

ABSTRACT

A missile or rocket flying vehicles that get a boost so that it can fly into the air. There are various types of rockets including Electric ducted fan (EDF) rocket that uses the motor as a driver and devoted at low altitudes. To monitor and control the necessary rocket called Ground terminal station (GS). The terminal is located on land and its existence is obliged to monitor the mission and the data that is captured by a rocket through the medium of radio waves.

EDF has a mission rocket will be catching up in the air condition to GS. Rocket fitted with sensors in his observations, in the form of gyro, accelerometer, GPS and image. With sensors mounted on the rocket fly Flight Controller with desire so that the direction and the goal does not deviate from the mission plan. Based on the above, the authors designed the GS as the control and monitoring of rocket EDF. All the data is observed and stored by the receiver which will then be done by GS.

With this study the authors present the results of these studies in the form of systems consisting of a transceiver and an application tool. The application consists of server and client so that the client has the ability to apply multiple users can monitor the rocket together. EDF rocket will communicate with the server using the RF transceiver 3DR Radio and client communicate using Ethernet or wireless via UDP to the server. Applications written in C # 4.0 and the server process occurs real-time so that from the many data received will not be burdensome to the client application performance while there are multi-threading so that the number of data processing programs do not become slow. From the measurement results can be concluded that the application is designed capable of handling 10 clients with average throughput 1.0976 Mbit/s, 620 ms delay manual control and real time applications delay 6.2 ms for 10Hz and 10.6 to 15 Hz.

Keywords : Ground station, C#, Multi Client, EDF rocket, real-time, sensor