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## **Low Cost IoT system for Residential Automation using Open Hardware and Open Software with a Focus on Disabilities**

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## Abstract

The quest for comfort and practicality is commonplace in contemporary society, but such benefits are still not offered satisfactorily to all. Among these, special attention is given to people with Disabilities, who often do not enjoy the latest technologies in applications and automated systems because they do not have their needs covered by these technologies (Domingo 2012). The aim of this work was to develop an automation system that would increase the level of inclusion. This work also proposes a low cost residential automated system, developed using electronic waste, open hardware and open software, to increase the application of the system. There were used platforms of easy access, and easy replication, aiming at the dissemination of technology (Trihinas, Pallis, and Dikaiakos 2018). Among these platforms, it is possible to highlight the Google Assistant (Chatterjee, n.d.). All the platforms used help the development of an Internet of Things (IOT) system, with multiple capabilities. Finally, functional tests were performed of three physical modules to control a door, a set of sockets and some lamps, using RFID, cellular and voice cards for its activation.

# Low Cost IOT system for Residential Automation using Open Hardware and Open Software with a Focus on Disabilities

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## Abstract

The quest for comfort and practicality is commonplace in contemporary society, but such benefits are still not offered satisfactorily to all. Among these, special attention is given to people with Disabilities, who often do not enjoy the latest technologies in applications and automated systems because they do not have their needs covered by these technologies (Domingo 2012). The aim of this work was to develop an automation system that would increase the level of inclusion. This work also propose a low cost residential automated system, developed using electronic waste, open hardware and open software, to increase the application of the system. There were used platforms of easy access, and easy replication, aiming at the dissemination of technology (Trihinas, Pallis, and Dikaiakos 2018). Among these platforms, it is possible to highlight the Google Assistant (Chatterjee, n.d.). All the platforms used helps the development of an Internet of Things (IOT) system, with multiple capabilities. Finally, functional tests were performed of three physical modules to control a door, a set of sockets and some lamps, using RFID, cellular and voice cards for its activation.

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**Author Keywords.** Residential Automation, Disabilities, Internet of Things, Microcontrollers, Low-Cost.

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