

# 5 MHz spectrum for Indian railways

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## In news

Recently, Government has approved allotment of 5 MHz Spectrum in 700 MHz frequency band to Indian Railways.

In 2019, the TRAI recommended the allotment of spectrum to the railways, albeit only for captive use and not to offer any commercial services such as onboard WiFi.

## Key updates

- It has been allotted for public safety and security services at stations and in trains.
- With this spectrum, Indian Railways has envisaged to provide LTE (Long Term Evolution) based Mobile Train Radio Communication on its route.
- The Railways currently relies on optical fibre for its communication network but with the allocation of fresh spectrum, it will be able to use high-speed radio on a real-time basis.
- The purpose of the LTE for Indian Railways is to provide secure and reliable voice, video and data communication services for operational, safety and security applications.
- It will be used for modern signalling and train protection systems and ensure seamless communication between loco pilots and guards.
- It will also enable Internet of Things based remote asset monitoring especially of coaches, wagons & locos, and live video feed of CCTV cameras in the train coaches to ensure efficient, safer and faster train operations.
- The estimated investment in the project is more than Rs. 25,000 Crore.

- The project will be completed in the next 5 years.
- The Spectrum charges may be levied based on formula basis as prescribed by Department of Telecommunications for Royalty Charges.
- License Fee for Captive use as recommended by Telecom Regulatory Authority of India.
- Indian Railways has also approved TCAS (Train Collision Avoidance System), an indigenously developed ATP (Automatic Train Protection) System, which will help in avoiding train collisions thereby reducing accidents and ensuring passenger safety.

## **Significance**

It brings a strategic shift in Railways' operations and maintenance regime. It will help in improving the safety and increasing the line capacity to accommodate more trains using the existing infrastructure.

Herz is a measure of frequency per unit of time, or the number of cycles per second. The most common uses for hertz are to describe radio and audio frequencies. It's abbreviated as Hz. 1 Megahertz, or 1 MHz, is equal to 1 million Hz.