ESSER
by Honeywell

The secure networking of large building complexes

Oportunities of the essernet® and subsequent extension to Metanet

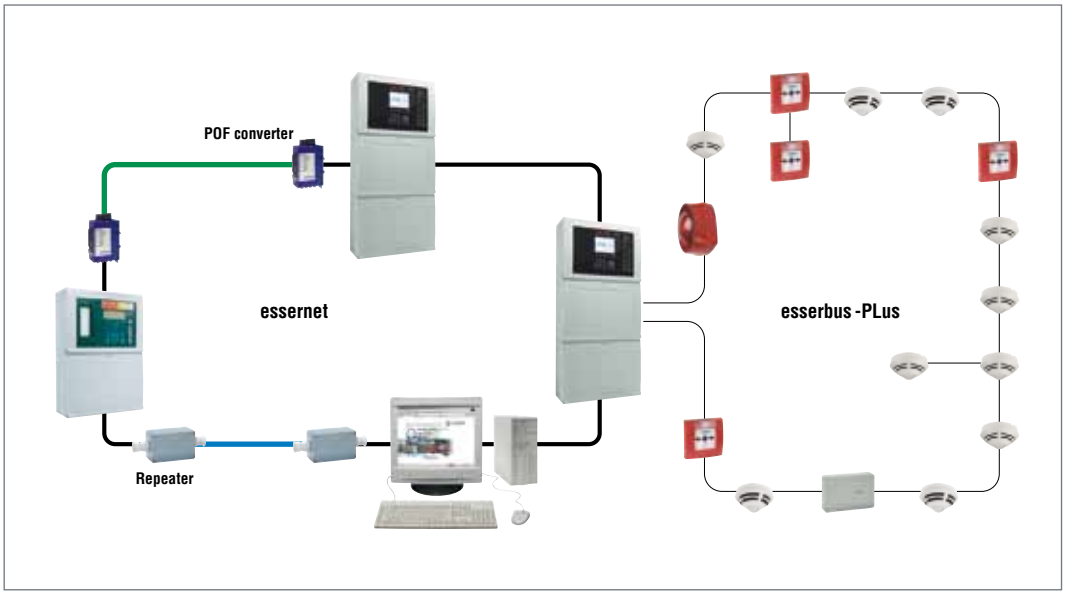
Secure conditions: competence & responsibility

Due to our extensive product portfolio, you can realize projects with us which, because of their complexity, meet the highest requirements of the fire alarm system. Our system concept is driven accordingly an thus guarantees smooth coordination of all technology used. With very large objects, it is important for planners, installers, and operators to make use of the known flexibility of our systems as well as the proverbial “Esser reliability”, in order to allow the installation of the fire detection technology during expansion and reconstruction of already existing properties in a simple and easy way.

Of course our product range is provided with acknowledged certifications so as to be able to realize some of the largest objects worldwide. All control panels and detectors are tested and authorized in compliance with EN-54. The larger an object is, the more important it is to select a suitable fire alarm system which is resistant to malfunction and other disturbance variables. Here again you are making the right decision by selecting our products.

Technically demanding and extensive large projects are successfully realized worldwide with our innovative products and system solutions. Here we always offer our partners the best possible technical support and together develop the optimal system solution for any type of application.

The following examples of how to realize objects present only a selection of the possibilities our products have to offer.



The essernet – flexible and efficient

The essernet, a loop which can tolerate short circuits and interruptions, combines several control panels and network components into a hierarchy-free network for economical and convenient monitoring of extensive building complexes. Indicating and control operations are easily possible and trouble-free via the essernet, even across multiple control panels.

Due to the modular construction, all changes in the object can be programmed quickly and easily from a single point. Even the configuration of master panel (MP) and slave panel (SP) is possible at any time via the programming software.

At a bit rate of 62.5 kbaud, up to 16 devices can communicate with each other via the net; at a bit rate of 500 kbaud, the number increases to 31 devices.

essernet ranges

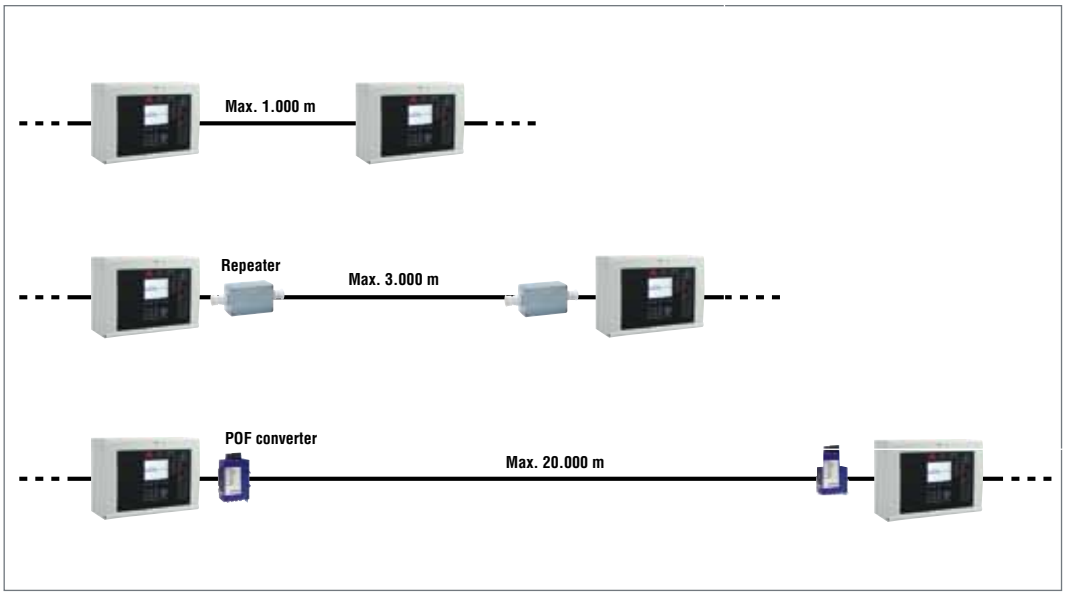
Depending on object's particular circumstances, the essernet can be operated using even the most diverse types of cable.

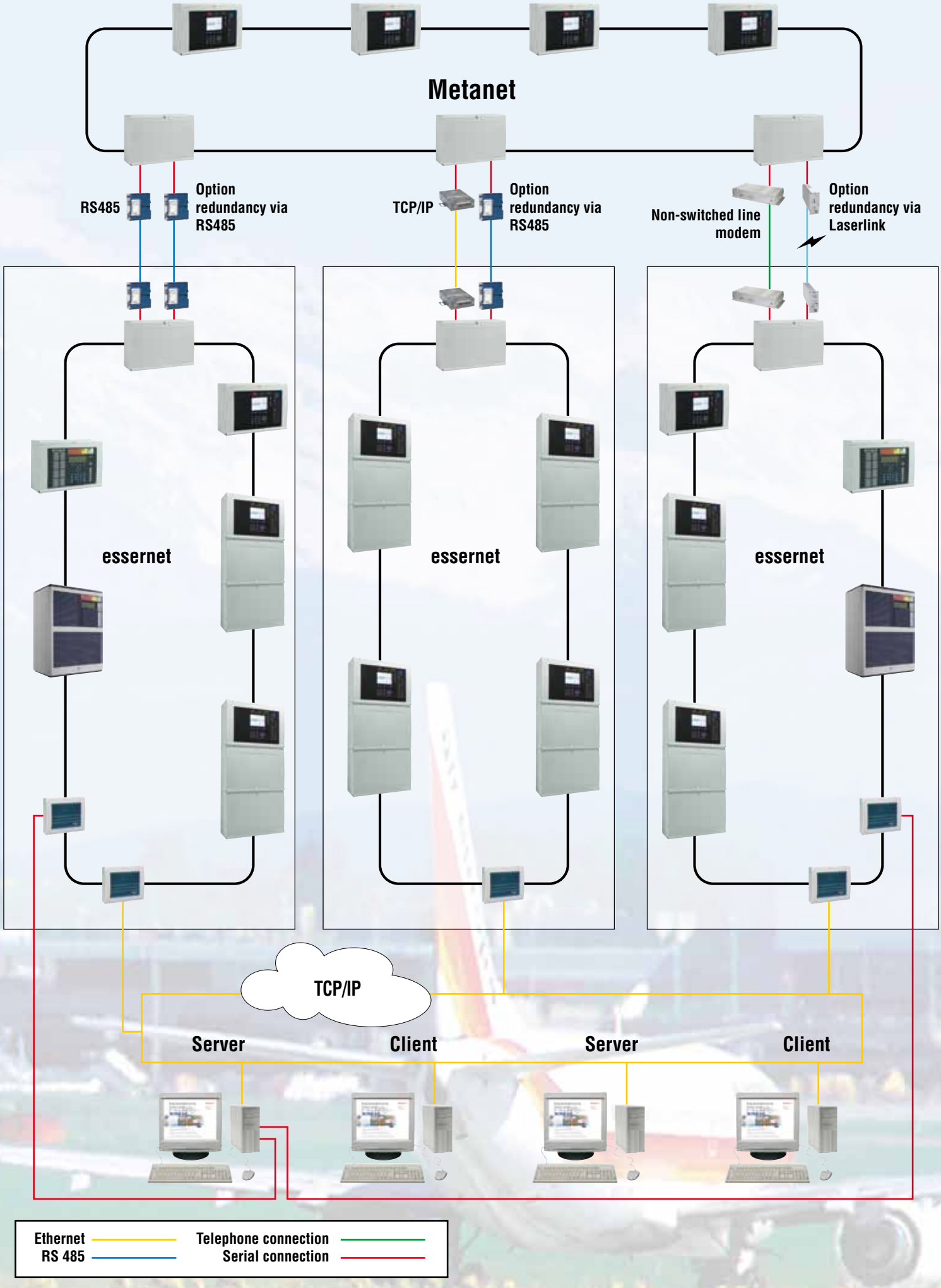
If a bit rate of 62.5 kbaud is selected, traditional telephone cable - IY (ST) Y nx2x0.8 mm – is sufficient.

For the high bit rate of 500 kbaud, IBM Type 1 and/or Belden 1634A cable must be used, which are widely used in data processing.

The maximum distance between 2 essernet loop devices is 1000m. If that is not far enough, the distance can be tripled by using two repeaters.

If fibre optic and corresponding converters are used, even distances of up to 20km between two devices can be realized.




Metanet
RS485
Option redundancy via RS485
TCP/IP
Option redundancy via RS485
Non-switched line modem
Option redundancy via Laserlink
essernet
essernet
essernet
TCP/IP
Server
Client
Server
Client
Ethernet
RS 485
Telephone connection
Serial connection

Interconnection of large systems with existing infrastructure

At large building complexes information is gathered from numerous, far away located FACPs to one common management system. At the same time, all information is switched onto redundant management systems.

Modem LGH 28.8

Serial essernet Interface 2 (SEI)

Serial essernet interface 2 (SEI), redundant

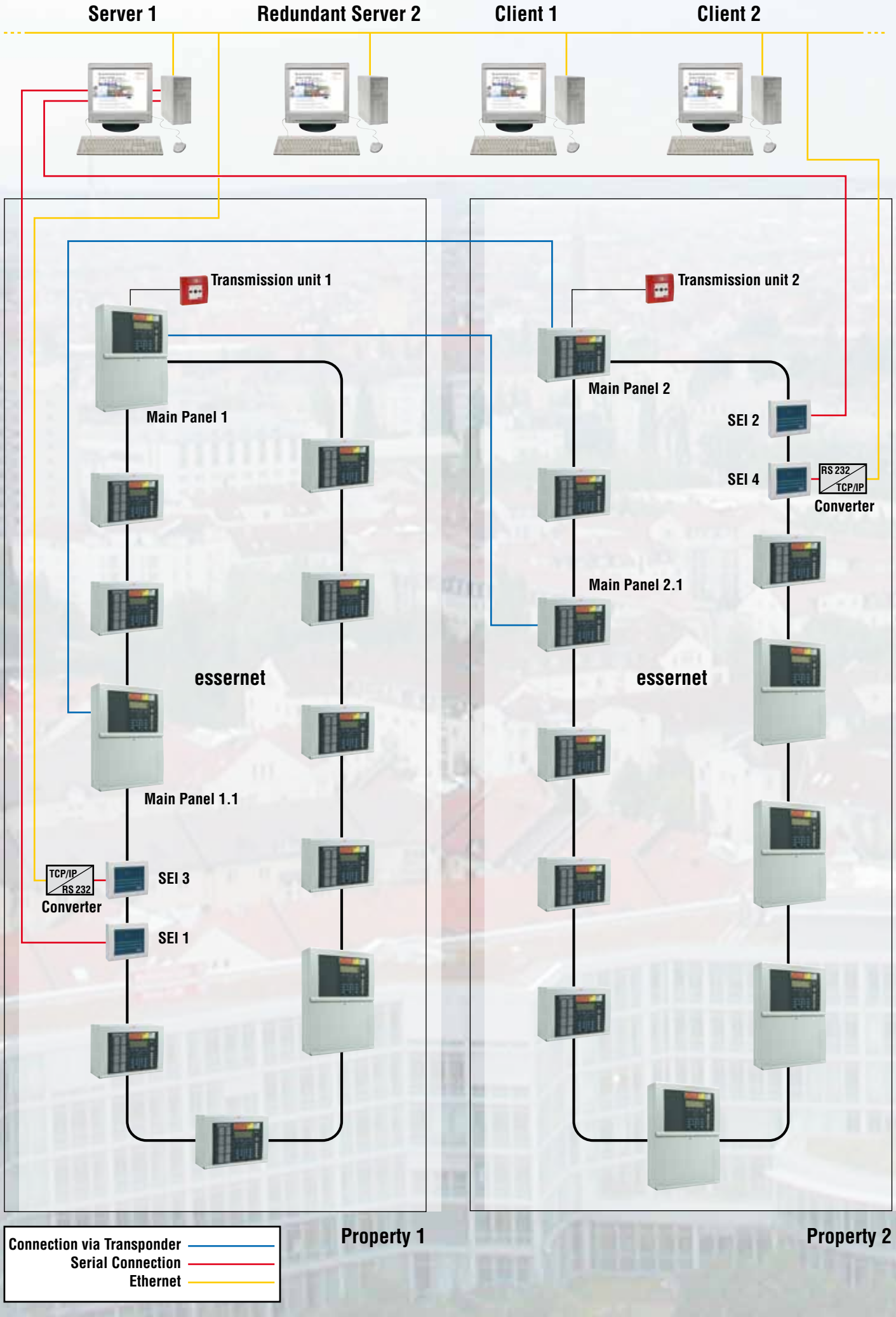
TCP/IP converter

RS232 - RS485 converter

The individual essernet networks work completely autonomously; that is, announcements are transmitted to the control center and/or to the management system, but not to the other networks. All operations of the fire alarm system are possible from both the control center and the management system.

The additional texts of the individual networks are available centrally in the gateways and can be displayed both in the fire department control center as well as in the management system.

The essernet data is transmitted via existing internal telecommunication network, TCP/IP or GSM.


Server 1
Redundant Server 2
Client 1
Client 2
Transmission unit 1
Main Panel 1
essernet
Main Panel 1.1
TCP/IP
RS 232
Converter
SEI 3
SEI 1
Transmission unit 2
Main Panel 2
SEI 2
SEI 4
RS 232
TCP/IP
Converter
Main Panel 2.1
essernet
Connection via Transponder
Serial Connection
Ethernet
Property 1
Property 2

Maximum redundancy in monitoring and alarms

In a large university clinic, the fire alarm systems networked in the individual clinic buildings are to be switched over to a FlexES Guard central management system. Both the connection of the individual systems as well as the management system itself are redundant (red and yellow lines) for security reasons. The clinic's own pre-existing Ethernet network is used for this.

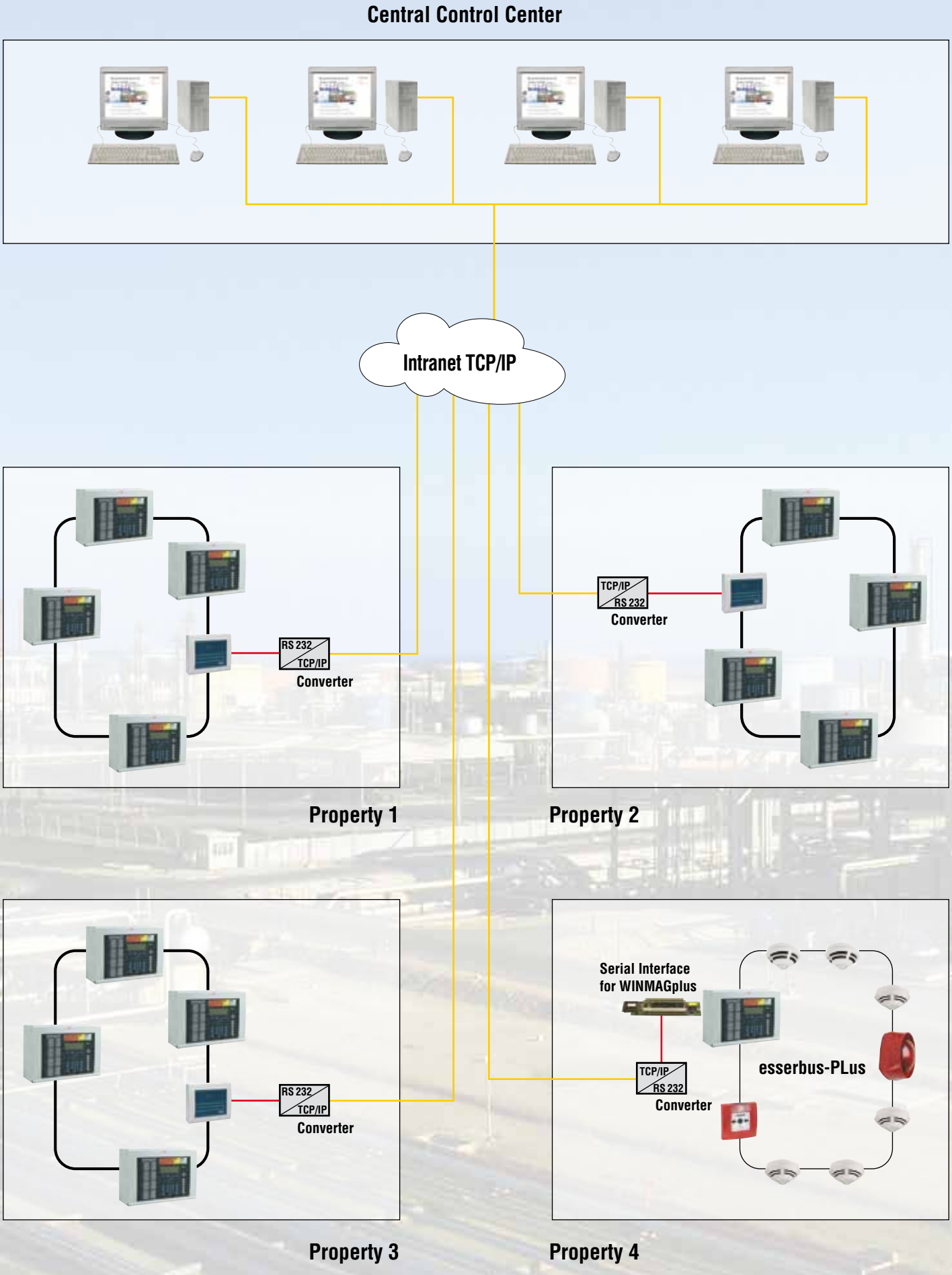
Transmission Unit to Fire Department

IQ8Control Fire Alarm Control Panel

RS232 TCP/IP Converter

The networks of both properties work autonomously. Via FlexES Guard, however, the user has the option to access all control panels. For security reasons, the fire announcements of the individual networked fire alarm systems are additionally transferred to the main panels of the other networks via esserbus transponders (blue line). In this way, an emergency call can still be made over the redundant path even if there is a breakdown of one transmission device.

Currently, the entire fire alarm system consists of 50 fire alarm control panels with a total of 9,000 detectors. The further expansion of a third and fourth essernet is currently in progress. The final configuration will contain approx. 80 fire alarm control panels and 12,000 detectors.


Central Control Center
Intranet TCP/IP
RS 232
TCP/IP
Converter
Property 1
TCP/IP
RS 232
Converter
Property 2
RS 232
TCP/IP
Converter
Property 3
Serial Interface
for WINMAGplus
TCP/IP
RS 232
Converter
esserbus-PLus
Property 4
Serial Connection
Ethernet

Real-time monitoring of 10,000 detectors via intranet

The fire alarm systems in the headquarters of a large telephone company are centrally switched over to the FlexES Guard management system. These fire alarm systems are distributed in business locations throughout the entire country.

The flexibility of FlexES Guard allows the creation of a company's own individual internal user interface with different security levels and user-specific access rights. At the same time, FlexES Guard allows the display and access to all fire alarm systems of the respective properties.

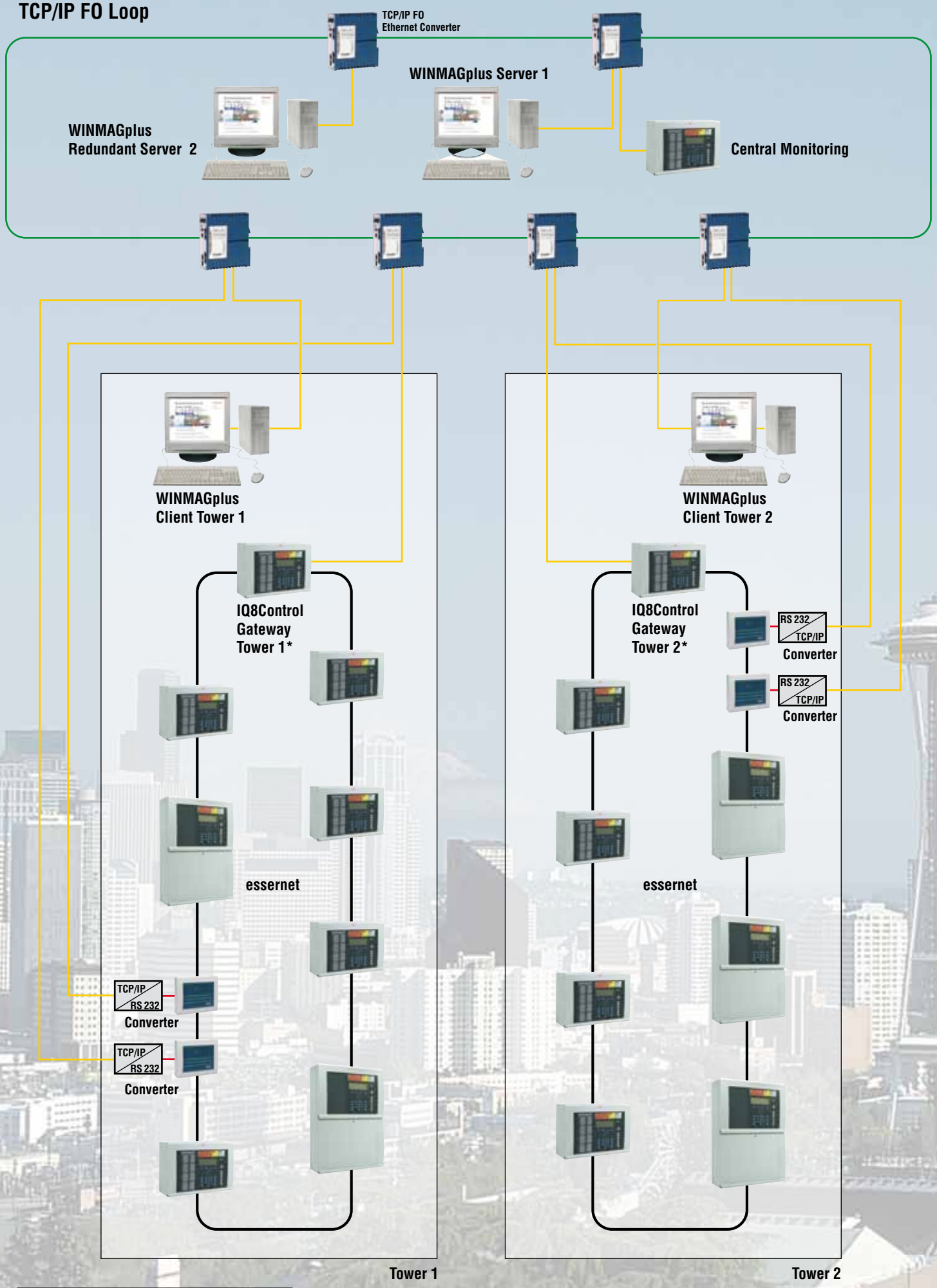
RS232 TCP/IP Converter

Serial Interface for FlexES Guard

Serial essernet Interface (SEI)

Individual fire alarm control panels or complex networked systems can be present in these 40 offices. Individual systems are not connected via the serial essernet module but rather via the clearly more cost-effective FlexES Guard interface. Transmission of the announcements occurs exclusively via the company's own Ethernet.

TCP/IP FO Loop



*The IQ8Control Gateway is a project-specific solution and requires a release from Neuss.

Secure networking of large building complexes

The fire alarm systems of several high-rise building complexes are switched over to a control center via an FO loop network which can tolerate to wire breakage and short-circuits. In addition to the redundant FlexES Guard management system, an IQ8Control Gateway is located in the control center as a combined indicator and control panel.

In each case there is also an IQ8Control Gateway located in the high-rise buildings' engineering rooms. These enable the status display and operation of both fire alarm systems.

IQ8Control Gateway with Ethernet interface

TCP/IP FO Switch

RS232 TCP/IP Converter

The FlexES Guard clients in the engineering rooms allow an additional visualization with the possibility of storing synchronized emergency action plans for the buildings. The final installation will encompass about 70 fire alarm control panels with almost 45,000 detectors.

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