

Innominate

mGuard

The innovative end-to-end solution for remote maintenance via Internet connections



The remote maintenance of systems allows service costs to be reduced and, at the same time, system availability to be increased. Traditionally, connections are established via modem. While this offers the advantage of direct and relatively secure access to the system, it also comes with decisive disadvantages, namely the complexity associated with the telephone infrastructure, high connection costs and low data throughput rates. Last but certainly not least, the enormous security risk that each modem connected to networked systems can risk the function of the entire enterprise network.

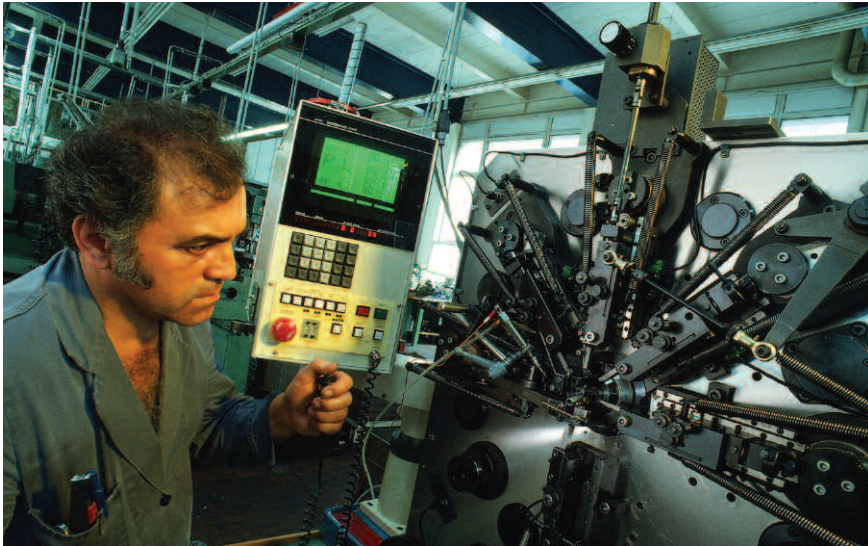
Until now, solutions using Ethernet interfaces for remote maintenance have not been scalable enough. This is mainly because every incoming connection must be forwarded through the company's firewall. For individual machines, this would be a realizable

procedure, but for industrial facilities or plants, the technical and administrative complexity would be enormous. Not to mention the fact that a high residual risk remains in terms of security.

The "status quo"

Modern production systems are equipped with an Ethernet/IP interface and are often integrated into the company-wide network. For this reason, the use of Internet connections for the remote maintenance of industrial plants and machine systems lowers costs while raising availability rates. No expenditure is necessary for an additional telephone infrastructure. Connection costs are minimal and data throughput rates are increased enormously. Technology such as Voice over IP (Internet telephony) and streaming of image and video data open up new service perspectives which guarantee more efficiency while bringing numerous competitive advantages.

Yet for most companies, it is simply impossible to set up a direct link via the Internet from outside the enterprise to systems within the company. The security policies of the corporate firewall wouldn't allow this. For this reason, until now modem connections have been the only access points for remote maintenance. This solution is no problem for older "stand-alone" systems. But for modern systems, it is the modem connection which is usually the weak point within the company-wide network. This produces a dilemma for which there has been no economically feasible solution to date.



The mGuard end-to-end solution for manufacturers

As a manufacturer of machines or production plants, you can obtain decisive competitive advantages from mGuard technology. For the first time ever, you can offer a uniform solution which is easy to implement and which enables you to link your systems to a tele service center via the Internet: with proven security, greater cost-effectiveness and minimum configuration and administration work.

The mGuard end-to-end solution for industrial users

Generally, industrial companies operate production plants and machines made by different manufacturers. For the first time ever, with the mGuard technology, a standard service platform can be implemented for remote maintenance procedures performed by all these manufacturers. The service platform can be used efficiently via the Internet – offering maximum system availability and minimal administration work, plus the absolutely highest security standards.

Innominate opens new paths

With its new, integrated and end-to-end solution based on proven standard technologies, Innominate is now able to offer a solution to this dilemma – which is as brilliant as it is simple. The innovation starts with Innominate's strategic approach of reversing the implementation of remote maintenance services. Up to now, a connection was created by a service technician to the system – in other words, an incoming connection. With Innominate's "device attached security" concept, the connection is made from system to service – in other words, an outgoing connection is established.

This opens the way for remote maintenance via the Internet. Thus all previous access problems associated with security policies and firewall procedures are solved in one go, as the outgoing Internet connections are significantly easier and correspondingly safe to administer.

More efficiency, less hassle and guaranteed security

Now manufacturers and users of industrial plants and machines can profit from the full range of advantages attached to an Internet connection for remote maintenance: low complexity levels, tenable costs and maximum security.

Downloading of extensive service data (to the tele service) can be carried out much more quickly, e.g., via high-performance DSL connections. In addition, uploading (to the machine) of software updates, which often have large data sizes, is now possible. By saving time, costs are reduced. This is in addition to the significantly lower costs of an Internet connection as compared to expensive telephone connections – especially to foreign clients.

At the same time, the Internet connection can be used to implement further technologies, enabling supplementary, innovative service solutions. For example: the streaming of image data. A camera integrated within the production plant can transmit image information live to the service technician. Or the technician can place a telephone call directly to a local operator (Voice over IP) without any additional costs.

mGuard – the technology based on open standards

All this is possible with the mGuard technology from Innominate, a platform which works absolutely independently. The mGuard devices can be easily integrated into any multi-vendor environment and are compatible with every system. Moreover, they require no modifications to existing configurations for production plants, machine systems or the network.

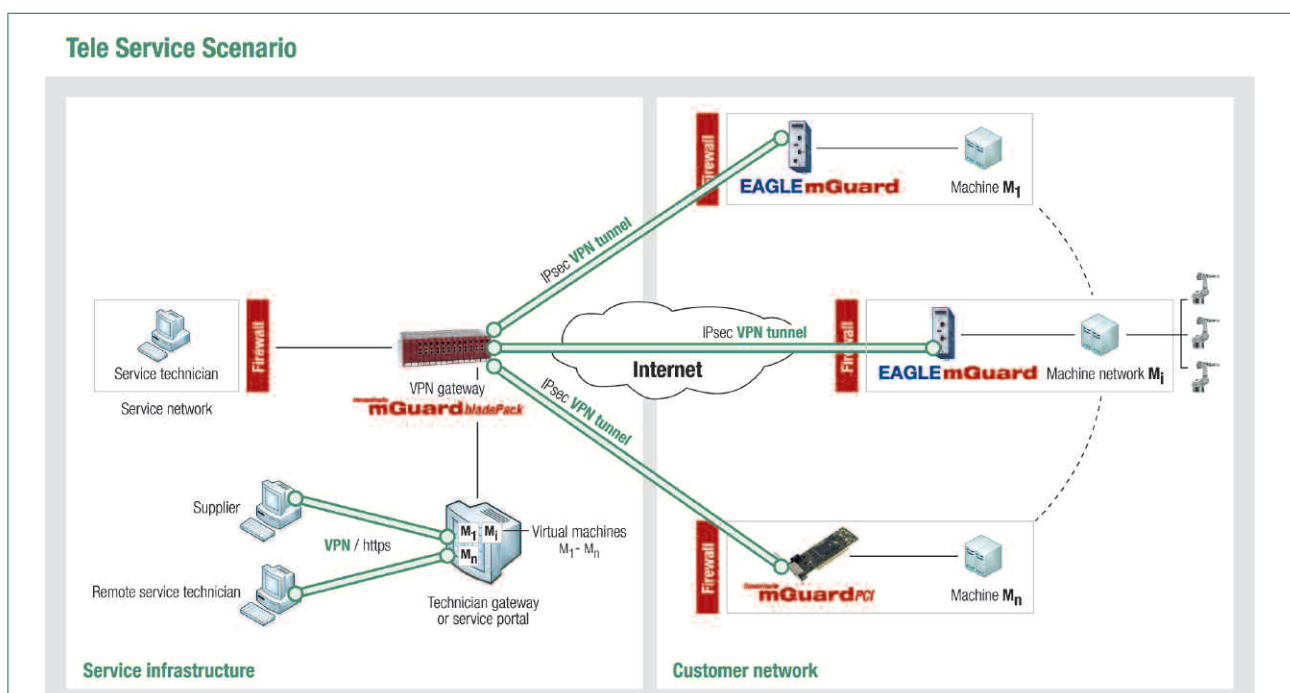
Maximum security is guaranteed through the VPN (Virtual Private Network) technology integrated into Innominate's mGuard "device attached security" solution. If required, additional tunnel technologies can be used via HTTP(S) and proxy servers, as well as optional virus protection. These are both highly successful and proven security standards. What's more, the overall control of authorized remote maintenance accesses is possible through interactive or automated access control, e.g., access is granted only for defined users and during specified time periods.

Roll-out with the "Innominate mGuard Device Manager"

The template-based approach of the Innominate mGuard Device Manager is perfectly suited for the configuration of a large number of remote maintenance systems. When creating the template, the joint settings for many devices are compiled and integrated. The roll-out of widely distributed installations with thousands of remote maintenance appliances can thus be conducted quickly, conveniently and without broad security know-how in the field.

Primary functions

- Configurable firewall – protects the system from unauthorized access. The Stateful Inspection Firewall scrutinizes data packets based on the originating and target address, blocking undesired data traffic in both directions.
- Innominate Stealth Mode for a transparent network integration: the mGuards can use the same IP address as the system being protected, thereby making them "invisible" and protecting the entire system from attack.
- VPN router (optional) for secure data transmission via open networks (hardware-based DES, 3DES and AES encryption, IPsec protocol).
- Integrated virus protection (optional) supports the protocols FTP, HTTP, SMTP and POP3.





At a glance:

- Via corresponding software interfaces, the “activate”, “deactivate” and “check connection” remote maintenance functions can be easily integrated into the operator interfaces of control panels and regulation units.
- Conflicts with IP addresses can be reliably prevented using an easily administrable, virtual addressing system.
- Even the implementation and administration of thousands of mGuard systems and their remote maintenance connections is supported by the recently developed, template-based configuration management system, which also allows secure remote updates of configurations or firmware.
- Innominate’s mGuard system is an all-encompassing solution based on open Internet standards. This allows both the mGuard bladePacks and IPsec-compliant devices from other manufacturers to be deployed as central VPN gateways.
- The integration of mobile service technicians or other suppliers, for instance, can be carried out via a central technician gateway.
- Furthermore, it is also possible to link the mGuard technology to professional service portal solutions offered by specialized providers. In this way, the service technician can be equipped with a virtual desktop which is customized to the requirements of the system awaiting maintenance.

Tele service via a central technician gateway or service portal

Access by mobile service technicians via a central technician gateway or service portal offers the distinct advantage of greater security in production environments. The service technician’s laptop can be isolated from production networks via the service portal and therefore has no direct connection to the machine or system. This procedure prevents any possible disturbances or transmissions of harmful programs out of the Internet from occurring.

The Service Portal can be accessed for remote services via any Internet connection, at any time and from any location. All tools required for the tele service as well as related customer data and information are stored permanently within the portal, and therefore are not exposed to any risks arising from the mobile use of laptops by technicians.

Traditional modem connection and innovative technology

Remote maintenance via IP connections is definitely the wave of the future. Firstly, because the bandwidth enable much higher data throughput rates. Secondly, costs can be significantly reduced. Thirdly, in conjunction with further innovative technologies, service offers can be expanded considerably. This benefits both manufacturers and users.

If, however, users should insist on the traditional modem connection for remote maintenance, new and existing facilities can still be made fit for the future. This is because the mGuard technology will also be available with an optional modem integration, which offers the following advantages:

- The security risk of dial-up modems is immediately reduced by the mGuard firewall.
- New and existing production facilities and plants can be uniformly equipped with future-proof technology.
- The transition from the traditional modem connection to the clearly more advantageous and secure Internet connection can be made flexibly at any time and at a low cost.