

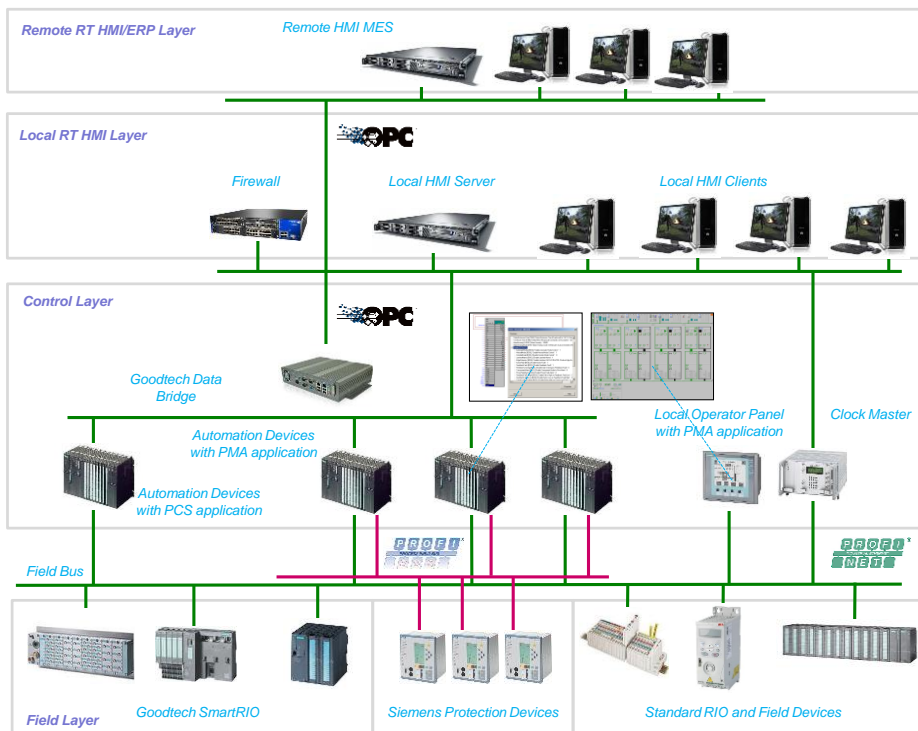
Goodtech Power Management Control System

The **Goodtech Power Management Control System** is a modular high performance power management system based on industry standard hardware and software. The system is based on Simatic standard PLC hardware in the S7 300 and S7 400 range. It is designed to be used in a standalone fashion or embedded in controllers running the **Goodtech Open Process Control System** or the **Goodtech PCS7** control system application .

When the system is embedded in the standard **Goodtech Open Process Control System** version 4.0 or 5.0 controllers, the power management system is capable of time stamping messages with a resolution of two milliseconds. In the current version the system can handle up to eight DG sets connected to up to four separate power bus-bars. The PMA controller application can be distributed in up to four separate Simatic controllers. The PMA controller application can also execute on Simatic 400H (Hot Standby) controllers. In addition to standard PMA functionality such as fault and load dependent start and stop of DG sets, the system is also capable of load limitation through fast limitation of Variable Speed Drive power consumption (10 milliseconds).

Engineering of the system is performed using standard PCS7 engineering tools and the functionality of the system is roughly equivalent with the functionality of the Goodtech PCS7 system.

The figure below shows the principle for the Goodtech Power Management automation system.



The figure shows the Goodtech PMA system embedded in a Goodtech Open Process Control System for normal process applications and power management applications.

The Simatic controllers can combine normal PCS control and the special PMA control in one controller. The PMA system can use the Goodtech Smart RIO system for high precision time stamping.

The Siemens protection devices (Siprotec) are connected to the controllers by means of Profinet. A special protocol handles message transfer from the protection devices to the controllers, ensuring high precision time stamping for protection device data also.

In the newest version of the Goodtech Bridge system the protection messages will be routed directly to the Data Bridge using the IEC 61850 protocol

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