

AT A GLANCE ON THE FUTURE: MEASURING PRESENCE AND HEART BEATS ... FROM A DISTANCE!



Is catching heartbeats from a distance useful?

Remote presence or heartbeat sensors can be used to assess whether a person in an enclosed or inaccessible place is alive. The need is particularly felt for elderly people living alone ... Japan would be one of the first markets for this technology since, in 2014, 26% of the country's population was over 65.

How does it work?

The sensor is actually a radar. It emits a radio frequency wave which travels through the air, collides with our body and sends back a kind of echo, picked up by the device.

In the case of the detection of the movements of the heart, as it performs a back-and-forth movement, the frequency of the reflected signals varies due to the Doppler effect, the same effect which is used to measure the speed of the cars with speed cameras ... and give tickets! By studying the repetition of these signals, we can extract the heart rate.

What does the spiral correspond to?

The spiral trace represents your position relative to the sensor. Its size depends on the distance at which you are, while its direction of rotation is linked to your movement. Move away then get closer, slowly then quickly: the spiral will change speed of rotation!

And if you keep perfectly still, you can "see" the beating of your heart.

Is this technology for today or tomorrow?

This radar is very innovative, expensive, and has not yet been used commercially. However, it is able to detect movements of the order of ten micrometers (the equivalent of the diameter of a hair) and it can be adjusted for many uses: detection of objects hidden under a garment, listening to a conversation through the vibration of a window, detection of the stress level of a video game player ...

No doubt this type of technology will be part of our future.