

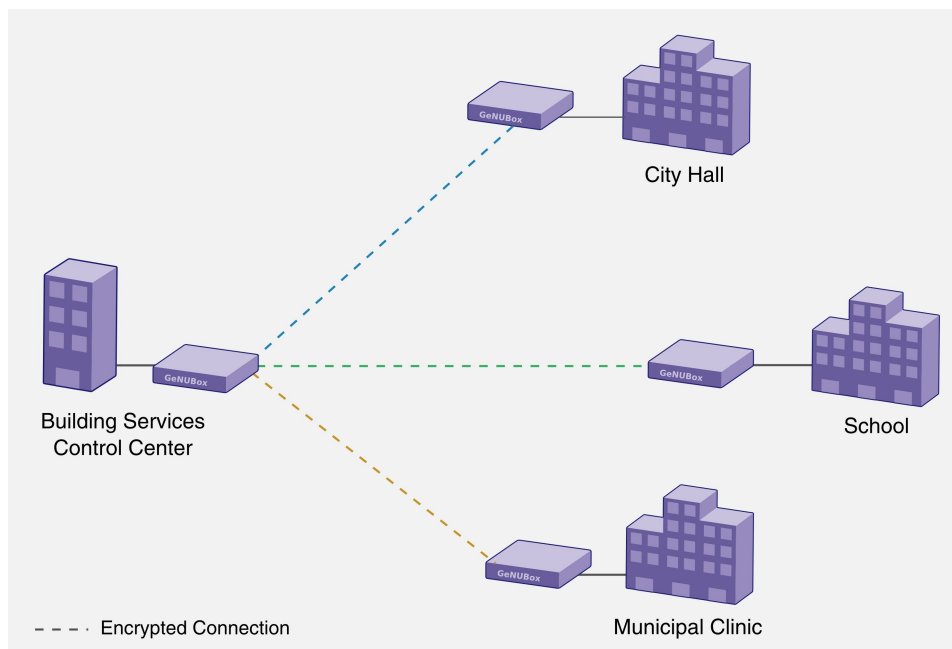


## Standard Solutions for Comfortable, Centralized Building Automation

### GeNUBox Provides a Common Application Platform and Reliable Data Connections via the Internet

*Cities and district authorities require a large number of buildings in order to carry out their responsibilities: the city or district hall, schools, kindergartens, clinics, museums, administrative offices and housing. These buildings are distributed throughout the community and require continuous maintenance. Facility management systems play an important role, allowing important functions to be centrally monitored and here, clearly reducing costs. The GeNUBox remote maintenance appliance – manufactured by the IT security specialist, GeNUA – provides a particularly secure and cost-efficient means of implementing these complex management systems.*

In today's larger buildings the superintendent can no longer straighten out things with his hammer and pipe wrench: almost all important functions, whether the lighting or the access control, heating and ventilation, fire protection or intrusion detection systems – are automated and electronically controlled by a computer. However, these control systems need to be continually monitored themselves. Measured data needs to be checked regularly and fault reports and alarms need to be evaluated to ensure both trouble-free operation and that quick action can be taken, should problems occur. This, in turn, means that both ongoing monitoring and specialist knowledge are required.



Facility-Management using GeNUBox



## **Our Aim: Linking Administrative Office Buildings to a Central Management System**

This task would be enormous if it were carried out for each administrative building individually. This is because each administration owns hundreds of buildings, with the city of Munich, for example, possessing around 2,000. The efficient management of such a large number of buildings calls for a facility management system, which allows the computer-controlled systems installed in buildings to be remotely monitored by a small number of staff working in a single building services control centre.

There are, however, two critical requirements for centralized, automatic building management that must be met. First of all, the data from the different control systems needs to be translated into a common language because, for example, the data from alarm system from manufacturer X is different to the data from the automatic blinds manufacturer Y. Secondly, it is important to ensure that the data collected is reliably transmitted to the control center.



The Security Platform GeNUBox 100C

## **Required: A Maintenance-Free, Standardized System**

An additional requirement, which also applies to IT solutions in general, is the use of a unifying procedure – a standard. Each building should be connected in the same way, as the use of differing procedures would not only make the implementation of the maintenance system more difficult but also increase its own maintenance requirements. This would be the exact opposite of the intended aim of comfortable administration requiring a minimum of time and effort.

There is a tested solution for unifying the various languages, known as the building automation node. With this software, which was developed by an administrative working group under the direction of the Stuttgart city finance office, signals from different control systems are translated into the FND system-neutral data transmission protocol (see DIN V 32735-1). Once translated, this data can be interpreted by higher-level management systems before being processed further.



## **Unification of a Heterogeneous Developed Infrastructure through Data Transmission**

A unifying system is also required for data transmission from the monitored buildings to the building services control center. This is because each administration has developed a heterogeneous infrastructure, using a variety of connections: unencrypted via ISDN, analog using a modem over the telephone land lines, or direct using an Ethernet connection to the administration network (LAN). With time, such a conglomerate will become both more complex and more extensive and thereby also more liable to defects.

This problem can, however, be solved using the GeNUBox remote maintenance appliance, produced by the German IT security specialist GeNUA. These compact appliances are installed at each end node of the connection – i.e. at the building being maintained and at the services control center – and use the IPsec protocol to make strongly encrypted data connections. These connections – so-called virtual private networks (VPNs) – can be made over the all-prevalent Internet, but none the less allow data to be transmitted in the knowledge that it is well protected.

## **Remote Maintenance Appliances Take Over On-Site Tasks**

GeNUBoxes are provided with an additional relevant feature: they are equipped with an integrated software applications platform, allowing tasks on the systems being maintained to be carried out on-site. The building automation node can be installed on this platform, meaning that it is no longer necessary for an additional computer for the translation software to be installed at each maintenance site. The GeNUBox then accepts the translated data from the implemented application, saves it in a buffer store and at a predetermined time initiates transmission to the control center via VPN. This means that all on-site building management functions can be comfortably fitted onto the compact remote maintenance appliance. A central management station administers the GeNUBoxes themselves, meaning that even large cities with their extensive building inventory can be comfortably maintained.

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