

A photograph of an elderly couple. The man is in the foreground, wearing a light blue polo shirt, resting his chin on his hand. The woman is behind him, wearing a light blue cardigan, smiling. The background is a bright, indoor setting with a white shelf holding several small, square objects.

contexta-care

contexta-care is a sophisticated, yet easy to use system, which enables close monitoring of a person and of her/his living environment. The beauty of contexta-care lies in its ability to both highlight, in a preventive manner, *situations that might evolve in a potentially dangerous manner, as well as promptly signal critical events, e.g. falls.*

contexta-care can recognize situations or signal events **without any active, manual involvement of the person** being monitored, and can therefore operate effectively also in cases where the user is unconscious.

It was developed particularly with elderly people in mind, both people who still live independently and those who are being taken care of by a support structure.

contexta-care is a highly modular and scalable system, suitable both for monitoring in health-care structures -including complex ones- and for remote monitoring of elderly people still living at home.



The system is **active 24/7**:

- it guarantees a high level of attention to critical situations with a very low percentage of false alarms;
- it allows close control of user's needs also from a remote location;
- it increases efficiency and effectiveness of control coverage of support personnel, thus optimizing costs as well;

contexta-care focusses on **prevention** and it is able to detect *events* that can lead to a critical situation, raising an immediate alarm.

contexta-care

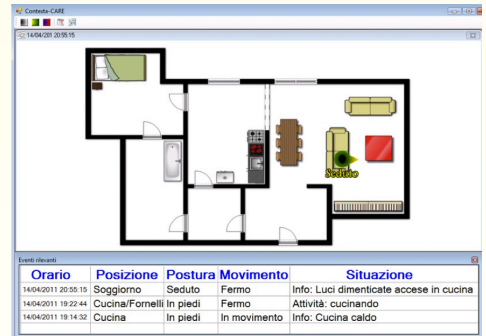
contexta-care Characteristics

contexta-care can detect situations that lead to a change of state by means of:

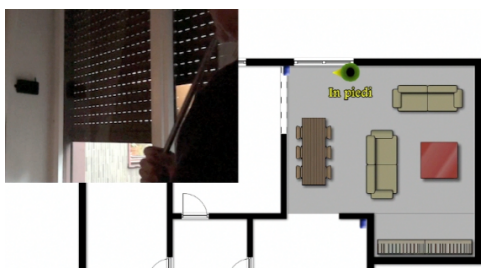
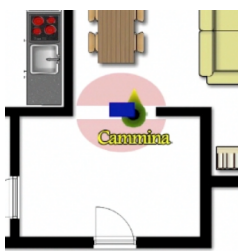
- the gathering of large amount of data delivered by sensors located in the environment being monitored. Small, light and **non invasive** sensors can also be carried by the user.
- an intelligent data concentrator, which analyzes and stores the data being collected; it detects situations, anomalies, emergencies and raises alarms.

All data processed by **contexta-care** are available also remotely via the web, through a user friendly client running on a PC or an iPad/iPhone.

The system can also send SMS messages depending on users' choices.



| Orario | Posizione | Postura | Movimento | Situazione |
|---------------------|-----------------|----------|--------------|---|
| 14/04/2011 20:55:15 | Soggiorno | Seduto | Fermo | Info: Luci dimenticate accese in cucina |
| 14/04/2011 19:22:44 | Cucina/Formelli | In piedi | Fermo | Attività: cucinando |
| 14/04/2011 19:14:32 | Cucina | In piedi | In movimento | Info: Cucina caldo |



contexta-care Features

- Preventive evaluation of dangerous situations.
- **Movements detection** in the monitored environment
 - ★ special attention is given to the **identification of events which appear atypical for a given user** (traumatic events like falling, but also detection of reduced activity, or unusual postures)
- **User localization** within the environment being monitored
 - ★ identification of a person's presence in defined areas -e.g. in bed, in the kitchen, etc..
 - ★ identification of a user going through doors, and **exiting the environment being controlled**. This can be achieved even without the user carrying any sensor.
- Gathering of **environmental data**
 - ★ Eg. temperature, humidity, ambient light conditions, etc.
- The overall system can still operate, albeit at a lower level of recognition capabilities, when the user carries no sensors.
- Alarms can be raised without any user intervention.
- It can be interfaced with various home automation systems, and its functionality extended.
- It is possible to trace, view and analyze past events by **storing historical data**.

contexta 

via G. Durando, 38/ A - I-20158 Milan (MI), Italy

www.contexta.it info@contexta.it

Patent Pending

Registered Office: via G. Carducci, 16 - I-20123 Milan (MI), Italy

Italian VAT Number 07317720964

contexta-care

Falling: a critical event

Falling is not only the result of a “mechanical” event, but it is often the consequence of medical emergencies, where immediate intervention is mandatory.



Not always is falling a pure traumatic event: sometimes it may be connected to loss of equilibrium, or bad posture: e.g. leaning against a wall and then standing still in an unusual position.

- ★ existing systems that detect falling by simple measurement of acceleration, lack of motion, distance from the floor, cannot reliably detect all events.

Many actions in everyday's life can be wrongly detected as a traumatic fall, e.g. removing the body sensor, climbing stairs, running.

contexta-care is able to detect the context and the sequence of events that lead to a give situation, like, for example:

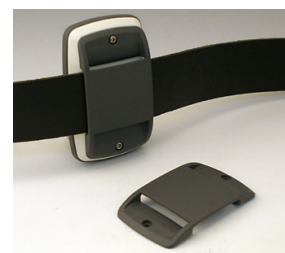
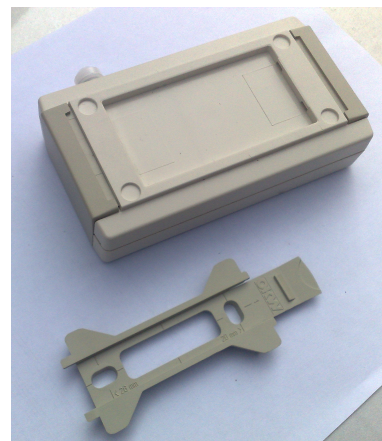
- ★ sequence of postures or unnatural movements, even though slow and non traumatic;
- ★ lack of motion with the user in an unusual position or place. The system will automatically learn user's behaviors over time.

Monitoring the whole chain of events instead of individual actions, will **drastically reduce false alarms**.

Installing **contexta-care**

Installing **contexta-care** is definitely simple:

- The system is composed of a group of devices (**nodes**), interconnected using wireless technology so that no external additional cables are required. Most nodes operate on batteries, so there is no need to connect to the mains socket.
- **Fixed** “nodes” can easily be mounted on the walls of the areas to be monitored, so as to guarantee the monitoring of specific places, e.g. bed, main entry door, next to a window, etc.
 - ★ fixed “nodes” are **battery powered**, and, in nominal conditions, can be active for **more than one year**.
- **Mobile** “nodes” are also battery powered and are placed on the belt of the user.
- An **intelligent concentrator** gathers and processes all data from all nodes and sensors, and sends them over to the operator.
- The **map of the environment** is loaded in the system and **contexta-care** is ready for use!



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