

Personal safety alarm and communications system for senior residences

Solution examples

The new communications- and personal safety alarm system for senior residences, Smart Call 5000, has been developed by our Swedish supplier Caretech for maximum flexibility and functionality. In the following we are presenting some examples that will briefly show how a personal safety alarm system can be designed, with different levels of functionality, for a senior residence or nursing home with some 120 rooms or apartments. Three alternative solutions are being described:

- Basic personal safety alarm without voice communications
- Alarm system with voice communications between most rooms and central reception
- Alarm system with voice communications between rooms and portable phones

In addition we are also showing how a flexible and economic communications- and alarm system can be built for senior resorts with residents living in their own apartments or houses.

In all cases it is possible to include a dedicated computer system for event logging and collection of data for statistics and planning purposes.



Alarms can be initiated from portable *radio push buttons* that people are wearing as a bracelet or in string around the neck as well as from a fixed alarm button in each apartment.

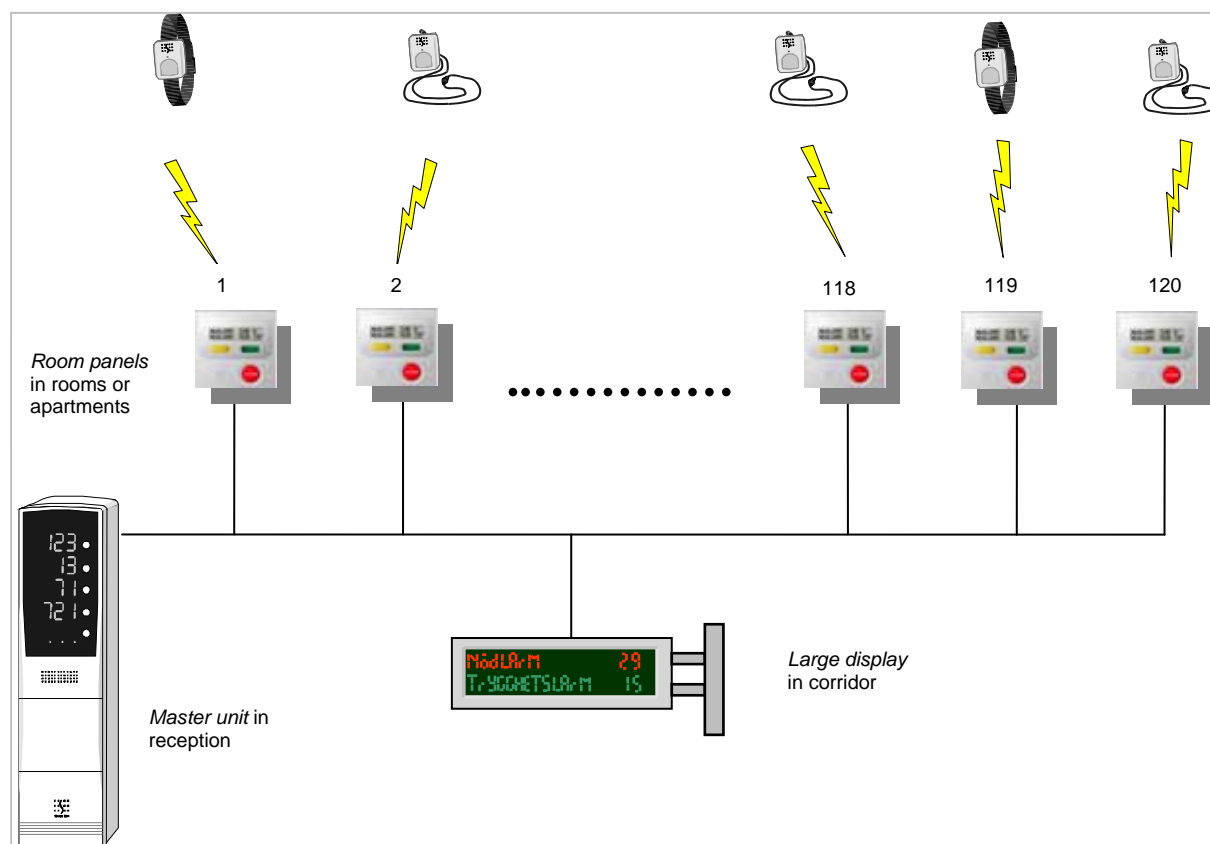
A *room panel* is installed in each room. The panel has push buttons for alarm, check-in and reset and also a display showing plain text messages if there is an alarm from another room. Each room panel has a built in radio receiver for alarms from radio push buttons or other alarm transmitters. These radio receivers are working in such a way in the system that they provide for radio coverage also outside a room or apartment that belongs to a certain radio push button.

The system is designed in a modular way and it is possible to combine alarm units without voice with equipment that comprises voice function. Room panels without voice can also easily be upgraded to include voice at a later stage.



Other types of wireless or wired alarms can also be connected to the system, such as bed alarms, door alarms, contact alarms, smoke detector etc.

Basic alarm system without speech function

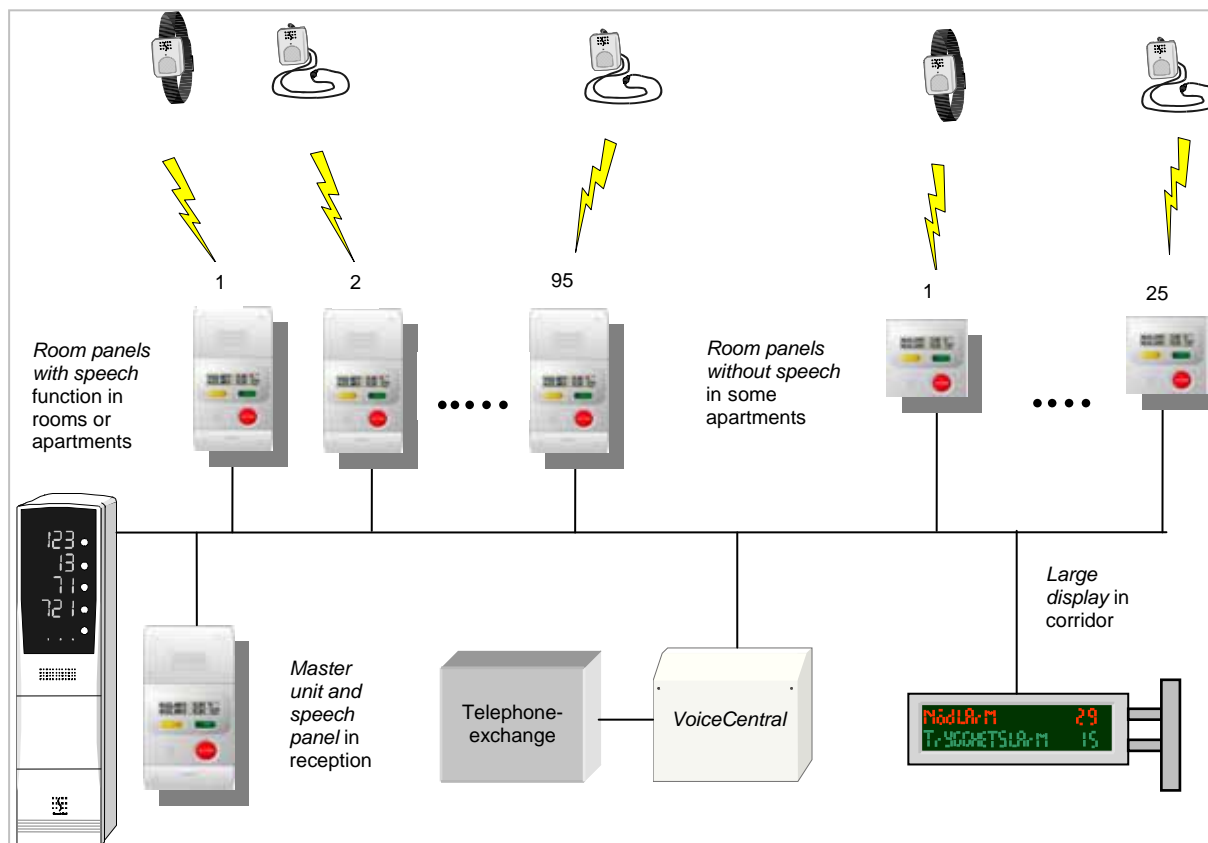


Function

Alarm signals can be initiated from portable radio push buttons or from the room panel in the room. The staff members are handling the alarms from residents by receiving alarms and confirming the reception on the master unit in the reception or by pushing the check-in button and later clearing on the room panel of the person who has initiated the alarm.

While a staff member is registered as checked-in in an apartment the display of that room panel will show new alarms coming from other apartments in plain text and it will also give a sound signal. If a new alarm is sent from a room panel that is already registered as checked-in, this alarm will be shown as a panic alarm on the master unit and other room panels where staff members are checked-in.

Alarm system with speech function in most rooms, without speech in some rooms

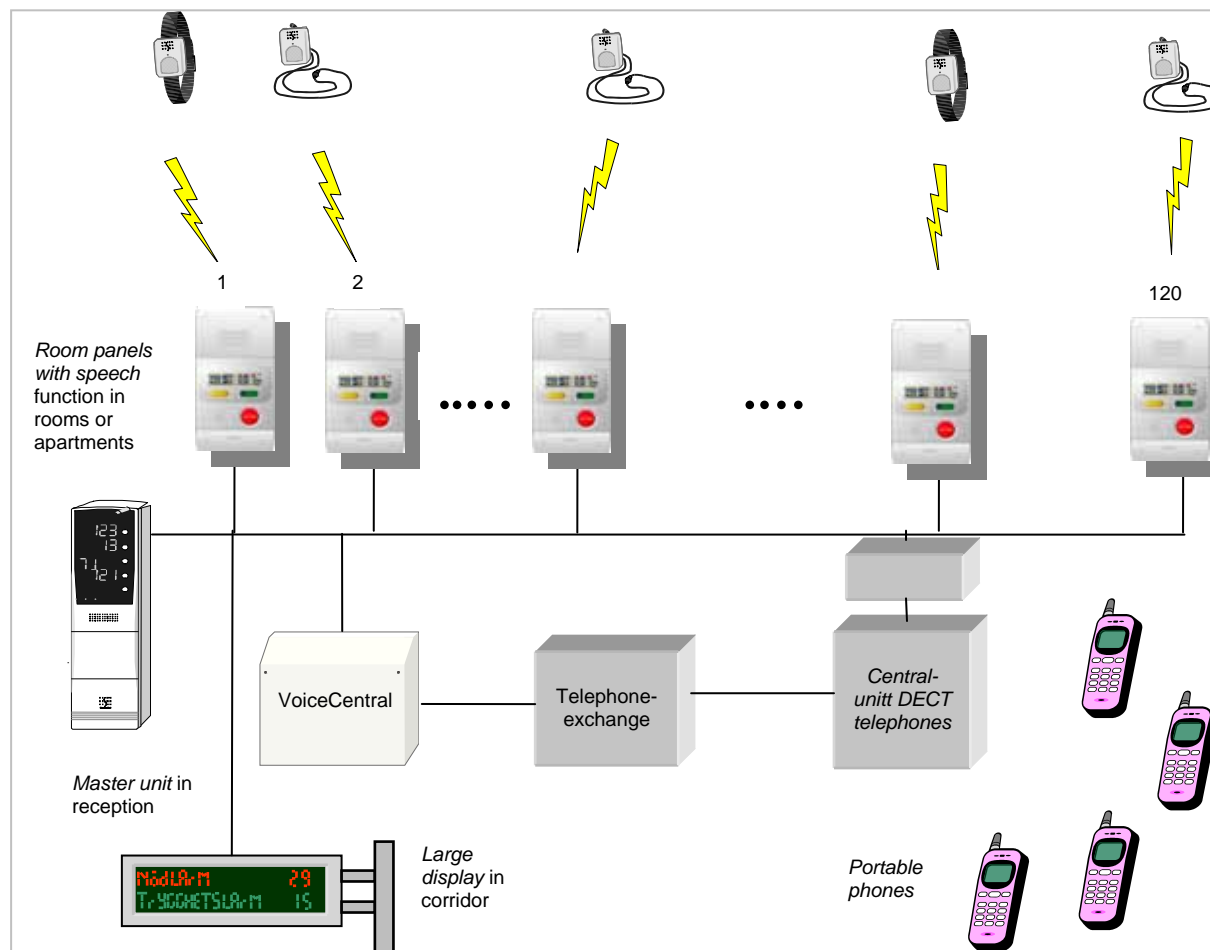


Function

In this example most rooms are equipped with room panels with speech function. Some apartments (25) have panels without speech. The basic functionality of room panels with speech is the same as for room panels without speech. In addition the panels also have a speech function with built in microphone and loudspeaker.

When an alarm is being received in the reception, or at a room panel that is registered as checked-in, a voice conversation can be maintained between the room from where the alarm comes and the staff member who is receiving the alarm. The system can also dial pre-defined internal telephone extensions or external telephone numbers when there is an alarm. A message stating name and room number can be pre-recorded for each room panel with speech function. This message will be played when the alarm is being received from a telephone and a voice connection can then be established.

Alarm system including portable telephones, with speech function in all apartments



Function

In this third example alarms can be received in portable telephones all over the buildings. Alarm messages will be shown in plain text on the telephones. Reception of an alarm is confirmed by pushing a button on the telephone. In the room panels with speech function a message stating name and room number can also be pre-recorded to further facilitate identification when an alarm is received in a portable telephone. After reception of an alarm a voice conversation is possible between the portable and the room that has sent the alarm. Clearing of the alarm can be done on the room panel or the portable phone.

The portable phones can also be used for communication between staff members in the building and for connection to the public telephone network.

The solution with portable DECT telephones requires the connection to a telephone switchboard (PBX) with some extensions available for the alarm system. It is assumed that senior residences normally have a main switchboard that can be used for this purpose. If this would not be the case, a small dedicated PBX can easily be installed to fulfil this requirement.

Personal safety alarm- and communications system for a Senior Resort

For senior resorts with still mostly active people living in their own apartments or houses, the need for personal safety alarms and emergency call systems can vary considerably.

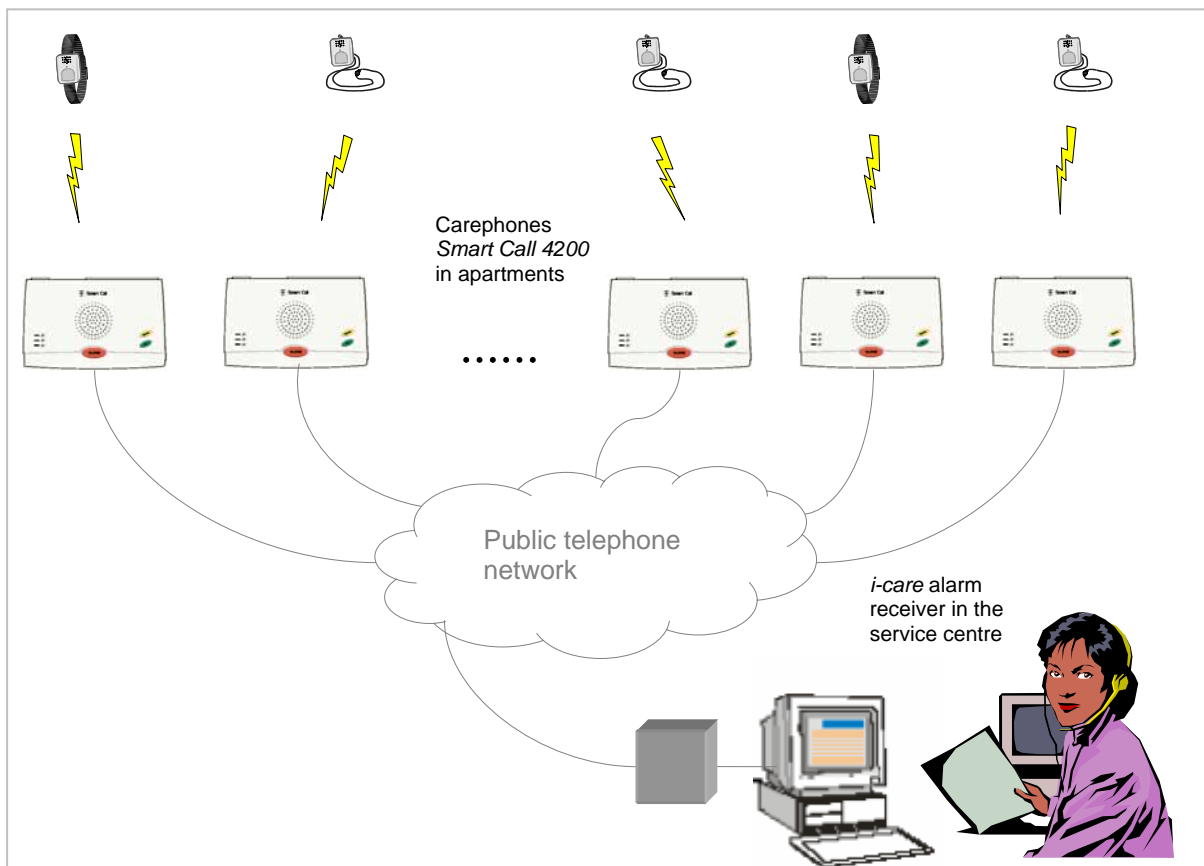
In the example shown here, alarm equipment is installed only in those apartments with tenants that want to have this service. Additional apartments can, however, easily be added whenever there is a need occurring. The system as such is capable of accommodating an almost unlimited number of installed apartments.



A carephone unit, *Smart Call 4200*, is installed in each apartment that should be equipped with personal safety alarm. The carephone has push buttons for alarm, check-in and reset and built in microphone and loudspeaker to enable two-way voice communication. Alarms can be initiated from portable radio push buttons that residents are wearing as a bracelet or in string around the neck, as well as from the alarm button on the carephone. Each carephone has a built in radio receiver for alarms from radio push buttons or other alarm transmitters such

as smoke detectors. Other types of wireless or wired alarms can also be connected to the system, such as bed alarms, door alarms, contact alarms, smoke detector, infrared detectors etc.

The carephones are using the ordinary telephone network for communicating with the alarm centre which makes the installation very simple.



Function – system for a Senior Resort

Apartments

A carephone is installed in each apartment that need alarm. In the service centre there is a PC based alarm receiver, *i-care*, where all alarms will be received and automatically registered. Alarm signals can be initiated from the portable radio push button or from the carephone itself in the apartment. As soon as an alarm has been received at the centre, the staff can talk with the person that has sent the alarm.

The carephone has unique construction with very low power consumption that allows it to be run on ordinary batteries, without any need for external power supply. Power outages will therefore not cause any problems and the equipment is very well protected against lightning as well. Battery life time will normally be 1-2 years and when the battery voltage is starting to get low a battery alarm is automatically sent to the alarm receiver.

The installation in the apartment is very simple since it is just a matter of connecting the carephone to the telephone network in parallel with the ordinary telephone. Each carephone will be programmed with a unique code so that the alarm centre will always know from whom an alarm is coming.

Alarm receiver

The alarm receiver in the centre (*i-care mobile alarm receiver*) can also be set so that all alarms are transferred automatically to ordinary telephones or to mobile phones at certain times (during night time for instance), while still all alarm details will be registered in the computer system.

All tenants and carephones can be registered with a high degree of details in the computer system. Apart from basic information about the individual it is also possible to register information about relatives, health status and illnesses, medicines etc. All this information will automatically be displayed on the screen when an alarm is being received by the system.

When the alarm receiver is set for transfer of incoming alarms to other telephone numbers the alarms can be read to the receiving person through synthetic voice. The type of alarm and identity of the person that has sent the alarm will be presented to the receiver.

Time management

The system can also be used for registration of presence of staff, both for safety reasons and for administrative purposes. In this case staff members are using special staff versions of the portable alarm buttons or dedicated hand held computers. When a staff member is coming to an apartment he or she can send a presence message to the centre through the carephone. If a handheld computer is being used it is also possible to send information about different types of work that are being carried out in the apartment. Time and types of activities are being registered in the alarm centre and can be used for statistics or as a basis for billing of customers.

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