Abstract

To make a tree climber / harvester more powerful and efficient there is a need for networked control between the various subsystems. The board to board communication becomes a need in any complex distributed system and it is proposed to be achieved by creating a CAN communication between them. In the proposed system the various nodes namely, motor ECU, sensing subsystem, image processing subsystem and router MCU are all connected over a Controller Area Network. Every node is controlled by an individual microcontroller that will perform its programmed functionality. In the proposed work the climbing motor is controlled by the sensing subsystem whose sensed parameters will reach the climbing unit over the CAN
bus. Later when the climbing process is terminated the image processing subsystem is triggered to start by a CAN message and with the result of image processing the hand motor is controlled. The whole process is monitored and controlled by a base station. All these proposed nodes have their communication capabilities extended through a CAN controller (MCP 2515) and Transceiver (MCP 2551) interfaces at the SPI of each node. Further it is possible to introduce additional nodes as required for the sophistication of the application.

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**Index Terms**

Computer Science  
Networks

**Keywords**

Controller Area Network (can)  
Microcontroller Unit (mcu)  
Nodes  
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