

Get smart – sensing seniors' situation

Researchers used a network of sensors installed in the seniors' flat to track their memory, movements and sleep patterns over a period of time.



1. Gateway

All non-gateway devices transmit their data wirelessly to the gateway, which aggregates and sends the data to the server via the Internet for the researchers to analyse.



2. Tap usage sensor

This is used to determine if the senior had forgotten to turn off the tap before moving away from the designated area.



3. Sensorised medication box

Each time the box is opened, data is generated and used to determine how frequently the seniors forgot to take their medicine.



4. Motion and environmental sensor

This is to detect motion.



5. Bed occupancy sensor

Placed under the mattress, this sensor provides data on the length and quality of sleep.



6. Contact sensor

This sensor is placed at the flat's main door and on the medication box to detect if they are open or closed.



7. Smart plug

It monitors the usage of the appliance it is connected to based on voltage measurements.



8. Wearable

Activity bands worn by the seniors measure their heart rate.



9. Beacon tag

Proximity beacon tags (right) are attached to the seniors' keychain and wallet. Through these tags and wearable motion sensors,



researchers are able to determine if the seniors had taken their wallet and keychain with them when they left their home.