

FDT技术 应用

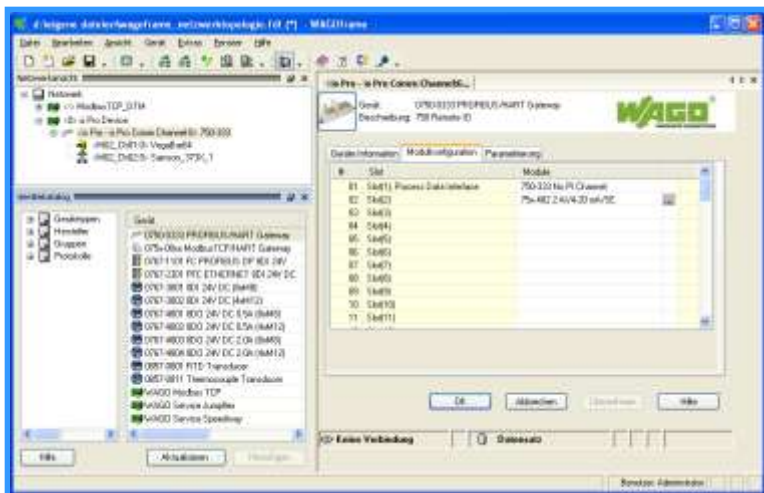
陈阳

万可电子（天津）有限公司

2010年12月07日

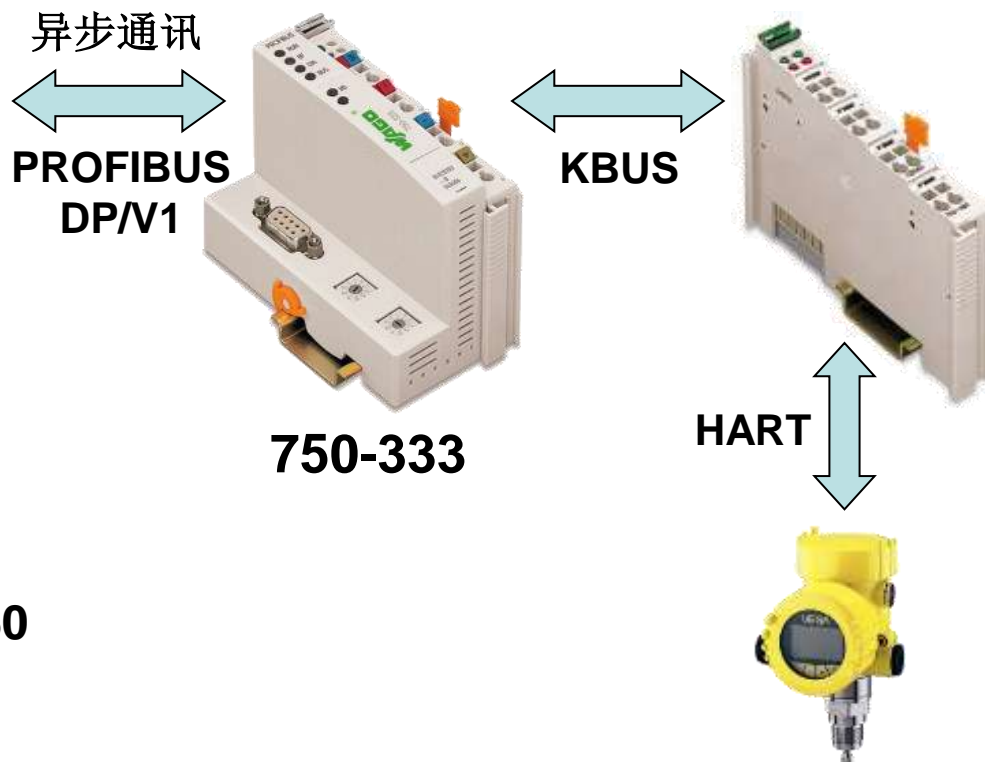
- **HART/ 现场总线网关的FDT/DTM应用;**
- **高性能远程IO的FDT/DTM应用**

- 将HART模块安装在Profibus DP/V1适配器750-333的节点上，通过Profibus/HART网关DTM 759-360应用。



FDT frame

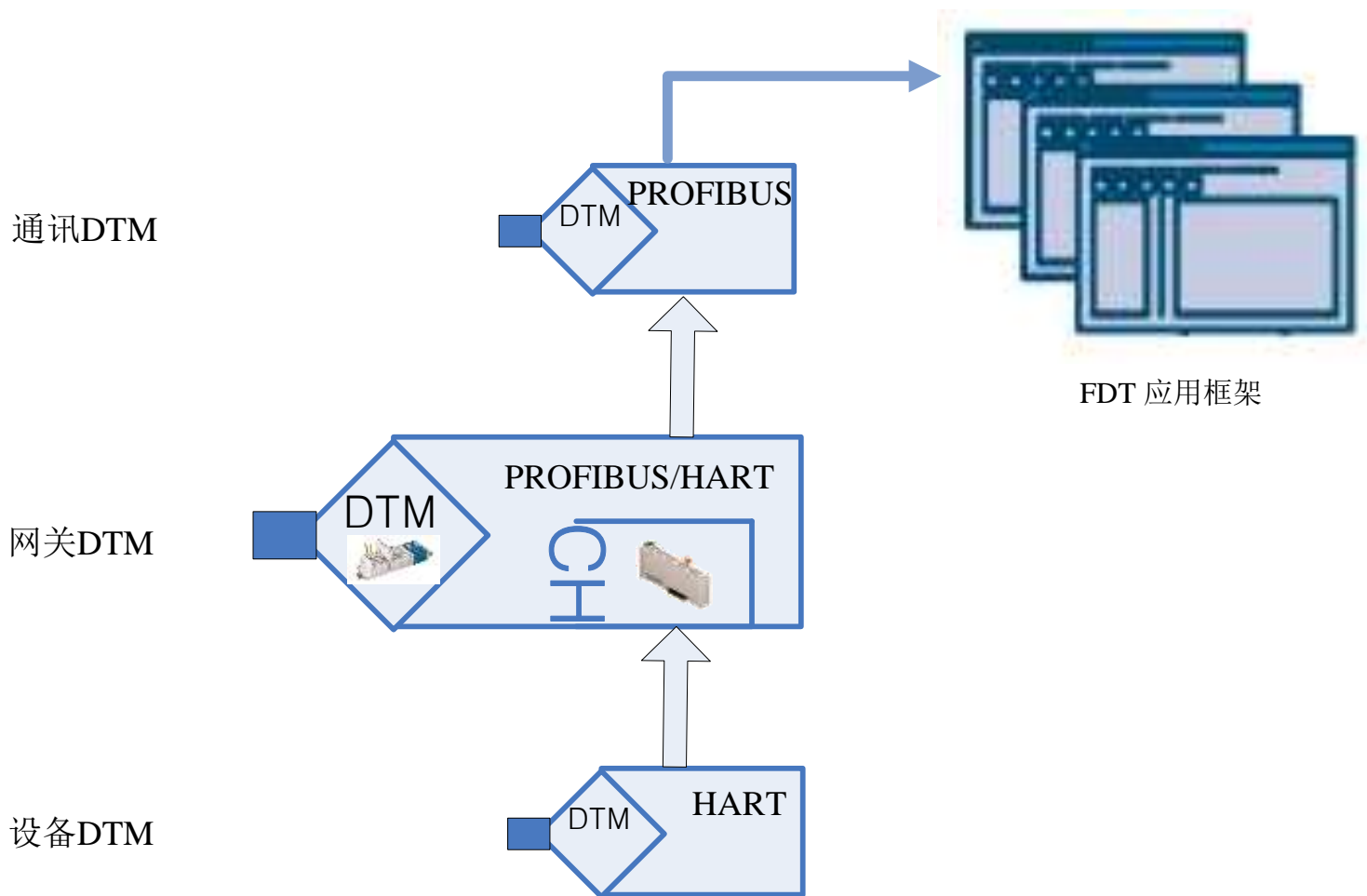
PROFIBUS/HART网关 DTM 759-360



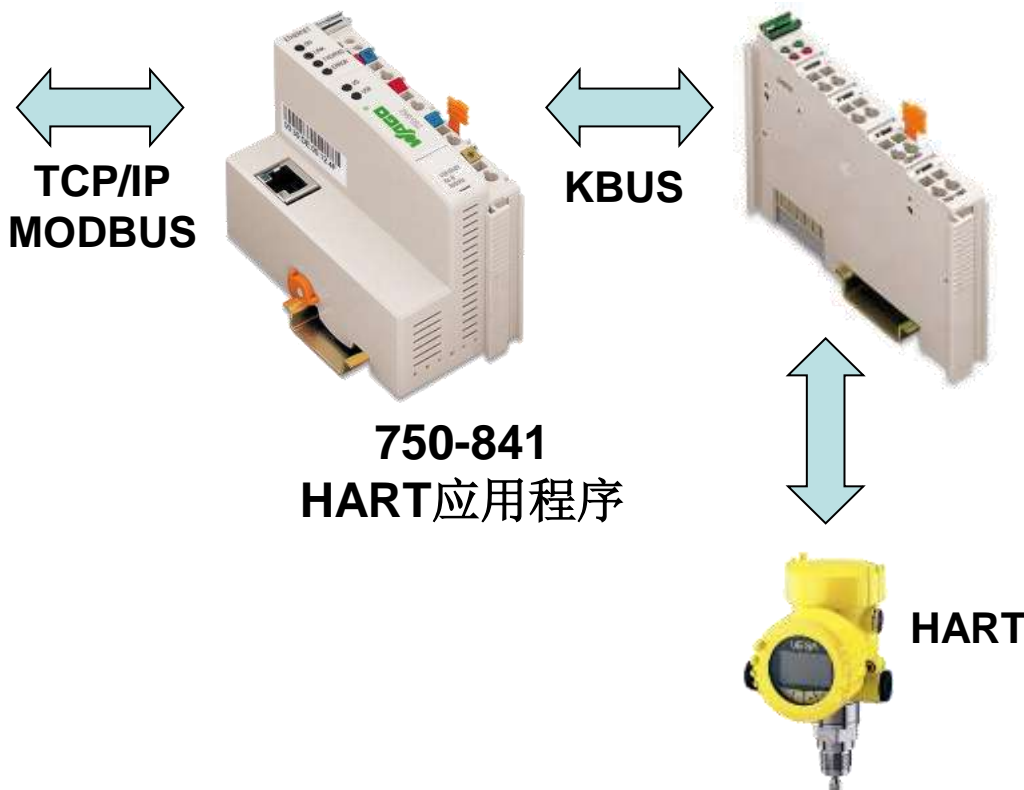
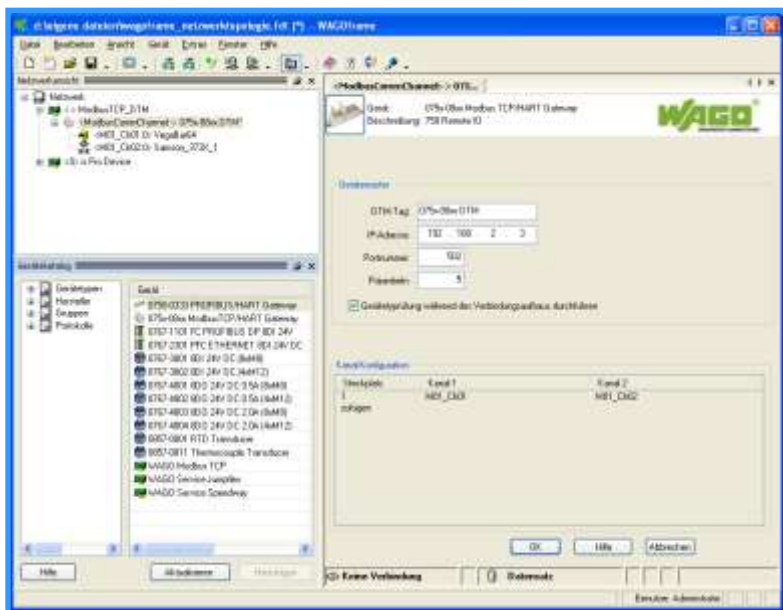
通讯步骤:

- PROFIBUS/HART网关DTM 接收来自HART现场设备DTM的 HART报文，并通过PROFIBUS报文发送到750-333;
- 750-333 继续通过KBUS发送 PROFIBUS DP/V1报文到HART模块;
- 数据通过HART PROFIBUS协议输出到所连接的传感器。

- 将HART模块安装在Profibus DP/V1适配器750-333的节点上，通过Profibus/HART网关DTM 759-360应用。



- 将HART模块安装在Ethernet控制器节点上，通过ModbusTCP/HART网关DTM 759-359应用；



FDT frame

ModbusTCP/HART网关759-359

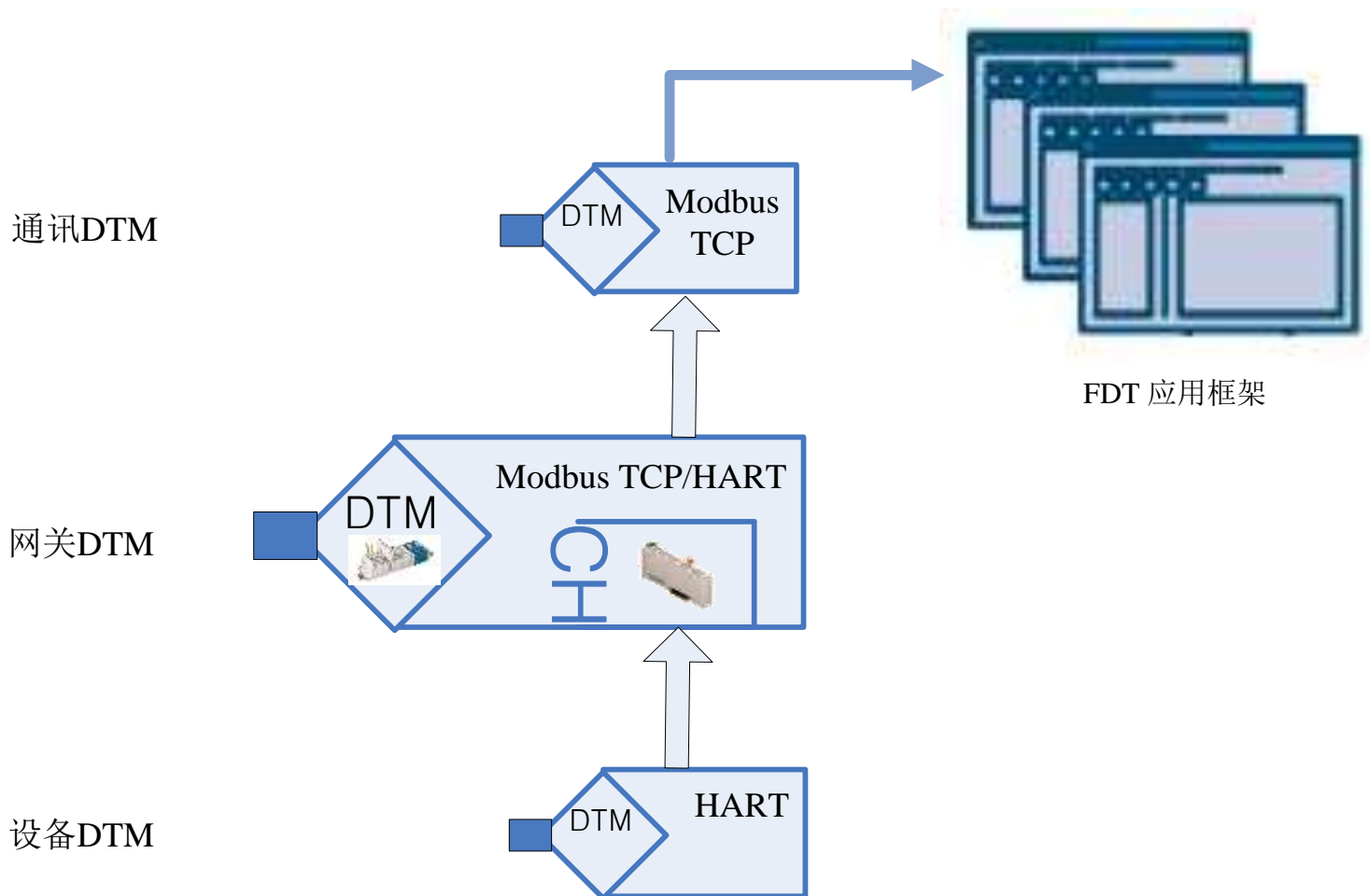
通讯方式:

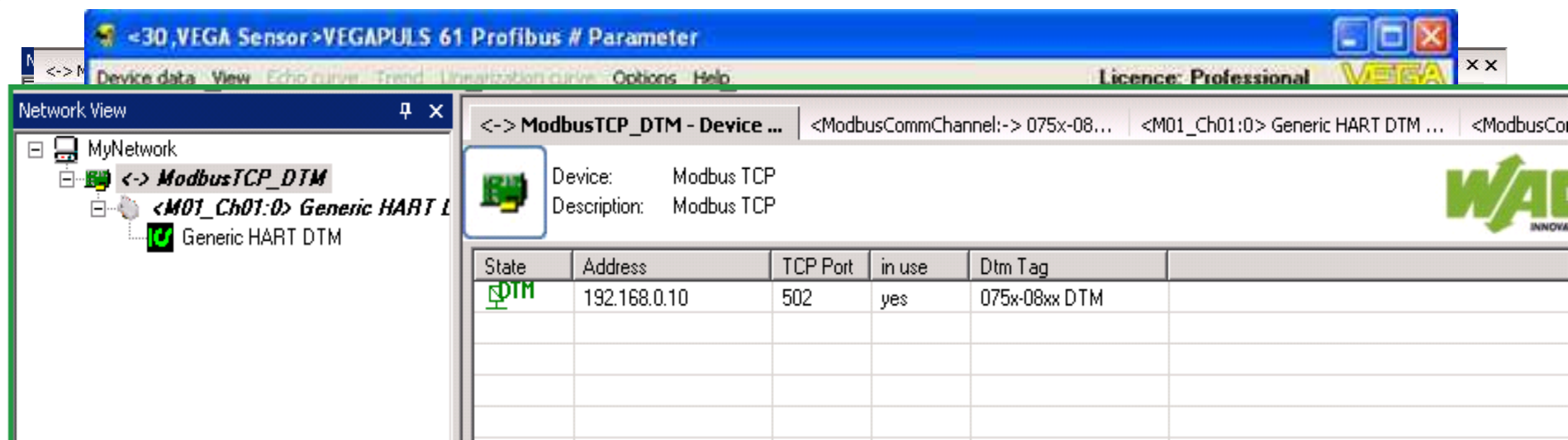
ModbusTCP/HART网关DTM 从HART现场设备的DTM接收 HART报文，并通过Modbus报文传输给现场总线750-841；

750-841 收到 Modbus报文，读取 HART报文并通过KBUS发送到HART模块；

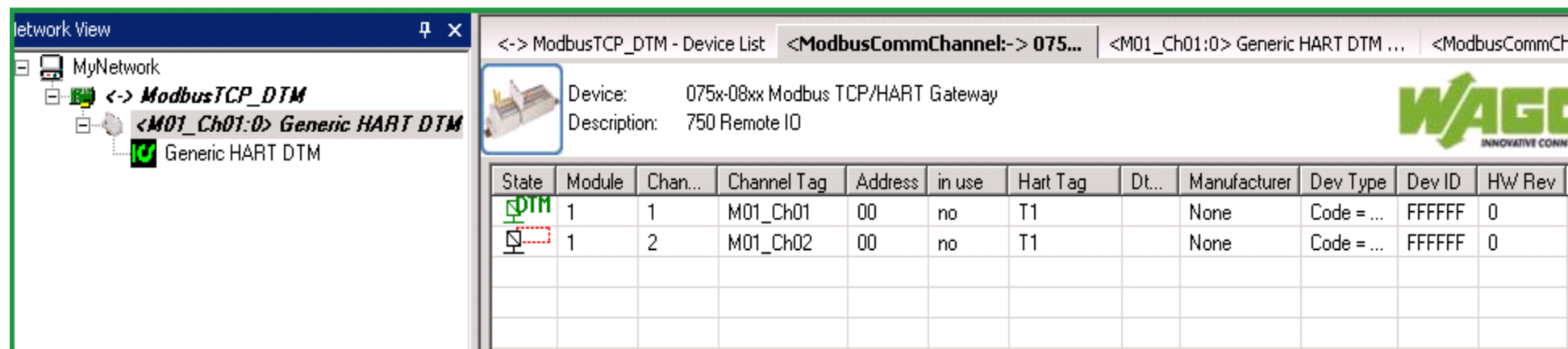
HART模块把它传输到 HART 现场设备。

- 将HART模块安装在Ethernet控制器节点上，通过ModbusTCP/HART网关DTM 759-359应用；





frame中的Modbus TCP设备页



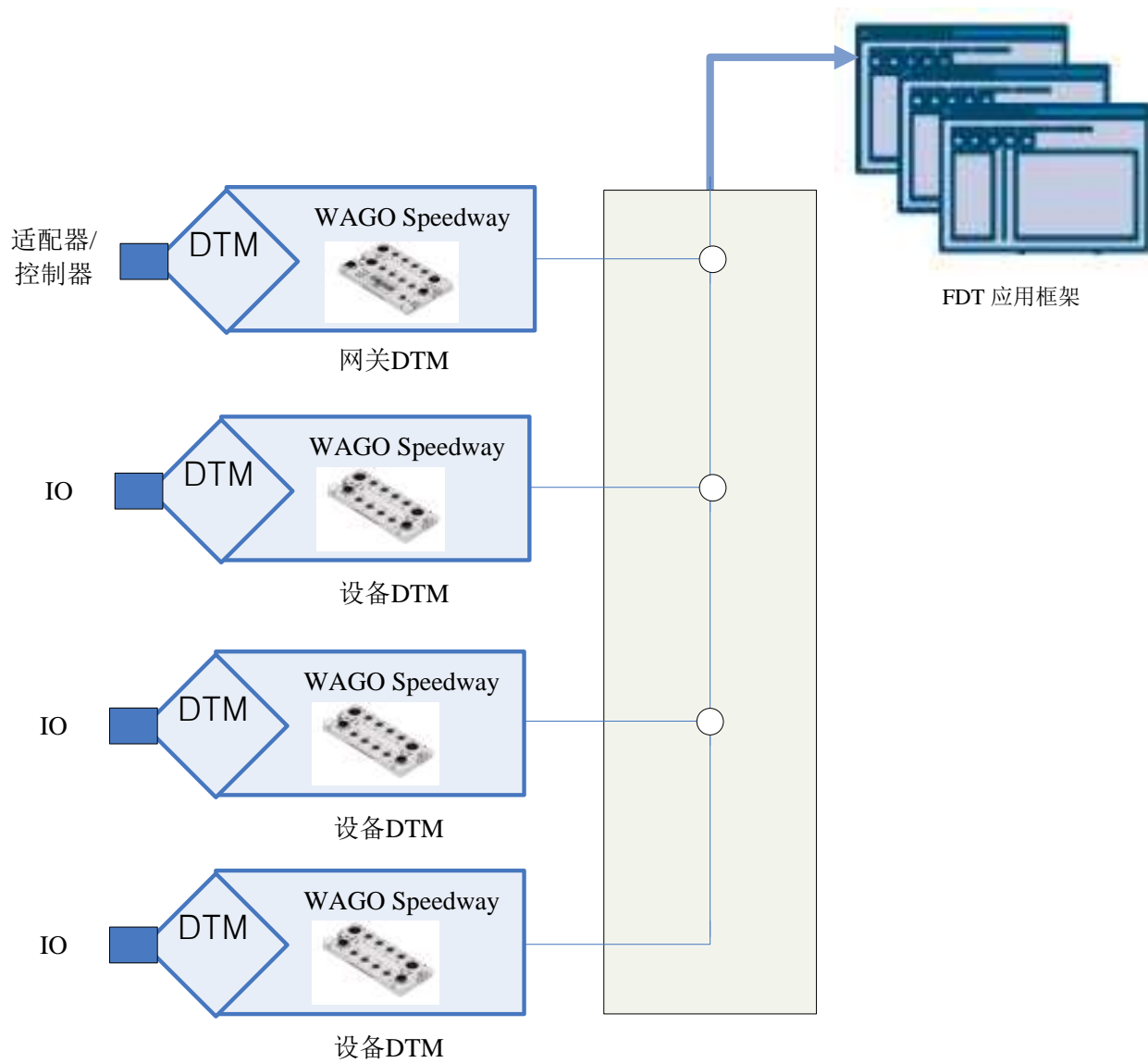
frame中的HART仪表页

HART模块的应用方法:

- 将HART模块安装在Ethernet控制器节点上，通过ModbusTCP/HART网关DTM 759-359应用；
- 将HART模块安装在Profibus DP/V1适配器750-333的节点上，通过Profibus/HART网关DTM 759-360应用。

- ◆767系列按需改善数据传输速率，循环时间短，信号采集和传输的时间同步；
- ◆广泛灵活的网络布置安装；
- ◆FDT/DTM参数化，异步和同步诊断。
- ◆防护等级IP67，全封装；
- ◆工作温度-25℃~60℃；
- ◆极好的EMC保护。





<Speedway-> 0767-1101 FC P...

0767-1101 FC PROFIBUS DP 8DI 24V DC
Fieldbus Coupler, inclusive 8 digital inputs (Version 2)
WAGO Kontakttechnik GmbH & Co. KG

Settings (Online)
 - Connection Diagram
 - Electronic Type Label
 - Profibus
 - Extended Settings
 - **Real Time Clock**
 - S-BUS Master
 - Blink code
 - System Event History
 - Diagnostics History
 - Internal Input/Output
 - Diagnostic Overview
 - Digital Input 1 (X1/0)
 - Digital Input 2 (X2/1)
 - Digital Input 3 (X3/2)
 - Digital Input 4 (X4/3)
 - Digital Input 5 (X5/4)
 - Digital Input 6 (X6/5)
 - Digital Input 7 (X7/6)
 - Digital Input 8 (X8/7)
 - Global Settings
 - Field Supply

Real Time Clock
 Daylight saving time
 Time zone: UTC+8 (China Standard)
 Actual time: 2010-04-06 10:37:05
 UTC: 2010-04-06 02:37:05
 Apply PC time

S-BUS Master
 Max. restarts: 0x00000000
 Special case: 0xFFFFFFFF ==> endless restarts

Blink code
 Blink Code: 0:0:0

Diagnostics History

ID	S-BUS Address	Power Addr	Time Stamp	Data
4	1	614	2000-01-01 01:01:05	00000000
3	0	614	2000-01-01 01:01:05	00
2	1	614	2000-01-01 01:00:02	00000000
1	0	614	2000-01-01 01:00:01	00

System Event History

No.	Event	Error Code	Class	Count	Time Stamp
1	RCOMING	1-6-1	3821505	1	2000-01-01 01:00:11
2	RCOMING	1-6-1	3821505	1	2000-01-01 01:00:11
4	RCOMING	1-6-1	3821505	1	2000-01-01 01:00:11
5	RCOMING	1-6-1	3821505	1	2000-01-01 01:00:11

Real Time Clock
S总线主站
闪烁代码
系统故障历史
诊断历史

Read Write Close Help

Connected Device

0767-2301 PFC ETHERNET 8DI 24V DC
Programmable Fieldbus Coupler, inclusive 8 digital inputs (Version 2)
WAGO Kontakttechnik GmbH & Co. KG

Diagnostics History

Entries:

ID	S-BUS Address	Param Addr.	Time Stamp	Data
3	2	6-1-4	2010-03-24 15:25:54	00
2	1	6-1-4	2010-03-24 15:25:49	0F0000
1	1	6-1-4	2010-03-24 15:25:48	0F000F

Clear entries:

ID of last entry:

Maximum size of history: Byte

Current history size: Byte

Buttons: Read, Write, Close, Help

Status: Connected, Device

诊断信息记录
系统事件记录

The screenshot shows the WAGO configuration software interface for a 0767-2301 PFC Ethernet 8DI 24V DC module. The left sidebar contains a tree view with the following structure:

- Settings (Online)
 - Connection Diagram
 - Electronic Type Label
 - Ethernet Configuration
 - Ethernet IPV4 Configuration
 - EtherNet/IP Configuration
 - Ethernet Modbus Configuration
 - SNTIP Configuration
 - FTP Server Configuration
 - WEB Server Configuration
 - Real Time Clock
 - S-BUS Master
 - Blink code
 - File System
 - System Parameter Handling
 - System Event History
 - Diagnostics History
 - Internal Input/Output
 - Diagnostic Overview
 - Digital Input 1 (X1/0)
 - Digital Input 2 (X2/1)
 - Digital Input 3 (X3/2)
 - Digital Input 4 (X4/3)
 - Digital Input 5 (X5/4)
 - Digital Input 6 (X6/5)
 - Digital Input 7 (X7/6)
 - Digital Input 8 (X8/7)
 - Global Settings
 - Field Supply

The main settings area is titled "Field Supply" and contains the following configuration options:

- Enable field supply:
- Autorestart delay: 1000 ms
- Simulation diagnostics:
- Short circuit:
- Open load:

At the bottom of the window, there are buttons for "Read", "Write", "Close", and "Help". The status bar at the very bottom shows "Connected" and "Device".

仿真：现场接线短路
现场接线短路
系统供电电压过低
现场侧供电电压过低

The screenshot displays the WAGO FDT/DTM software interface. At the top, the window title is "<WAGO 767:001> 0767-4802 8...". Below the title bar, there is a product image of a digital output module and its specifications: "0767-4802 8DO 24V DC 0.5A (4xM12)", "Digital Output Module, with 8 outputs (Version 1)", and "WAGO Kontakttechnik GmbH & Co. KG". The WAGO logo is visible in the top right corner.

The main interface is divided into two panes. The left pane, titled "Settings (Online)", contains a tree view with the following items: "Connection Diagram", "Electronic Type Label", "Diagnostic Overview", "Digital Output 1 (X1/0)", "Digital Output 2 (X1/1)", "Digital Output 3 (X2/2)", "Digital Output 4 (X2/3)", "Digital Output 5 (X3/4)", "Digital Output 6 (X3/5)", "Digital Output 7 (X4/6)", "Digital Output 8 (X4/7)", and "Global Settings" (which is currently selected and highlighted).

The right pane, titled "Global Settings", contains three settings, each with a checkbox:

- Simulation diagnostics
- Low voltage ULS
- Low voltage UA

At the bottom of the interface, there are four buttons: "Read", "Write", "Close", and "Help". Below these buttons, a status bar shows "Connected" and "Device".

模块系统供电和现场侧供电的仿真

<WAGO 767:001> 0767-6401 4...

0767-6401 4AI U/I
Analog Input Module Voltage/ Current, with 4 inputs (Version 1)
WAGO Kontakttechnik GmbH & Co. KG

WAGO
INNOVATIVE CONNECTIONS

Settings (Online)

- Connection Diagram
- Electronic Type Label
- Diagnostic Overview
- Analog Input 1 (X1/CH1)
- Analog Input 2 (X2/CH2)
- Analog Input 3 (X3/CH3)
- Analog Input 4 (X4/CH4)
- Measurement Range User 1
- Measurement Range User 2
- Measurement Range User 3
- Measurement Range User 4
- Global Settings
- Field Supply**

Field Supply

Enable field supply

Autorestart delay ms

Simulation diagnostics

Short circuit

Open load

Read Write Close Help

Connected Device

仿真：系统和现场侧供电电压过低和现场供电开路/短路

The screenshot shows the WAGO software interface for configuring an analog output module. The window title is '<WAGO 767:002> 0767-7401 4...'. The main content area is titled 'Adjustment Signal Range User 1'. On the left, a tree view shows the configuration structure, with 'Adjustment Signal Range User 1' selected. The main panel contains the following settings:

- Copy presettings from: ± 20 mA
- Signal type: Current output
- User scaling active:
- User offset: 0
- User gain: 1
- Saturation lower limit: -32768
- Saturation upper limit: 32767

At the bottom right, there are buttons for 'Apply', 'Close', and 'Help'. The status bar at the bottom left shows 'Connected' and 'Dataset'.

用户自定义的信号
类型和范围设定

- 自动扫描网络构建拓扑结构模块
- 设备配置参数的读取和存储
- 对设备进行配置和参数设置
- 离线模式下规划网络和预先配置
- 检测配置变化并存档日志文件
- 诊断
- 仿真



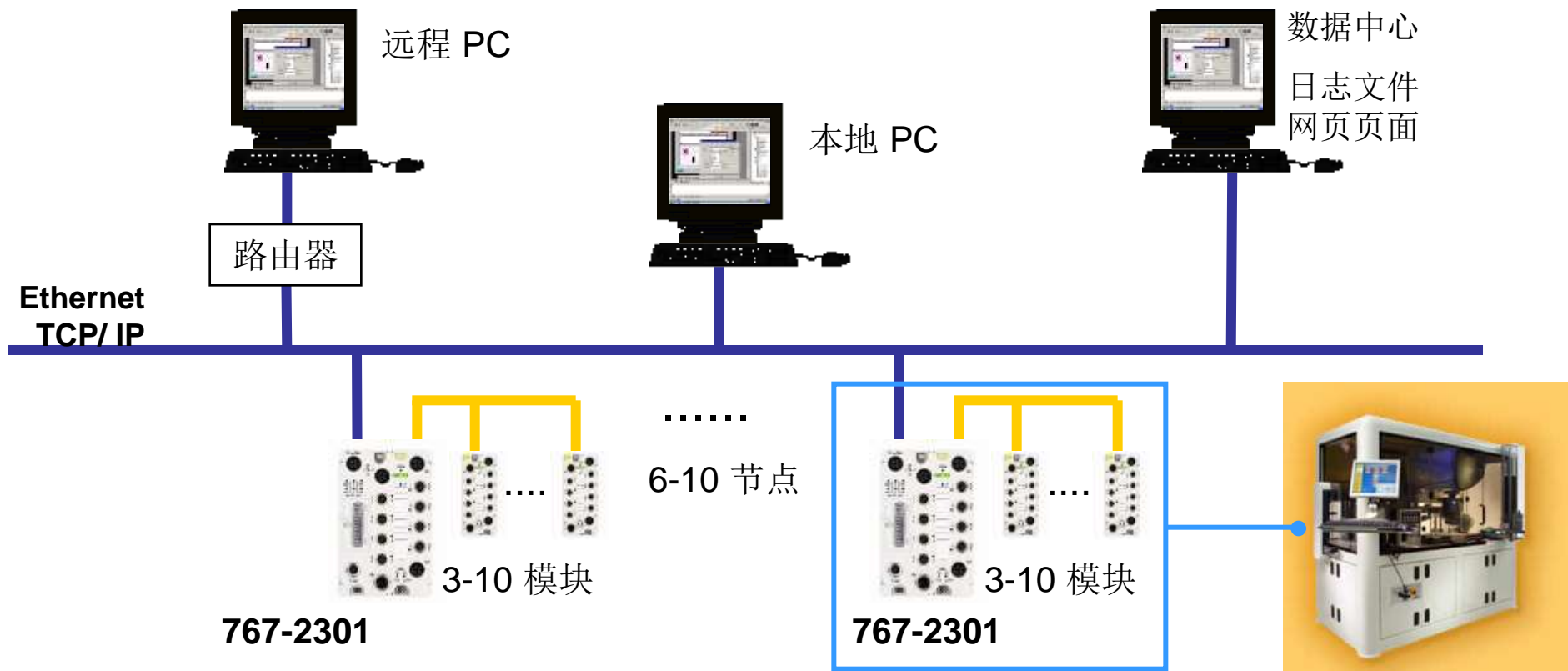
- 支持文件系统（包括浏览、装载、存储、删除文件）
- 激活/屏蔽输出
- 按需设置信号传输速率
- 更新DTM和产品固件



用途: 实验室血液分析设备

系统: Ethernet PFC (767-2301)

优势: 强大的IP67防护等级PLC, 并带有Ethernet/IP和网页可视化技术



多谢!