

## e-Health Context Aware Environments Deployment based on Wireless Social Sensor Networks

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In this work, the implementation of Context Aware in order to aid in the assistance of end users within the framework of e-Health and m-Health scenarios has been described. Interaction with end-users and social/medical staff is achieved by using a multi-signal input/output device. A prototype of ‘Social Sensor’ device has been designed and implemented, in order to provide multiple-signal processing capabilities, while exhibiting flexible, low complexity and moderate cost features. The ‘Social Sensor’ device is based on a Bluetooth transceiver, in which a dedicated microcontroller provides access to several signals, which can provide medical, environmental and behavioral information. In order to analyze the robustness of the system, detailed wireless channel analysis has been performed, providing insight on the behavior of the devices in real complex indoor scenarios, in which large signal variability can severely degrade overall performance. Initial tests under Living Lab conditions, given by NASISTIC project’s operational requirements have been also been performed, showing the feasibility to successfully interchange multiple information within real time regime. The obtained results show good acceptance of the proposed system both by end users as well as by medical and social staff, increasing interaction, reducing overall response time and social inclusion levels, with a compact and moderate cost solution which can readily be largely deployed.

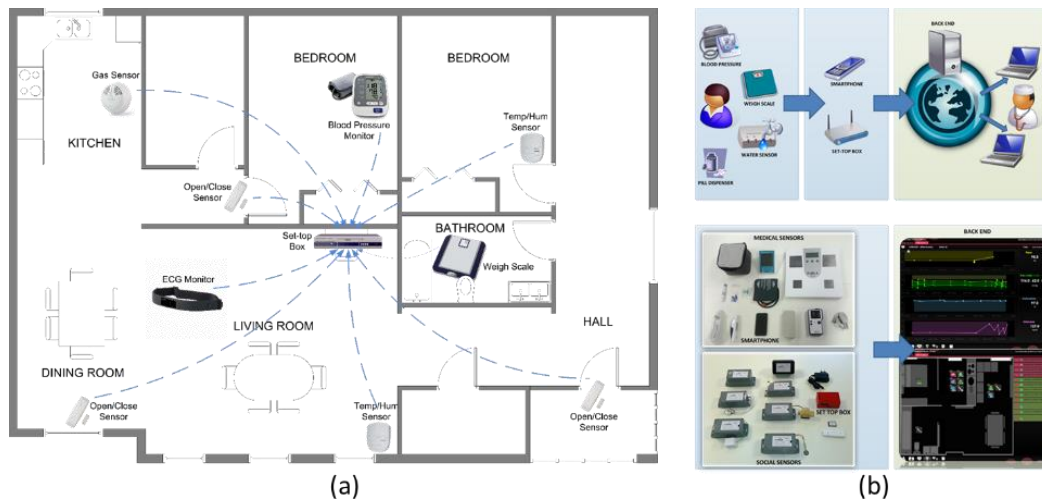


Figure 1. (a) Home monitoring scenario, in which a Social Sensor network is deployed, (b) Overall view of the NASISTIC Social Sensor architecture (up) and an expanded view of the employed sensor testbed (down).