Technology Transfer Opportunity

RECAP: Dynamic reassignment of cluster aggregation point in wireless sensor networks

OPPORTUNITY:
RECAP: Dynamic reassignment of cluster aggregation point in wireless sensor networks.

Description of Technology:
The RECAP technique dynamically reassigns the aggregation point (AP), which is the central node responsible for collecting the data in multihop wireless sensor networks, in order to reduce the energy consumption and to prolong the battery lifetime of the sensor nodes. The reassignment is based on a function that computes the main energy and load parameters from the network and, in case of a load/energy unbalance in the network, it calculates the best next node that will temporarily be responsible for aggregating the data.

Value Proposition:
Commercial benefits for sensor network-based applications are:
- An increase of network lifetime from 20% to about 50% with respect to a static aggregation point (AP) and in between 12% and 40% with respect to random AP reassignment
- Less frequent battery replacement.

Market:
The invention is beneficial to companies that require monitoring of mobile or geographically distributed entities where a central aggregation point collects data from the network and forwards it to the user. The targeted markets comprise, but are not limited to:

- sensor network-based medical systems
- environmental monitoring
- industrial monitoring
- sensor-based entertainment systems.

Inventors:
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Publications:
Antonio G. Ruzzelli, Raja Jurdak and Gregory M.P. O'Hare "Dynamic Reassignment of Aggregation Point for Network Load Balancing" 5th European Conference on Wireless Sensor Networks, Bologna, Italy 2008.

Status:
Patent application filed.

Opportunity Sought:
- Validation Partner
- Licensee.

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