Smart Solution For Railways

IDEA 1:

ABSTRACT:

- This project describes how to avoid train collision by using an automated control incorporated in trains

- We use RFID sensor for pre-chasing and ultrasonic sensor in order to choose a commands based on conditional algorithm created in microcontroller

- We use EPM to control the speed of motor

ADVANTAGES:

- Avoiding collision
- Ensures safety
- Minimize delays

DISADVANTAGES:

- It is based only on conditional algorithm
- It uses automated system
- It is not applicable for AC motor

IDEA 2:

ABSTRACT:

- We use GPS system and a map matching algorithm are used to pinpoint the location of fault on tracks

- Field test using in-service vehicle was carried out to evaluate the developed system

- The rail irregularity and rail corrugation can be estimated effectively

ADVANTAGES:

- GPS is used to analyse the vehicle services
- Lowering maintanence costs
- Maximising production output

DISADVANTAGES:

- This is totally based on database
- Short term investment is required
- The sensors of condition monitoring may not survive depending upon the environment

IDEA-3:

ABSTRACT:

- The GPS module and GSM modem is used for identification and transmission of railway geometric parameter of crack detection to nearby railway station

- Ultrasonic technique is the most effective method which detects minor cracks and also calculates the growth rate can be calculated

- One of the processes which help in the examination of material without causing any harm is non-destructive

ADVANTAGES:

- This helps to detect the flaws in the rail track using ultrasound testing method
- Less cost
- Crack is detected accurately

DISADVANTAGES:

- It is slow
- It consumes more time
- The certain proportion of the signal energy propagates over to the other medium at the same time the remaining energy gets reflected back