

ICT for Smart Appliances: Current Technology and Identification of Future ICT Trend

Authors : Abubakar Uba Ibrahim, Ibrahim Haruna Shanono

Abstract : Smart metering and demand response are gaining ground in industrial and residential applications. Smart Appliances have been given concern towards achieving Smart home. The success of Smart grid development relies on the successful implementation of Information and Communication Technology (ICT) in power sector. Smart Appliances have been the technology under development and many new contributions to its realization have been reported in the last few years. The role of ICT here is to capture data in real time, thereby allowing bi-directional flow of information/data between producing and utilization point; that lead a way for the attainment of Smart appliances where home appliances can communicate between themselves and provide a self-control (switch on and off) using the signal (information) obtained from the grid. This paper depicts the background on ICT for smart appliances paying a particular attention to the current technology and identifying the future ICT trends for load monitoring through which smart appliances can be achieved to facilitate an efficient smart home system which promote demand response program. This paper grouped and reviewed the recent contributions, in order to establish the current state of the art and trends of the technology, so that the reader can be provided with a comprehensive and insightful review of where ICT for smart appliances stands and is heading to. The paper also presents a brief overview of communication types, and then narrowed the discussion to the load monitoring (Non-intrusive Appliances Load Monitoring 'NALM'). Finally, some future trends and challenges in the further development of the ICT framework are discussed to motivate future contributions that address open problems and explore new possibilities.

Keywords : communication technology between appliances, demand response, load monitoring, smart appliances, smart grid

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