Kavach 5.0

Source: IE

The **Union Minister for Railways** announced the implementation of **Kavach 5.0**, aimed at **enhancing train safety.** The current version, **Kavach 4.0,** is already under deployment across Indian Railways.

Kavach System:

- **About:** India's indigenous **Automatic Train Protection (ATP) system,** developed to prevent **train collisions by automatically activating** the braking system if the loco pilot fails to act**.**
- **Technology:** **Radio Frequency Identification (RFID)** tags are placed throughout the entire track length to enable the **Kavach system** to track train positions.
    - **Optical Fibre Cable** is laid along the tracks to ensure fast and efficient data transmission.

Indian Railways:

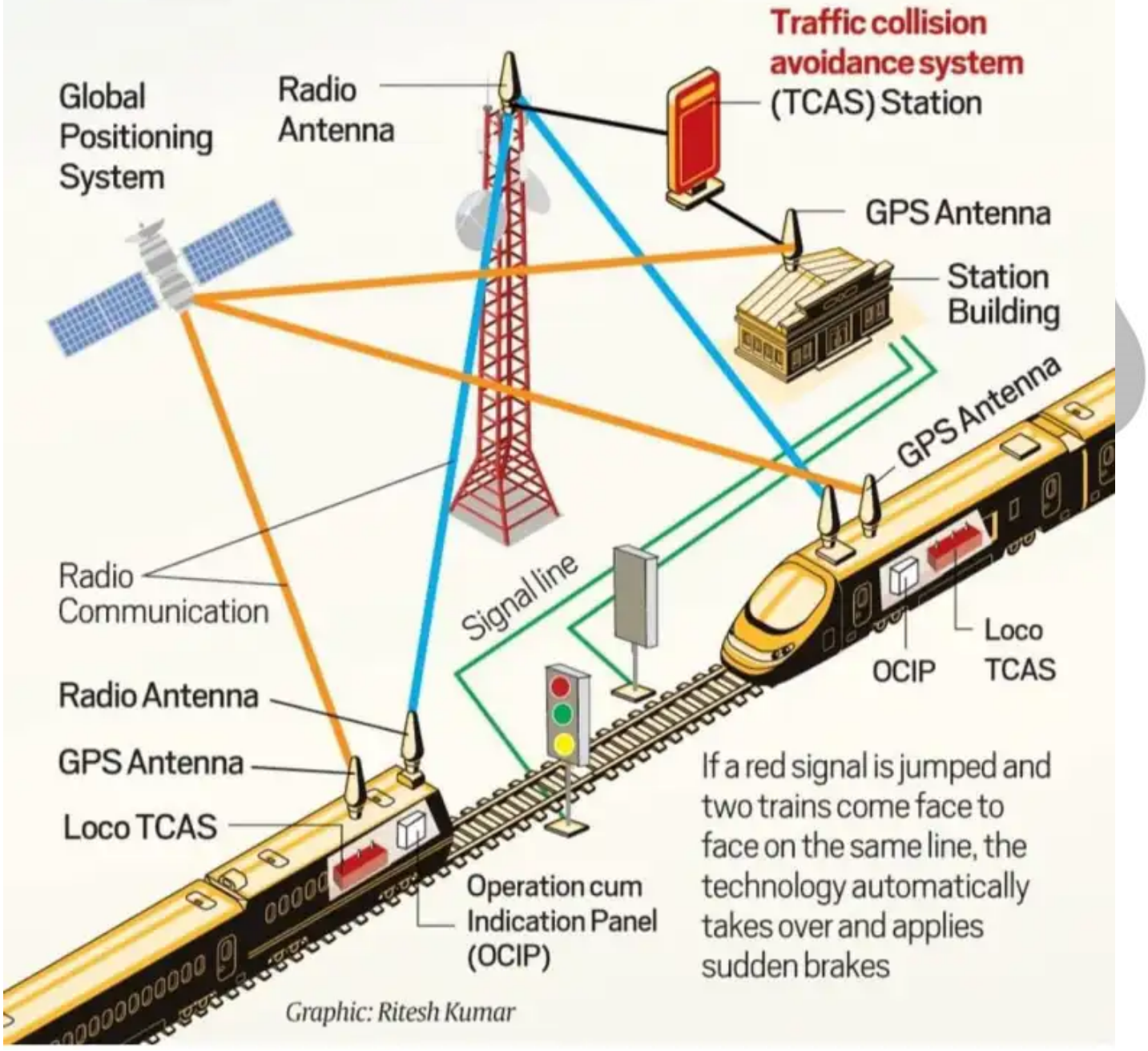
- India operates the **world's fourth-largest railway network**, spanning **over 65,000 kms,** and is projected to **account for 40% of global rail activity by 2050**, highlighting its significance in sustainable transportation and mobility.

Global Best Practices on Rail Safety:

- The UK uses **Train Protection and Warning System (TPWS)**, **ETCS**, and **RAIB** for signal protection, real-time control, and independent investigations.
- Japan employs **Automatic Train Control (ATC)**, **CATIS** for fault detection, and **EEWS** to stop trains during earthquakes.

HOW RAILWAYS' KAVACH PROTECTION SYSTEM WORKS

KPS is a set of electronic and radio frequency devices installed in locomotives, in the signalling system as well the tracks, that talk to each other using ultra-high radio frequencies to control the brakes of trains and also alert drivers



Graphic: Ritesh Kumar

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