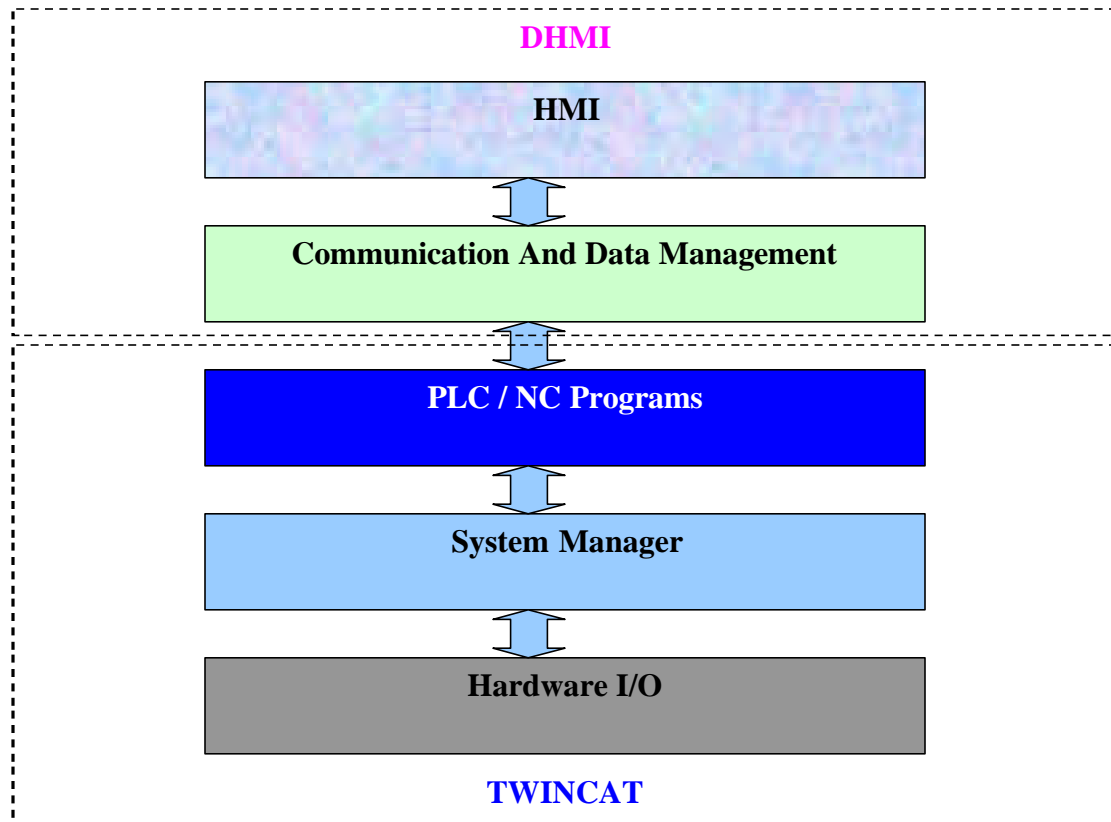


What Can DHMI Do on TwinCAT ?

It is easy to build a system control solution by using the combination of DHMI and TWINCAT PLC.



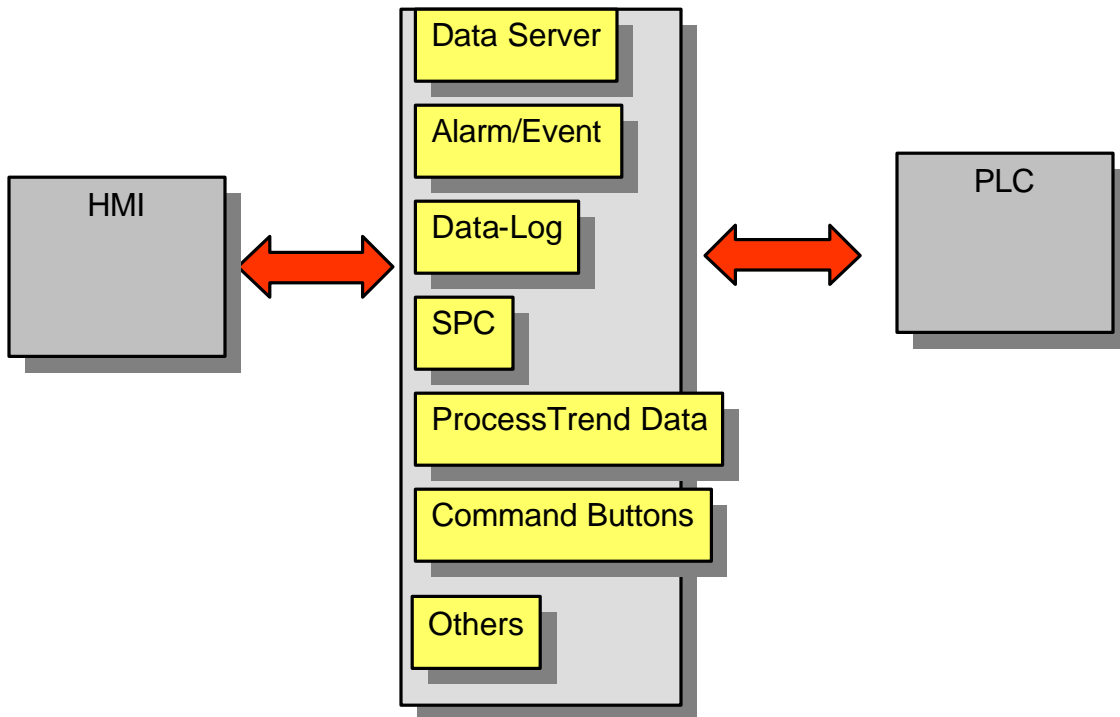
There is a special layer which is responsible for data communication and management, which makes HMI independent on PLC platform, HMI and PLC development just follow the same interface structure which is implemented in this layer. And many application configurations involving PLC and HMI can be handled in the Communication and Data Management layer without change PLC code and HMI code. The layer can directly communicate with OPC server and DDE server. Hence DHMI is easy to integrate different PLC platforms and data sources into one united framework. There is a tool provided for the developers to work with the layer.

Many developers just directly apply ADSOCX.ocx to communicate with TwinCAT PLC, but as we know the efficiency of ADSOCX.ocx is low. DHMI directly apply ADS Server to communicate with TwinCAT PLC to greatly improve the communication efficiency. And DHMI supports group reading via ADS to read multiple PLC data with one ADS call round which saves a lot of reading time.

Meanwhile, DHMI allows TwinCAT PLC to actively write data (such as alarms and datalogs or other information) to DHMI which avoids polling data from DHMI to PLC and saves a lot communication time.

DHMI is good development platform combined a general configuration software features and advanced programming languages which is suitable for people to develop professional and graphics-rich applications with their own personality. In particular, DHMI is suitable for those who want to develop their own personalized business HMI and do not want to spend too much time to realize some basic common HMI functions (such as the overall framework of HMI, Navigation Design, control buttons, language switch, unit switch , graphics, etc.).

The communication and data management layer is responsible for exchanging data between PLC and HMI, data management and storage saving/loading, alarm/event recording/handling, historical data recording/saving/SPC analyzing, process trend data sampling/synchronizing, command button setup/transferring, and so on.



DHMI can run under Microsoft operating systems (Win NT, Win 2000, Win XP, Win EXP, Win Vista). Support ActiveX controls, ODBC database connection, COM/DCOM, Internet, email and other windows features. It supports VB6, C# and VB.NET languages to expand its existing functions. The developers can directly

apply VS2005 or VS2008 to develop DHMI applications by using project templates provided by Dragonfly.

Based on TWinCAT, DHMI can do

- Control system program architecture / Data structure design
- PLC logic、 Process control algorithm development
- PLC NC PTP application
- PLC NCI motion control development
- CAD/CAM Support, DXF-G_Code support, G Code generation,
- Different HMI graphic pages development
- Production system design. As DHMI is designed based on components and modules, so the final solution can be configured with different function components and modules. Depending on the machine type and customer requirements to configure the system software and parameters. The production engineers just configure the parameters in Data Server to select the requested functions, and design the special features (including PLC and HMI) in accordance with the specific requirements. "Production System" can automatically generate the corresponding PLC program and HMI modules, download the configuration to the machine, thus the production efficiency is greatly improved.
- Remote service and diagnosis. As DHMI is working under Windows operating system, it is possible to apply MODEM or INTERNET (TCP/IP) or other remote software tools to connect remote machines for services/upgrading/diagnosing, further the service quality and efficiency are guaranteed and improved, meanwhile a lot of cost is saved.

The Control System Features Based on DHMI and TwinCAT :

- Systematic and professional software architecture design. Object-Oriented-Design approach is applied to designing PLC and HMI.
- At beginning of the design, Production Management, After-Sales Service, Remote Diagnosis, On-Line Help and others are taken into account together. Such as "After-Sales Service", customers may request new features after the machines are shipped, so at beginning of the software architecture design we need to take this possibility into account, which enables that the software engineer just need to modify some parameters or write a separate HMI or PLC program so that USB or EMAIL can be used to deliver these changes to customers and customers only need to run a simple program to meet the purpose. This will save you a lot of manpower and material resources. In particular, the machine was sold to the overseas, and service travel will be extremely expensive. Good software design can guarantee the reuse of software resources, and hence the productivity can be enhanced.
- Important production and historical data are automatically saved in SQL database.
- Configuration data can be freely be uploaded/ downloaded /copied /transferred.
- Online/Offline backup/restore of process data and parameters are allowed.
- Present one unified HMI look and feel with multiple PLC platforms. As the communication and data management layer in DHMI makes HMI independent on PLC platforms, hence DHMI allows the customers to buy different PLC platforms from different suppliers as needed, and combine them into a unified data structure and HMI architecture.

DHMI Applications with TWinCAT

1. A Window Corner Cleaning Control System AUTOMA

When the windows are welded from the welding machines, it is needed to clean welding scars of the four corners of each welded window

frame using more than 20 knives (tools). Different window frames may need different cleaning programs. NCI and G Code are used to implement all these functions.

2. A Tool Grinding Control System XiaMen JinLu

A five axis grinding machine is to grind the tools. Left / Right trencher PCB forming a total of 5-axis, which axis X, Y, Z linkage grinding processing, X-axis control grinding length of the trenching, Y-axis control the blade diameter, overlap tooth width and size, Z-axis is the axis of rotation axis, X1, Y1-axis positioning of the location of the tool plate. (NCI / G Code support)

3. A Pipe Temperature/Flow Measurement System XiaMen LuDa



The testing machine must comply with D08 standards-related requirements, can choose manual or auto operation; Test is divided into 10 items:

- 1, Flow rate and temperature sensitivity of the test
- 2, Thermal performance of the initial test set
- 3, Valve operation mixed water temperature deviation
- 4, The second mixed-water outlet temperature deviation
- 5, Room temperature, the opening of the mixed water temperature deviation

- 6, The mixed water temperature regulation of water temperature when mixed deviations
- 7, Water interruption test
- 8, The impact of pressure changes in the mixed water temperature test
- 9, Hot and cold water temperature change temperature test
- 10, Flow changes Temperature stability test
(TWinCAT PLC)