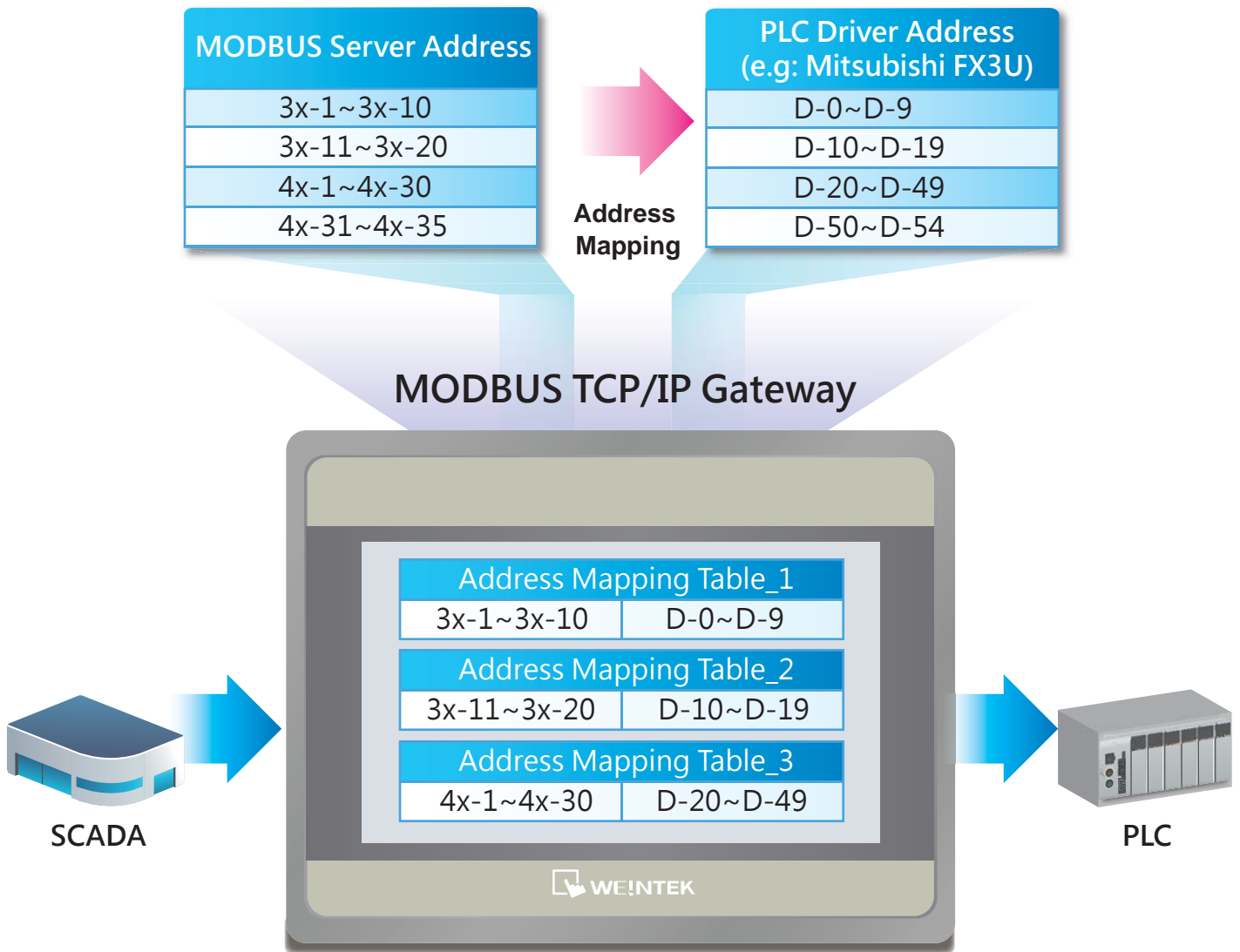


▲ MODBUS TCP/IP Gateway Method to access the PLC data

■ Complete MODBUS TCP/IP and PLC Address Mapping Table

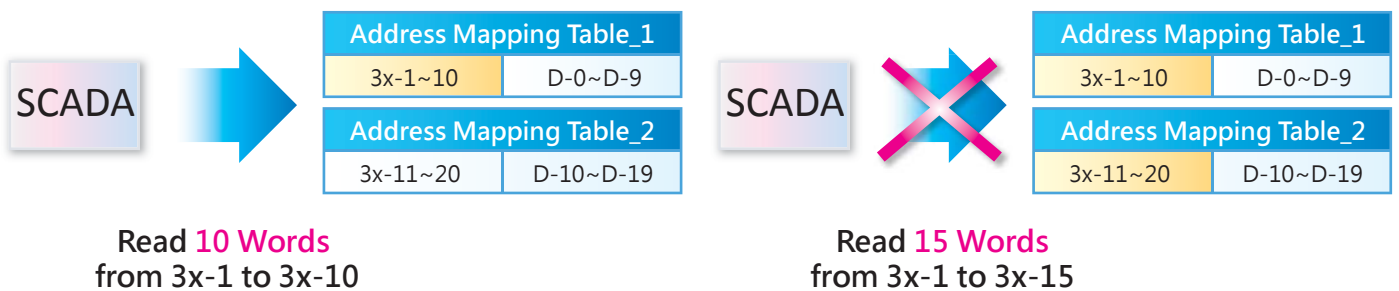
In the EasyBuilder configuration software, the Address Mapping Table is created based on the mapping relationship between the address of the MODBUS TCP/IP and the PLC. This table facilitates to directly access PLC data from the SCADA software.

The figure below shows a connection to a Mitsubishi FX3U PLC. For example, the addresses of the MODBUS started from 3x-1 to 3x-10 are mapping to the addresses of the Mitsubishi FX3U PLC started from D-0 to D-9. Furthermore, the addresses started from 4x-31 to 4x-35 are mapping to the addresses started from D-50 to D-54. Based on the Address Mapping Table, you can simply read the addresses from 3x-1 to 3x-10 to obtain the records of D-0 to D-9. Similarly, you can modify the records of addresses from D-50 to D-54 by simply modifying the records of the 4x-31 to 4x-35.



▲ Complete MODBUS Server and PLC Driver Address Mapping Table

In addition, in order to efficiently implement the MODBUS TCP/IP Gateway feature, the address from one MODBUS command shall be located within the range of one Address Mapping Table.



▲ The read address is in the range of one Address Mapping Table