Telecontrol with SIMATIC. Modular, flexible, secure.
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The SIMATIC-based telecontrol system technique has proven itself in applications worldwide and is continuously being enhanced in compatible steps. The huge application area and technical innovations have resulted in two systems to cover the different requirements.
For simpler tasks:
SINAUT MICRO

The telecontrol system uses bidirectional, wireless communication via GPRS for the monitoring and control of distributed plants. It uses SIMATIC S7-200 controllers and the SIMATIC WinCC or SIMATIC WinCC flexible visualization software. Configuration is carried out using STEP 7 Micro/WIN.

For complex telecontrol requirements:
SINAUT ST7

This telecontrol system is recommended for the fully automatic monitoring and control of process terminals which exchange data with one or more control centers or with each other via a WAN or over the Ethernet (TCP/IP). This telecontrol system is based on SIMATIC S7-300, S7-400, WinCC and PCS 7. Configuration is carried out using STEP 7.

SINAUT MICRO and ST7:
Independent and open to combination

An OPC server is available for both telecontrol systems which permits connection to another control center system (OPC client). Data transmission in the two systems is carried out using different protocols.
SINAUT MICRO

The system for simple monitoring tasks within the scope of system control is based on SIMATIC S7-200 and features wireless operation. It is an economical solution with low investment costs ideally suited to maintenance support or intelligent energy management.

Typical application areas comprise traffic lights and logistics systems including monitoring, e.g. of concrete trucks or truck-mounted cranes.

GPRS with all the advantages

- Permanent online connection benefiting from low GPRS tariffs
- Performance comparable with dedicated line
- Data can be transmitted immediately
- Prompt detection of station failures

Manage any number of stations

For the convenient configuration of the communication, the SINAUT MICRO SC software package contains blocks for the S7-200 controllers. It also includes the connection manager for the control center PC that manages the connection between control center and as many as 256 S7-200 stations per server. Another software component is the OPC server for exchanging data with an OPC client, for example SIMATIC WinCC.
Convenient and reliable alerting

The additional “Alarm Control Center Micro Edition” package is recommended for alerting the standby personnel. Messages received by the OPC server of the SINAUT MICRO SC can then be transferred to up to four recipients (mobile phone, fax or printer). The person on call at the time according to the shift plan is directly informed. If he does not acknowledge the message in good time, the multilevel escalation management ensures that an alternative recipient is always reached.

Control center PC always accessible

As the control center PC is continuously accessible in the Internet, distance-related costs are irrelevant.

Own VPN for secure connections

SINAUT MICRO comes with its own virtual private network. This allows the GSM/GPRS modem to make a VPN tunnel to the connection manager in the control center PC. Both sides can exchange data securely by means of this tunnel in both directions. Additional advantage: crossover-traffic between the stations. The connection manager features a routing function for this purpose and uses it to switch the data traffic between the stations via its own VPN – secure against any eavesdropping or manipulation.
Building on SIMATIC S7-300, SINAUT ST7 is the universal telecontrol system for applications in which high availability and total data security take priority. It is suitable for complex tasks, e.g. for linking remote process stations to several control centers, linking different transmission media, or implementing demanding network topologies. SINAUT ST7 is of a modular construction throughout and is extremely versatile – when it comes to configuring the stations as well as selecting and combining the communication paths.

Fast and flexible data communication

Communication with SINAUT is event-driven. The operating personnel must receive information quickly – particularly in the case of alarms – and be able to intervene in the process control, to define set-points, for example. At the same time, important events can be sent to a mobile phone by means of text messages – also, if required, with a direct acknowledgment to the transmitting station. Direct data exchange between the process stations themselves is also possible.

Intelligent and efficient engineering

The innovative engineering system based on SIMATIC Tools facilitates the graphic configuration of entire communication networks. The system automatically presents the configuration engineer with every option for data links between individual controllers. The multiple addressing of process data, e.g. to several control centers or process stations, is also possible. Validity checks and address comparisons provide assistance when configuring complex networks.

SINAUT ST7cc. Operator control and monitoring based on SIMATIC WinCC or PCS 7

SINAUT ST7cc supplies the archive with process data according to its time stamp and is also capable of connecting sectoral reporting systems such as ACRON. The ST7cc configuring tool has the same communication blocks as the telecontrol system. The advantage of this for the user is that consistent object communication is possible, from the process sensors to the screen content and databases of the control center system.
Connection of other control center systems using ST7sc via OPC interface

Using the SINAUT ST7sc program package with "Data Access Interface V2.05" (OPC interface), the SINAUT ST7 stations can also be connected to the control center systems of other manufacturers. ST7sc has extensive buffer mechanisms which prevent loss of data even if the OPC client fails. Of course all process data is delivered with a time stamp and the OPC interface is also extremely convenient to configure.

Programming from a distance

Program changes or remote diagnostics of the RTU can readily be performed over the SINAUT telecontrol network, not only during the commissioning phase, but also during operation – without interrupting the process data communication in progress. This saves making visits and deploying maintenance personnel and moreover forms the basis for completely new service concepts.

Transmission networks as and when required

SINAUT ST7 demonstrates its amazing versatility in the selection of transmission networks available. In the context of classic WANs, these may be:

- Dedicated lines (private or leased lines)
- Private radio networks (with optional time slot procedure)
- Analog telephone network
- Digital ISDN
- Cellular network (GSM)

In addition to these conventional networks, SINAUT communication is also possible via IP-based networks, in particular:

- Via radio, e.g. Ethernet or IWLAN
- Via fiber-optic cables
- Via public networks and the Internet by means of DSL
- and/or GPRS
Networks in a project – in any combination

SINAUT ST7 enables point-to-point, line and node network topologies to be set up. For redundant data transmission, a station can be linked to one or two transmission paths.

The two paths can be of the same type or of different types: dedicated line or dial-up connection, ISDN, DSL or Industrial Ethernet.

Data security – top priority

It goes without saying that SINAUT ST7 includes security components to counteract falsification and loss of data. Each SINAUT ST7 transmission module has a large memory for several thousand data message frames. In this way it is possible to overcome temporary failures of the transmission link. Advantage for dial-up networks: This reduces the number of data links that would otherwise be necessary.

Fully automatic time stamp

For the subsequent, correct archiving of the process data in the control system, all data message frames are given a time stamp at their point of origin. The entire network is synchronized automatically (DCF77- or GPS-controlled) – including daylight saving time changes.
Future-proof and cost-effective. With standards from SIMATIC.

The integration of the Internet (IP-based network) into SINAUT ST7 allows the safe transition to faster cabled or wireless public networks using the familiar configuration tools from automation technology. A high-speed Internet connection not only eliminates the need for the modem infrastructure, but also reduces the expense of configuration.

In contrast to a conventional in-house WAN with its continuously rising maintenance costs, communication via public networks benefits from continuously falling prices, without the worry of maintenance costs. A high level of availability can also be achieved by means of a redundant design covering a variety of network access points.

Based on the SIMATIC S7 automation system, the SINAUT ST7 telecontrol system features the successful properties of its predecessor SINAUT ST1 while continuing to evolve. The consistent SIMATIC-based design safeguards the longevity and economy of plant investments and guarantees compatibility with earlier and future systems.
Get more information

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www.siemens.com/simatic-net

Information and ordering:
www.siemens.com/automation/mall

All about SINAUT:
www.siemens.com/sinaut

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