



SensFloor® Care – The Future of Care Starts Now

Christl Lauterbach, CEO, Future-Shape GmbH, Höhenkirchen, Germany

Introduction Future-Shape GmbH

History and Management

Future-Shape GmbH, Hoehenkirchen,
Germany, founded: 2005
Core business: Sensor Floor SensFloor®



Management:
Sebastian Stoll, COO
Christl Lauterbach, Managing Director, CEO
Dr. Axel Steinhage, Managing Director, CTO

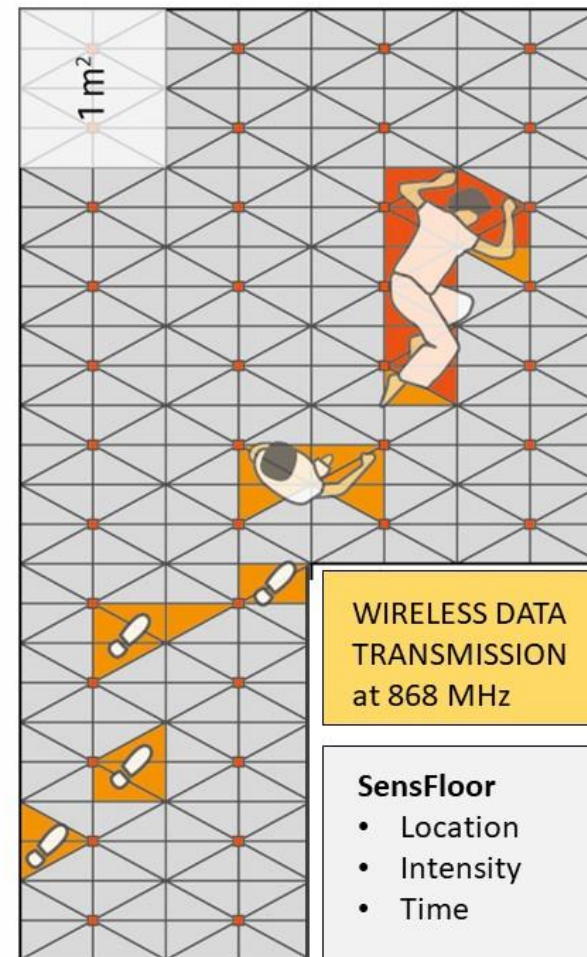


Schematic of the SensFloor® System

Multifunctional sensor system

SensFloor features

- Detects presence and number of persons
- Speed and movement direction
- Flexible – can be laid under any kind of flooring
- Robust – no mechanical parts
- Invisible and discreet – no visible components
- No cameras – respects user privacy



SensFloor Transceiver based On Raspberry PI 3



HDMI

ETHERNET

Bluetooth

Audio

USB

WLAN (Host)

8 Relays

Basic Functions

- Presence
- Direction
- Velocity
- Counting
- Person lying on the floor
- Self test

SensFloor® for Intelligent Rooms

Care and Ambient Assisted Living



SensFloor® CARE

- Fall detection and alarm
- Fall prevention
- Activity monitoring
- Health status
- Documentation



SensFloor® LIFE

- Fall detection and alarm
- Inactivity recognition
- Analysis of daily routine
- Change recognition
- Longterm analysis of behaviour



SensFloor® GAIT

- Gait pattern recognition
- Speed & asymmetrical step lengths
- Evaluation of risk of falls
- Change recognition
- Rehab success documentation

SensFloor® CARE

Installable beneath all kind of flooring

SensFloor Underlay installed,
Black seam: Height-levelling
material



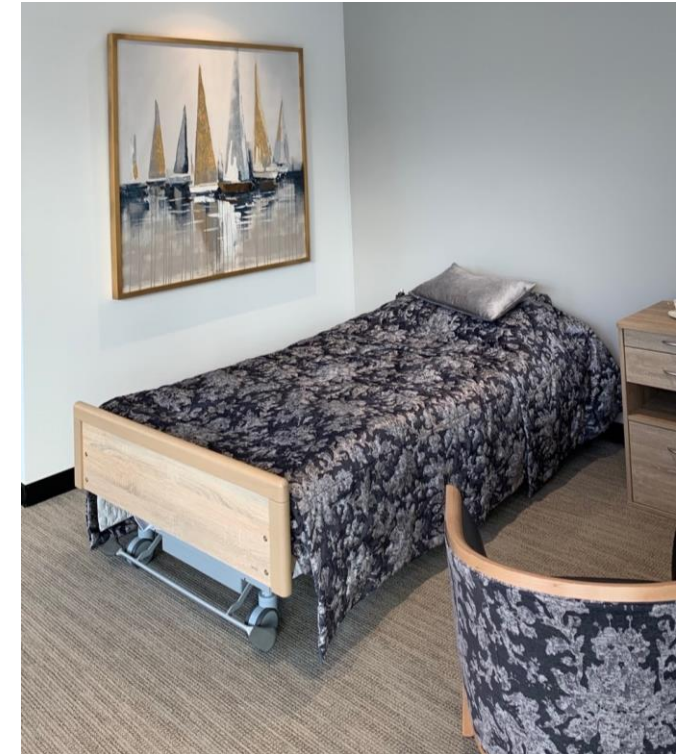
2019 Boolaro, Harbison, AUS

Hospital room with Lino, tiles
or Vinyl



2019 Sydney, Syno, AUS

Nursing home with parquet,
laminare, design floor or
carpet



2019 Sydney, Syno, AUS

SensFloor® CARE

Fall detection and prevention

EHPAD LA RÉSIDENCE DR. MORITZ DU VAL
DU MODER PFAFFENHOFFEN (F) 2012



70 rooms/bathrooms equipped with SensFloor, fall detection and fall prevention by orientation light, activity alerts possible - acts as referee in France and recommends SensFloor

WOHNEN AM SCHLOSSANGER IN
HÖHENKIRCHEN-SIEGERTSBRUNN, (D) 2015



10 rooms/bathrooms equipped with SensFloor, fall detection and fall prevention by orientation light, activity alerts for people with high risk of falling; partner in EU project UNCAP; pilot installation for activity monitoring

SensFloor® CARE

The ward terminal at a glance

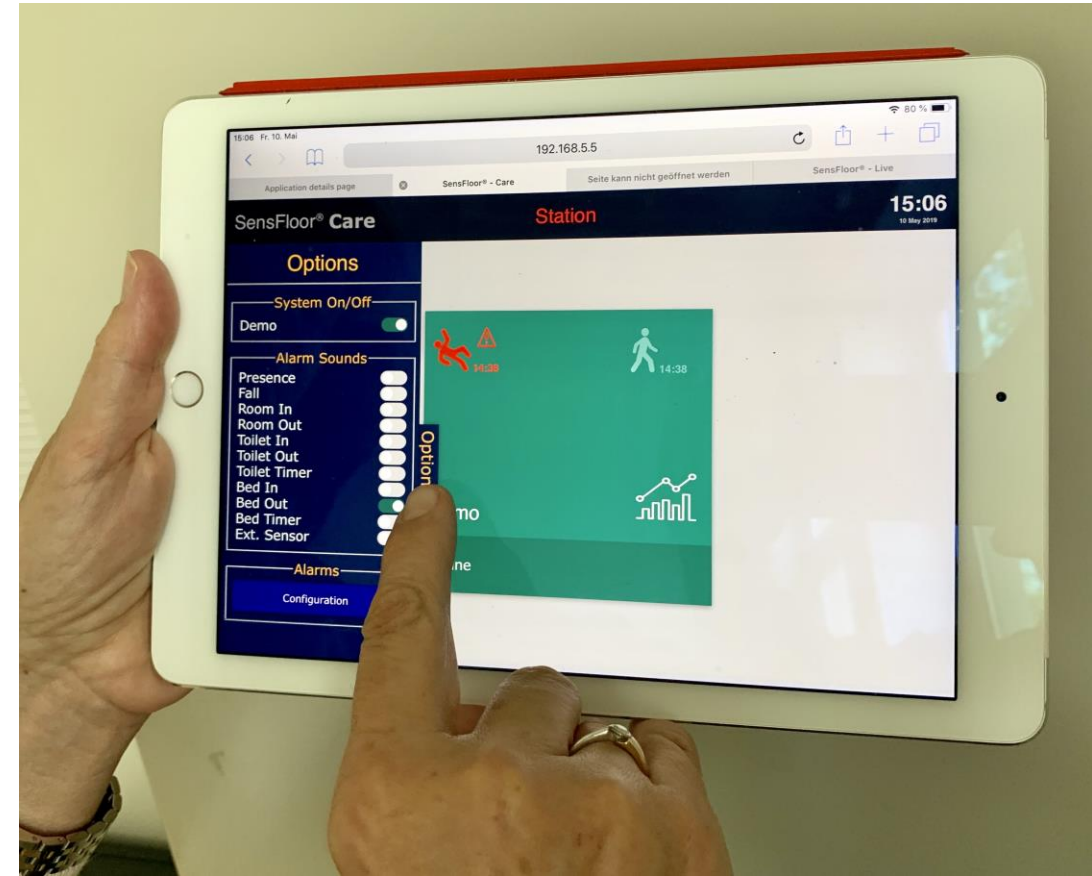
- Depiction of actual activities in all rooms
- Fast reaction to urgent events
- Optimization of pathways
- Documentation of falls
- Movement tracking available for each room



SensFloor® CARE

Individual alarm configuration for each room

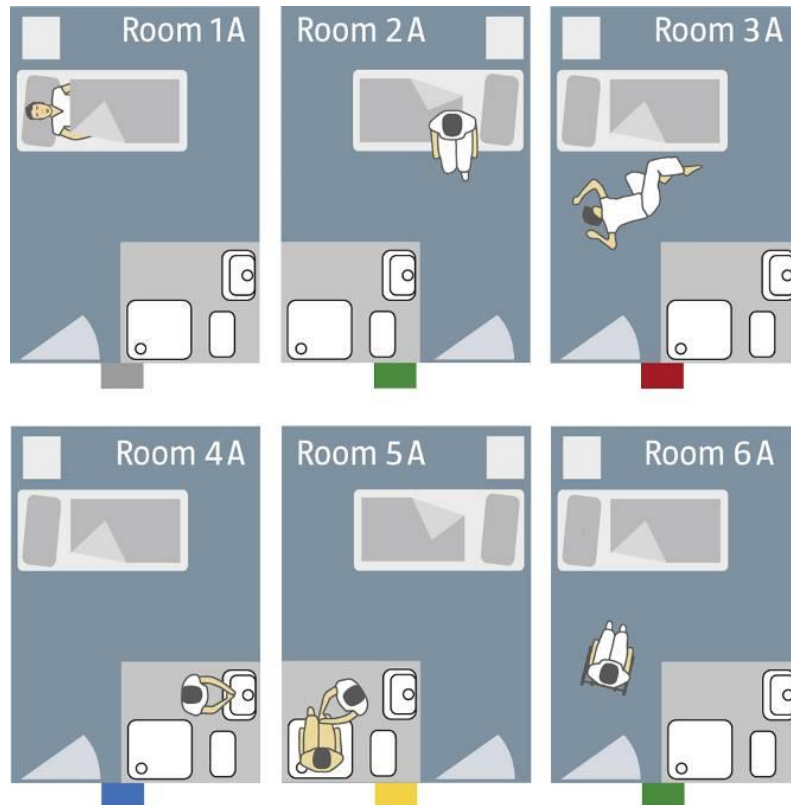
- Presence
- Fall
- Entering/leaving the room
- Surveillance of toilet
- Entering/leaving the bed
- Connection of external sensors
- Timer functions



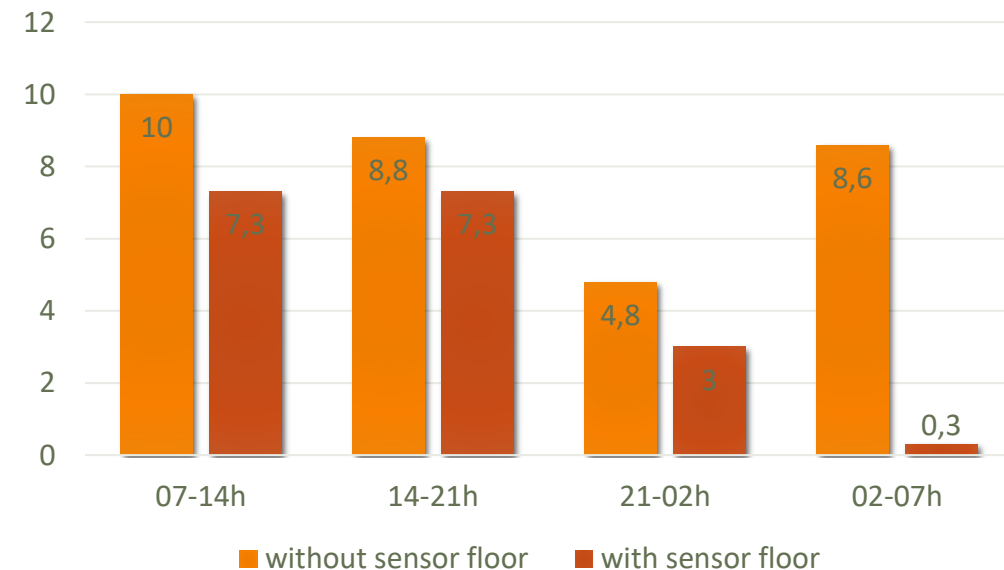
Scene recognition and fall prevention

Realtime analysis and real-time alerts

Different scenarios in the patients' rooms



Average number of falls/month in 44 hospital rooms (during 4 months)



Source: ELSI® sensor floor installation Kustaankartano Hospital in Helsinki, Finland, published at ISG-ISARC, (2012), 44 rooms, 4 months statistics

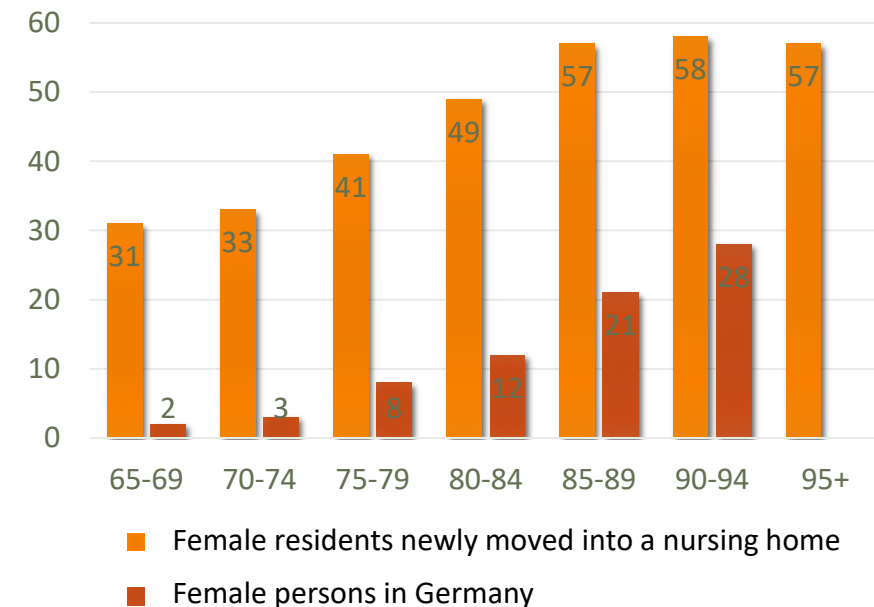
Fall statistics in Germany

Elderly people have a high risk of fractures

- One fall per year for 1/3 of people over 65 years
- One fall per year for over 50% of the inhabitants of nursing and care homes
- 10% of the falls make medical treatment necessary
- 100.000 hip fractures per year in Germany (costs of 20.000 EUR per case)
- Cost of medical treatment after hip fractures in Germany (2009): about 2 billion. EUR/ year
- Every fall in a care home causes emergency intervention (cost of 980 EUR without fracture)

Source: Rapp. Daten der AOK Baden-Württemberg, and article from „Gesundheit und Gesellschaft“, Edition 6/09, 12., pp. 24-29

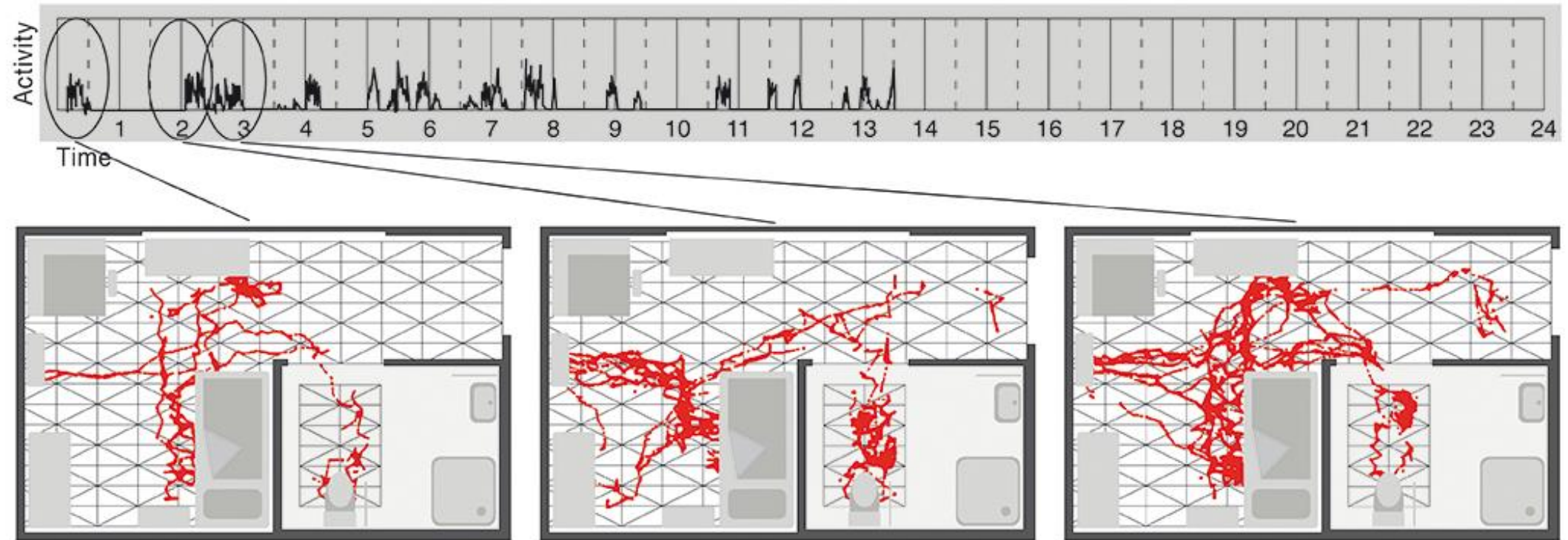
**Hip fractures per 1000 person
years in Germany**



SensFloor[®] CARE

Long-term activity monitoring

Activity monitoring from 0h until 13:30h, SensFloor in room and bathroom



Trajectories from bed to bathroom

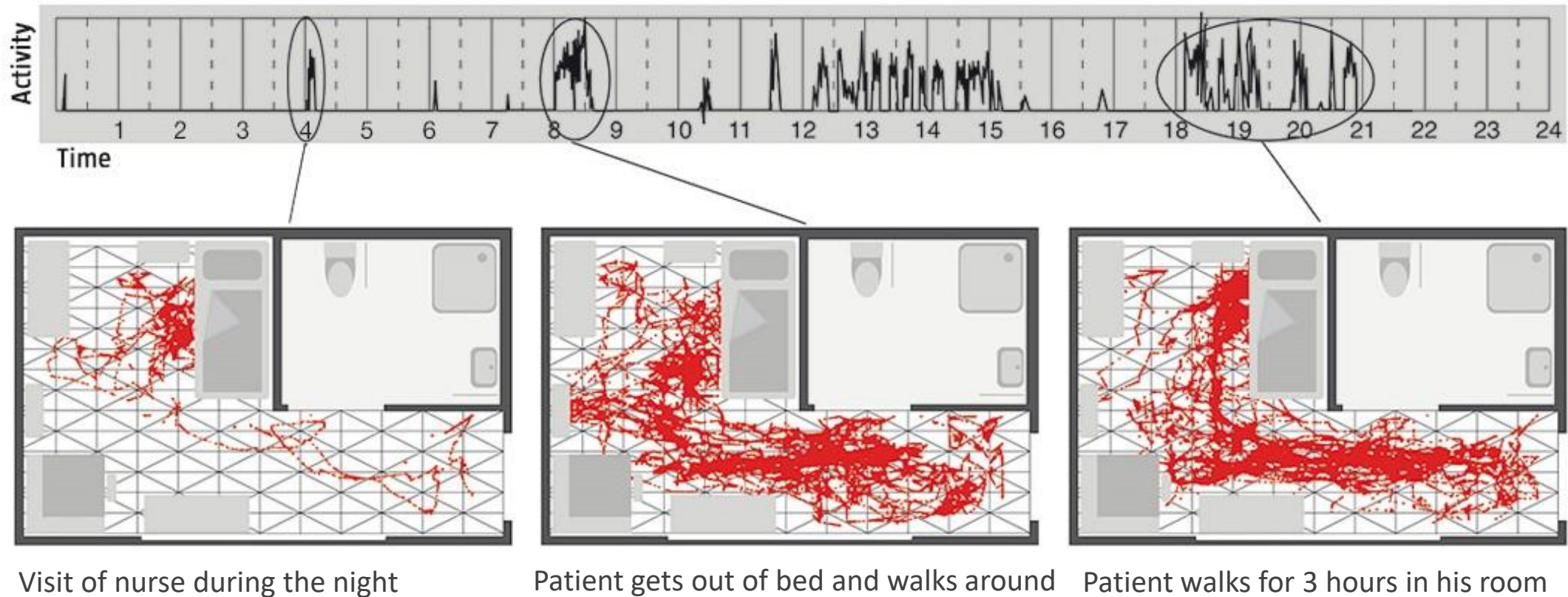
Trajectories from bed to bathroom
Nurse comes in and talks to him

Trajectories from bed to bathroom
Nurse comes in and talks to him

SensFloor[®] CARE

Long-term activity monitoring

Activity monitoring from 0h until 24h, no SensFloor in bathroom, Alzheimer patient, age 74



SensFloor® LIFE

Being at home – protected and safe

- SensFloor on existing flooring
- Detects all kind of falls
- Automatically sending alarms
- No cameras and no wearables
- Longterm activity monitoring
- Complex data processing (AI)



SensFloor in ****senior residence

A new dimensions for comfort and safety

Bad Griesbach, environment with high recreational value: golf, thermal baths, nordic walking center



Easily accessible Vita D'oro residence with 69 bungalows, 30 apartments and a club house with 24/7 service center for alarms



AAL in the -show house Bad Griesbach

Integrated, unobtrusive functionality

KNX-building automation system with:

- Fingerprint door opener
- Automatic shutters
- Automatic ventilation with heat recover
- Circadian light
- Intrusion alarm

SensFloor® for:

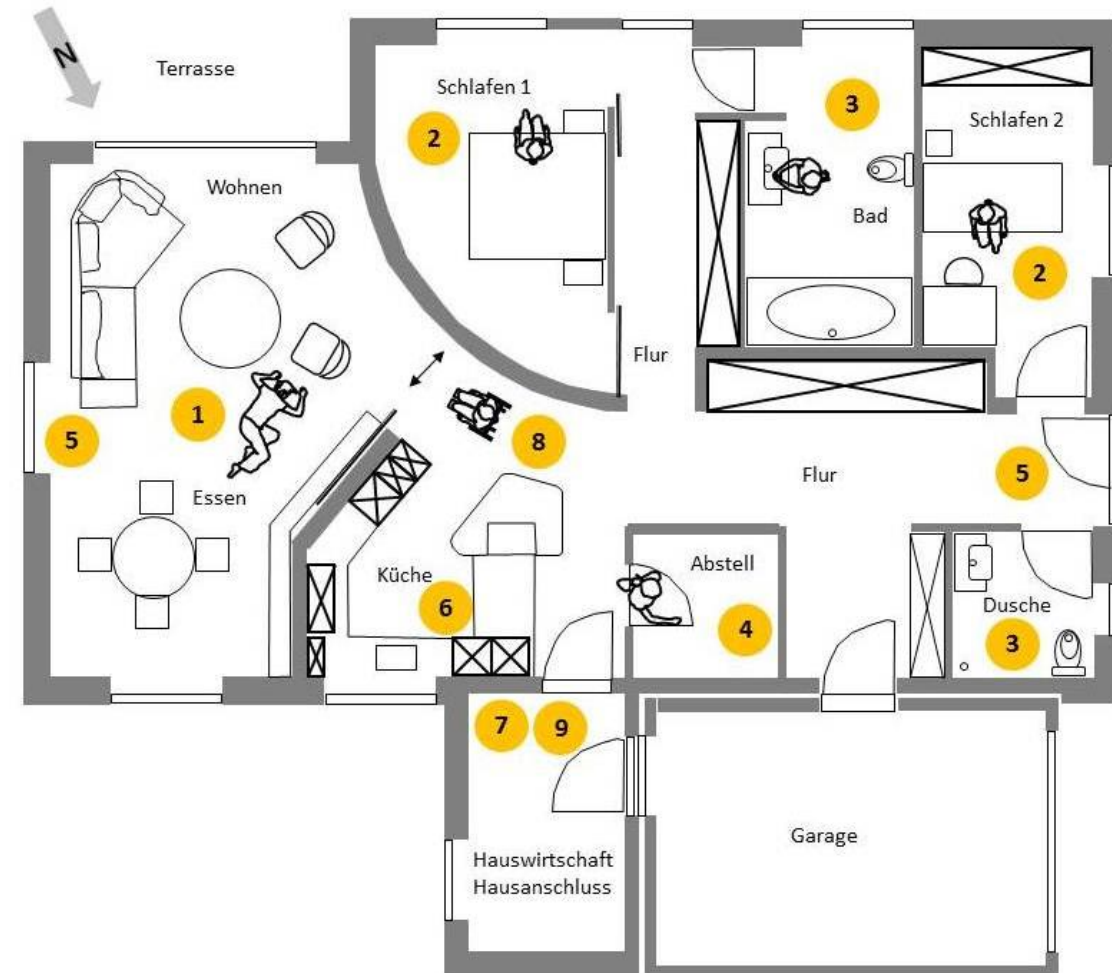
- Comfort functions (climate, light)
- Ambient Assisted Living functions
- Alarms
- Locating intruders



SensFloor® in the - show house

Integrated, unobtrusive functionality

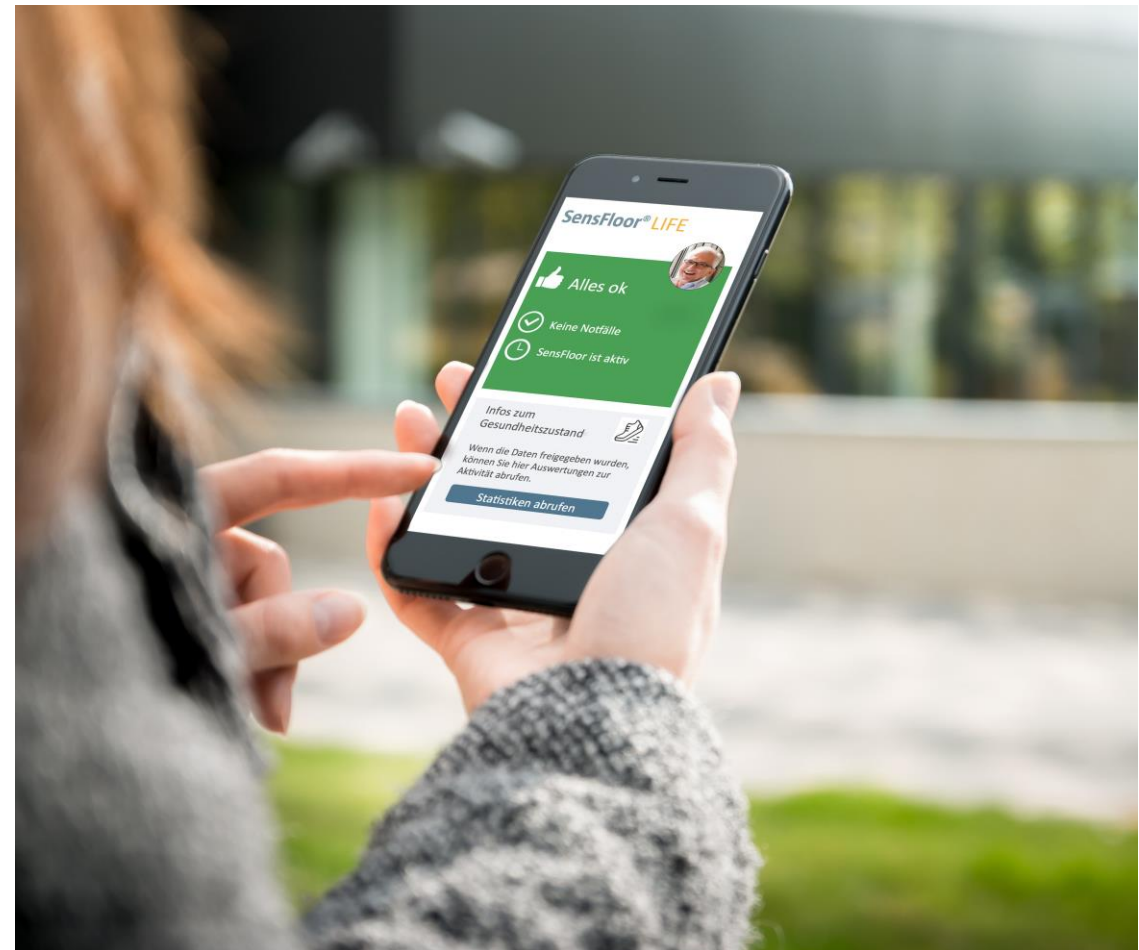
- (1) Alarm when a fall is detected
- (2) Alarm when leaving the bed
- (3) Inactivity alarm
- (4) Automatic light
- (5) Intruders or wandering (dementia)
- (6) Detect water leakages
- (7) Ventilation depending on presence
- (8) Automatic door control
- (9) Remote maintenance



SensFloor® LIFE

Services for next of kin with mobile phone app

- Push alarms
- Traffic light symbol for activity, daily routine, ...
- Direct link video chat / chat app
- Alarm konfiguration
- History function
- Complex statistics (AI)



SensFloor® GAIT

Gait recording for objective assessments

Invisible beneath the flooring - barrier-free set-up

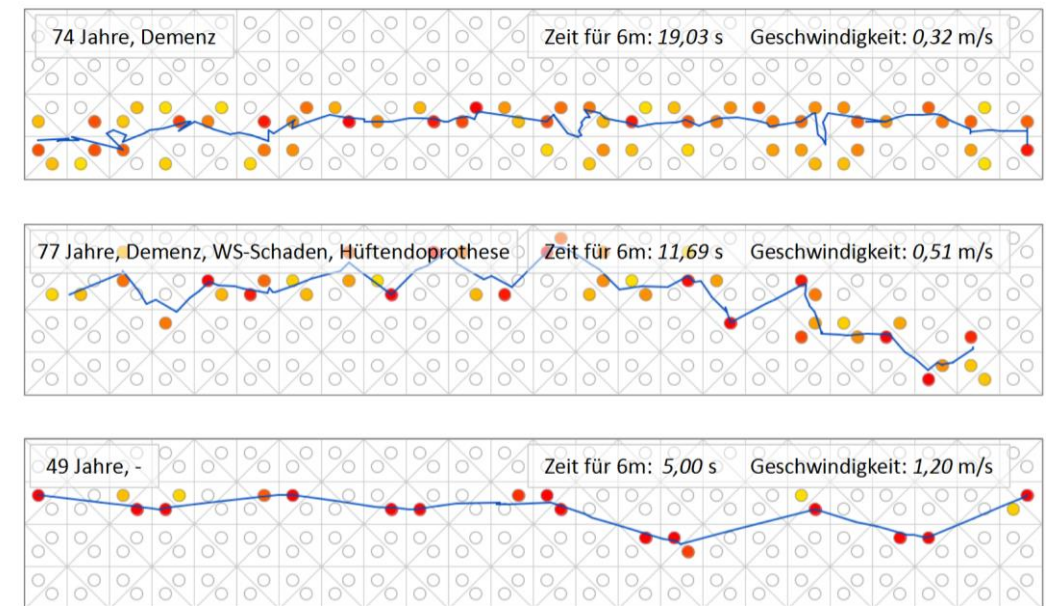
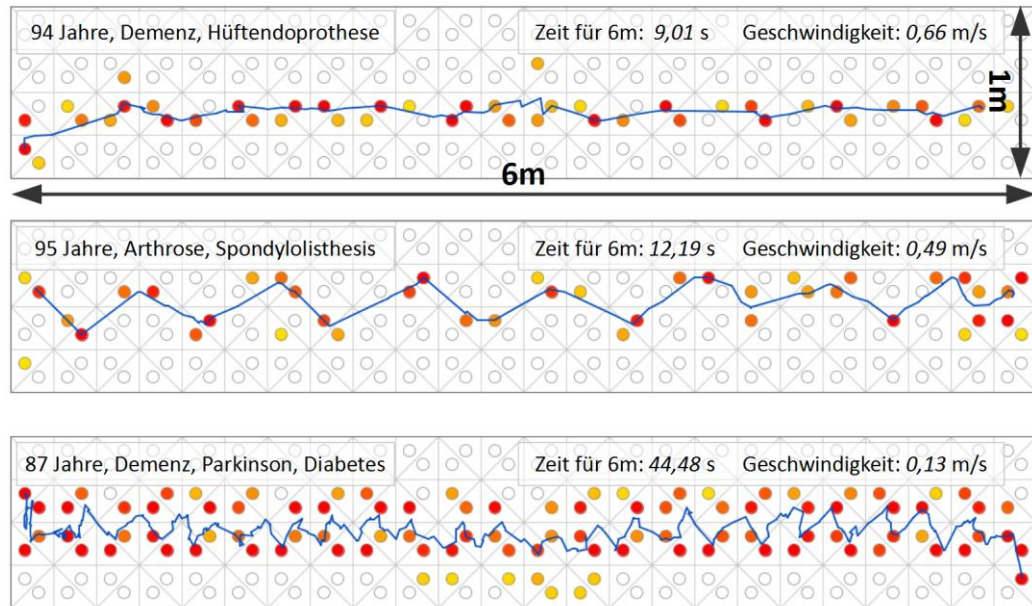
- Normal flooring – no threshold
- Natural gait pattern, easy assessments
- No additional space required
- Robust and non-expendable
- Economically priced



Clinic Frankfurt Oder (RKAG)

SensFloor® GAIT

Examples of gait patterns



SensFloor® GAIT

Supports telemedicine services

- Gait recognition to identify certain diseases and health problems
- Traffic light symbol for activity, daily routine, behaviour...
- Prove effectiveness of medication
- Longterm health status documentation
- Direct link to video chat / chat app
- History function
- Complex statistics (AI)



SensFloor®

Thank you for your attention!



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