

# Hierarchy of Cooperating Robots

## Front - End Robots

- small robots
- limited capabilities
- short range
- short time
- wire based
- wire less control
- autonomous
- wheel based
- leg based

## Mid - Size Robots

- mid size robots, wheel+leg based
- autonomous
- cognitive decision capabilities
- carry and control front-end robots
- provide energy, collect data

## Large-Size Robots

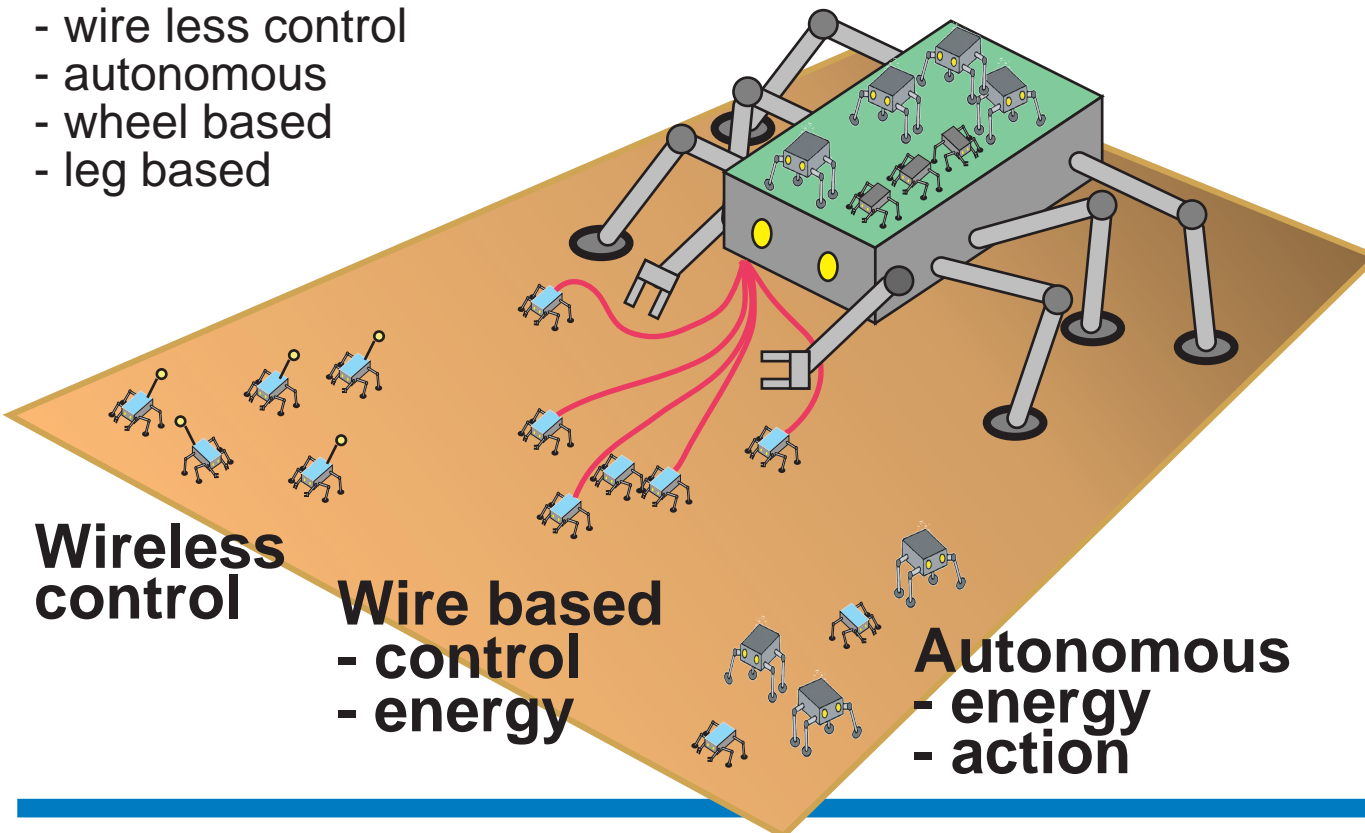
- large size robots
- transport units
- wheel based
- autonomous
- carry mid-size systems
- provide energy
- collect data

## Human Operator

- defines task
- "veto"
- start / stop

## Tasks

- Inspection tasks
- Exploration of unknown territory
- Rescue Operations
- De-Mining
- Garbage Collection
- Surveillance
- ...



**Wireless control**

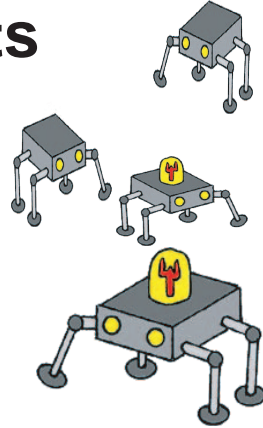
**Wire based**  
- control  
- energy

**Autonomous**  
- energy  
- action

# Hierarchy of Cooperating Robots

## What we want: Build a Hierarchy of Cooperating Robots

- Hierarchy in **size**, **function**, and **autonomy** of the robots
- Cooperating autonomous robots with local decision capabilities
- Robots and reliable task execution



## Who we are: Nils Goerke, [goerke@nero.uni-bonn.de](mailto:goerke@nero.uni-bonn.de)

Department of Neural Computation, Division of Computer Science  
University of Bonn, Bonn, Germany: [www.nero.uni-bonn.de](http://www.nero.uni-bonn.de)

Over 10 years of experience in robotics & autonomous agents

Partner in IST-FET networks of excellence (NEuroNet, nEUro-IT.net)

Coordinator of IST-FET project **SIGNAL**

## Whom we look for: additional partners from

- SME / Industry
- Robotics (robot control, robot manufacturer, ... )
- Application areas: inspection, rescue, de-mining, garbage collection, ...