

Broadcast-based skew correction technique for wireless sensor networks

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Abstrak

Time synchronization is a vital process in wireless sensor networks, where energy sources are highly limited. In this work, we propose a broadcast-based skew correction technique that will improve both the accuracy and the lifetime of any time synchronization protocol that only corrects time offsets among sensor nodes. Using time information transmitted periodically by the root node, each client node can compensate its software clock frequency in real time after an initial offset correction. The experimental results show that a clock skew below 0.05 us/s can be consistently achieved with appropriate compensation parameters after the correction process is stabilized.