

Annex A: Details of the Exhibits

1. AI Virtual Assistant (AIVA)

AIVA is an AI digital concierge that assists commuters with their ticketing, wayfinding, and other travel queries. Currently located at Ang Mo Kio Bus Interchange and Punggol Coast MRT Station, she is powered by generative AI technology that combines smart language understanding with reasoning capabilities to automatically deliver spoken responses to enhance user engagement.

2. Advanced Video Analytics Train Assessment Robot (AVATAR)

AVATAR is an autonomous AI-enabled robotic dog that supports our rail technicians in conducting thorough train inspections at Sengkang MRT Depot. AVATAR is equipped with advanced sensors and a 360-degree camera that can visually inspect the train and identify issues early for prompt rectification. It frees our technicians for complex maintenance tasks, improving efficiency and reliability.

3. Gamified App with Smart Glasses

This mobile training platform helps technicians develop the practical skills to handle train defects, such as faulty doors, safely and efficiently. It simulates realistic defect scenarios and provides trainees with instant feedback on their actions. Trainers can even provide real-time support by guiding trainees remotely through the smart glasses.

4. Mobile Autonomous Robotic Surveillance (MARS)

MARS is an all-terrain, AI-powered patrol robot deployed at Seletar Bus Depot. It employs LiDAR technology, high-definition cameras, thermal imaging, and video analytics for precision surveillance and provides real-time monitoring and intrusion alerts. By taking over security patrols, it enables officers to focus on higher-level security tasks.

5. MaxiMobility™

MaxiMobility™ is AI-driven asset management system powered by IBM Maximo Application Suite, which monitors the condition of rail assets and optimises resource allocation. By delivering predictive, data-driven insights, it enables staff to anticipate and resolve potential issues before they occur — enhancing operational efficiency and reliability.

6. Mixed Reality Train Simulator (MIRROR)

MIRROR equips trainees with hands-on experience in LRT operations and emergency response. It simulates realistic emergency scenarios to enhance preparedness, employing advanced visual tracking technology to monitor trainees' actions in real time to deliver targeted feedback — helping them build their driving skills in a safe and controlled environment.

7. Multi-Role Robot (MR-2)

MR-2 is a multi-role robot with safety, security, and cleaning capabilities. It can patrol public transport hubs independently and detect security concerns such as unattended

bags. It also acts as a safety ambassador by broadcasting safety messages and undertakes cleaning duties.

8. North East Line Video Analytics System (NELVAS)

NELVAS utilises AI to monitor passenger density at station platforms and concourses for effective crowd management. By detecting potential congestions early, it enhances passenger safety, comfort and travel experience.

9. Optimised Train Timetable for Energy Savings (OTES)

OTES is an AI-powered scheduling service developed by Alstom. By synchronising train schedules such that one train departs just as the other arrives at the MRT station, it enables the regenerative braking energy from arriving trains to be used to power departing ones. This reduces energy consumption and carbon emissions, thus promoting sustainable transport.

10. Rail Rover

The Rail Rover — a second-generation automated multi-function track trolley — enhances the accuracy of rail inspections to support timely maintenance and reliable operations. Equipped with ultrasonic sensors, it detects hidden rail defects. It also employs lasers for precise third-rail alignment, and high-definition cameras to identify surface cracks and water seepage.

11. Sign Language Virtual Assistant (SiLVIA)

SiLVIA is a virtual avatar that supports passengers with hearing loss across the public transport network, empowering them to travel independently and confidently. Powered by generative AI technology and advanced speech recognition algorithms, she answers queries in both sign language and text. She also instantly translates public announcements into sign language.

12. Video Analytics to Guard Commuter Safety (VAnGuard)

VAnGuard employs AI and video analytics to detect people or foreign objects on the LRT tracks. In emergencies, it alerts the Operations Control Centre to cut traction power and halt trains. It also detects passengers-in-wheelchairs or unattended items left on station platforms and prompts staff for follow-up.

13. Virtual Reality (VR) Trainer

This hi-fidelity training simulator immerses trainees in realistic track access scenarios, using advanced eye-tracking technology to reinforce proper scanning habits for heightened safety awareness. It enables trainees to practise track protection procedures in a safe and controlled environment, while providing an interactive learning experience.

14. Waymap-SG

Waymap-SG is a free-to-use navigation app that helps visually impaired passengers navigate bus interchanges and MRT stations confidently. The first-of-its-kind in the Asia-Pacific, it provides turn-by-turn audio instructions using pre-mapped station features without the need for GPS, Wi-Fi, or Bluetooth.