

WHITEPAPER

# Enhancing Security and Efficiency: The Role of Entrance Control to Support a Sustainable Metro Network



Metros are crucial assets for efficient, sustainable mobility in cities worldwide. From 2018 to 2020, during the three years following the last UITP World Metro Figures, 14 new cities opened a metro system, taking the total number to 193 cities<sup>1</sup>.

Ensuring the safety, efficiency, and smooth flow of people through these transit hubs is critical. This is where smart entrance control systems play a pivotal role. Among the leading innovators in this field stands Gunnebo Entrance Control, offering the latest solutions tailored to the unique needs of metro stations globally.

Nathan Anstee, VP of Mass Transit of Gunnebo Entrance Control explores the multifaceted issues encountered by metro operators, strategies to overcome them, and the integration of futureproof solutions to enhance efficiency and security.

Metro stations are bustling hubs of activity, vital in the urban landscape where diverse communities intersect and connect.

Far beyond mere transportation nodes, these stations are vibrant centres of social interaction, cultural exchange, and economic activity. They pulsate with the energy of commuters rushing to their destinations, travellers embarking on new adventures, and locals navigating their daily routines.

Whilst this welcoming feel must be maintained throughout a metro station, it presents unique security challenges. Entrance control systems serve as the first line of defence, regulating access and detecting potential threats. They contribute to operational efficiency by facilitating the smooth flow of commuters, reducing congestion, and enhancing passenger experience.

<sup>1</sup> Metro World Figures 2021 published by Advancing public transport: <https://www.uitp.org/publications/metro-world-figures-2021/>





## Enhancing Operational Efficiency

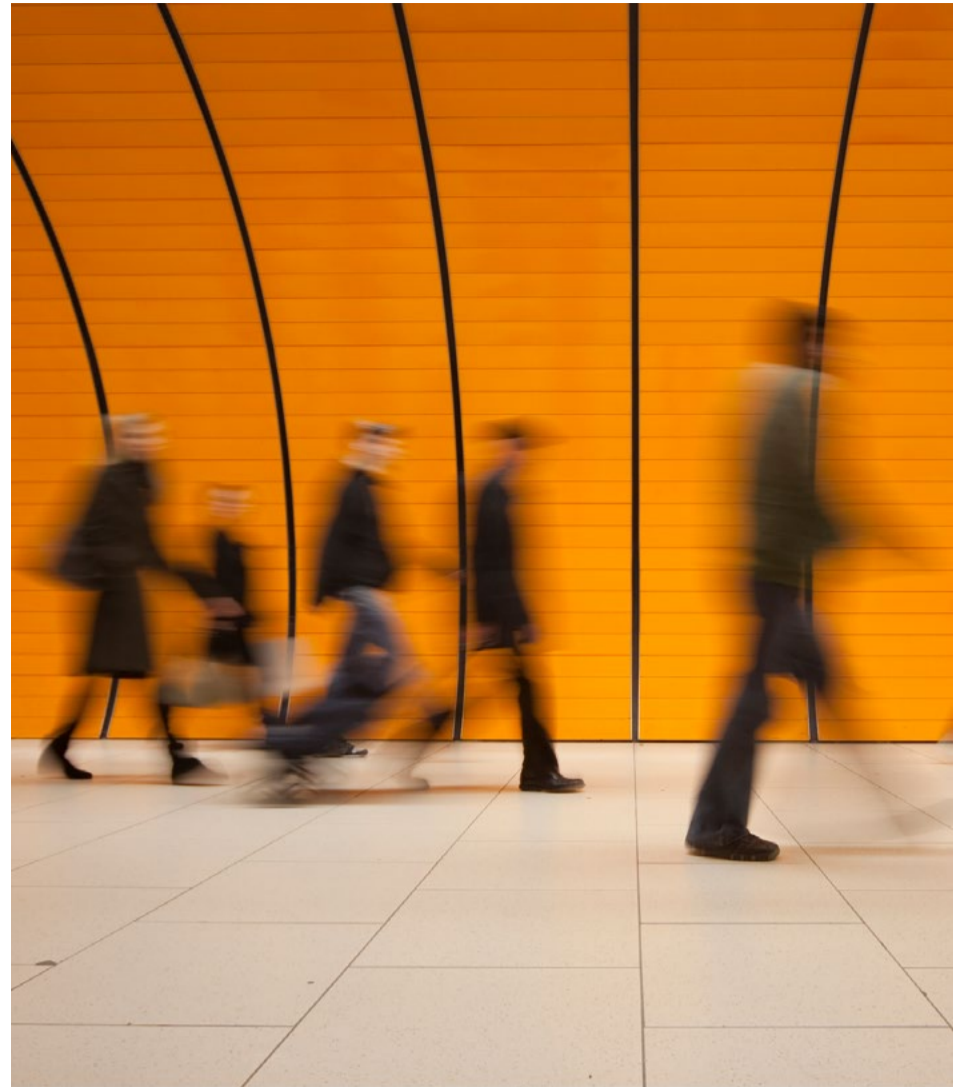
With the exponential growth in public transport ridership, now exceeding a billion journeys annually, efficient crowd management has become paramount for the seamless operation of metro stations.

Beyond security considerations, optimising passenger flow, minimising queuing time, and streamlining the boarding process is essential for ensuring a positive commuter experience.

Achieving these objectives without compromising security against tailgating and piggybacking poses a significant challenge. To address this, metro stations are adopting advanced turnstiles, gates, and speed lanes equipped with intelligent sensors and analytics.

These technologies enable real-time monitoring of passenger movement, providing operators with actionable insights to identify bottlenecks and implement proactive measures for smoother, more secure operations.

By leveraging data-driven solutions, metro stations can enhance operational efficiency while maintaining robust security protocols, delivering a more seamless and enjoyable journey for passengers.



## Customised Solutions for Diverse Needs

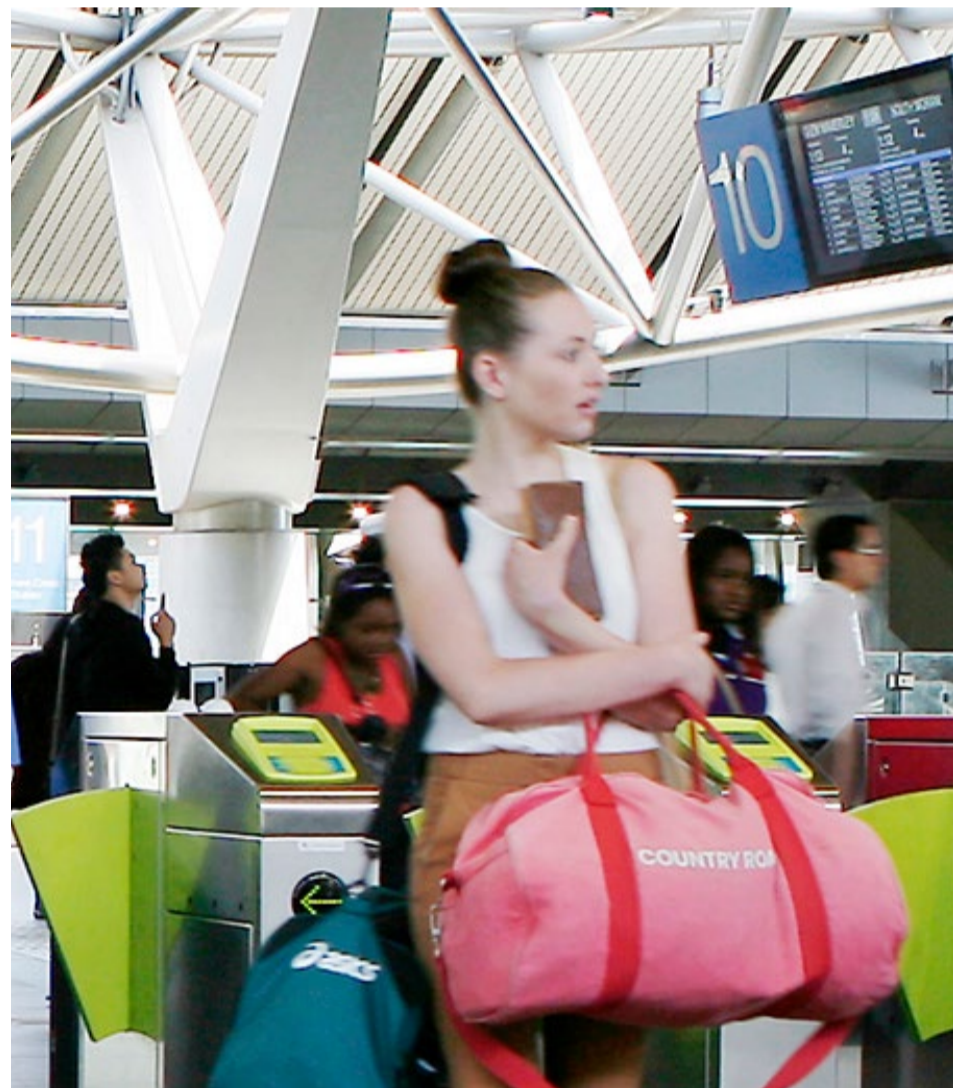
Metro stations are not one-size-fits-all; they vary greatly in layout and passenger demographics. Implementing entrance control solutions that address the unique needs of each station is essential for ensuring optimal performance and security.

From sprawling interchange hubs to compact neighbourhood stops each metro station presents its own set of challenges and requirements. Tailored solutions that take into account factors such as passenger volume, peak hours, and architectural constraints are key to maximising efficiency and effectiveness.

At the heart of customised entrance control solutions lies a deep understanding of the specific needs and dynamics of each metro station. This requires thorough site risk assessments, consultations, and collaboration between metro authorities, architects, and security experts.

By taking a holistic approach to design and implementation, tailored solutions can be developed that seamlessly integrate with existing infrastructure, enhance passenger flow, and mitigate security risks.

Whether it's implementing turnstile arrays, gate configurations, or speed lanes, bespoke solutions can be tailored to meet the unique requirements of each metro station while ensuring compliance with safety regulations and accessibility standards.





## Future Trends and Innovations

As sustainable security technology continues to advance at a rapid pace, the landscape of entrance control in metro stations is transforming from traditional methods of access control to the latest innovations in biometrics, artificial intelligence, and IoT connectivity.

These technologies offer unprecedented levels of security, efficiency, and convenience, revolutionising the way passengers move through metro stations.

One of the most notable advancements in entrance control technology is the integration of smart and biometric authentication systems. By utilising smartphones and unique physiological characteristics such as fingerprints, facial recognition, or iris scans, metro stations can enhance security while streamlining the boarding process.

This not only eliminates the need for physical tickets or tokens but also provides a high level of accuracy and reliability, reducing the risk of unauthorised access or fraudulent activity. As biometric technology continues to mature and become more accessible, it is poised to become a cornerstone of modern entrance control systems in metro stations.

IoT-enabled sensors and smart access control devices provide valuable data insights that enable metro authorities to optimise operations, predict congestion patterns, and proactively address bottlenecks.

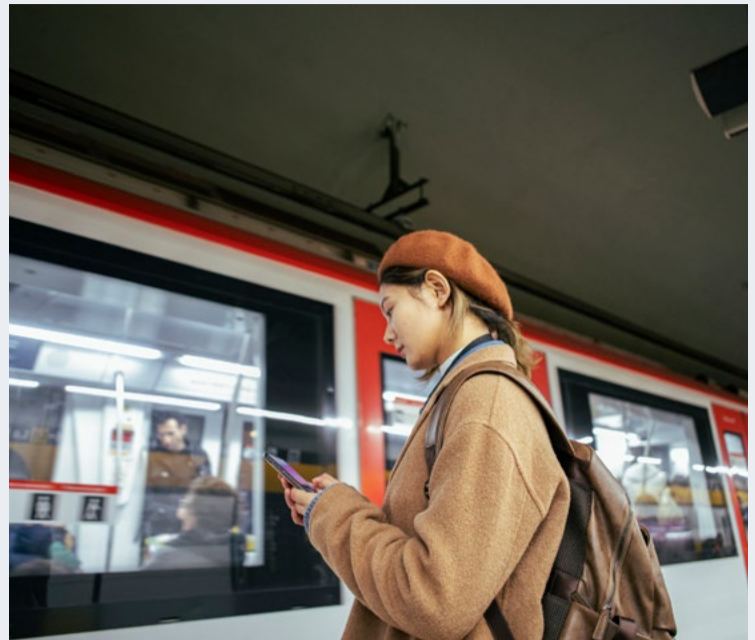
By harnessing the power of these advanced technologies, metro stations can create safer, more efficient environments for passengers while staying ahead of emerging security challenges.



CASE EXAMPLE:

# Metropolitans de Barcelona (TMB)

**Metropolitans de Barcelona (TMB) recognises the importance of investing in the latest technology to meet the evolving needs of its passengers.**



With the number of journeys made on public transport in the Barcelona metropolitan area reaching a new record high of 8.5m passengers a week, the need for efficient and reliable entrance control systems has never been more critical.

By partnering with Gunnebo Entrance Control and deploying the latest SpeedStile technology at its newest Ernest Lluch stop, TMB demonstrates its commitment to providing a sustainable, safe, and seamless journey for millions of commuters and tourists.

The SpeedStile entrance control systems offer a sophisticated blend of security and convenience, allowing for rapid passenger throughput while maintaining robust access control measures. With features such as anti-tailgating sensors, biometric authentication options, and sleek, ergonomic design.



The implementation of Gunnebo entrance control systems at the Ernest Lluch – an essential new platform linking two neighbouring cities - not only enhances passenger security but also contributes to the overall efficiency and reliability of the Metro Barcelona network.

As Metro Barcelona continues to grow and evolve, investments in latest entrance control technology will play a vital role in meeting the increasing demands of urban mobility while maintaining the highest standards of safety and security.



## Sustainable Entrance Control

Examining real-world applications of Gunnebo Entrance Control's solutions as per our work with Metropolitans de Barcelona (TMB) demonstrates how in an era defined by rapid urbanisation and evolving security challenges, entrance control systems play a vital role in ensuring the safety, efficiency, and sustainability of metro stations.

Gunnebo Entrance Control's commitment to innovation, security, and customer satisfaction positions it as a trusted partner for metro operators worldwide. By embracing smart technologies, customisable solutions, and a forward-thinking approach, Gunnebo Entrance Control continues to shape the future of entrance control

in metro stations, enhancing security and efficiency for millions of commuters each day.

Our ambition is to lead the way by embracing key considerations for sustainable modern infrastructure projects. Gunnebo Entrance Control is committed to environmental responsibility, incorporating eco-friendly materials, energy-efficient components, and recyclable designs into its products.

By reducing energy consumption, minimising waste, and promoting sustainable practices, these solutions contribute to building greener, more resilient metro stations for the future.



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of entrance control solutions, please visit  
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