

Acoustic and Visual Telepresence Robot

Project Update and Sharing 1

By Avatar

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Introduction

- Bimodal (visual and acoustic) telepresence robot for remote surveillance in disaster relief situations, military reconnaissance etc.
- Visual telepresence is common among existing robots and prototypes
- Binaural acoustic telepresence can aid accurate sound localization in low visibility situations

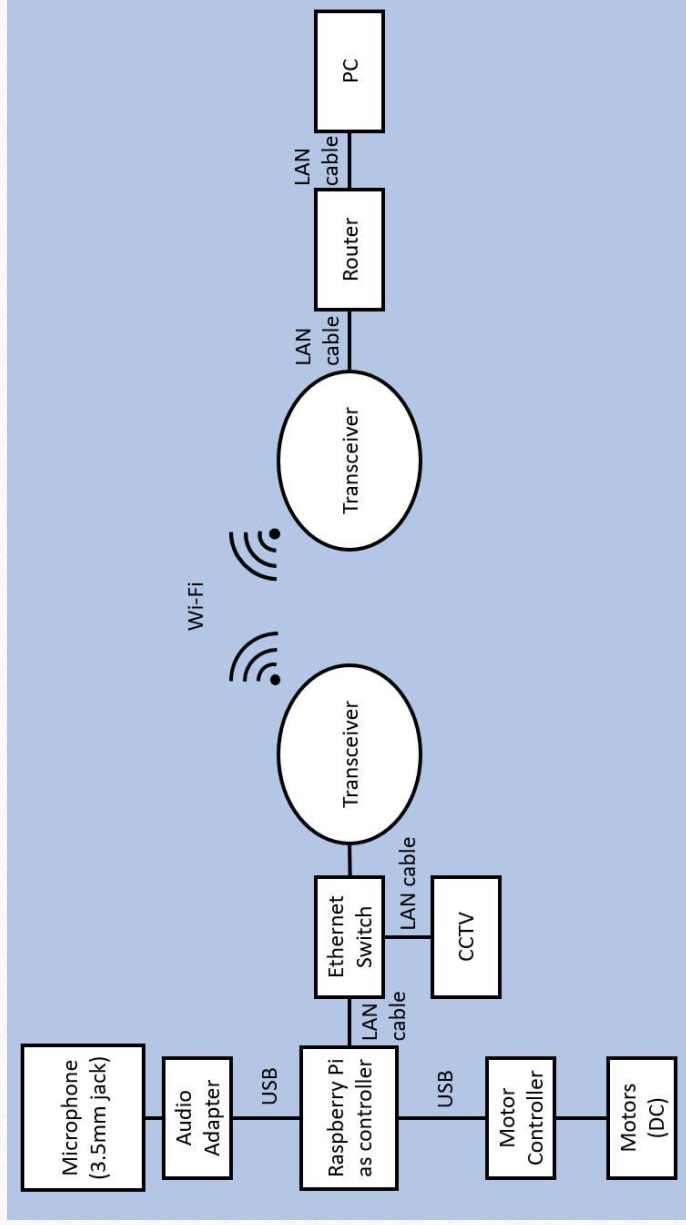
Overview

- Buying parts of the robots and putting them together
- Connecting the modules together
- Testing a robot capabilities (audio/video streaming + remote control)

Individual Contributions

Jing Xuan	Group Leader: - Contact point between Prof Domenico and our group	Hardware - Assembling different components of the robot together
Rachel	Secretary - Take down meeting minutes for future references	
Reuben	Financial Controller - Keep track of money spent and update the group on expenditure	Software - Coding
Ming En	Communications Manager - Communicate with Tony and Prof Ho	

Block Diagram



Time Chart

Week / Date	Activity
Week 4	Discuss with Tony and Prof Ho to confirm project details 3D print the ears Source and buy parts for the robot and relevant modules Prepare presentation slides and coming up with timeline
Week 4 / 6 Jun, Thurs	Project Update and Sharing 1
Week 5 - 7	Build the robot Test the remote controlling of the robot

Time Chart (Cont.)

Week / Date	Activity
Week 6 / 19 Jun, Wed	Project Update and Sharing 2
Week 8 - 12	Continue to develop and test the robot for its live streaming capabilities (video and audio) Prepare presentation slides
Week 8 / 3 Jul, Wed	Project Update and Sharing 3
Week 10 / 17 Jul, Wed	Project Update and Sharing 4
Week 12 / 31 Jul, Wed	Project Submission

Budget & Expenditure

Parts	Purpose	Price
Frame of the RC Tank Robot	Maneuver robot	TBC
Transceiver (TP Link)/Router	Wi-Fi connections	TBC
Microphones and adapter	Binaural audio recording	\$149+19.90
CCTV Camera	Live video streaming	\$60.84

Frame of RC Tank Robot

Things to consider when deciding the RC tank chassis:

- Dimensions of the tank
- Load that the tank can carry
- Power of the tank (determined by voltage and current specifications)
- Materials of the thread and wheels
- Rubber threads are preferred because it will produce less noise which will interfere with the sounds recorded by the binaural ears.



Transceiver (TP Link)/Routers

- TP Link CPE 510
- Dual directional antenna
- >15km wireless range transmission



- Alfa AC1900 wi-fi adapter
- Up to 1900 Mbps



Microphones and adapter

- Binaural in-ear microphones
- Adapter



CCTV Camera & Ethernet switch

- Power over Ethernet (PoE)
- 4MP / 1080P



- Power over Ethernet
- 1000Mbps



Thank you and have a nice day!

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- Any question(s)?