Team Project: A Surveillant Robot System
Status Report: 04/12/2005

Little Red Team
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Agenda

☐ Team meeting & Problem
☐ Progress report
Team meeting

- We talked about IR tower.
- Each robot has each IR tower. If the main controller send a command to one robot only, however, two robot concurrently response the command. This is because IR signal and command does not ID to differentiate two main controller. Thus, we decide to include ID into signal.
  - Original objective of IR tower is to download program into RCX.
  - In our case, additional objective is to use signal as a tool to transmit command.
- Time goes by, physical problems is occurred rather than software problem.
- IR tower and IR signal is very sensitive to the direction. If a robot is positioned to opposite side of IR tower, robot can’t receive the signal.
The solution is to install two column or similar facility. RCX can increase the probability to receive signals from the IR.
Task Plan

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Software Test Plan, Hardware Test Plan, Basic Model Test, System Test Plan, Technology Investigation, Feasibility Experiment, Wall Setting, Environment for Demo, T-shirts, etc.

~ 3.24 (5) ~ 3.31. (4) ~ 4.07. (3) ~ 4.14. (2) ~ 4.21. (1) ~ 4.28. (0)

Today
Software Design – SD#1

Remote User

Remote Control Panel

Room Live Video

Mode Selector

Basic User Interface

Remote Control Panel

Room Live Video

Mode Selector

Call services

Provide services

RMI/JINI Interface

STC 1-1: To check the connection of RMI/JINI Interface between the client and the server

STC 1-2: To check the status robot

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Software Design – SD#2

RMI/JINI Interface

Basic User Interface

Surveillant Robot Controller

Main Cam

STC 2-1: To control the robot when the robot is ready

STC 2-2: To get the detection information

STC 2-3: To have surveillant robot to wonder in the room

Control robot

Remote Control

Surveillant Task

Raise Alarm

Vision Detection

Video Transmission

leJOS API

Robot Camera

Color Setting

Live Video Camera

Detection Vision & Region

Call services

Provide services

Implementation 100 %Completed

Implementation 70 %Completed

Implementation 60 %Completed

Implementation 50 %Completed

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Software Design – SD#3

Intruder Robot Controller

- STC 3-1: To control the robot when the robot is ready
- STC 3-2: To get the detection information
- STC 3-3: To have surveillant robot to wonder in the room

Basic User Interface

- RunAway
- Vision Detection
- ieJOS API
- RS-232C/USB

Detection Vision & Region

- Implementation 50 % Completed
  - 3-1
- Robot Camera

Color Setting

- Implementation 50 % Completed
  - 3-3

Implementation 50 % Completed
- 3-1

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Software Design – SD#4

STC4-1: To check dispatcher thread
STC4-2: To check main thread

Surveillant Robot

RS-232C/IR
IN Channel
Out Channel
Dispatcher Thread
Main Thread
Remote Control Model
Surveillant Navigation Mode
Java TINY VM
RCX FirmWare
Sensors
Motors

Two wheel drive mechanisms

Implementation 100 % Completed
Implementation 90 % Completed

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HTC1-1, HTC1-2 is testing
Software Design – SD#5

STC5-1: To check dispatcher thread
STC5-2: To check main thread

Intruder Robot

RS-232C/IR

IN Channel  Out Channel

Dispatcher Thread

Main Thread

Intruder Navigation Mode  Runaway Navigation Mode

Java TINY VM

RCX FirmWare

Sensors  Motors

HTC2-1 is testing

April 22, 2005
Progress status

- Actual vs plan: 80% of the whole system is completed and tested.
- This week, we will start to integration test between all software and hardware.