

ART-WISE: ARCHITECTURE FOR REAL-TIME COMMUNICATIONS IN WIRELESS SENSOR NETWORKS

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Objectives

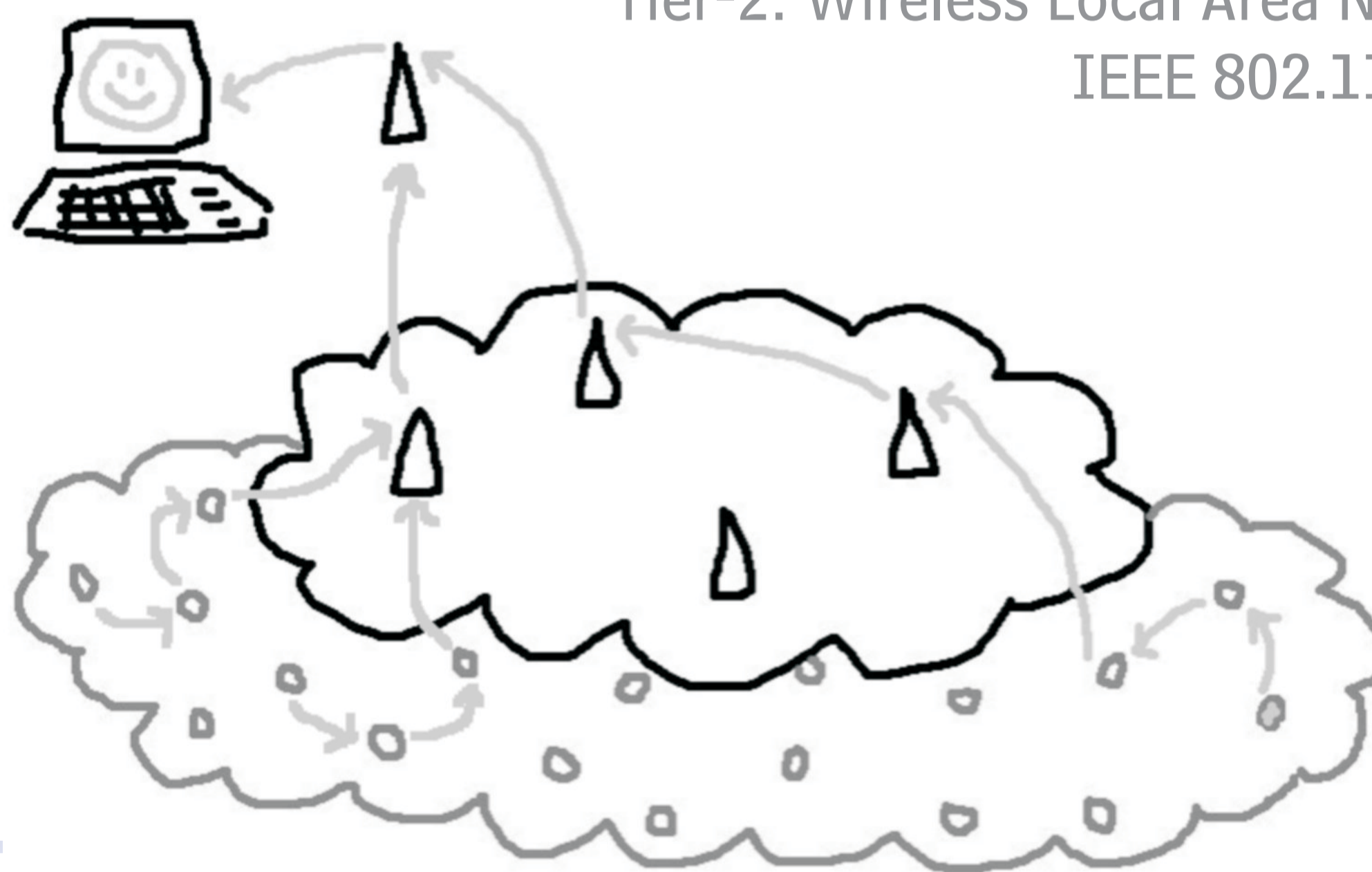
Providing Real-Time and Reliable Communications in Wireless Sensor Networks
Pushing Forward Solutions Matching Standardization Efforts (IEEE 802.(15.4/11))
Design of QoS-Aware Architectures based on COTS Technologies
Performance Evaluation using Analytical and Simulation Models
Development of a Real-World Time-Critical Application Test-Bed

Design Goals

Timeliness
Energy-Efficiency
Reliability
Scalability
Self-organizing
Transparency
Load-Balancing
Cost-Effectiveness

Two-Tiered Approach

Tier-1: Wireless Sensor Network
IEEE 802.15.4/ZigBee
Tier-2: Wireless Local Area Network
IEEE 802.11b/e/g



Applications

Target Tracking
Forest Fire Management
Health Care Monitoring
Security and Supervision
Process Control
Domotics
Intelligent Transportation Systems

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