MariCare
www.maricare.com

The Nursing tool assistance for fall prevention, and improved Care

eLea™
Smart Detection
Wireless Version Available

Elsi®
Smart Floor
Invisible System

This guide takes a look at the new technology “Nursing tool assistance” on the market to prevent falls etc. in Age care facilities.

POPULATION GROWTH BY 2050

Ageing population is positively challenging world wide the elderly care sector. The +65 population in Europe today is 130 million (2015), which is 26% of the whole population. The estimates* show, that by the year 2050 the rise up of +65 citizens will be up to 195 million, which leads to 48% of the whole population.

WHAT IT TAKES FOR ELDERLY CARE LIVING

When looking at design for the elderly living environment, the two basic ‘physical’ design fundamentals can be applied to any environment. These fundamentals are: that the residence home or apartment maximizes the independence of the person and minimizes the risk of potential harm to them. The homelike environment must be taken into account, that the elderly may have diminishing capabilities, amongst which are mobility, balance, dexterity, hearing, vision and, for some, cognition.

With MariCare´s innovative products: Elsi Smart Floor and eLea Smart Dtection, many of the serious cases in the care home living can be seen. Especially the major injuries, that require medical or hospital treatment and relatively minor bruising if someone happens to stumble, slip or trip and fall onto the corner of such a benchtop. In a serious incident the Elsi and eLea solutions send an alert and the help of nurses or relatives can be reached at a short notice. In severe cases, even lives can be saved.

CARE HOME ENVIRONMENT

The care home living environment should be thought of as a partner in the care of people, in independent living environments — particularly for those who live alone or who are highly dependent.

As a partner of care, apartment and home designs should reduce the risk of falls. Falls are a major problem in residential aged care. Residents in aged care facilities experience three times the rate of falls than older people living in the community. These falls and the resulted injuries can have a detrimental impact on the quality of life of the person, as they lose confidence and mobility and reduce their overall movement.

“THE BUILT ENVIRONMENT SHOULD BE THOUGHT OF AS A PARTNER IN THE CARE OF PEOPLE IN INDEPENDENT LIVING ENVIRONMENTS — PARTICULARLY FOR THOSE WHO LIVE ALONE OR WHO ARE HIGHLY DEPENDENT”

* https://esa.un.org/unpd/popdev/Profilesofageing2015/index.html

FALL PREVENTION PRODUCTS

There are a number of products designed to reduce the risk of falls in the elderly care. These include monitors/sensor pads, fall mats, grab bars, anti-slip mats, lift slings and shower chairs. While these products are valid ways to reduce falls, it's vital that designs incorporate a range of design elements, to create a system which integrates seamlessly into the user's life. It's important that the system is unobtrusive and gives the user "their life back". However, it is also vital that those who have a high risk of falling, or becoming unwell, are sufficiently monitored and help in near when needed.

ELSI SMART FLOOR ®

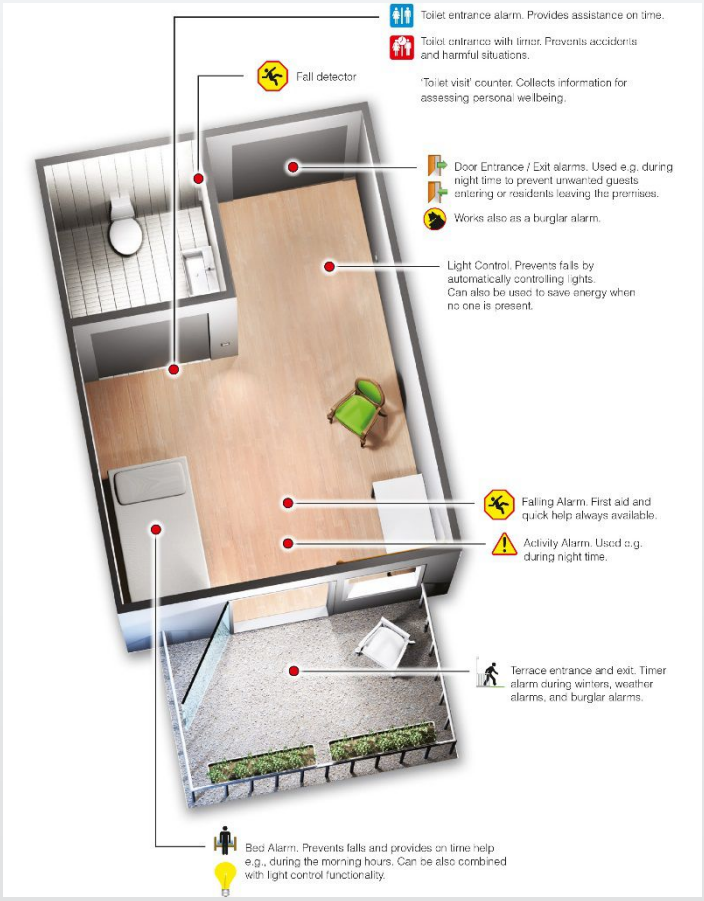
Elsi Smart Floor is an intelligent nursing tool for improved care in healthcare facilities like nursing homes. It enables the right care at the right time without violating the privacy of the people. The system improves the quality, safety and productivity of the nursing and care taking. Elsi Smart Floor is based on an innovative sensor technology installed under the floor surface and an intelligent computer system analyzing the sensor readings. The system was tested from 2006 to 2010 in the second largest Health Care home "Kustaankartano" located in Finland, Helsinki. The testing showed that the incidents of falls nearly halved in the Elsi unit. Nursing staff and relatives reported a more resident orientated care and 21% more time was saved in the Elsi unit compared to other units.

HOW DOES IT WORK?

The technology around Elsi Smart Floor is similar to today's touchpads and tablet computers. Elsi Smart Floor tracks the motion and position of human bodies relative to their positions on the floor. The Elsi Smart Floor can identify the water in the human bodies and interpret that to the system. It does this using sensor laminates, which are installed in a similar way to traditional flooring. The sensor laminates are plastic foils containing a thin layer "0,16mm" of copper etched into specific patterns. The sensors are installed under the top floor material, which can be anything from linoleum to marble. The sensor laminate connects to the Elsi Smart Floor sensor electronics, which are installed inside the skirting board.

The Elsi server at customers´ premises runs software that is responsible for the alarm detection, logging and delivery. The system uses a multiple target tracking algorithm to estimate the number of people and their locations from the observations it receives from the sensor laminate. It analyses the movements of the people and checks if they are doing anything that might be alarming. When the system detects an event that is alarming based on the alarm settings, it triggers an alarm, and stores the data. Supported alarms include: fall alarm, bed alarm with automatic light control, toilet alarm and with timer, entrance/exit alarms on doors and a burglar alarm.

The Elsi server provides a web based user interface, that allows nurses to see the activity on the Elsi Smart Floor in real time in each apartment. In addition the nurses can view the status of the system, configure settings, monitor the rooms, play back events, create reports and view detailed logs about the alarms.



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GLOBALLY THE NUMBER OF OVER 60 YEAR OLD RESIDENTS IS INCREASING UP TO 2 BILLION BY 2050.

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INTEGRATION WITH THE NURSE CALL SYSTEM

The Elsi Care Solution typically integrates with a third party nurse call system (Smart phones or DECT phones). Alternatively, Elsi Care Solution can deliver alarms to mobile phones. When delivered over a mobile phone, the alarms arrive either by using the Elsi Smart Client application. Using the app, the user is presented with a list of unacknowledged alarms, and they can acknowledge the alarms directly from the phone, and in the residents room for as present. Smart Client also allows the user to establish a phone call to the originating room, if the room has a care phone installed. If the connection is down towards the traditional nurse call system for an extended period of time, the Elsi Care Solution can deliver notification via VPN.

NURSE CALL BUTTONS
Elsi Care Solution also has the capacity to act as a simple nurse call system, with several button types supported; including the ordinary red nurse call button; green “nurse present” button, nurse call cord and the bathroom pull cord. Furthermore, the sensor laminates can be used directly to drive Elsi LED lighting in the floor skirting profile. This means that the system detects when someone gets out of bed, and turns on a night light, which prevent falling etc.

INSTALLATION
Elsi is installed beneath the flooring and is laid in a similar way to traditional linoleum flooring, but is fully protected by the top floor covering, giving it a long life time. It is easy and quick to install either in existing or in new facilities and all common floor materials can be safely laid on top of sensor foil.

MARICARE
MariCare is the global supplier of Floor Sensor Systems, providing the newest generation of technologies for the Elderly Care sector for Proactive Care and Wellbeing. More than 2000 apartments today have the Elsi Smart Floor System installed.

ELEA
eLea™ Smart Detection is a wireless system specially developed for private home care, existing nursing homes, senior homes and provides fall alerts, activity monitoring, burglar and smoke alarms. Enables residents to live longer in their own home environment.

Tested and proven technology in more than 2000 apartments.

Patent pending

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SELECTED REFERENCES

Finland, Kustaankartano (Helsinki): 53 rooms 2016-2017
Australia, Horton House Gordon (Sydney): 45 apartments 2015-2016
Australia, Assisi nursing home (Melbourne): 20 apartments 2015
Denmark, Frydenholm Plejecenter (Rudersdal): 59 apartments 2015
Finland, Eura nursing home (Eura): 15 apartments 2015
France, EHPAD à GANNAT (GANNAT): 15 apartments 2014-2015
Finland, Nikkarinkruunun palvelutalo (Keravaa): 42 Apartments 2014-2015
Sweden, Hälleborg Äldreboende (Västerås); 120 apartment 2014
Norway, Bjønnes Bo og Aktivitetssenter (Nøtterøy), 16 Apartments 2014
Denmark, Ansager Fremtidens Plejecenter (Varde): 25 Apartments 2013
Finland, Nurmijärven palvelukeskus (Nurmijärvi): 36 rooms 2013
Finland, Nastolan palvelukeskus (Nastola): 32 rooms 2013
Denmark, Betram Knudsenvej (Kolding): 90 Apartments 2013
Denmark, Tirstrup Plejecenter (Varde): 24 Apartments 2013
Finland, Wiitalinna (Viitasaari): 54 apartments 2013
Finland, Runosmaki (Turku): 32 apartments 2013
Denmark, Fremtidens Plejehjem (Ålborg): 75 Apartments 2013
Denmark, Marienlyst Plejecenter (Skive): 24 Apartments 2013
Denmark, Skovhuset Plejecenter (Hillerød): 104 Apartments 2013
France, Hospitalor (Epinal, France): 12 rooms 2012
Finland, Kaunisjärvi (Rauma): 60 rooms 2011

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