# Introduction to the PD 664 P-NET GPRS Interface

A wireless P-NET solution

Overview

The purpose of the PD 664 P-NET GPRS Interface is to provide a wireless P-NET communication link to remote stations by using the Internet and the public GPRS mobile phone network. Such communication can be between one or a number of PCs, and one or more remote stations. Communication between remote stations is also possible and all communication is done via a P-NET Gateway Service. Each remote station, which may be stationary or mobile, must have a PD 664 and one or more other P-NET devices.
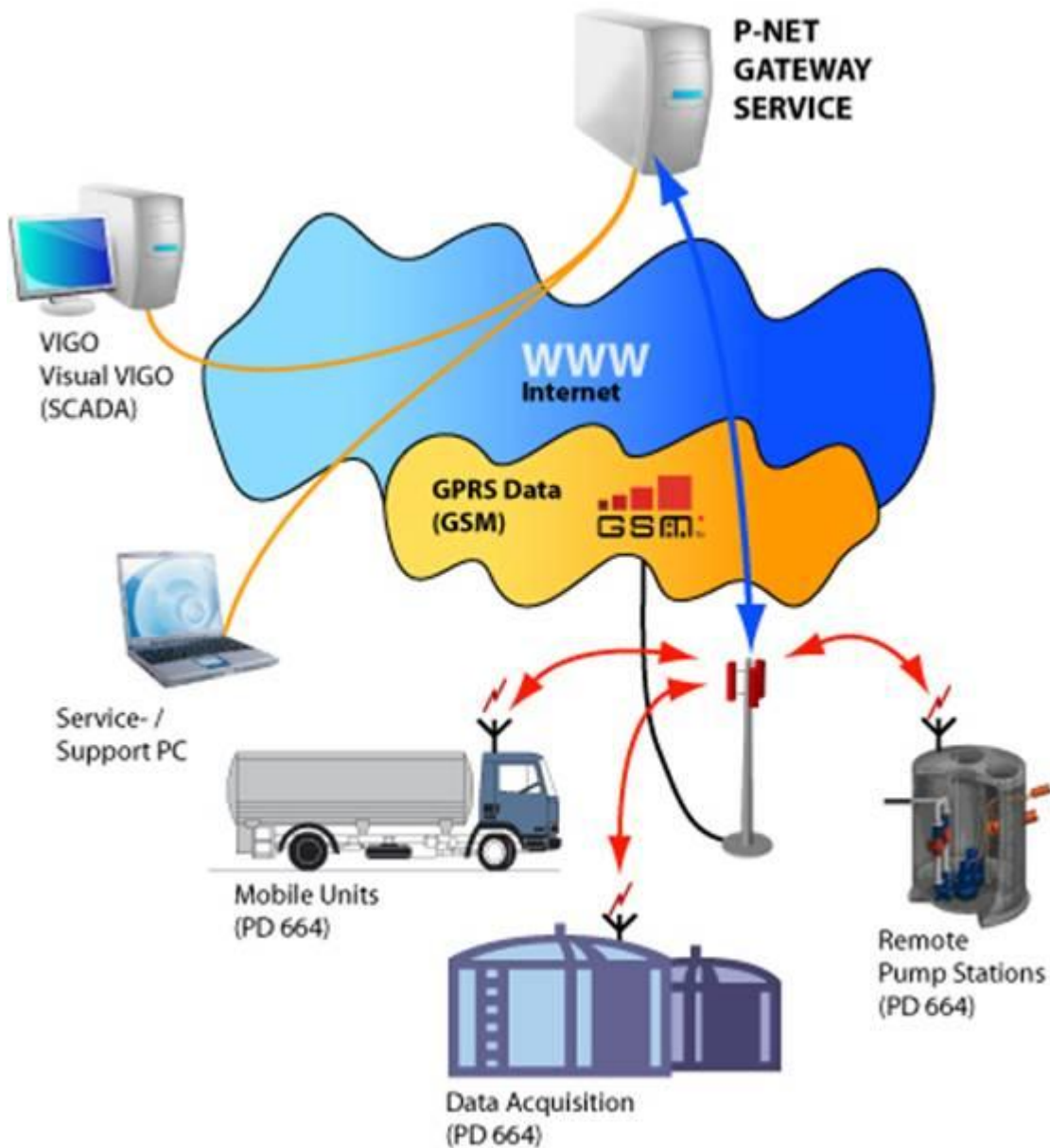
Communication principle

Using its built-in triple-band mobile phone, each PD 664 can establish a permanent point-to-point connection to a specifically identified P-NET Gateway Service. Via this connection, P-NET communication takes place between the remote stations and PCs connected to that service.

In the System overview above, the blue lines indicate the point-to-point connections between the Remote Stations and the P-NET Gateway Service. As illustrated, these connections run via the Internet and the GSM mobile phone network, through which GPRS operates. Communication through each point-to-point connection is encrypted.

The yellow lines indicate the communication paths between PCs connected to Internet and the P-NET Gateway Service. Security and data integrity is ensured by the use of UDPSec.

Benefits

- There is no need to install communication cables or any other special equipment to establish communication, saving cost substantially.
- There is no need for a GPRS modem or similar equipment to enable PCs to communicate with the remote stations.
- The PD 664 provides a system that is "Always ON". It is highly suitable for remote data monitoring, remote control, data acquisition, and for update of application software and firmware, etc.
- With the use of VIGO, is it possible to communicate with a large number of sites simultaneous without any delay.
- Easy installation and maintenance, due to the fact that all configuration is stored on the SIM Card.
- When using GPRS, no charge is made for the time connected, only for the amount of data that is sent and received.
- The PD 664 is able to send and receive SMS messages to or from mobile phones, or web based services.

Application examples

- Remote data monitor, remote control and data acquisition.
- Automatic meter reading, tank management etc.
- Remote diagnostics and maintenance.
- Milk collection trucks, fleet management etc.
- Retail shop automation, alarm systems.
- Water supply pump stations / wastewater pump stations

System components

A system consists of the following components:

PD 664 GPRS Interface

One or more PD 664 P-NET GPRS Interfaces.
For each of them:
One SIM card, mounted in the remotely located PD 664
(GPRS service must be enabled).
PD 664 is a P-NET master on
P-NET RS485 / P-NET Light-Link.

P-NET Gateway Service

The P-NET Gateway Service is a program that is installed as a service on a PC. This PC will normally be a separate PC, because it is connected directly
to the Internet similar to a WEB server.
The P-NET Gateway Service is automatically activated as soon as the PC starts running. However, it is recommended that the PC is always switched on
It is possible to establish up to 15376 encrypted point-to-point connections between each P-NET Gateway Service and defined PD 664 P-NET GPRS Interface devices.
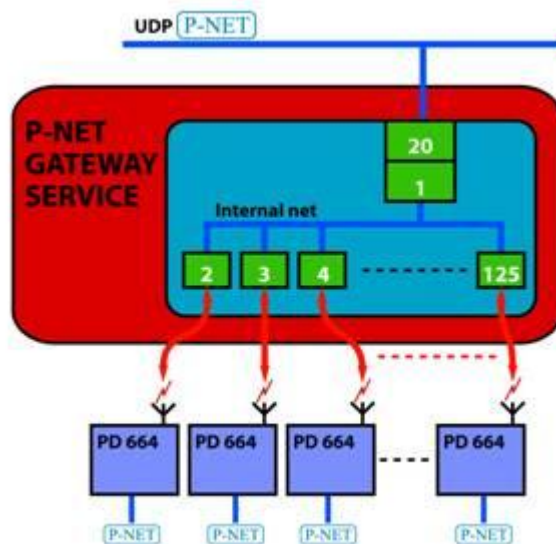
Security

- The only P-NET GPRS Gateway that a specific PD 664 interface will be permitted to connect with, will be that gateway which has been pre-defined and identified by URL or IP address within the module's SIM card.
- All data communication between the PD 664 P-NET GPRS Interface and the P-NET Gateway Service is encrypted.
- Security and data integrity between the PCs and the P-NET Gateway Service is ensured by using UDPSec.
- A PD 664 module can send SMS messages in the event that it cannot connect to the P-NET Gateway Service.
- The module has a built-in watchdog function, which can send an SMS message if there has been no communication with the local master within a specified time period.