Abstract

Vertical handover is a mechanism that can maintain connections within a network to other networks such as from IEEE 802.11 to cellular or vice versa, especially for pervasive computing such as wearable device. There are various algorithms used to support this VHO mechanism such as algorithms that calculate the value of each weight of network selection parameters such as RSS, bandwidth and network speed, that is, Simple Additive Weighting (SAW) algorithm and Multiplicative Exponent Weighting (MEW) algorithm. The development of the selected Fuzzy MADM algorithm is the MEW algorithm by considering the euclidean distance between nodes represented by the weight values of each selected network candidate parameter. The Modified Multiplicative Exponent Weighting (M2EW) algorithm is proposed to fine-tune the mechanism of alternative preference vector calculation in the process of selecting a network candidate to perform a VHO mechanism for wearable devices developed in this case elderly fall detector. The test results show that the M2EW algorithm has increased the relative standard deviation value by 0.2% and has a similar delay duration with MEW algorithm on the data transmission process.

Keywords: Vertical Handover Decision Algorithm, SAW, MEW, M2EW, Wearable Device.