Trove: a physical game running on an ad-hoc wireless sensor network

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Trove as a pervasive game

What is it

Why develop it

How does it work

Achievements

What's next

Trove

- an example of pervasive / physical gaming from the SENSORIUM suite
- based around the MICA2 & TinyOS system

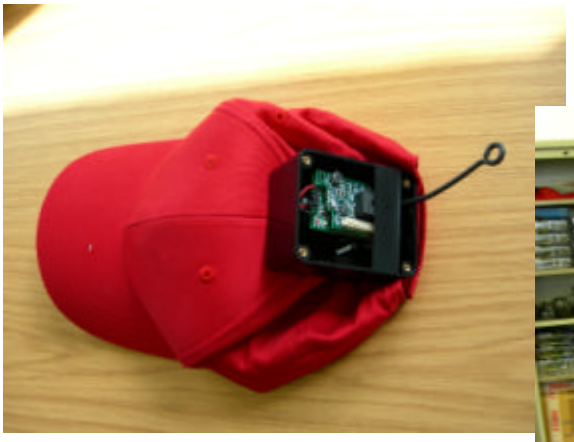
Why was it developed

- Main thrust was to excite and facilitate understanding of some basic pervasive/distributed systems concepts
  - Bringing the pervasive agenda to undergraduates
  - Allow for undergraduate work in a controlled environment – facilitate creative thinking and problem solving
  - Gives scope to student work in a wide range of timely disciplines from within computing
- Gave an opportunity to appropriately address a mostly computing-disinterested teens market
- Test rig for research

How does it work

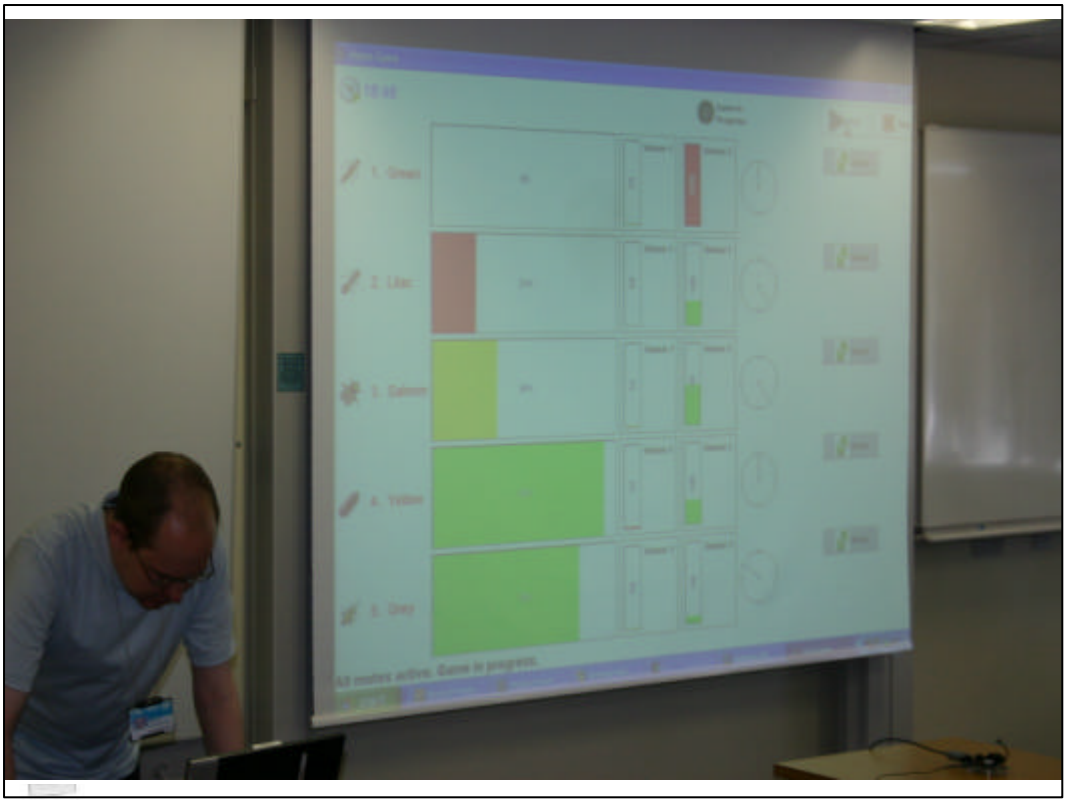
- Distributed and controllerless – all game play within motes
- Collaborative – motes communicate for collective game rules
- UI is simply a listener

The game play



O2

1. Green
2. Lilac
3. Salmon
4. Yellow
5. Grey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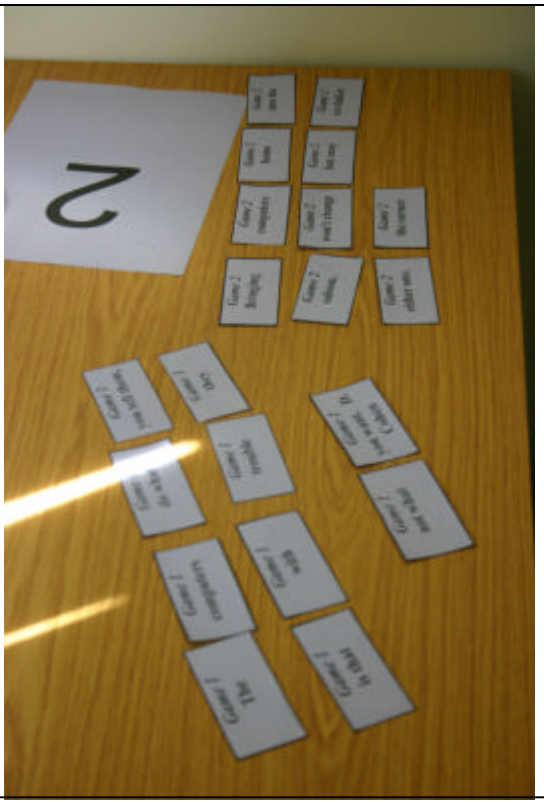

Sensorium games

- Trove platform can be extended in a number of directions without changing the underlying system design
  - More sensors/combinations
  - Locationing
  - Collaborative/disruptive cluster interaction
  - Adaptive behaviour

What's next

- Open source the platform
- Learn more about game play possibilities
- More interactive (better mote technology)
- Games vs. teaching
- Combine with virtual/augmented reality

Thank you.