

Indian Railways implementing Automatic Identification and Data Collection (AIDC) of Rolling Stock (RFID Project)

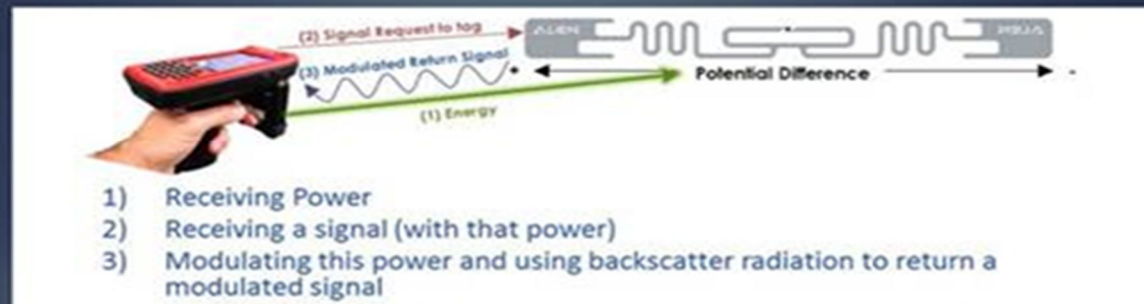
Indian Railways is amongst the largest Railway systems in the world, addressing a significant part of the country's transportation needs, both in the passenger and freight segment. It carries about 23 million passengers per day and over 3 million tons of freight every day over 65000 route kilometers. It has major growth plans and needs to improve service levels and operating efficiency.

As a part of this endeavour, the RFID project has been taken up which aims to automatically and accurately track and trace rolling stock as they move across the country with a special focus on improving their safety and reliability. Two works for RFID project have been sanctioned by Railway Board for a total of Rs. 113 Crores.

For implementing this project over Indian Railways, the Centre for Railway Information Systems (CRIS, the IT arm of the Indian Railways), GS1 India and the Indian Industry have come together in alignment with the Hon'ble Prime Minister's 'Make in India' initiative. Thereby creating a new segment in the AIDC (Automatic Identification and Data Collection) industry in India uniquely suited for the Indian Railways requirements. This project is being spearheaded by the Rolling Stock Department of the Indian Railways. GS1 India is deeply involved in ensuring the quality of the work and proper adoption of international standards. CRIS has been utilising the considerable expertise of GS1 in developing and validating solutions, based on GS1 Standards, for the Indian Railways.

The project enables real time visibility of railway wagons through the National Rail Network using cutting edge technologies like RFID with GS1 global standards for unique & universal identification, in line with global best practices. It enables enhanced operational efficiency of the Indian Railways. This unique initiative of standards based technology development coupled with high-paced field work done by CRIS during last 15 months has now borne fruit – the complete technology eco-system for RFID implementation on the Indian Railways has been established jointly.

How it works



- ▶ RFID is technology where an antenna broadcasts energy to the Tag, which in turn returns the modulated energy back in the form of back-scatter.
- ▶ A **RFID tag** is an electronic tag that exchanges data with a **RFID reader** through radio waves.
- ▶ A **RFID reader** is a device used to gather information from an **RFID tag**, which is used to track individual objects.

Implementation plans:

The Indian Railways has aggressive implementation plans for RFID. All Rolling Stock, roughly 3,50,000 vehicles, are expected to be tagged by 2021. Till now approximately 22,000 wagons and 1200 coaches have been fitted with RFID tags. Additionally, roughly 3500 fixed RFID readers are expected to come up which shall communicate to a central control center using GS1's LLRP (low level reader protocol) standard.

This will enable a paradigm shift on the Indian Railways in its move to improve reliability of its Rolling Stock, by moving from a predominantly time based maintenance methodology to a condition based maintenance. The operational advantages in terms of improved availability and reliability of Rolling Stock will affect each and every customer of the Indian Railways.

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