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Embodied, Situated and Pheromone Communication

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Institute of Embedded Systems (InES)

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Group : Real-Time-Ethernet Research

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Financials:

F&E: CHF 3 Million (eqv. 4 mil. Industry CHF)

Teaching: CHF 1.5 Million.

Focus:

- Realtime Ethernet: (Prof. Doran - 11 Staff)
- Synchronisation and high availability: (Prof. Weibel - 5 Staff)
- Wireless Communication: (Prof. Meli - 5 Staff)
- Microelectronics, SoC: (Hr. Gelke - 9 Staff)
- Development Methodologies: (Prof. Fierz - 2 Staff)

Focus:

- Communication and sensory-actuator systems for Autonomous Systems
  - Framework: new Artificial Intelligence

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Embodied and Situated Communication

Copyright:Twentieth Century Fox

I, Robot, 2004

Target:

Awareness of surroundings as well as status of own-breed and different-breed animates promises substantially cheaper solutions to many industry problems and issues

Applications:

- Robot-formation orientated navigation and obstical avoidance
- Diagnostics of complex systems made simpler by generation of abstract representations of inner states.
- Dynamic production planing and forecasting enhanced by awareness between machines, of availability and production rates

Keywords:

- Embodied Communication
  - Using the machine embodiment to transmit/recognise information on state of machine
- Situated Communication
  - Signal carriers contain information that may also be modulated by the environment

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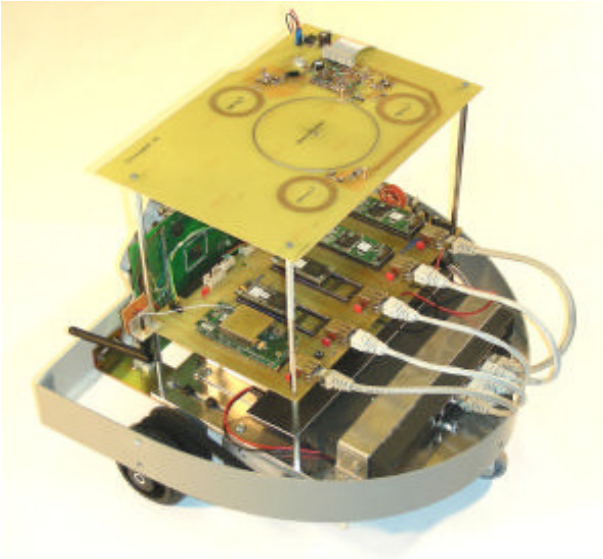
Pheromone Communication

Target:

Develop methodologies for depositing information for other agents to retrieve

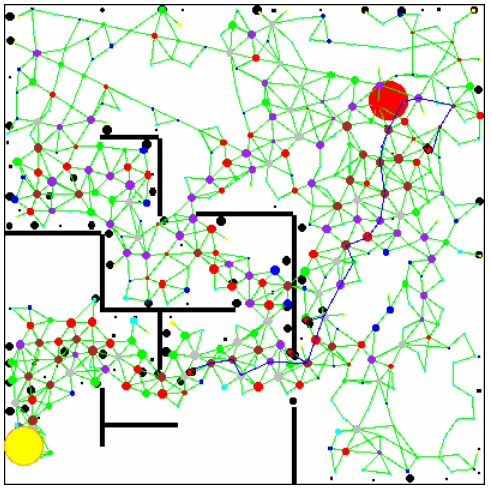


Applications:

- Robot navigation in unstructured environments and route-blocks avoidance

Methodologies:

- Using active RFID devices to store and time-degrade information deposited by passing robots.
- These RFID transmitters may also used in robot-robot communication



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Interested in cooperation?

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