

RAIL

TagMaster

LEARN FROM REALITY

Communication Based Train Control (CBTC)

Metro Signalling System

The challenge

As urban areas expand and traffic density increases, the need for innovative solutions to enhance the safety and efficiency of Metro and Monorail systems becomes ever more critical. These vital modes of transportation require a signalling solution that is not only reliable and safe but also flexible, allowing for maximum throughput on the tracks and enabling fully automated operation.

TagMaster is committed to meeting these challenges with cutting-edge technology, ensuring that urban transportation systems operate smoothly and efficiently, contributing to the vibrant life of our cities.

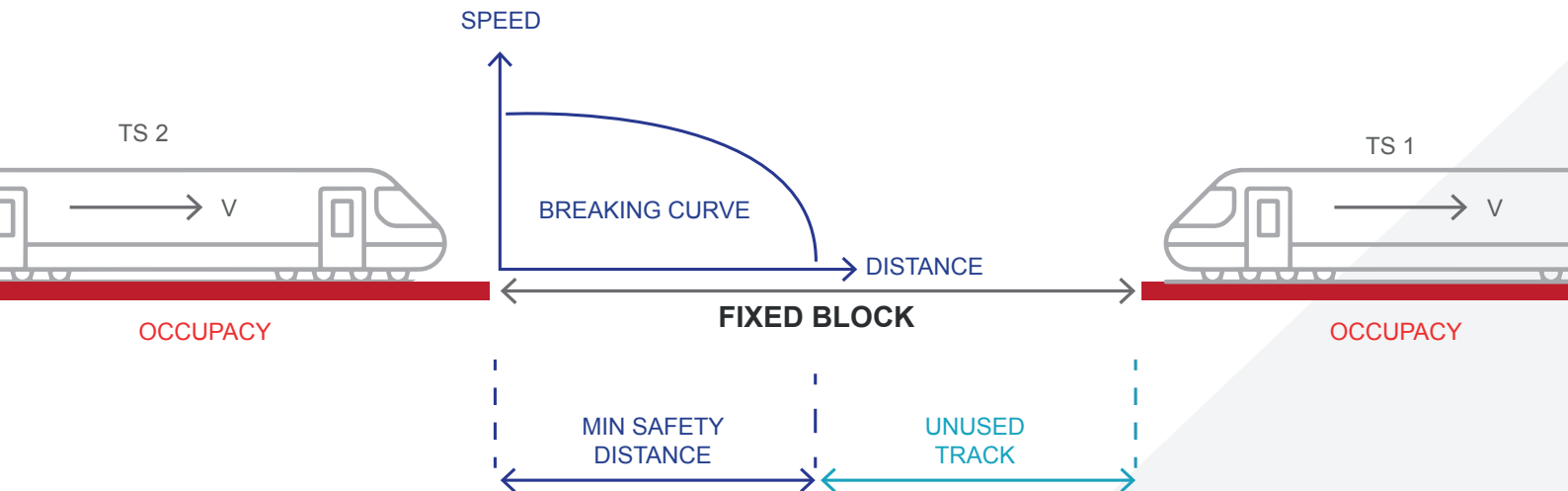
Modern Technology for Urban Mobility

TagMaster RFID systems boast a proven track record, seamlessly integrated into major CBTC systems currently available on the market. They have been successfully operating for many years in major metro installations worldwide, showcasing their reliability and efficiency.

In Communication-Based Train Control (CBTC) systems, traditional track-based interlocking and wayside train control are replaced by a continuous on-board positioning function and seamless data exchange with the wayside infrastructure. The reliability of the on-board train positioning system is crucial for ensuring safe train operations while allowing a significantly **higher throughput compared to traditional interlocking methods**. This advanced solution is also well-suited for rubber-wheel and mono/mag-rail systems.

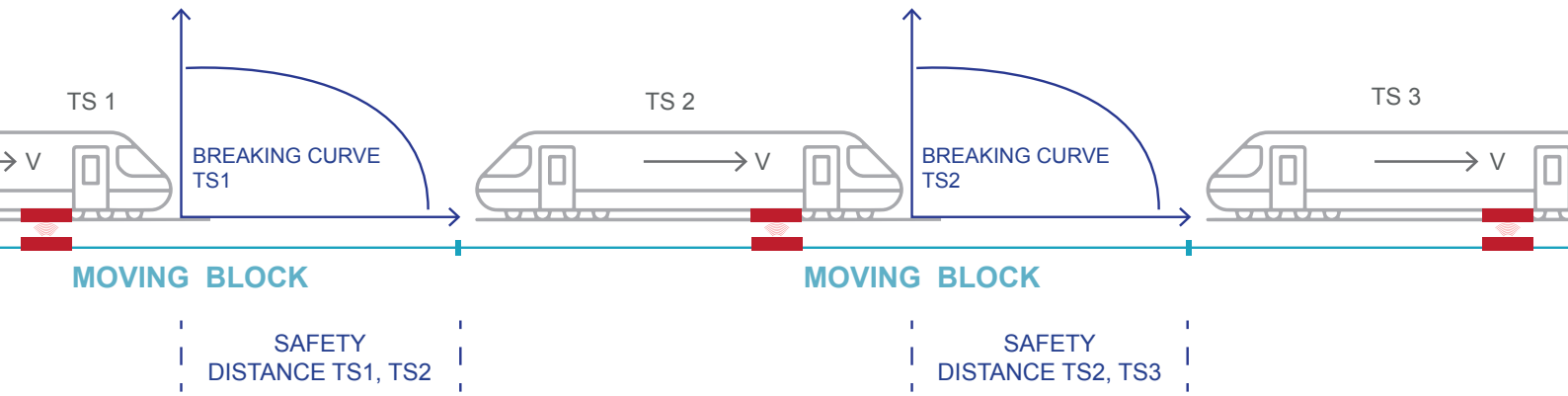
Fixed Block

Track based Fix Block Interlocking reserve free track space for the theoretical worst case, regardless of the actual situation, leaving a lot of unused track most of the time.



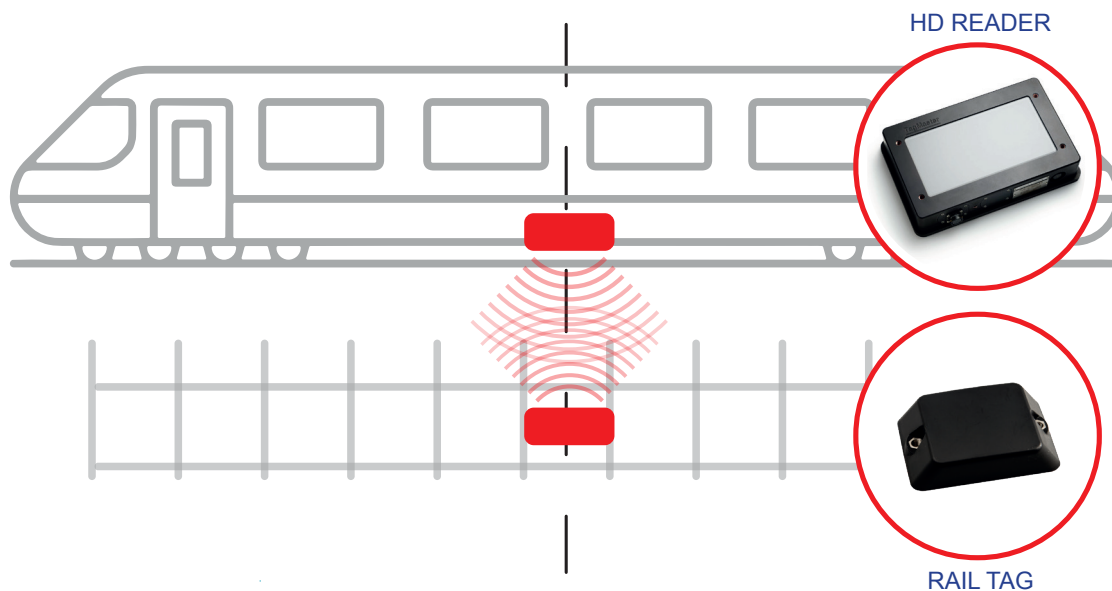
Moving Block

Moving Block Interlocking continuously adjust the safety distance between the trains to the actual situation with respect to current speed, weight and maximum braking force, allowing the trains to move closer together at low speed.



Accurate Positioning (APOS)

The TagMaster Accurate Positioning function reports the precise time to the onboard CBTC Train Controller, when the onboard HD Reader passes the dead center of the Beacon on the track.



Enhancing efficient and safe operation in Metro Signalling

TagMaster CBTC RFID positioning solutions offer unparalleled benefits, including:

Highly Accurate Positioning:

The TagMaster HD RFID system delivers reliable, high-precision positioning data at full speed as vehicles pass the track beacons (Tags).

Optimized Braking:

This precise data enables optimized braking profiles, allowing vehicles to approach station platforms and stop accurately without unnecessary early deceleration. This not only saves time but also enhances passenger comfort during braking.

Increased Track Capacity:

Additionally, accurate positioning supports moving block interlocking, minimizing safety distances between trains and thereby maximizing track capacity.

Improved Energy Efficiency:

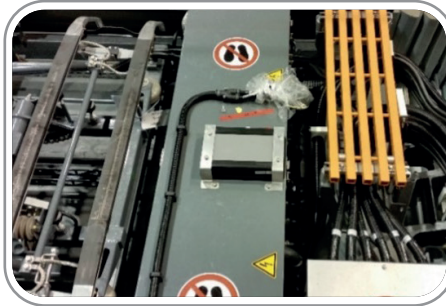
In response to the growing need for enhanced energy efficiency, our highly accurate positioning system combined with regenerative electrical braking, enables optimized timetable planning. This allows the braking energy from one vehicle to be used to accelerate another, avoiding power loss during the charging cycle using batteries, and significantly improving overall energy efficiency

Simplifying Complexity

The TagMaster Solution excels in its simplicity, reliability, and sustainability. Our technology provides high flexibility in installation and robust interfaces, ensuring seamless integration. The fully integrated LRU Reader unit supports easy maintenance and enables quick turnaround times for vehicles in the depot.



Under



On top



On trac

The Benefits

Sustainable Reliability:

Our TM RFID system stands as a testament to sustainability, offering a cost-effective solution over its lifetime.

Resilient Design:

Engineered to withstand the mechanical stress of harsh environments, whether in the underframe of railway vehicles or on the track bed.

Simplicity and Compatibility:

Featuring standard digital I/Os and Ethernet, our system integrates effortlessly into on-board Train Control systems.

All-Weather Performance:

Designed to operate flawlessly across diverse weather conditions, ensuring reliability when it's needed most.

Unparalleled positioning performance:

Accurate positioning is possible down to a few centimetres.

High speed performance:

Supports train speeds up to 400 kph.

Advanced Microwave Technology:

Battery-Assisted Passive Tags enable operation at very low RF power and offer a long, predictable service life. This technology is highly resilient to electrical and magnetic interference caused by high currents in traction systems.

Worldwide compliance:

Operating on the 2.45 GHz ISM band, our system can be easily deployed in most countries without complicated national qualification processes

TagMaster

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TagMaster is an application oriented technical company developing and selling advanced sensor systems for solutions in the two areas **Traffic Solutions** and **Rail Solutions**, based on radio, radar, magnetic and camera technologies for demanding environments.

TagMaster works in two segments – Segment Europe and Segment USA – with the trademarks TagMaster, Citilog, Sensys Networks and Quercus Technologies – with innovative mobility solutions for increased efficiency, security, safety, comfort and to reduce environmental impact in Smart Cities.

TagMaster has subsidiaries in England, France, Spain and US and exports mostly to Europe, North America, The Middle East and Asia through a global network of partners and system integrators.

TagMaster – Driving Innovation in Rail Technology

Founded in **1994**, TagMaster has since then been at the forefront of **RFID technology**, built a strong global footprint and established a reputation for reliability and innovation. Building on this success, expanded into the rail sector, focusing on **Automatic Vehicle Location Systems** for **trams and metro networks** operating in demanding outdoor environments. This strategic move marked a turning point, showcasing our commitment to technological excellence and our ability to adapt to the evolving needs of the transport industry.

In **2003**, TagMaster achieved another milestone through a collaboration with a leading safety partner, developing a cutting-edge **RFID-based Automatic Train Protection solution**. This breakthrough project, deployed on key **tram lines in France and Belgium**, reinforced TagMaster's position as a trusted supplier to the rail industry.

Today, clients include **Metro, Light Rail, and Tram operators** worldwide. TagMaster works closely with major **rail integrators** across the globe to deliver proven, robust, future-ready solutions that enhance safety, reliability, and operational efficiency.

With more than **200 Tram and Light Rail Vehicle lines installed worldwide**, TagMaster stands as a **recognized technology leader** in rail identification and positioning.

Our comprehensive project portfolio reflects decades of expertise, innovation, and customer trust, making us a reliable partner of intelligent rail systems.

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