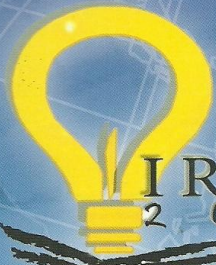




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**PP-268 Autonomous Reconnaissance Mission: Development of an Algorithm for Collaborative Multi Robot Communication**

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A collaborative team of two resource constrained semi-autonomous hexapod robots have been developed that perform navigation tasks while satisfying communication constraints. Our approach is based on the use of a control structure where each hexapod performs elementary tasks, a behavior-based controller generates motion directives to achieve the collaborative tasks, and controller generates the actuator commands to follow the motion directives. The control technique has been developed for a mission where a target location spread across a static environment has to be visited once by the two hexapods while maintaining a relative given distance with wireless communication. Wireless communication under mobile ad-hoc networks are communication networks that do not rely on fixed, preinstalled communication devices like base stations or predefined communication cells. This wireless networks consist of mobile nodes which are characterized by their decentralized organization and the potentially high dynamics of the network structure, therefore ad-hoc network communication system has been the focus in this multi-robot communication. The ad-hoc network has to provide position data to support localization of the mobile robots, which might be of great importance to guide the robots to specific targets and locations.

Communications standards considered for the ad-hoc network are Wireless LAN, Bluetooth and ZigBee. In this project Bluetooth and ZigBee are integrated on robots for real experiments.

**PP-269 PENGUIN Framework- Portable Malware Scanner Engine for Windows**

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Malware infection such as Trojan, Autorun and Viruses are common problem faced by windows OS users. In countries such as Taiwan and Russia the infection rate reached 69.1% and 67.99% respectively. In contrast, Linux users virtually didn't face such problem. As such, many are advocating that consumers should switch to Linux. A computer crime and security survey in 205 conducted by Computer security Institute and FBI indicated that virus is the leading cause of loss running to the tune of \$42,787,767. However, due to lack of awareness and user resistance it seems improbable to see a majority of consumers to switch to Linux anytime soon. This situation demands a cost-effective and easy solution for consumers to combat malware in Windows environment.

Taking advantages that Linux OS can mount Windows formatted hard disks; it is possible to create a Linux program to find and destroy malicious programs. Combined with the inability of the malicious programs to run on Linux, it can be safe and effective solution to combat malwares. The solution will consist of five parts; the live Linux system, mount module, scanner engine, database and update server. This project develops a malware scanner engine framework on Linux to detect and eradicate Windows malware. Packaged as a custom Linux distribution, it will mount the hard disks and starts scanning for malware. Detection is done through comparison with a database. The engine is fully developed using BASH scripting and complemented with Zenity for GUI.