Abstract

Every year the Indian Railways incurs heavy losses due to fogs. In last 3 years the Indian Railways has lost in access of 1 lakh crores due cancellation of trains, heavy delay in running trains and accidents occurring due to foggy conditions. Moreover many people have lost their lives in these mishaps, which has tagged the Indian Railways as 'unsafe' and 'unreliable'. The Indian railway is an amazing example of successful government run enterprise not only in India but also for the whole world. Government has taken back foot policy of cancelling and delaying trains which has worsened the crisis. This project is aimed towards the normal operation of Indian Railways even in dense fog as well as in zero-visibility
This project puts forth an innovative and dynamic concept aimed to provide a practical tool in the hands of railways to fight with fogs and continue normal operations even in zero-visibility condition. The concept of this project is based on using different aspects such as laser signaling systems, RF signaling systems, embedded systems, digital communication systems as well as visual graphics and animation systems. A well designed system based on optimum utilization of all the above mentioned technologies is the zero-visibility navigation system. The first requirement is the speedy survey of a particular rail route and to compile a full and detailed database which will store the relative positions of all the important landmarks useful in train movements. All the intermediate signals, all the intermediate stations, warning signs, important signs, symbol boards, speed limit boards, information about forthcoming bridges, tunnel, trench, elevation, angle-turning, level-crossing etc will be included. All these important information of landmark will be fed into a database along with their respective distances. The system will take the instantaneous speed of the train from the speedometer at a particular sampling interval (preferably lesser sampling interval for better accuracy) and show all the landmarks accordingly on a display system which will be installed inside the locomotive. Also all the signals will be using Laser lights which can pierce fog easily. Hence the driver does not need to look outside in foggy condition and the system will drive him through the route effectively. For example if the Loco-driver starts from Jaipur station the software driven program will auto start and guide the driver up to the destination New-Delhi station. As the system is program driven the data from various other modern devices such as Anti-Collision Device (ACD), Vigilance Control Device (VCD) etc can also be included to make the system accurate and flawless. As the concept is fresh and innovative it might be thought to be a costly affair, but when program-run software games like road-rash and Y-city can be developed with thousands of crores of investment where unnecessary violence is shown, it is better to invest just a fraction of sum to save lives of people. On the basis of interviews and conversation it has been found out that this technology is very innovative and never ever thought of. This technology can change the face of Indian Railways and is also very efficient, feasible and cost-effective.

References

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Index Terms

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