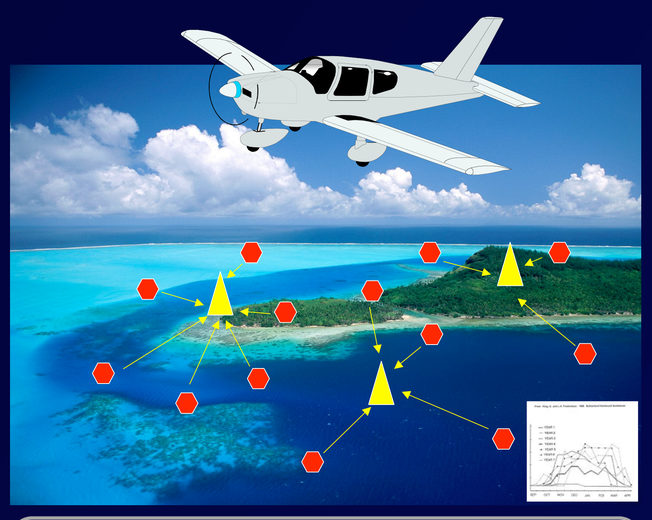
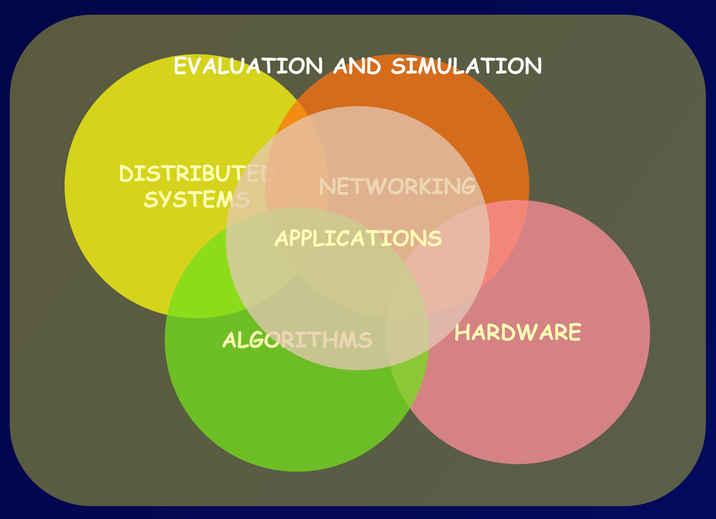
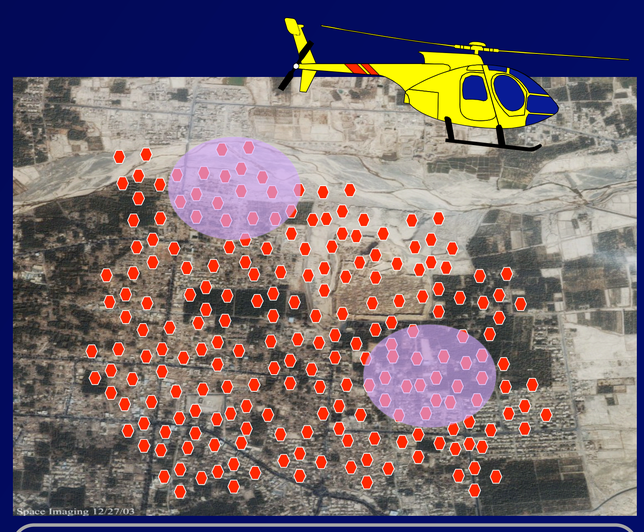
WIRELESS VIDEO SENSOR NETWORKS
FOR SURVEILLANCE APPLICATIONS



On-the-fly deployment of environmental monitoring network



Research in Wireless Sensor Networks



Real-time organization and optimization of rescue in large scale disasters

Scalar sensor nodes

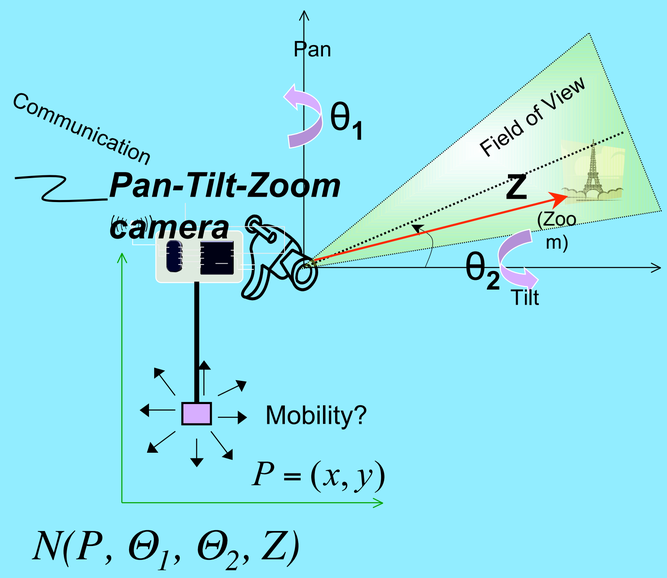
Scalar value of some simple environmental parameter

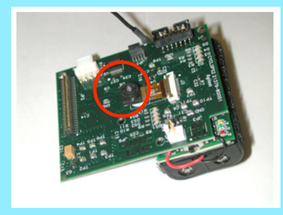
Simple rectangular or circular geographical sensing area

Same sensed value in any direction

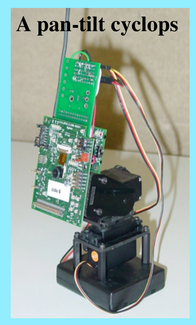
No mobility

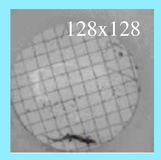
Wireless Video Sensor Networks (WVSN)

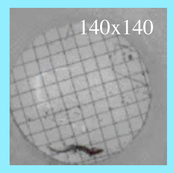


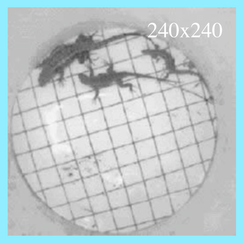


Cyclops video board on Mica motes



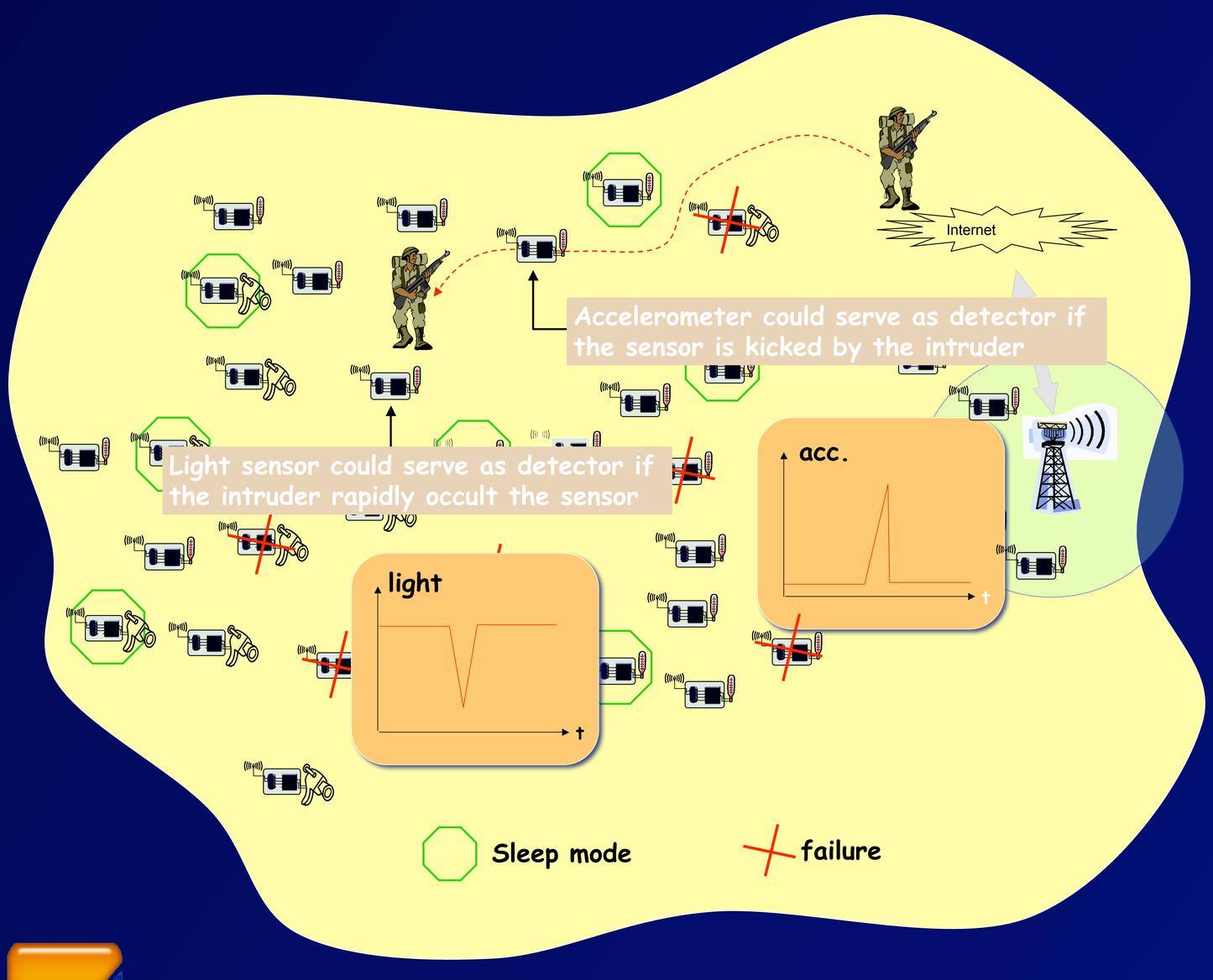




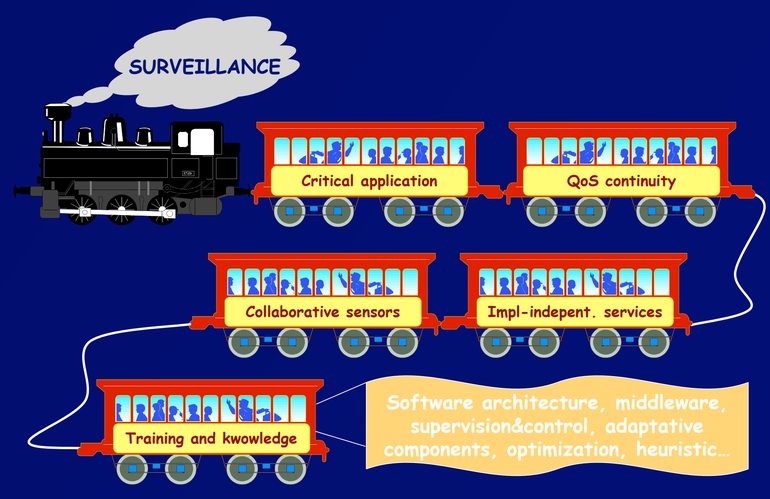


WVSN: Challenges & design space

RULE 1: don't miss important events!
RULE 2: high-quality not necessary good!
RULE 3: don't put all your eggs in the same basket!



- Provide Quality of Service: reliability, availability, multi-resolution
- Take into account the needs of the applications!
- Multi-views for scene disambiguation, heterogeneity and multi-tiers organization



- With scalar sensors, event's position determines the set of active sensor. Not true anymore with video sensors
- Coverage is more complex, determination of which sensor to wake up is not trivial as pan-tilt-zoom features increase the number of eligible sensor nodes

LIUPPA

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