

ABSTRACT

Train is one of the transportation that used majority of Indonesian people. For the transportation used by the majority of the people, the railway should continue to improve its services. The problem with the train, this means of transportation can not turn itself to avoid collision in front of it. Trains always rely on signals to know the condition of the road to be traversed. Train signals are used to control rail traffic so it is safe to prevent train collides Signals are placed in various places along the lane, to control certain parts of the existing lane. Rain can cause disturbances in railway signaling systems, floods that soak the lanes can also damage signals.

In this final project will be designed monitoring system of railway position and automatic wesel based on GIS dan GPS. GIS is a mapping and information based information system. The system is used for monitoring of moving objects or not. This system can facilitate the wesel officer to monitor the train at the point where the train will turn. GIS displays the position in the form of maps taken from the google map which features the API (Application Programming Interface). From the API, the wesel officer can see the map of the route the train will go throught.

Can Design of Monitoring System for Position of The Train and Automatic Wesel Based GIS and GPS can help wesel officer to monitor trains to determine the position of the train and which point the train will turn if there is a signal interruption. The average delay is 30.5 seconds for the process from GPS to the firebase. Then for the process from firebase to web interface the average delay is 0.6 seconds. While the process of sending speed data from GPS to the firebase averages 11.5 seconds delay. From this data, this Final Project can carry out the Monitoring System in real-time.

Keyword : *Monitoring system, Railway, GIS, API, real-time*