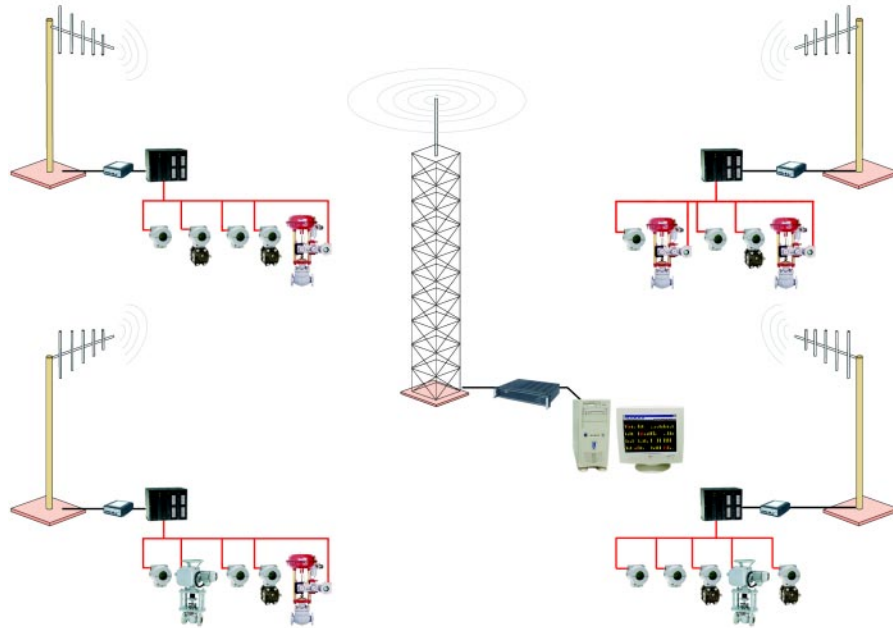


SMCT302

TELEMETERING MEASUREMENT AND CONTROL SYSTEM



Telemetry is the technique of collecting, processing and transmitting data to a remote location, using several existing communication technologies such as cables, fiber optics, conventional and cellular telephony, radio, satellites, etc.

The [SMCT302](#) - Telemetry Measurement and Control System, developed by Smar, is intended to monitor and to control industrial process variables in applications where the distances involved or the geographical conditions of the area makes it impractical to use cables.

The SMCT302 is not simply a new product; it is one more solution offered to you by SYSTEM 302 - Enterprise Automation

Some of the chief benefits of the SMCT302 are: the possibility of performing periodical measurements without the participation of operators, the reduced cost when compared with conventional systems which make use of cables as the means of transmission, and the possibility of using existing facilities such as telephone lines and transmission towers.

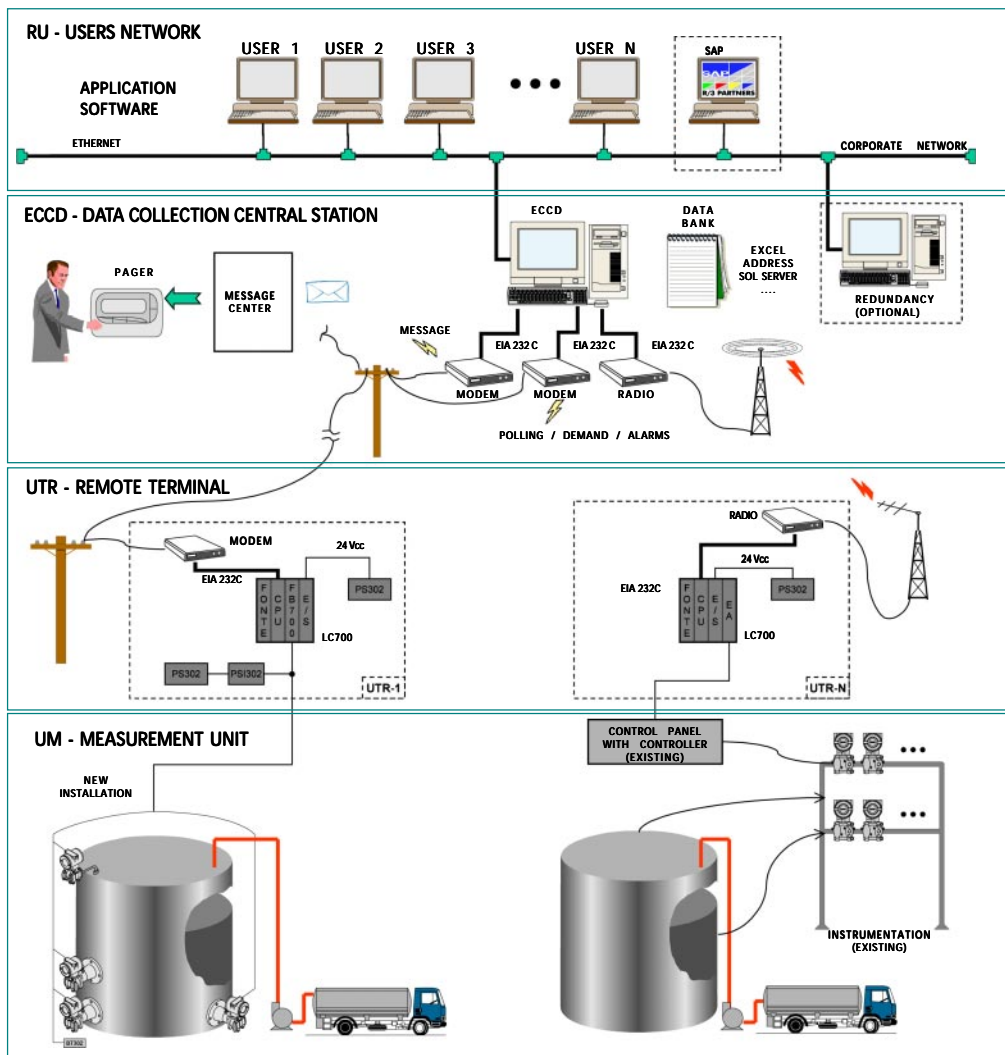
Besides the monitoring and control of process variables, the SMCT302 provides real time operation and maintenance, as well as status monitoring of all pieces of equipment involved in the process, which makes it possible to diagnose eventual failures in the system.

All information collected by the SMCT302 are stored in a standard format data bank which may be used in reports, process optimization, statistic control and enterprise administration software.

Architecture

Its totally open architecture flexibilizes the final conception of your system, making it possible to adopt several configurations to fulfill the most different types of applications.

The use of an open architecture and new technologies grants connectivity to the SMCT302



Modularity

The SMCT302 is a modular system, thus enabling the user to begin with one single Measurement Unit (UM) and to gradually evolve until reaching the final conception of the system.

- UM - Measurement Unit
- UTR - Remote Terminal Unit
- ECCD - Data Collection Central Station
- RU - Users Networks

The modularity of the SMCT302 offers to you a low initial investment cost.

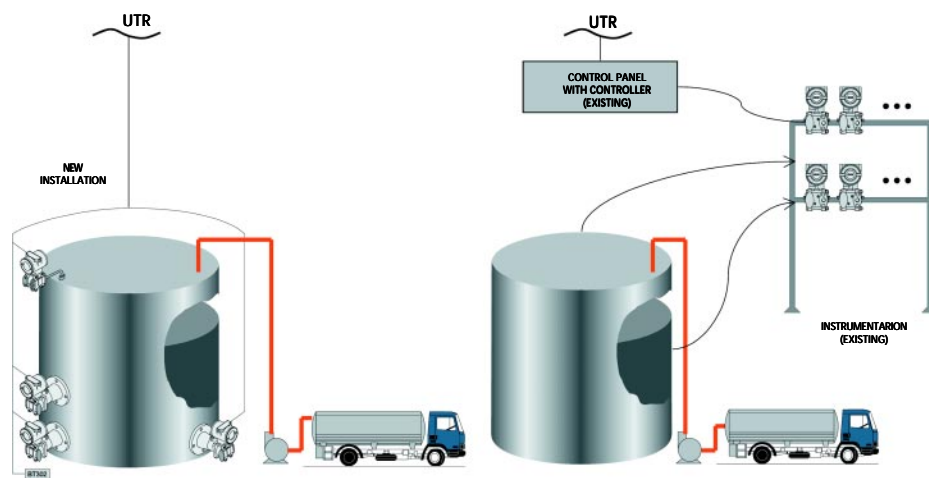
UM - Measurement Unit

The UM - Measurement Unit is a module with equipment to measure the various process variables such as pressure, level, temperature, mass, flowrate, volume, density, etc.

Measurement is a fundamental factor for the good operation of the system, so that a highly accurate and reliable equipment is required.

Smar has a solid reputation on several industrial segments, with proven expertise and know-how in the area of process control and measurement, so it is fully capable of granting the measurement accuracy and reliability required by the system.

A complete solution, from engineering to installation and start-up to SMCT302.



UTR - Remote Terminal Unit

The UTR - Remote Terminal Unit - is a highly rugged module designed for industrial applications, fit for installation in the area where the process variables measuring equipment are located, either in classified or general purpose areas.

The utilization of the programmable logic controller LC700, manufactured by Smar, turns the UTR into a module capable of collecting data directly from the Measurement Unit, as well as of performing analogic and discrete controls. This module is connected to the UM by means of conventional cabling.

The use of an open architecture and new technologies improves the reliability of the SMCT302.

Data collected from the UM are made available by the UTR by means of a radio or a modem , depending on the technology chosen, using the MODBUS RTU communication protocol. This protocol guarantees the integrity of information and grants reliability to the data package transmitted.

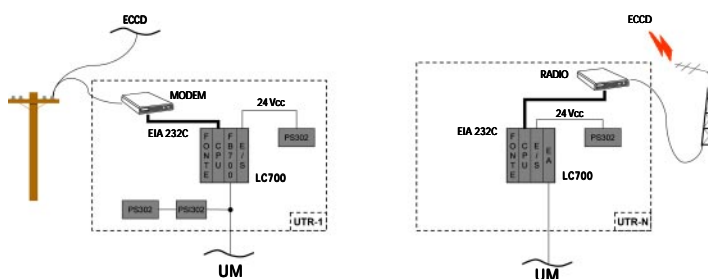
Should an alarm situation occur in the UM, the UTR may be configured to automatically connect itself with the data collection central station, in order to report such an event to an operator or even to record it in a data bank.

Data collected from the UM may be stored in the memory of the LC700 programmable logic controller in the desired frequency and in real time (Data Logger function), thus increasing the ruggedness of the SMCT302, granting the data integrity in the eventual occurrence of a communication failure with the data collection central station.

Both the configuration and the maintenance of the UTR are simplified due to the fact that the programming graphic interface used by the configurator of the LC700 (CONF700 has been developed for Windows). The configuration is compatible with the IEC-1131 standards, so that it is possible to create logic networks (ladders) and / or functional blocks in a very simple way.

Maintenance may be performed either locally, by connecting a laptop to the UTR, or remotely, from the data collection central station.

Due to its modular design, the LC700 accepts the inclusion of new input / output cards at low additional costs. The system may be expanded freely as required by the inclusion of new Measurement Units.



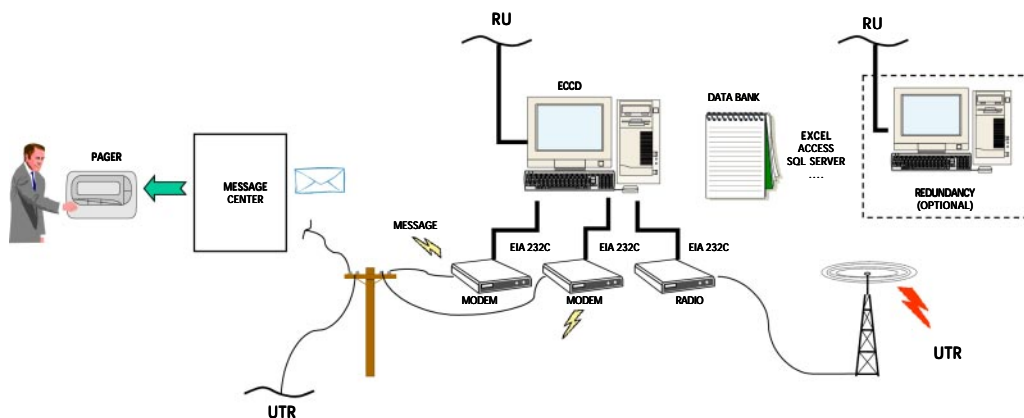
ECCD - Data Collection Central Station

This module is based on a PC compatible microcomputer, and it is fit for standalone or network operation.

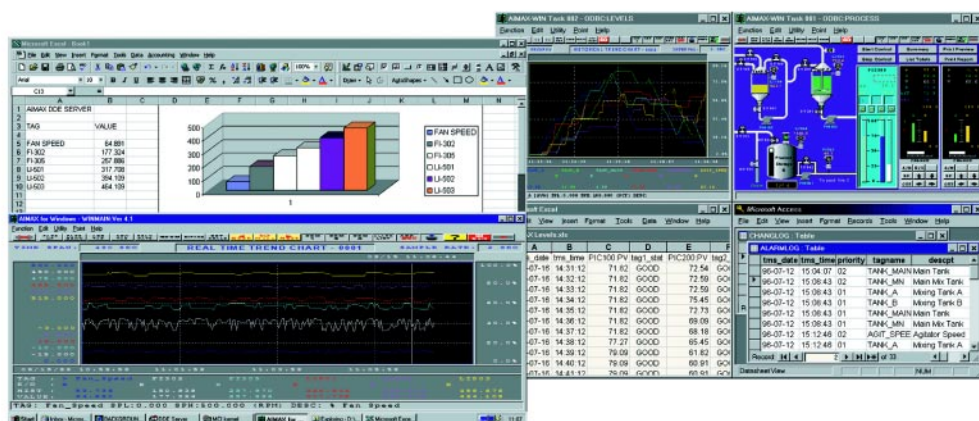
The ECCD is responsible for the collection of the data existing on the UTRs, for their processing and for making them available by means of data bank on the ECCD itself or in a computer connected to the same network. The data bank may be created in standard format of Microsoft Access, Microsoft Excel, SQL, Server, Dbase and others, so that it is feasible integration with enterprise management systems, like SAP R/3.

Data transmission from the UTRs to the ECCD may be done by means of commercial telephone lines , private telephone lines or radio, depending on the distances involved and the geographical conditions of the installation area. As the data collected from the UM may be stored in the memory of the LC700 (Data Logger function), it is possible to optimize the scan cycle time between the ECCD and the UTRs, thus decreasing communication costs without affecting the volume of information available.

The SMCT302 is an HMI and it also makes data available for other applications.



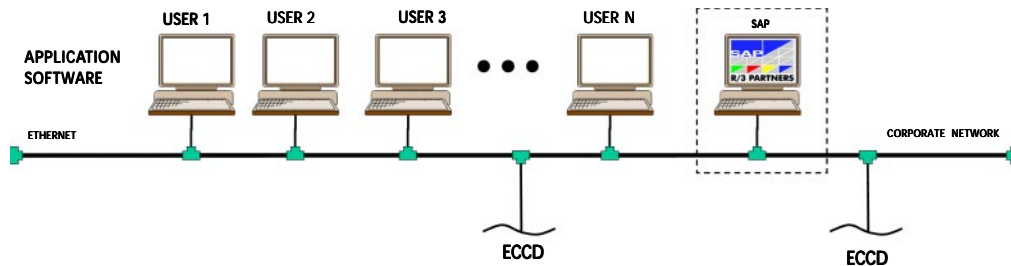
- Data collection by Polling.
- The UTRs are sequentially accessed at configurable intervals of time.
- Data collection on demand.
- The UTRs are accessed upon a request to visualize the current process situation.
- Dealing with alarms.
- Upon the occurrence of an alarm, the UTR sends the information to the ECCD, which may be configured to send messages via Microsoft Mail, Internet Mail or Alphanumeric Pagers.
- Operation Station - HMI
- Visualization of process data in graphic displays and parameter settings on the UTRs, such as setpoints of controls, alarms limits, etc.



RU - Users Networks

This module is comprised of computers connected to a corporate or a dedicated network in which the ECCD will make the information collected by the Measurement Units (UM) available.

Applicatives such as supervision software, calculation routines and enterprise management software may be used as the interfaces for data visualization and handling.



He SMCT302 integrates Enterprise management systems such as the SAP R/3.

- Visualization of information from a data bank.
The user may visualize process information stored in the data bank created by the ECCD.
- Visualization of information in real time.
A user may, at any moment, request the ECCD to perform an immediate collection of process information from a given UM.
- Data handling.
It is possible to write reports and trend graphs from the data bank created by the ECCD.
- Alarms signalling.
Should an alarm situation occur, one or more users may be informed by the ECCD.

