Robot Interaction Using Cricket, an Indoor Positioning System

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What is Cricket?
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- Determines ranges of mobile clients by sending RF and ultrasonic signals to fixed beacons above.
Uses range information to triangulate position of client.
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Tracking a Fixed Destination
Tracking a Fixed Destination
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\[ D(X_D, Y_D) \]

\[ R(X_R, Y_R) \]

\[ \theta \]
Tracking a Fixed Destination

D(X_D, Y_D)

R(X_R, Y_R)

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Robot Tracking: Robot tracks fixed destination.

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Tracking Another Robot

Robot is a moving destination.

How to find the coordinates of another robot?
Tracking Another Robot

- Robot is a moving destination.

- How to find the coordinates of another robot?

- CORBA
Tracking Another Robot

CORBA
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- Tracking Another Robot
- CORBA
Classical Pursuit:
Robot Genghis chases Robot Lola, with Lola under manual control.
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Rendezvous: Robots Lola and Genghis under mutual pursuit law.

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Control Law Implementation

MDLe – Motion Description Language, extended version.

Independent of robotic system platform.
Project Website:

www.isr.umd.edu/Labs/ISL/Summer06project/