



AutoLog® ControlMan

Remote Monitoring & Controlling Service



Login

Password

Sign in

- Web browser based HMI / SCADA interface
- Server is hosted by Internet server hosting company
- Control units communicate wirelessly via GSM / GPRS
- Cost efficient solution for remote control and monitoring of tanks, pipelines, processes, machines, street lights, etc.
- FF-Automation designs and manufacturers AutoLog control units and AutoLog ControlMan service.

1. Introduction to AutoLog® ControlMan

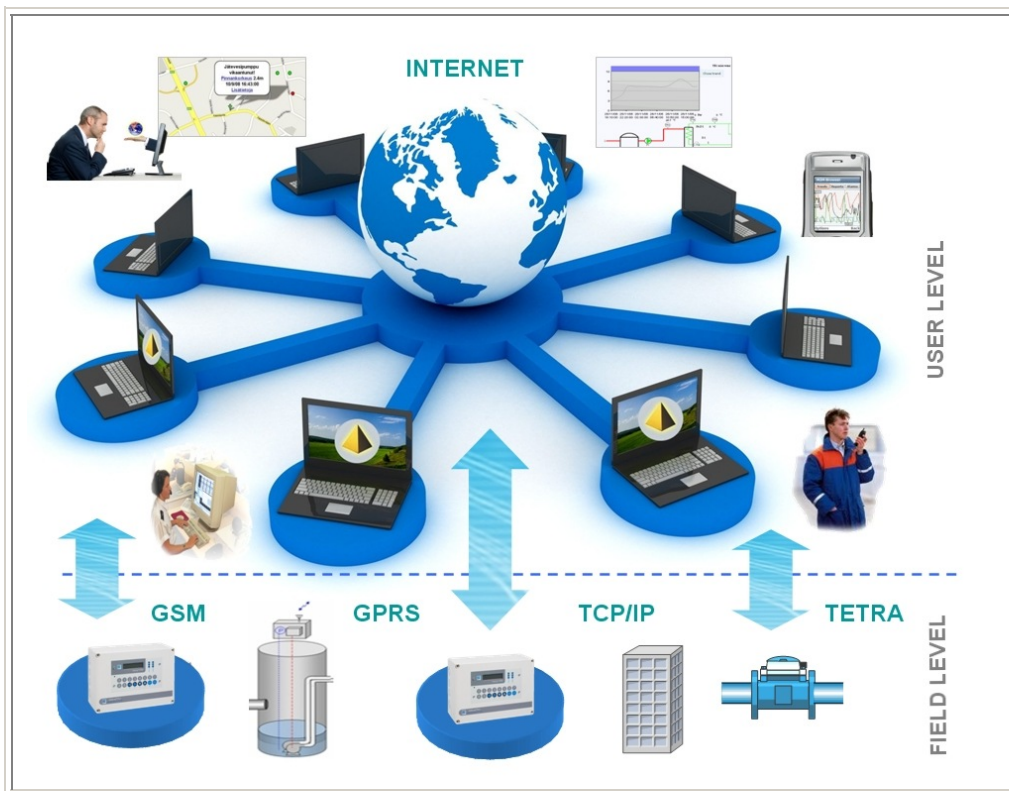
1.1. FF-Automation

FF-Automation has over 30 years of designing and manufacturing experience in the field of automation. Our trademark is AutoLog®. Tens of thousands of AutoLog RTUs (Remote Terminal Unit) are used in remote target supervision applications all over the world. AutoLog ControlMan software solution is designed by FF-Automation.

1.2. AutoLog ControlMan

FF-Automation's AutoLog ControlMan is modern and cost effective solution for remote supervision and control. It is suitable for remote monitoring and controlling almost anything: machines, devices, processes, cathodic protection systems, pipelines, tanks, street lights, pumps, valves, real estates, unmanned stations, cold rooms, cargoes, environment, flood etc. If you have many targets which are hard to reach and you want to have a way to monitor and control them, then AutoLog - ControlMan is most likely what you are searching for - and most likely it's more!

AutoLog ControlMan is complete solution which includes both programmable GSM control units and hosted internet application service. Programmable control units (AutoLog GSM-RTUs) are installed along the remote targets to perform measurement and control tasks. Control units are communicating wirelessly using GSM network. ControlMan web service is used with web browser through Internet.



AutoLog ControlMan uses global GSM and Internet networks for communication. Information can be collected and shared with all participants regardless of their physical location.

1.3. Cost efficient solution

AutoLog ControlMan is hosted Internet "control room" service for remote target supervision and control. Server is hosted (24/7/365) by Verio(*), which is awarded as most reliable Internet hosting company in 2008. Customer doesn't need own server PC or maintenance personnel. Existing PCs can be used to connect to server application without any software installations. User just needs user name and password to log in to service through web browser.

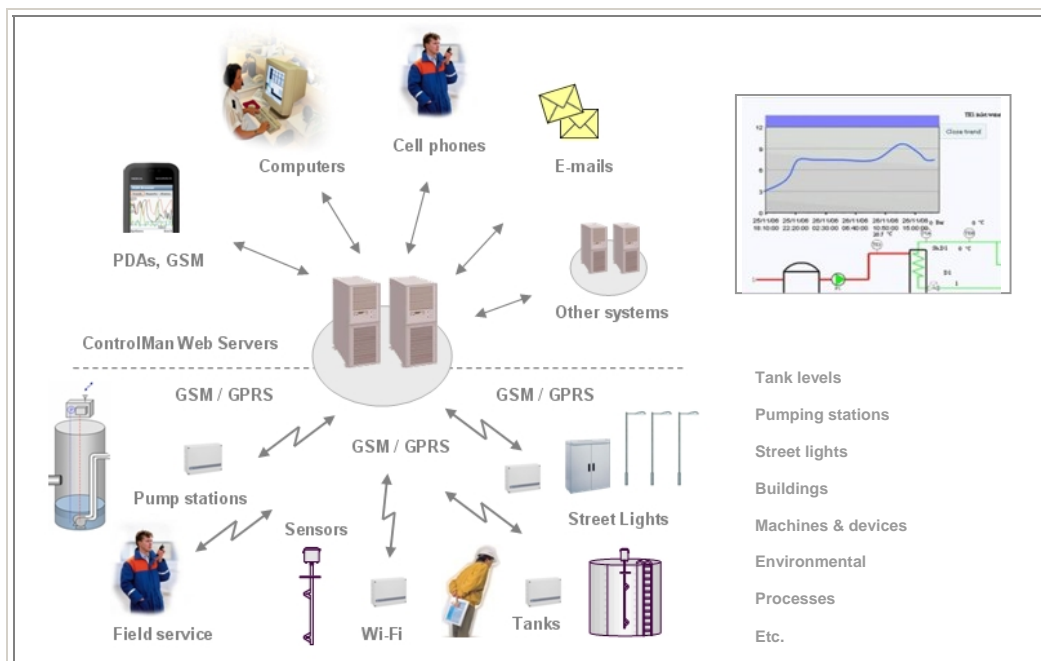
(*) ControlMan can be hosted also by other hosting companies or it can run on customer's own server.

1.4. Global Networks - ready to use without investments

AutoLog ControlMan uses existing and global communication solutions. Measurement data is send wirelessly via existing and almost global GSM and Internet networks. Users log in to service through Internet network. No network investment costs!

System uses *local GSM operators* to minimize the communication costs. GSM communication uses Internet between local GSM operator and ControlMan server.

1.5. Centralized architecture





Today's trend for global companies is to use centralized Internet server databases and web based application interfaces. This way the information is shared to everybody regardless of the physical location.

AutoLog ControlMan integrates easily with other systems and databases. Open standard interfaces and mainstream technology guarantees long term and cost

effective solution. New features are constantly included to the service to follow today's and future needs.

2. AutoLog GSM control units

	GSM-4	
	GSM-8	
	GSM-16	
	GSM-20	
	Low power models	
	Ask more!	

AutoLog ControlMan is complete solution. It is not only supervision software; it includes also AutoLog GSM control units. Control units are installed along with monitored targets.

2.1. Inputs & Outputs (I/O)

In typical application control units are connected to targets to measure different kinds of analog values, like temperatures, pressures, surface levels, voltages, currents etc. and digital ON/OFF status information. Control units have also digital and analog outputs.

GSM control units have selectable analog input modules for all standard measurement ranges (0-20mA, 4-20mA, 0-5V, Pt100, RMS Voltage, RMS Current etc.) so almost any sensor in the market can be connected to control unit. In addition control units have free serial port which supports Modbus RTU protocol, so it can communicate directly with other control units, SCADA systems or intelligent meters / actuators etc.

2.2. Control program (Application program)

Target applications can be controlled automatically using the control unit's control program or manually from the Controlman's Web interface or control units from panel HMI. Normally control unit can handle all the needed automation tasks so no other automation devices are needed.

Control unit is Programmable logic controller (PLC) which means that user can write control program which is capable of doing demanding automation tasks like PID controlled positioning, real-time-clock based controlling, measurement processing, averaging, filtering, arithmetic, fault diagnostics, alarm generation etc.

2.3. Data logging

One typical task for control unit in many applications is to log measurement data into its memory. Control unit is capable of storing for example 16 measurements with time-stamp in one minute periods for 7 days. Stored log can be send to ControlMan server using GPRS data transfer. This allows that control unit doesn't need to be on-line all the time in order to send measurement data to server. This is important especially in low power applications.

2.4. Alarm generation

Control unit can generate alarms when a measurement goes bellow / above defined alarm limit or e.g. by combining many conditions (*diagnostic alarms*). Alarm is time critical information and it can be send immediately to server, from where it can be forwarded as text GSM/SMS message or e-mail to defined (on-duty) service man.

2.5. Other Features

Control unit has many other useful features like:

- remote programmability via GSM network,
- RS232/RS485 Modbus master/slave connection to other systems,
- connection to AutoLog HMI front panel,
- real time clock and calendar which can be used to make time based controls,
- connection to AutoLog wireless Wi-Fi sensor network (WSN) I/O modules etc,

But before going any deeper in technical details, its better to go back to big picture. More information from AutoLog GSM control units (=GSM-RTUs) can be found from our web pages!

3. AutoLog ControlMan (Technical Description)

3.1. Database

ControlMan setup information, control unit definitions, users, user groups, measurement history etc. are stored in ControlMan server's SQL database. ControlMan server database can be connected to other systems using standard ODBC interface and SQL queries. User can also upload measurement history from server database to own PC for offline analysis.

3.2. Communication

GSM control units communicate wirelessly through GSM network to local GSM operator access point. GPRS communication from operator's access point to ControlMan server is using Internet IP network. Virtual Private Network (VPN) can be used if local GSM operator supports it, but in most cases it's not needed.

Major part of typical communication is logged measurement data which is transferred using GPRS packet data. GSM/SMS messages can be used for sending alarms, controls, report queries etc. SMS message communication allows also direct communication between control units and between control unit and GSM phone.

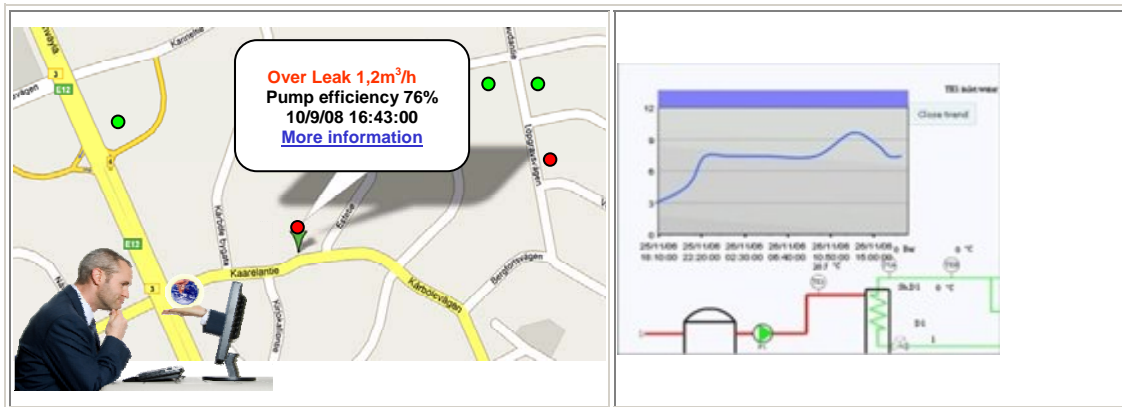
Serviceman can for example send direct control or setup command to control unit from GSM phone using SMS message.

GSM control unit can be controlled also using free call controls. Control unit can identify incoming phone number and make defined controls.

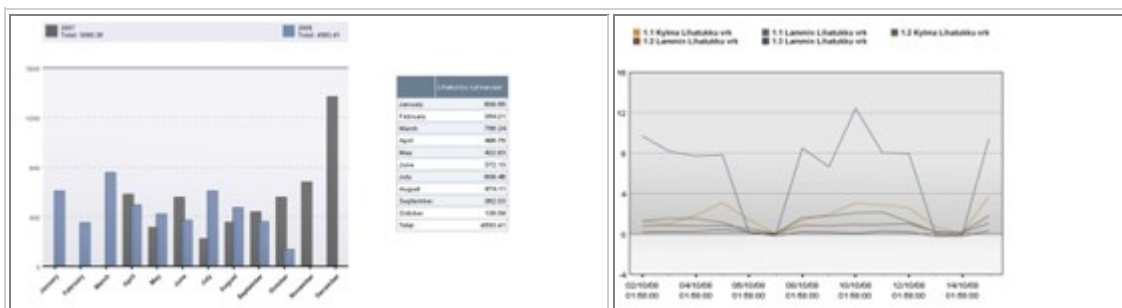
3.3. Graphical User Interface (GUI) views

System includes lots of technology, but normal user doesn't need to know or care about this. User just wants to see the status of their remote targets as easily and illustratively as possible. ControlMan gives versatile *Graphical User Interface* including dynamic maps, measurement trends, alarms views, animated process views, reports etc. Views can be designed according to application specifications.

User can log in to the system from any PC with Internet access using web browser. User doesn't need to install any software for using ControlMan.



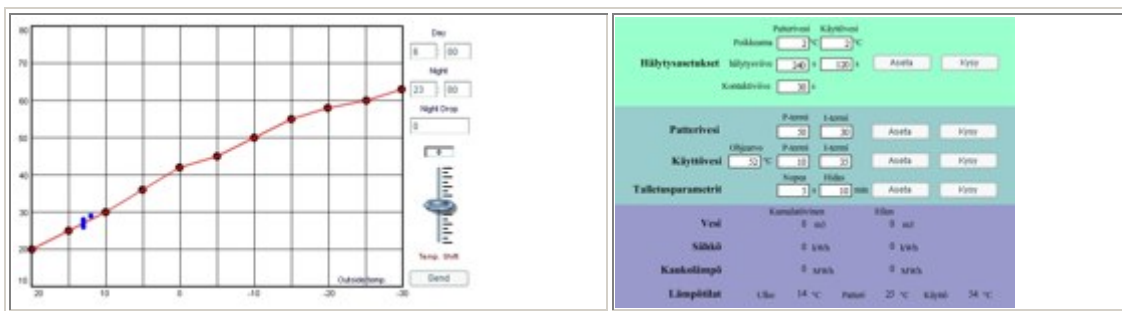
On *dynamic map view* user can see the target site locations and alarm information. Clicking the object on the map opens site views for further analysis. On the right there is example of *dynamic process view* which gives immediate information of the process status. User can for example click the valve symbol to set new set point which is automatically sent to control unit.



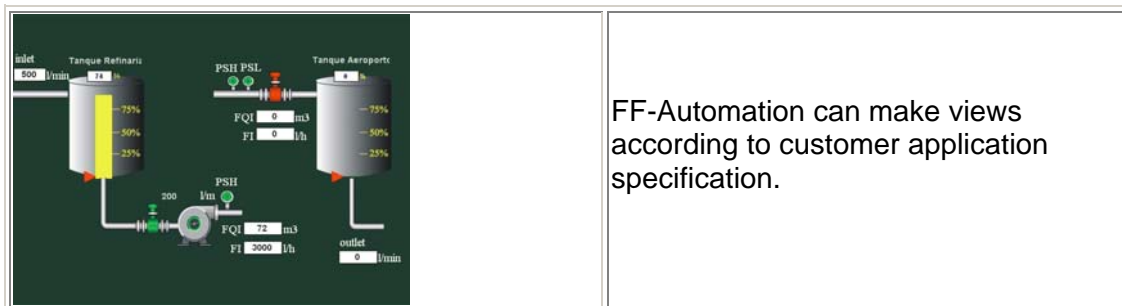
Measurements are stored to database. This data can be analyzed in many ways, e.g. using *cumulative bargraph*- and *trends views*. These views give the ability to see the process history and to detect e.g. the symptoms of some problems before it's too late.



From alarm view user can see active alarms. Alarms can be acknowledged. On the right there is example of a week control program. Control unit has own clock & calendar, so week programs can be loaded to control unit's memory. Targets can be controlled according to defined times and days according to this program.



An example of XY -control curve. E.g. building heaters / air conditioners can be controlled according to outside temperature. On the right there is an example of parameter setting view for alarm limits and PID control units.



Process view, from where user can control valves and see tanks surface levels and flow rates.

3.4. Expandability

The system uses global communication networks and it operates on hosted servers, so it can be expanded unlimitedly.

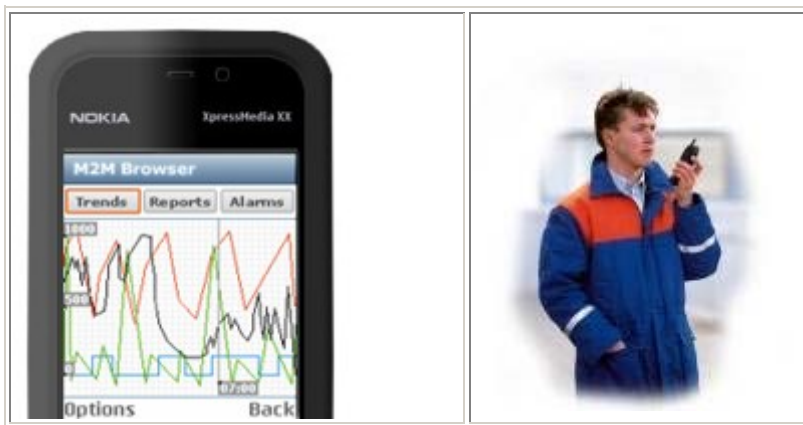
3.5. Remote Maintenance

Control units can be programmed remotely through GSM network. ConrolMan application pages can be maintained remotely through Internet network.

3.6. Safety

- Operates only from defined phone numbers
- Password identification when programming control unit
- Secret phone numbers
- User name and password authentication for Web pages
- Possibility to use VPN if local GSM operator supports it. (Normally its not needed).

3.7. Mobile applications



Normally graphical user interface views are browsed with desktop PC's Internet browser, but ControlMan pages can be designed to be used also with small resolution mobile phones. Mobile phone's Internet browser should have Flash support.

Older GSM phones can be used to receive SMS text messages like alarms, work orders (Trouble ticket system), measurement reports and also to send control commands, set point changes, acknowledgements etc.

4. Trouble Ticket system

Alarms and other work orders can be forwarded to Trouble Ticket – system. System sends the work order to free service man's gsm phone or e-mail. Service man can send work status and work time reports back to the system. Trouble Ticket system gives standard procedures for fast system maintenance operations. Work reports can be used many ways e.g. billing service work, detecting the cause of failures, knowing the spare part needs etc.



5. Benefits of ControlMan

5.1. General benefits of ControlMan

- Easy to use interface to analyze and learn the behavior of remote targets and react to possible failure or abnormal situations before it's too late.
- Increase total income. Increased productivity, less failures, less on-site visits.
- Shared knowhow. Information can be shared between authorized user groups with different user levels. - Also management knows what is happening!
- Critical alarms are automatically detected and send immediately to repairman's mobile phone or e-mail. Automatic work order generations.
- Targets can be monitored and controlled remotely. No need for expensive on-site visits. E.g. Maintenance can be based on real measured operating times or other diagnostic information.
- Targets can be controlled automatically. AutoLog GSM control unit is full featured automation PLC device so it is capable of controlling very complex target processes locally without user interaction.
- Better knowhow for needed spare parts.
- Easy to use and illustrative graphical user interface views.
- Easy report generation based on real data.
- Database can be integrated with other company's databases and systems. ERP, MRP, Time scheduling, Field Force Automation...

5.2. ControlMan's benefits vs. "traditional" SCADA system

- No need for expensive control room server PC or operator workstation investments and maintenance! AutoLog ControlMan uses existing hardware. No additional maintenance or investment costs.
- Leverages existing and global GSM and Internet communication solutions. No network investment costs.
- Maintenance changes and application programming can be done remotely. No need for expensive on-site maintenance visits.
- Long term solution - very flexible for future expansions and integrating with new technologies.
- Based on open mainstream technologies.

6. Applications:



Picture: Street Light control, Tank monitoring, Low power Pipeline monitoring.

AutoLog ControlMan can be used in many different kinds of applications for example:

- Pipeline Cathodic Protection monitoring,
- Street light controlling & dimming (energy saving system),
- Tank level monitoring,
- Water pumping station monitoring and control,
- Real estate monitoring and control,
- Device and machine monitoring and control,
- Base station condition monitoring,
- Temperature monitoring and controlling in cold rooms etc,
- Environment monitoring applications,
- Flood detection systems,
- Process monitoring
- Road applications, Road signs, traffic monitoring, light control, etc,
- Integrated OEM solutions,
- Low power applications (located out of power network),
- Wireless Wi-Fi sensor projects (GSM control unit works as access points)

And any other remote monitoring and controlling application! Ask more!

7. Complete solutions

FF-Automation can design and supply complete solutions directly to end customers or through distributor / system integrator.

7.1. AutoLog product family:

- from I/O level (also wireless I/O and sensors if needed)
- to Programmable Control unit (RTU= Remote Terminal Units)
- to Communication equipments (GSM, TETRA, TCP/IP, Wi-Fi, Ethernet, etc.)
- to Server Solutions (ControlMan, Web Studio SCADA system)
- to Graphical User interfaces and Maintenance systems (Web based)

7.2. FF-Automation project services:

- Project planning
 - Hardware, software and communication architecture
 - Project planning documents
- Project design
 - Application programming
 - Communication design
 - Graphical user interface design
 - Project documentation
- Factory acceptance tests (FAT)
- Commissioning and Site acceptance tests (SAT)
- User and maintenance training
- 10 years spare part guarantee
- Support, maintenance, training
- Long term relationships, long life span systems, upgrades with new technology.

7.3. Distributors and System integrators

FF-Automation can make very beneficial agreements with distributors and system integrators. The level of technical support depends on need and capacity. FF-Automation can e.g. design the system, help commissioning and maintain the system etc. so in other words do all technical works. Step by step partner companies can start designing and maintaining ControlMan systems independently. FF-Automation provides training when needed.

For example Finnish company C2 Information Systems started by marketing and distributing ControlMan system to street light control and energy saving projects. Now they are commissioning and maintaining ControlMan projects independently. Over 20 cities are using ControlMan for controlling street lights.

8. Please contact us for further information!



FF-Automation
Eräkuja 2
01600 Vantaa
Finland

Tel: +358 10 2190 500
Fax: +358 3 5846711
E-mail: info@ff-automation.com
Web: www.ff-automation.com