World Academy of Science, Engineering and Technology
International Journal of Computer and Information Engineering
Vol:8, No:6, 2014

Resident-Aware Green Home

Authors : Ahlam Elkilani, Bayan Elsheikh Ali, Rasha Abu Romman, Amjed Al-mousa, Belal Sababha

Abstract : The amount of energy the world uses doubles every 20 years. Green homes play an important role in reducing the residential energy demand. This paper presents a platform that is intended to learn the behavior of home residents and build a profile about their habits and actions. The proposed resident aware home controller intervenes in the operation of home appliances in order to save energy without compromising the convenience of the residents. The presented platform can be used to simulate the actions and movements happening inside a home. The paper includes several optimization techniques that are meant to save energy in the home. In addition, several test scenarios are presented that show how the controller works. Moreover, this paper shows the computed actual savings when each of the presented techniques is implemented in a typical home. The test scenarios have validated that the techniques developed are capable of effectively saving energy at homes.

Keywords : green home, resident aware, resident profile, activity learning, machine learning
Conference Title : ICASICA 2014 : International Conference on Agent Systems, Intelligent Computing and Applications
Conference Location : New York, USA
Conference Dates : June 05-06, 2014