

(54) Title of the invention : Automated Railway Signalling System Using Feedback

(51) International classification :B61L0001180000, B61L0025020000, B61L0023040000, G16H0040670000, B61L0025080000

(86) International Application No :NA
 Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
 Filing Date :NA

(62) Divisional to Application Number :NA
 Filing Date :NA

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(57) Abstract :
 Automated Railway Signalling System Using Feedback is designed to increase train safety and maximize traffic on railway lines through feedback systems in real-time. It switches tracks and signals with the help of switches by using weight sensors for train detection, with very little human intervention and lower risk of collisions. The main controller is an Arduino Uno that takes input from weight sensors for track switching and signalling. Among the features highlighted are an auto-braking system, which engages if a train is seen plying on the same track and fully stops procedures to avoid collisions. Train movement data are stored and processed on Thing ThingSpeak cloud platform. A mobile application using ThingsView shows the availability of data in a graphical format, where 1 is the availability of a train on the same track and 0 is the non-availability of a train on the same track. This assists the railway companies in effectively monitoring the system status. The software, coded with Arduino IDE, manages real-time sensor data to automatically control track switches and signals to optimize efficiency. This type of robotic system enhances railroad safety and operational efficiency.

No. of Pages : 21 No. of Claims : 4