ABSTRACT

The natural disasters often hit big cities in Indonesia, such as DKI-Jakarta, Indonesia's capital. On heavy rain, the amount of water increases and can drawn to natural disasters, like flood. Flood does hit many areas of Jakarta and there are many victims of it. The Jakarta Government has done many efforts to prevent flooding, handling before and after situation. Mitigation of the victims are still considered to be less helpful, especially in remote areas with high population density, that difficult to be reached by disaster evacuation team. Therefore, in this final project, a remote object control system using XBee Pro wireless based on microcontroller is made. The moving object used in this project is a boat prototype with a small dimension, so it can reach the remote areas a large boat can't reach. The prototype boat has tasks for giving some informations to user, like a video captured by camera on moving object.

The remote object control system is made using computer (as object control center), microcontroller (as data processor), 2.4 GHz XBee Pro wireless module (as data transceiver medium) and boat prototype as controlled object. User can control a moving object based on screen preview in computer. The screen preview consists of buttons to control an object. User can also see the video captured by object's camera. Pushing button on computer's screen preview will be resulted in sending serial data to XBee Pro wireless module 2,4 GHz which will be transmitted to another XBee Pro wireless module. After serial data is received in object, a microcontroller do data processing and it will be executed by Motor DC as moving object driver (boat prototype).

Keywords: control system, computer, XBee Pro wireless 2.4 GHz, microcontroller, wireless camera