

Weapons Detection Pilots Updates Summary of the Activity and Preliminary Findings

Metro's System Security and Law Enforcement (SSLE) is piloting weapons detection technologies to evaluate their potential to reduce the presence of firearms in the transit system. The technologies can be broadly categorized into two groups: video analytics-based brandished weapon detection and concealed weapon screening. Staff collaborated with multiple vendors to organize cost-free pilots of different solutions to test their effectiveness and feasibility in transit environments.

Between late August and October, staff tested four different brandished firearm detection solutions. In November, staff finished testing the first concealed weapons screening solution. The second screening pilot concluded in late December. The third screening pilot will assess the feasibility of deploying weapons detection solutions onboard rolling stock, which requires additional evaluation and testing beyond the scope of this current effort.

Video Analytics-Based Weapons Detection

Staff tested four visual detection solutions in the Union Station West area, enabling 25 of the CCTV cameras to detect the brandishing of firearms. Visual detection systems leverage artificial intelligence (AI) and computer vision algorithms to scan existing CCTV video feeds in real time, identifying threats and disseminating alerts to predesignated responders through predefined channels.

Methodology

Staff conducted multiple rounds of testing of each of the four solutions to assess their detection capability and establish a baseline of performance. The overall assessment of the solutions included evaluating the alerting mechanism, alert viewing platform or dashboard, frequency of false positives, and integration with existing or upcoming security infrastructure.

| Brandished Firearm Detection System | Scheduled Piloting | Test 1 | Test 2 | Test 3 |
|--|---------------------------|---------------|---------------|---------------|
| Pilot A | September | 9/6/2024 | 9/10/2024 | 9/13/2024 |
| Pilot B | September | 9/16/2024 | 9/24/2024 | 9/26/2024 |
| Pilot C | September | 9/26/2024 | 10/04/2024 | 10/08/2024 |
| Pilot D | October | 10/8/2024 | 10/11/2024 | 10/14/2024 |

SSLE staff developed a uniform testing protocol, brandishing a selection of various inert and training replica firearms in different positions in view of cameras in different station areas. Staff tested each system during station closure hours.

Summary of Results

Staff are confident the solution tested as part of Pilot A sets a benchmark in detection the other solutions were unable to reach, in addition to the absence of false positives given the human-in-the-loop alert verification built into the system.

Based on this conclusion, staff have made a high-level assessment of the requirements to be able to implement the solution. However, an in-depth network engineering analysis is necessary to determine the extent to which this system can be deployed. This includes identifying facilities and locations where the CCTV and network systems meet the requirements and how many camera licenses and video processing units are necessary to sustain those camera feeds. For locations with incompatible systems, a thorough assessment must be performed to determine the scope of capital investments and the level of effort necessary to upgrade the CCTV and network infrastructure to meet the required specifications. Determining the extent to which this solution can be deployed systemwide is beyond the scope of this effort. This additional evaluation will be conducted once the board is fully informed of the findings and the results of the testing. A decision will then need to be made to determine if the operational performance of the system sufficiently and appropriately addresses the concerns of the agency for situational awareness arising from the brandishing of firearms in the system.

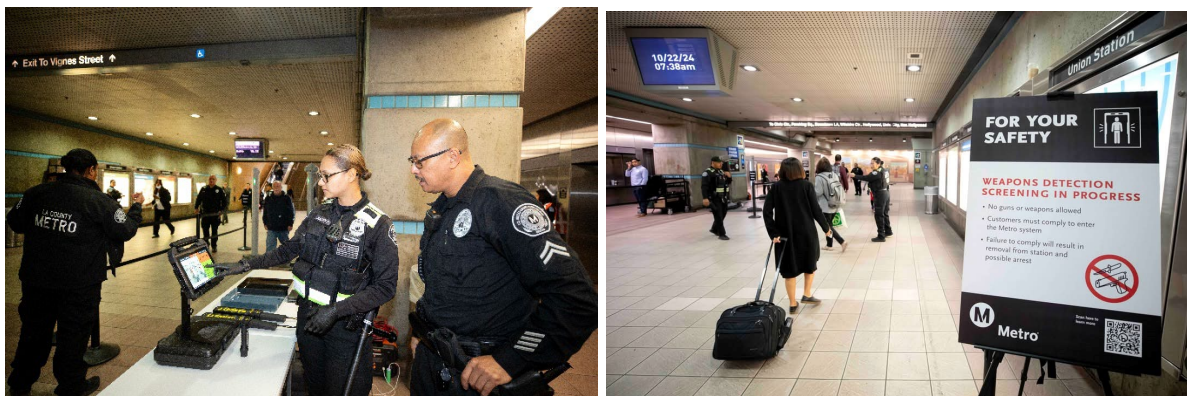
Concealed Weapons Screening

These systems are designed to identify concealed weapons, such as firearms or large-edged weapons, using advanced sensors, AI, and other technologies. They offer a noninvasive screening method to detect and identify hidden threats without physical contact and eliminate the need to remove personal belongings.

Status of Piloting and Testing

Pilot AA

Staff began piloting the solution the week of October 21 in the mezzanine area of the eastern access to the Union Station B/D Line platforms. Passengers were selected for screening using a predetermined pedestrian count interval, and if an alert was generated signaling the presence of ferrous material, passengers were asked to proceed to secondary screenings. Metro Transit Security and law enforcement provided the necessary personnel to direct passengers, staff the screening device, conduct secondary screenings when necessary, and intervene if a passenger was found to be in possession of a weapon. No weapons were found during this pilot. The screening deployments occurred on the following dates: October 22, October 24, October 30, October 31, November 6, November 12, and November 14.



Although the deployment was limited to the mezzanine area of the eastern portal, for the last deployment of this first system the vendor provided an additional screening unit to cover both entrances to the Union Station B/D Line platforms. This allowed staff to evaluate the staffing and operational requirements involved in total ingress coverage. The systems were operated simultaneously successfully with armed and unarmed Transit Security Officers (TSOs) staffing both screening filters, the appliances, and the secondary screening tables.

Summary of Findings

The first screening deployment was met with overwhelming support from staff and the public. Multiple passengers expressed their support for implementing weapons screening to heighten the level of safety and have a strong security presence in the system to deter criminal activity. Most of the passengers selected for screenings expressed no concern or refused to be screened. Of that group, those identified for secondary screening due to an alert from the system were amenable to allowing TSOs to visually inspect the contents of their personal belongings to determine the cause of the alarm.

A handful of passengers expressed concerns about the screening and all concerns raised were resolved by officers by providing additional information, patiently attending to the passenger's concerns, and giving clear directions without further incident. Two passengers were concerned with their health indicating they wore a pacemaker, they were reassured of the safety of the device given its low energy emission; however, when their concern persisted due to their doctor's directions, they were allowed to bypass screening. Passengers with concerns about the search for their personal belongings were informed of the device's detection capabilities and the operating procedures in place to conduct secondary screenings only in the event of an alarm. Finally, passengers who believed they were being profiled were informed that the selection for screening was purely based on an interval of pedestrian count indicated by an automated counter, reassuring them their selection was random and not motivated by an officer's judgment. All concerns raised by passengers were resolved by officers providing additional information, patiently attending to the passenger's concerns, and giving clear directions without incidents.

Staff is evaluating the operational successes and challenges faced during deployment. This will allow staff to draw conclusions and make recommendations on the scenarios or environments in Metro's transit system where this technology can lead to an improvement in overall safety. Staff will also evaluate the requirements recurrent deployments will have for staffing and equipment mobilization and the capital cost associated with the procurement of the units. Staff will present their findings to the Board at the conclusion of the last weapons screening pilot.

Pilot BB

The pilot for the second concealed weapons screening pilot began October 26 in the mezzanine level of the eastern portal of Union Station B/D Line. Technical staff from the vendor were on-site during the first deployment to ensure adequate operating procedures and detection settings. This solution, although similar to the first one piloted, is distinguished by its portability and battery-powered design. The overall footprint of the deployment is similar to the one employed previously and the staffing requirements are the same, albeit officers perform a few functions differently given the alerting mechanism of the device. This new deployment was met with support from staff and passengers who, in some instances, inquired about the type of technology being used and the different configurations of the system.

Staff saw it appropriate to use this second screening system's portability and power autonomy to conduct screening deployments at the APU/Citrus College A Line Station on December 5, December 10, December 12, and December 19. Piloting this second screening system at a light rail train (LRT) station produced valuable insight into the operational and staffing requirements involved in this deployment.

Pilot CC

Staff continue to work with the vendor to secure an agreement for the piloting of the technology. Although progress has been challenged because of the system's power, data connectivity, and hardware installation requirements, the vendor has expressed openness to evaluate the deployment of their solution onboard rolling stock. The vendor and staff continue to work to establish the feasibility and possible financial resources necessary to make this pilot a reality. This new arrangement places this pilot in a category different from the ones explored so far and will require separating this effort and timeline beyond 2024. This will allow staff to present its final evaluations of all other pilots while continuing to pursue an innovative strategy for onboard weapons detection.