



# Railways to roll out smart coaches

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## **Highlights**

- The Indian Railways are set to launch their 'Make in India' smart coaches with new features like black box and artificial intelligence (AI)-powered CCTVs, matching international standards.
- Named '**Smart Trains**', the coaches have been equipped with sensors that can detect defects on bearings, wheels, and the railway track, giving constant inputs to those in the control room to avoid accidents, carry out maintenance, and to improve efficiency of operations.
- The maiden smart coach was unveiled at the Modern Coach Factory in Rae Bareilly as part of launching 100 such trains in a pilot project to improve the safety and security of commuters, and to boost efficiency.
- The black box, being introduced for the first time by Indian Railways, has a powerful multi-dimensional communication interface to provide information on passengers and coach condition on real-time basis.
- The black box will act as a coach control unit with communication interfaces for passenger announcements, GPS-based announcement triggers, emergency intercom for commuters, digital destination boards, train reservation display modules, and CCTVs with remote monitoring.
- The modern infotainment system has been installed to locate the train in real time. AI-powered CCTVs will help those in the control room to keep a tab on untoward incidents and on the behaviour of on-board staff.
- Commuters will also be able to communicate with Railways officials.
- For wheel, coach and track monitoring, Railways have come up with Internet of things-based system.
- The vibrating-energy-based sensors will monitor the wheels, bearing and hard spots on the track, and will provide data through GPS/GPRS to the remote server for diagnosis and remedial measures.
- The Passenger Information and Coach Computing Unit (PICCU), an industrial grade computer, will monitor the coach maintenance and passenger interface.

## **CCTV recording**

- Six cameras installed in the coach will provide live recording.
- The footage can be accessed from the control room, which will be advantageous for law enforcers.
- An emergency talk-back system will enable communication between passengers and the guard during a crisis.
- A Wi-Fi hotspot information system is another innovative feature.
- Smart coaches are also laden with water-level indicator technology to know whether the water in the coach is sufficient and when it needs to be filled.
- An SMS will be sent to the next watering station when the water level falls below half the

coach capacity.

- In the version 2.0 of these coaches, the Railways are planning to introduce a host of new features, such as video analytics with face detection feature; unusual occurrence feature; fire-and-smoke detection unit; and an energy-metering module to measure the energy consumption of the coach.

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