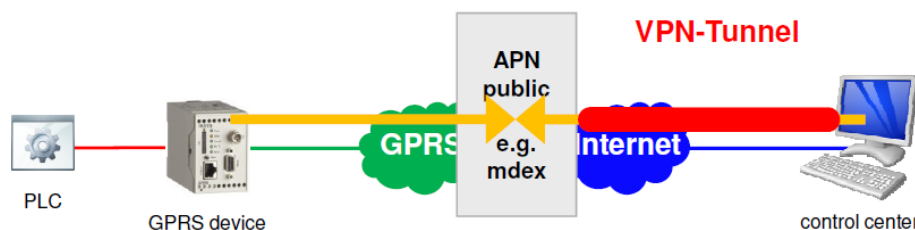


## Mobile data communication – Alternative solutions for leased lines

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Regensburg – Since the “leased line” has been well-established for decades now, and it is hard to imagine for various applications to go without it, the fields of application are very wide. They include time registration and remote meter reading, alarm and security technology as well as remote controlling and monitoring. Leased line operators come from a wide variety of backgrounds, ranging from public water suppliers to industrial groups. The technical bases of all these applications are serial devices, which are connected to remote terminals or higher-level systems via leased line modems and leased lines.



**Figure 1:** Easy migration: the analogue leased line with serial data stream is replaced by modern, packet-based communication methods. Existing serial terminal devices can still be used.

A lot of customers are concerned about a possible future discontinuation of leased lines by the phone line operators, but most of them make the best of it and think about improving their communication structures. The option of private lines, which requires enormous investments, will be limited to only a few. Therefore, modern wireless solutions will become more and more important – not only because of today's 'Features & Functions', which provide new perspectives for the operators. Different factors, like the local geographical conditions, the availability of public networks or company-owned communication channels, the architecture of the whole network with its individual components, operational requirements on the availability (real-time applications), and redundancy as well as conversion, investment and operation cost, for example, must be considered when selecting suitable replacement media in order for well-tried devices and new transmission technology to provide the desired results. Digital ISDN leased lines, which are often offered as alternative, cover the present functional scope, but require much more than only the procurement of additional hardware. First of all, a lot of the classic telemetry applications are in regions with poor infrastructure, where digital leased line connections are often not available. Furthermore, these line-based variants are often more expensive than mobile solutions. Finally, the long-term availability of these variants is also not guaranteed.

### Suitable solutions for each field of application

The industrial data communication experts of INSYS MICROELECTRONICS have several economically and technically suitable solutions in their portfolio. The mobile phone modems and routers of the series *INSYS GPRS* and *MoRoS* allow establishing virtual point-to-point connections via the public mobile phone networks. This is the basis for realizing cost-effective “virtual leased lines”, because only the transmitted data volume (traffic) is charged for the packet-switched data services GPRS, EDGE, and UMTS. EDGE and UMTS have shorter signal transfer times and are especially suitable for time-critical applications. The *INSYS GPRS serial* modem acts like a regular modem for an application with RS232 interface and transfers the data transparently through the mobile phone network. The *INSYS GPRS/EDGE 5.0 serial* can establish a connection as call back following a call or after receiving an SMS. This also allows connections from the internet to standard mobile phone networks. The *INSYS GPRS 5.0 Ethernet* is a GPRS Ethernet router with NAT and port forwarding – a single Ethernet device or a LAN can be connected locally.

#### **GPRS as leased line**

Moreover, the robust industrial routers *MoRoS GPRS*, *MoRoS EDGE*, and *MoRoS UMTS* combine the functional scope of a modem, a router, and a 4-port switch in one compact housing for DIN rail mounting with the dimensions 70 x 110 x 75 mm. The devices provide a serial RS232 interface for connecting the existing serial devices, dial-in and dial-out functionality, NAT, and port forwarding. This allows the devices of the MoRoS product family to establish continuous, time- or event-controlled connections, to be accessible from the control station via cost-effective fixedIP solutions, or to communicate from client to client. Moreover, the PRO versions provide VPN and firewalls for highest-level data security, a redundant WAN interface, and a serial Ethernet gateway. This functionality perfectly prepares each operator for the migration to packet-switched data transmission. INSYS continues to deliver the control cabinet modems *INSYS Leased Line* and *INSYS Partyline* to connect two or more terminal devices for users and operators of private analogue fixed lines.



**Figure 2:** Mobile phone modems and routers from INSYS, like the *INSYS GPRS* (left) or *MoRoS GPRS* (right), enable users to establish cost-effective virtual leased lines.

### **Good prospects for the users of innovative INSYS products**

To allow for a smooth commissioning, all INSYS devices with serial interface can be configured easily and quickly via the free configuration software HSComm.

All functions of the INSYS devices with Ethernet interface are configured via a comfortable web interface. The micro PLCs SIEMENS LOGO!<sup>TM</sup> and Moeller easy<sup>TM</sup> can be monitored by *INSYS GSM* and issue an alarm via SMS, for example when critical values are exceeded.

All INSYS devices support all world-wide used frequencies with dual band (Europe) or quad band and can login into the network automatically after a restart. Automatic, periodical logout and login is supported for stationary operation.

The potential-free inputs and outputs (IO) can be queried and switched remotely. For alarm purposes, SMS or fax messages with freely configurable alarm texts can be sent to individual recipients or data connections can be established. The outputs can indicate active connections. Very effective security methods, like security call back, password protection for connection establishment, or a virtual private network with OpenVPN can be used depending on the transmission method for all INSYS devices.

### **Analysis, consultation and test provision are a matter of course for INSYS**

The experienced experts of INSYS MICROELECTRONICS are always available for an analysis of the communication structure and work out the technically and economically optimal solution for decision-making, which not only replaces the existing solution, but adds new functionality in the best case. INSYS offers well-founded technology and product training as well as free test samples for prospective and existing customers to provide a carefree journey into the world of packet-switched data communication.

**Contact****INSYS MICROELECTRONICS GmbH**

Barbara Gallert  
Waffnergasse 8  
93047 Regensburg  
Germany

Tel.: +49 941 / 56 00 61  
Fax: +49 941 / 58 692 - 45

E-Mail: [insys@insys-tec.de](mailto:insys@insys-tec.de)  
Internet: [www.insys-tec.de](http://www.insys-tec.de)