ANNEX A – DETAILS OF THE EXHIBITS

1. Sign Language Virtual Assistant (SiLViA)

Developed by NUS start-up FingerDance, SiLViA is a virtual avatar that uses advanced speech recognition algorithms to instantly translate spoken or written words into sign language. Powered by generative AI technology, SiLViA promotes greater accessibility for the hard of hearing and those with hearing loss to travel independently and confidently on public transport. SiLViA will be rolled out on a trial basis at Chinatown Station on the North East Line in July 2024.

2. Artificial Intelligence Virtual Assistant (AIVA)

AIVA is an AI digital human concierge designed to elevate the customer experience at SBS Transit's bus interchanges and MRT stations. A co-creation effort by SBS Transit, RSP Architects Planners & Engineers, Samadhi Ventures and Hong Kong start-up Pantheon Lab, AIVA's speech capabilities are powered by generative AI technology that combines smart language understanding and processing with powerful reasoning. This allows her to interact with passengers at the digital kiosk and provide travel-related information at transport nodes. AIVA will be trialled at Ang Mo Kio Bus Interchange from June 2024 with plans to deploy a second kiosk at Bayfront Station on the Downtown Line in 3Q 2024.

3. SBS Transit AI Radio Communications Simulator (SAIRUS)

SAIRUS is a generative AI training solution currently under development by local SME, Aviation Virtual, which aims to enhance staff training in radio communications. Through an app on their smartphones or computers, SBS Transit staff can practise their radio communications protocol with a virtual avatar at their convenience without being constrained by the availability of an actual human trainer. SAIRUS uses machine learning technology to comprehend spoken words of the staff, and provide realistic responses in various training scenarios to ensure staff safety.

4. Rail Incident Management System (RIMS)

RIMS is a mobile app developed by StarHub to enhance customer experience during train service delays or disruptions. Utilising AI and data analytics technologies, RIMS streamlines the travel experience by keeping passengers up to date on the latest service disruption information, recommend alternative travel options based on their locations and offer navigation direction to station exits. This empowers passengers to make better informed decisions on their travel plans and manage their journeys by assisting them to reach their destinations efficiently. The RIMS app is expected to be released for public download in 3Q 2024.

5. Internet of Things (IoT) Sensors for Facilities Management

Local start-up, I.O.T. Workz, has developed a smart Internet-of-Things (IoT) solution for more efficient management of facilities on the North East Line. IoT sensors are installed at critical server rooms at the MRT stations to closely monitor temperature and humidity levels to ensure that optimal environmental conditions are maintained. In the event of any abnormalities or if the temperature and humidity readings cross a specific threshold, an automatic alert is sent to the Operations team for prompt intervention. Additionally, staff have access to a centralised cloud-based platform where they can monitor current readings, look up historical data, and assess comprehensive datasets to gain insights into facility performance.

6. Maint'Up Data Analytics Platform

Maint'Up is a digital maintenance solution developed by France's RATP that consolidates, stores and analyses rail asset data from different sources onto a single platform, to enhance operations and maintenance performance. Utilising IoT sensors, real-time data on asset health is collected and analysed, enabling early detection and rectification of minor issues before they escalate into major equipment failures. This improves the reliability and performance of the network.

This solution also supports our sustainability efforts by enabling more effective asset management. For instance, Maint'Up can optimise the air-conditioning in trains to ensure passenger comfort with minimal energy consumption. Being system agnostic, it can be easily deployed on any rail network. Maint'Up has been rolled out on the Downtown Line trains since the end of 2023, with plans to trial it on the North East Line from July 2024.

7. Digital Side Mirrors

SBS Transit is working with local company, TNT Surveillance, to trial high-definition digital side mirrors on our buses to expand our Bus Captains' field of vision and reduce the risk of blind-spot related accidents. Installed alongside conventional side mirrors, these digital mirrors have the capability to automatically adjust their level of brightness to reduce glare during sunny days and brighten up during the evenings for optimum visibility. Currently, these digital mirrors are installed on 100 buses, or 3% of our fleet.

8. Multi-Role Robot (MR-2)

MR-2 is a multi-role robot developed by KABAM Robotics to enhance safety, security and cleaning operations in public transport settings. This robot can patrol bus interchanges and MRT stations autonomously and detect security concerns such as unattended bags and suspicious individuals loitering. It also acts as a safety ambassador by broadcasting safety messages in specific situations, such as when it spots a passenger heading towards the escalator with a baby stroller. Additionally, it is also able to undertake cleaning duties. MR-2 is currently undergoing pilot testing at Little India Station on the Downtown Line with plans to deploy a second unit at a North East Line station in the coming months.

9. 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. Currently on trial at Sengkang Depot, AVATAR is equipped with advanced sensors and a 360-degree camera that can visually inspect the train for anomalies, such as missing screws and panels on the underside of the carriage. This streamlines the train inspection process and improves accuracy, thus enhancing the reliability and safety of our train operations. A "wheeled" version of AVATAR equipped with a robotic arm with a high-definition camera is also being trialled at the depot.