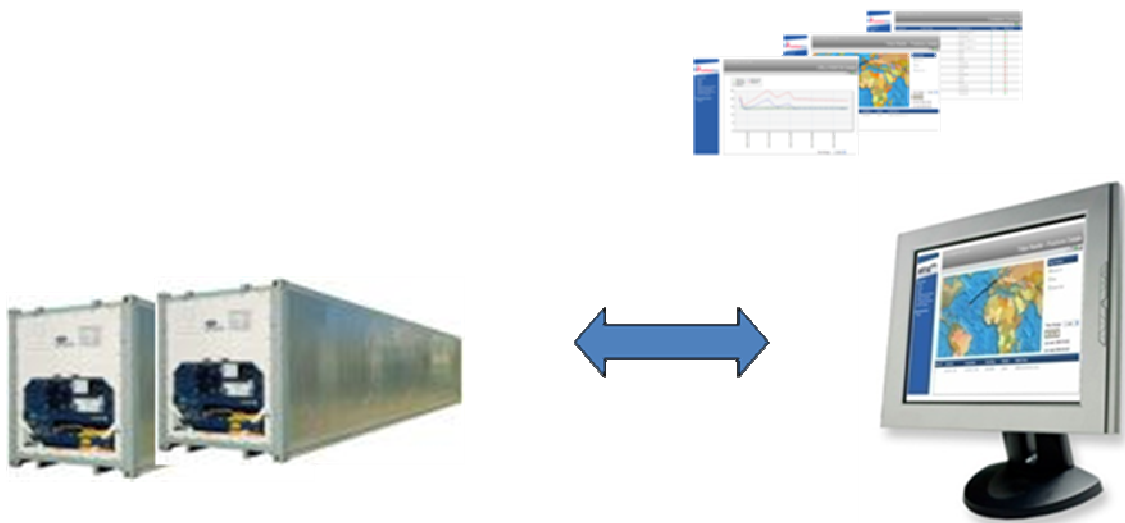




ARTIQ^{COOL} Remote Monitoring of reefer containers with GPRS



The ARTIQ^{COOL} Remote Monitoring is a system that brings long distance control of your reefer containers and therefore a quality assurance of sensitive transports. The system may be specially adapted your needs with a dedicated company access and special functionality.

The ARTIQ^{COOL} is a tool to improve your business efficiency:

- Enhance quality assurance in uninterrupted cold chains
- Supervise environmental control in cooled containers
- Act urgently on needed changes in set points during transport
- Get fast and secure management of claims



The ARTIQ^{COOL} Online System is a product to be used for remote control, monitoring and surveillance of sensitive goods in refrigerated containers. The system is prepared to monitor and store environmental data, position data as well as alarms and other important events. It is also easily customized on customers' request.

By using the system you may improve the quality in your uninterrupted cold chain, claims management and customer service. It gives possibilities to increase your efficiency and will also give the shipment staff a tool for safer and more efficient management of container control.

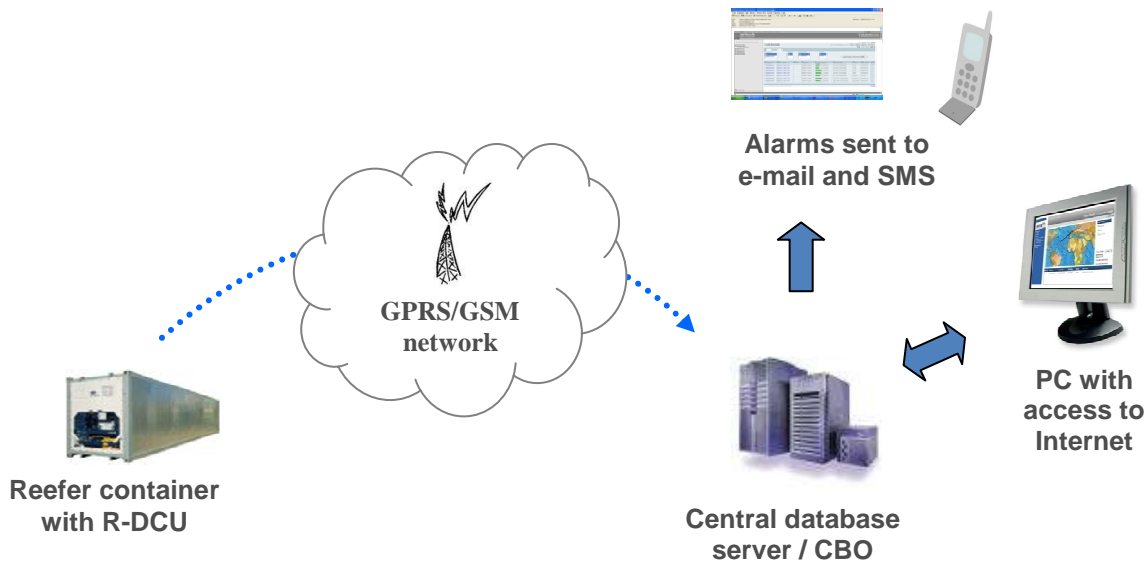
The system also improves your possibility to track your cargo and to implement security solutions in the containers.

Information of current and historical status is presented in a number of user-friendly web reports and is also easily exported to Excel for further analysis.

Since the Online System is web based, all information is easily accessed from any Internet connected computer with a web browser installed. By secure access and user right controls the system prevents intrusions and usage by non-authorized users.

Alarms and reports are sent as SMS or E-mail reports.

Business information may also be exchanged by direct data exchange with existing systems such as ERP systems.



The ARTIQ^{COOL} remote monitoring system for reefer containers consists of the following subparts:

Reefer Data Communication unit (R-DCU) – One R-DCU is installed in each reefer container. The unit fits into a dedicated slot in the Carrier container (Microlink II and III) and collects data like supply temperature, return temperature and set points. In addition, the R-DCU can be configured to receive information from external sensors (temperature, O², CO², relative humidity, door alarms, etc).



The R-DCU contains a GPS module that detects the geographical position of the reefer container. The positioning data is forwarded to the central back office system together with the measurement data.

The GSM and GPS antennas are attached directly on the R-DCU which enables an easy plug and play installation. If needed, this makes it very easy to move the R-DCU from one reefer container to another.

The DCU contains battery back-up enabling power loss detection and to collect and transmit data even after the power loss.

Communication Infrastructure – The communication is established through a GSM/GPRS, modem inside the R-DCU. The measurement data is sent on regular intervals (configurable) as long as the R-DCU is within GSM coverage. When the container is outside GSM coverage (for example on sea), the respective R-DCU continues to collect measurements. As soon as the container comes under GSM coverage and the GPRS communication is re-established, the R-DCU will forward all collected data to the back office system.



Back office system with data warehousing – The ARTIQ^{COOL} Online System is the systems data centre. It consists of a database with data warehousing functionality, communication gateway solutions, data processing and business logic parts as well as the software for user interfaces and data exchange with other systems.

Performance management:

- Container overview in table
- Container status in graphs
- Communication status
- Map presentation and tracking
- Alarm overview and details
- Administration

Alarm management:

- Temperature out of range
- Humidity out of range
- Door open
- DCU power loss
- Configuration of alarm threshold values
- Alarm log
- Forwarding of alarms as e-mails and SMS

Access management:

- Through any Internet browser
- Requires authorized id and password

Administration:

- Define users and user profiles
- Network administration
- Event log

Data access – The user has access to all the functionality provided by the back office through any PC with Internet connection, provided the user has an authorised access id and password.