

Sensor Network Applications



Wireless Sensor Networks for Habitat Monitoring

[Mainwaring+ 2002]

Introduction

- Habitat and environmental monitoring represent essential class of sensor network applications by placing numerous networked micro-sensors in an environment where long-term data collection can be achieved
- The sensor nodes perform filtering and triggering functions as well as application-specific or sensor-specific data compression algorithms through the integration of local processing and storage
- The ability to communicate allows nodes to cooperate in performing tasks such as statistical sampling, data aggregation, and system health and status monitoring
- Increased power efficiency assists in resolving fundamental design tradeoffs, e.g., between sampling rates and battery lifetimes



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- The sensor nodes can be reprogrammed or retasked after deployment in the field by the networking and computing capabilities provided
- Nodes can adapt their operation over time in response to changes in the environment
- The application context helps to differentiate problems with simple and concrete solutions from open research areas
- An effective sensor network architecture and general solutions should be developed for the domain
- The impact of sensor networks for habitat and environmental monitoring is measured by their ability to enable new applications and produce new results

