UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 6-K

Report of Foreign Private Issuer
Pursuant to Rule 13a-16 or 15d-16
under the Securities Exchange Act of 1934

For the month of January 2023

Commission file number: 001-41334

RAIL VISION LTD.
(Translation of registrant's name into English)

15 Ha'Tidhar St
Ra'anana, 4366517 Israel
(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.

Form 20-F ☒   Form 40-F ☐

CONTENTS

Attached hereto and incorporated herein is the Registrant's press release issued on January 9, 2023, titled "Rail Vision Demos AI-Based Obstacle Detection Technology for a Class 1 North American Railroad Operator."

The first, third and fourth paragraphs in the press release attached as Exhibit 99.1 are incorporated by reference into the Registrant's Registration Statement on Form S-8 (File No. 333-265968), to be a part thereof from the date on which this report is submitted, to the extent not superseded by documents or reports subsequently filed or furnished.

EXHIBIT INDEX

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Rail Vision Ltd.

Date: January 9, 2023

By: /s/ Ofer Naveh

Name: Ofer Naveh
Title: Chief Financial Officer

Exhibit 99.1

Rail Vision Demos AI-Based Obstacle Detection Technology for a Class 1 North American Railroad Operator

Collaborating with strategic partners, Rail Vision demonstrated field applicability of integrated technologies for autonomous switching yard operations

Ra'anana, Israel – January 9, 2023 – Rail Vision Ltd. (the "Company") (Nasdaq: RVSN), a technology company that is seeking to revolutionize railway safety and the data-related market, today announced the successful demonstration of the field applicability of its innovative Switch Yard System for a Class 1 North American railroad.

"Our AI-based obstacle detection technology is a key enabling technology for the future of autonomous train operations," commented Rail Vision CEO Shahar Hania. "The integration of our Switch Yard System with driverless locomotive technology creates opportunities for a broader application of autonomous switching operations that could ultimately increase capacity and throughput for railroad operators."

The demonstration showcased Rail Vision's technology on an SD40 locomotive equipped with autonomous driving technology and an advanced electronic air brake system. In wet and foggy weather, Rail Vision's obstacle detection system enabled the locomotive to efficiently navigate numerous challenging obstacles during both conventional and autonomous operations, identifying and providing the distance to people, cars, and rail equipment, as well as determining the alignment of switch points. The demonstration achieved GoA4 status. GoA4, which requires no on-train staff, is the highest level of automated train operations.

Rail Vision's Switch Yard System uses electro-optic sensors (including thermal and day camera) combined with AI and machine learning Advance Driver Assistance System (ADAS) solutions to overcome limited vision issues, expanding the range of sight, and decreasing downtime, while increasing punctuality, efficiency, and safety. Rail Vision's solutions address critical issues within the industry with its cutting-edge AI-based Obstacle Detection System (ODS), enabling rail operators to navigate obstacles and accidents, high operational costs, lack of personnel, capacity, and maintenance issues, heavy traffic on the tracks, extensive driving distances, and harsh weather conditions easily and swiftly.

"We anticipate completing a more in-depth follow-on demonstration before launching an official proof-of-concept pilot program for this Class 1 railroad," added Hania. "Rail Vision is positioned for a breakout year in 2023 as our technology continues to gain traction with major customers globally."

About Rail Vision Ltd.

Rail Vision is a technology company that is seeking to revolutionize railway safety and the data-related market. The Company has developed cutting-edge, artificial intelligence based, industry-leading technology specifically designed for railways. The Company has developed its railway detection and systems to save lives, increase efficiency, and dramatically reduce expenses for the railway operators. Rail Vision believes that its technology will significantly increase railway safety around the world, while creating significant benefits and adding value to everyone who relies on the train ecosystem: from passengers using trains for transportation to companies that use railways to deliver goods and services. In addition, the company believes that its technology has the potential to advance the revolutionary concept of autonomous trains into a practical reality. For more information please visit https://www.railvision.io/

Forward-Looking Statements

Contacts

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SOURCE: Rail Vision Ltd.