Semantic Localization
in TerraSwarm

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In collaboration with
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Semantic Localization

- Geo-localization (3D coordinates)
- Room-level localization
- Semantic localization
Shopping Analytics
Semantic Space vs. Physical Space
Semantic Space vs. Physical Space

Men’s room  Women’s room
Benefit from Semantic Information
EECS 149: Ultrasound
Ultrasound Demo + Evaluation
Ultrasound Demo + Evaluation
CS262A: Aggregation Framework
CS262A: Aggregation Framework
CS262A: Aggregation Framework
Benefit From Aggregation
TerraSwarm Effort

Home security/ emergency
Energy-efficient home
Health monitoring
Unpad

Apps

Resources

SWARM-OS

Sensors/ Input devs
Actuators/ Output devs
Storage
Networks
Computing

[J. Rabaey, VLSI '11]
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[J. Rabaey, VLSI ’11]

TerraSwarm Effort
• Marauder’s Map Project (Smart City Theme)
• Low-Power time-synchronous wireless nodes (Pister)
• Ultrasound based TDOA localization (Anthony)
• Particle Filters (Thomas)
Thanks!

Questions?