Autonomous Train - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 90 pages | Mordor Intelligence

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Report description:

The Autonomous Train Market size is estimated at USD 9.78 billion in 2025, and is expected to reach USD 12.96 billion by 2030, at a CAGR of 5.78% during the forecast period (2025-2030).

Over the long term, growing electrification in the transportation sector will likely provide major growth for the autonomous train market. The introduction of the Internet of Things (IoT) in transportation is a major driver for the autonomous train market.

Key Highlights
- In March 2023, the SNCF, French national railway, with industry partners, announced the launch of two autonomous trains with integrated technologies, such as artificial intelligence.
- The market's growth is also attributed to other factors, including the government's focus on increasing railway connectivity and increased focus on replacing older rolling stock with advanced, new-generation rolling stocks.

Economies across the world are investing heavily in railway infrastructure development. Government bodies of several countries worldwide have invested heavily to expand their railway connectivity to cater to growing freight and passenger transportation requirements. For instance, at the end of 2023, the total length of railway tracks in China was 159 thousand km, an increase from 155 thousand km at the end of 2022.

Major governments across developed and developing countries, including China, the United States, and Japan, are investing in connected mobility, which may provide significant growth opportunities for the autonomous train market. Asia-Pacific and North America are expected to dominate the autonomous train market during the forecast period. Asia-Pacific has one of the largest rail

networks in the world and is expected to show major growth with upcoming projects in the market. For example,

Key Highlights
- In January 2024, CRRC announced its plans to introduce the autonomous train to Indonesia, which is planned to be exhibited at the IKN in July 2024. The Indonesian government has been in talks with China Railway Rolling Stock Corporation (CRRC) to use a set of its autonomous trains for Indonesia's new capital, Nusantara or the IKN.

Considering such factors, the market is expected to witness exponential growth in the future.

Autonomous Train Market Trends

Metro/Monorail is Dominating the Autonomous Train Market

Metro/monorail is dominating the autonomous train market due to the increasing demand for an efficient, safe, and affordable mode of transport. The rising penetration of GoA 4 technology in metro rail is likely to boost the market's growth. GoA 4 is an unattended train operation (UTO) where activities like starting and stopping, operation of doors, and handling of emergencies are fully automated without any on-train staff.

Rail is considered one of the safest modes of land transport and is more attractive to the customer as it offers a much better service to potential passengers and boosts passenger numbers. Consumers worldwide are increasingly demanding safer and more efficient transport, highlighting the importance of adopting advanced technology-based transport, i.e., autonomous trains for commuting purposes.

The growing electrification of metro/monorails due to the enactment of stringent emission norms across the world is also boosting the market's growth. The introduction of connected metro rail is creating a challenge for the autonomous train market. Rail has been identified as one of the most energy-efficient transport modes, accounting for 8% of global motorized passenger movements and 7% of freight but consuming only 2% of transport energy.

Major industries are jointly working on rail projects to develop advanced technology for autonomous metro rail. Recent developments like testing driverless passenger cars are expected to further propel the market's growth. For instance,

- In May 2023, Mumbai's first underground metro line in India sought safety approval to begin driverless operations after completing Phase 1 (Bandra Kurla Complex to Aarey) in December 2023. In September 2021, Mitsubishi Heavy Industries Engineering formed a joint venture with Keolis and Mitsubishi Corp. for a new concession of Dubai Metro and Dubai Tram.
- Similarly, in June 2023, Alstom announced the entry into service of the MRT yellow line in Bangkok, a driverless system. The 30 four-car monorail trains can operate at speeds up to 80km/h.

Thus, such developments are expected to contribute to the market's growth in the coming years.

Asia-Pacific is Expected to Witness Significant Growth During the Forecast Period

Asia-Pacific has one of the largest rail networks globally, which is likely to dominate the autonomous train market worldwide. The growing investment by governments across the region, including China, India, and Japan, for rail infrastructure development may boost the market's growth in the region.

The growing popularity of metro travel as public transportation in India is also leading to significant growth in the region's autonomous train market. Therefore, the railway network plays a very significant role in the economic development of countries in Asia-Pacific.

For instance, in March 2024, the Bengaluru Metro Rail Corporation Limited (BMRCL) received the first set of six train coaches, part of the Communication-based Train Control (CBTC) system, for its under-construction yellow line, which is set to undergo various safety tests.

The 18.8 km-long line connecting RV Road and Bommasandra will be the first to have a driverless train.

Asia-Pacific is also characterized by the presence of both developed and developing economies, such as Singapore, Malaysia, Indonesia, and Bangladesh. Major industries are planning to establish rail projects in Asia-Pacific, which is witnessing significant growth in the market. For instance, in January 2024, East Japan Railway (JR East) announced plans to introduce largely automated bullet trains by the mid-2030s, becoming the first company in Japan to implement this labor-saving measure. The company aims to achieve Grade of Automation 3 (GoA3), which means the train can drive itself with a human operator managing the doors and taking over in case of emergencies.

With such developments by major players and their expansion into the country, the development of autonomous trains is expected to increase over the coming years.

Autonomous Train Industry Overview

The autonomous train market is consolidated and led by global and regionally established players. The companies adopt strategies such as new product launches, collaborations, and mergers to sustain their market positions.

- In February 2024, JR East announced its plans to introduce driverless Shinkansen in Japan by the mid-2030s. JR Tokai could launch self-driving bullet trains even earlier, or by 2028. As part of its Change 2027 program, JR East previously conducted a series of driverless Shinkansen test runs in late 2021, using a 12-car E7-series bullet train. JR East allocated an estimated budget of JPY 200 million for the trials.

Some of the major players in the autonomous train market include Bombardier, Mitsubishi Heavy Industries, Alstom, Thales, and Siemens AG.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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