

## ***ABSTRACT***

At this time PT KAI had a signaling system detecting the coming of the train from a vibration. When the train passes, then at that time the wave amplitude derived from vibration is higher than usual. But the system could only detect vibrations without knowing the source of vibrations sourced from which and for development of previous final tasks, this final task aimed to create a tool that could detect the direction of coming trains from the direction of one or the two for subsequent research development in order to improve the existing security system on PT KAI, using two pieces of MPU6050 vibration sensors mounted on a tool in the opposite direction that could receive vibration of source from the vibration direction of vibration direction. .. By the time the train passes, vibrations will propagate through the rail medium to the ground around the rail that will be received by sensors closer to the vibration source first. When the sensor reads the train vibration then the microcontroller will process the vibration. Once processed in the microcontroller there are two pieces of LED lights mounted in the direction of one or both directions whose one of them will light signifies the train is coming from the direction of one or even from the two and in the barengi with a warning sound in the form of a buzzer. As for the results of this final task using two MPU6050 sensors had an accuracy value of 100% with 10 trials during the study to determine the source of vibration direction of the train using a maximum threshold value of 10m/s<sup>2</sup> and a minimum threshold value of -10 m/s<sup>2</sup>.

**Keyword** : Train detection, vibration sensor, train arrival direction