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Comparison of Localisation Estimation Algorithms in Software Defined Wireless Sensor Networks

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Abstract

The strong relationship between the relevancy of sensory data and the physical location of the from which the data originates, has led to a growth in the need for efficient localisation techniques within Wireless Sensor Networks(WSN). It has been suggested that Software Defined Networking principles might be able to alleviate power draw requirements of localisation techniques. This paper discusses, compares and implements three localisation algorithms in both the data and control-plane using IT-SDN in a contiki-os environment. The three algorithms which were tested in this simulation is: Trilateration, Maximum likelihood estimation and the Linear Least Square Localisation algorithm. This experiment shows that it is possible to offload the computational requirement of localisation into the control-plane.