

# **INDIAN RAILWAYS**



## **FUNCTIONAL REQUIREMENT SPECIFICATION** **FOR** **DERAILMENT DETECTOR FOR COACHING STOCKS** **OF** **INDIAN RAILWAYS**

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## **Functional Requirement Specification for Derailment Detector for Coaching Stocks of Indian Railway**

### **Introduction:**

The derailment detector is devices which stops the train by activating automatic application of brakes or send a signal to the train driver when its triggering threshold has been reached following a rolling stock derailment. The primary safety benefit of installing the derailment detection device lies in its potential for preventing an initially non-severe derailment from evolving into a more serious derailment, if it is not timely detected. Hence, rolling stock equipped with Derailment Detector, apart from saving human life, shall reduce the damage to track, rolling stock and operation disruption.

### **Functional Requirement of Derailment Detector to be used in Indian Railway**

A derailment detector fitted in rolling stock of Indian Railways should fulfil following functional requirement:

1. Derailment Detector must be so designed that it is able to differentiate between normal running of train and derailment.
2. Triggering of Derailment Detector must result in automatic application of brake.
3. Device must not get activated during normal running of train and must get activated during derailment.
4. Derailment Detector must not be triggered by service and emergency braking applications, or by brake release.
5. Design of Derailment Detector must be based on proven design principal.
6. It should be able to perform in Indian environmental & operating condition.
7. The derailment detector must be able to operate at nominal brake pipe pressure between 4 and 6 bar and it should be compatible with brake system being used in Indian Railways.
8. Derailment detector should indicate their triggered state. Status of indicator device shall remain in the same position before it is manually reset.
9. It must be possible to isolate the derailment detector by means of an Isolating Cock.
10. The device should be mounted on rolling stock body, preferably at end wall/headstock, on suitable location.
11. No external power should be required for operation of derailment detector.