

# CoTeSys-ROS Fall School

## Participant Presentation

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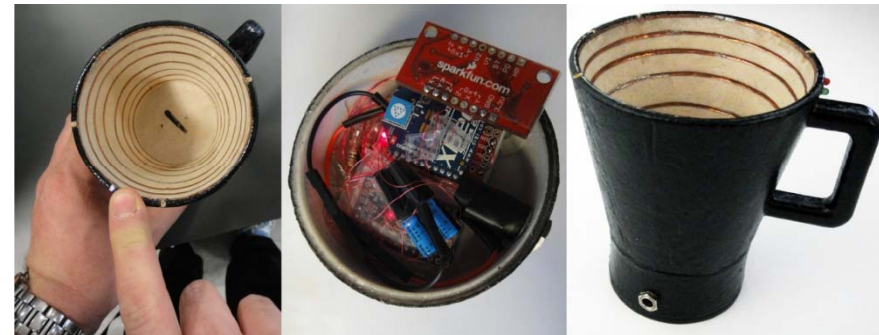
## Cognitive Environments and Robotics @ VMI

- Distributed Sensor-Actuator-Systems
  - Heterogeneous Devices&Appliances
  - Distributed Information Processing
  - Seamless Access and Interaction
  - Mobile, nomadic and fixed systems
- Activity Detection & Context Recognition
  - Who, where, what, when, why
  - Location-based services,
  - Indoor Localization & Navigation
- Interactive Environment for
  - Humans
  - Robotsinteracting via (amongst others)  
the manipulation of smart objects



## An Example for a Smart Object

- The object “knows” about itself (3D model, purpose, history, ...)
- Embedded sensors for
  - Liquid level / fill state
  - Temperature of contents
  - Position&Movement (6DOF IMU)
- Wireless communication over ZigBee gateway
- Integration into the ROS middleware
  - Tell the user if the coffee is cold
  - Tell the robot if it was used
  - Tell the robot if the coffee is cold to change the plan and get a hot coffee – and not the cold coffee



Imagesource: Matthias Kranz, Felix Greimel, VMI