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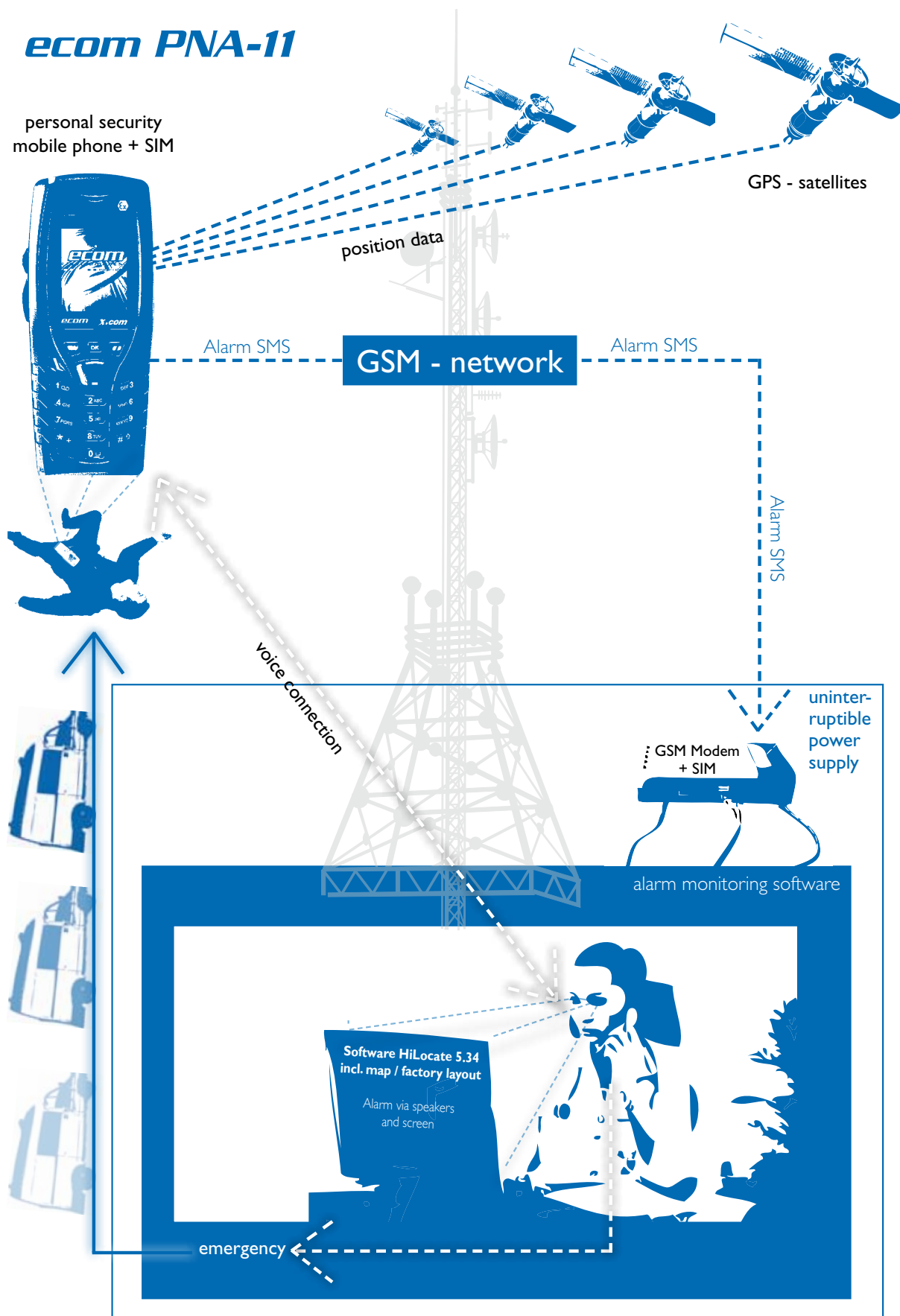


Benefits

- **The sophisticated safety software** ensures that alarms are reliably triggered. Which means that your employees may be confident that help will arrive quickly in the event of an accident.
- Good systems like the ecom PNA-11 by ecom instruments, which has been certified by the Berufsgenossenschaft (German Accident Prevention and Insurance Association), will also **notify users when the phone loses its GSM signal**. A visual and acoustic signal will be immediately triggered on the X.com personal security phone should it lose the signal from the GSM network while the employee is working. The alarm-monitoring centre will automatically trigger an alarm if the connection to the network is not re-established within 30 minutes. This ensures that dangerous tasks are not unintentionally carried out without the appropriate supervision by workers who are on their own.
- The use of solutions approved by local authorities also means that operators employing personal security systems will also be protected against legal recourse. Which may in the event of an accident be very important to all involved. Claims for damages, insurance protection and even criminal charges are the keywords here. Such approval is demonstrated by the GS test symbol and the mark issued by the German Accident Prevention and Insurance Association.
- Personal security phones also improve cost-effectiveness because they permit dangerous work to be carried out without the need for „mindere“.
- A particular benefit is derived from the omnipresence of public telephone networks. This means that workers who have to move over large areas can also be protected. Even in locations not covered by radio or DECT networks where expensive repeater stations would otherwise be necessary.

ecom PNA-11

personal security
mobile phone + SIM





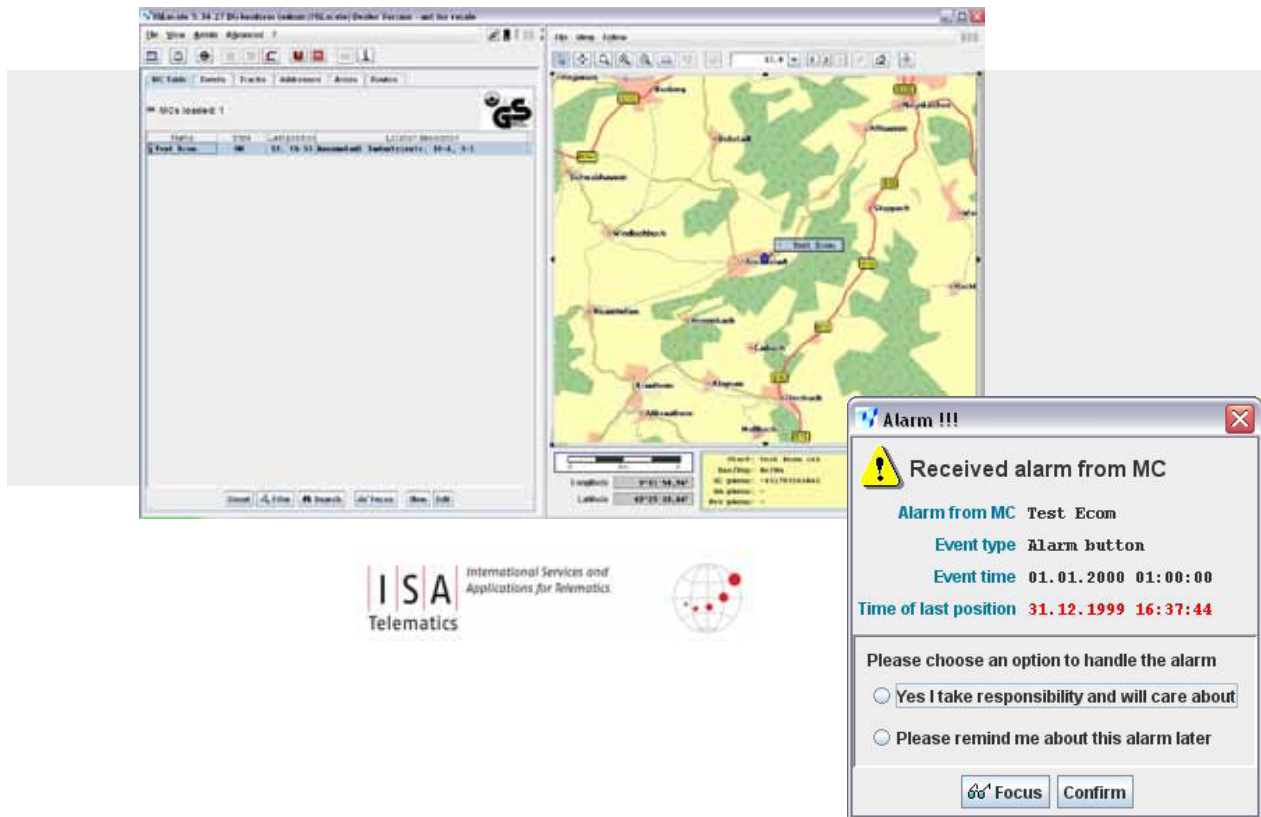
Which phones and which software?

The X.com xx1 explosion-protected personal security mobile phone

The X.com 4/5/6 family is made up of mobile phones that combine robustness and – depending on the model – explosion-protection for Zones 1, 1/21, 2 and 2/22. The X.com 401, 5x1 and 6x1 phones also possess approval within the certification issued by the German Accident Prevention and Insurance Association for the personal security system.

Besides their robust design and their reliable telephone functions, the phones in the X.com range also score points with the following important features:

- Man-down sensor for reliable alarms and GPS (in Version xx1)
- Dual band telephone for GSM 900/1800 networks
- Large LCD with 65,536 colours
- Bluetooth®
- Data transmission via GPRS
- Java™ MIDP 2.0 platform
- Integrated Office functionality
- Synchronisation with MS Outlook® or Lotus
- Separately rechargeable Li-ion battery with 2500 mAh or 2000 mAh in the Ex-versions
- A practical desktop charger for recharging the mobile phone and spare battery at the same time is also optionally available. Which means that round-the-clock shift operation is always possible – which in turn reduces the costs of the personal security system.



Alarm-monitoring centre

When choosing an alarm-monitoring centre, special features such as those provided, for example, by the HiLocate system operated by our partner, ISA Telematics, must be considered. Unfortunately the system is not yet suitable for all countries. But your local contact partner will be happy to provide information in detail.

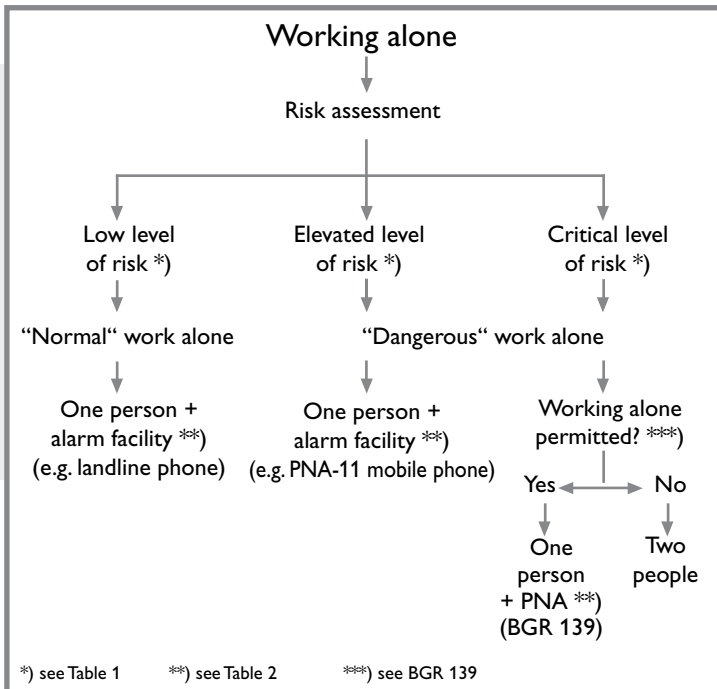
In conjunction with GPS/GSM telematics and personal security systems, HiLocate constitutes a highly efficient tool for end users, businesses, fleet managers, logistics operators and providers of telematics and security services. HiLocate supports telematics functions via an uncomplicated user interface. Extensive processing features and detailed user management make the software universal.

Customer-specific adaptations

The flexibility of the HiLocate centres is demonstrated with customer-specific adaptations. For instance, factory layouts may be integrated for easier localisation.

HiLocate centres may be integrated into already existing software environments. HiLocate is perfectly suited for fulfilling tasks in the fields of telemetry and personal security.

The use of such state-of-the-art technologies as the HiLocate software and such standards as Java and XML guarantee flexible and future-proof solutions. Investments in GPS/GSM systems are well protected against technological changes.



Person groups

There are clear rules in Germany regarding the assessment of the risk to people carrying out work on their own. Regulations in other countries may vary and must be observed accordingly. However, the procedure set out above still makes the complexity of risk assessments apparent.

The regulations issued by the German Accident Prevention and Insurance Association state that people may work alone using a personal security system only when the work comes with a low or elevated risk. Similar rules in other countries must also be observed.

The diagram above indicates exceptions where work associated with a critical risk level may also be carried out unaccompanied. However, an extensive risk assessment must be made for such cases on the basis of the specific national regulations. It may be gene-

rally stated that personal security systems may be employed in many situations to enable workers to carry out their tasks without it being necessary for them to be accompanied.

Risk assessment

Usually, the relevant regulations define the conditions in which workers may work alone and what organisational measures have to be implemented to minimise the risk at their place of work. The assessment must consider a range of various factors: the risk level depending on to what extent a person may still be capable of action following an accident, the probability of an accident occurring while the unaccompanied worker is carrying out a specific task and the time it would take for assistance to arrive at the respective location. If the risk determined for the specific case exceeds a certain value or if the risk levels are deemed to be elevated and the probability of an accident occurring has also been classed as

high, then continuous supervision by a second person, a personal emergency security system or video monitoring will be required. Insofar as applicable accident-prevention regulations do not prohibit the use of personal security systems, such systems constitute the most cost-effective method of ensuring communications between workers and the alarm-monitoring centre which would initiate the required measures in the event of an emergency.

Personal security systems certified by the German Accident Prevention and Insurance Association, for example, the ecom PNA-11, may be used to enable personnel to work on their own on tasks exposed to elevated levels of risk. In individual cases, employees may even be protected when working on tasks associated with critical levels of risk whereby the corresponding guidelines must be observed when making the corresponding assessments.

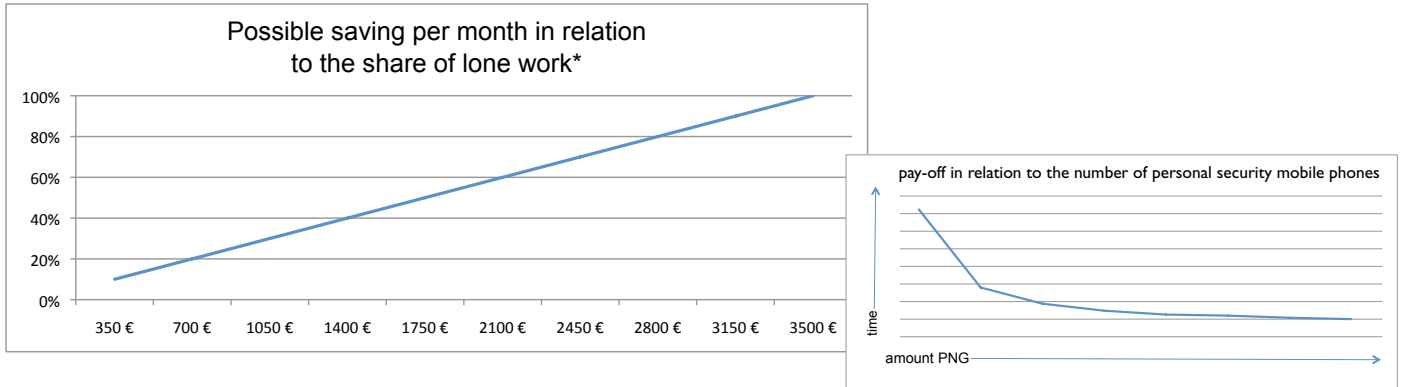
Table 1:

Risk levels	Possible severity of injuries and capacity to act
Low:	Risks where the person working alone would suffer only minor injuries or impairment to health. The person maintains the capacity to act.
Elevated:	Risks where the person working alone may suffer considerable injury or acute impairment to health. In the event of an accident, the person's capacity to act will be restricted.
Critical:	Risks where the person working alone may suffer particularly serious injuries or acute impairments to health. In the event of an accident the person will not have the capacity to act.

Table 2:

Alarm facilities	Risk levels
Landline telephone	Low
Stationary intercom system	Low
Cordless phone	Low to elevated
Mobile phone	Low to elevated
Walkie-talkie	Low to elevated
Time-controlled monitoring calls	Low to elevated
Dead man's switch	Low to elevated
Continuously operated video system	Low to critical*
Personal security systems – PNA-11	Low to critical*
Personal security systems (in accordance with Rule 139 issued by the German Accident Prevention and Insurance Association)	Low to critical

* Insofar as all technical and organisational requirements specified to achieve the appropriate level of protection demanded by regulations have been met.



* Based on a monthly wage of 3,500 EUR for the remainder of the lone worker.

Investment in equipment and software

The investment in equipment and the alarm-monitoring centre may vary greatly. The following questions will help assess requirements:

- Would it be possible to operate the alarm-monitoring centre with existing resources? (E.g. as an additional independent system installed in the control room.)
- Would it be preferable to have a security firm operate the alarm-monitoring centre?
- How many workers need to carry out tasks unaccompanied?
- How much work has to be carried out where the workers are unaccompanied?

We would be happy to prepare an individual quote and assist you in determining the required investment in equipment and software.

The example presented below, however, intends to show how quickly the investment in personal security systems like the ecom PNA-11 could be recouped.

The initial situation

1st assumption

The intention is to introduce a personal security system.

The company has five employees who are being required to work in areas exposed to medium levels of risk. These levels of risk therefore demand that these workers be supervised when carrying out their work. These tasks make up 30% of the days' work time. The employees sometimes work in areas where explosions may occur (Zone 1).

2nd assumption

The alarm-monitoring centre may be installed in the control room as it is always manned.

3rd assumption

The average wage costs for the workers, including wage-related costs, total around 3,500 EUR.

4th assumption

A solution certified by the Accident Prevention and Insurance Association, like the one by ecom instruments, is required.

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* also concerned for Canada, Mexico and Trinidad & Tobago