

ABSTRACT OF THE DISCLOSURE

OPTIMIZED PARENT AND PATH SELECTION FOR BATTERY POWERED DEVICES WITHIN A WIRELESS NETWORK

A wireless network includes nodes configured to implement an improved parent and path selection process to efficiently and reliably manage energy consumption of a battery powered device node. When a given node selects a path, the node transmits requests to multiple potential parent nodes. Each potential parent node transmits a metric that is indicative of the remaining battery life of the nodes in the path that includes the respective potential parent node. The given node then selects a parent node, and corresponding path, based on the metrics. More specifically, the given node selects a path, where at least one node on the selected path is less likely to prematurely exhaust the remaining battery life of the node, relative to the nodes in the other potential paths. As a result, the given node selects a path that optimizes battery consumption of the various battery powered nodes in the wireless network.

FIGURE 3