
DeterCam
On-Train Animal Deterrence (TrackSonic)
Forest Corridor Protection
Low Visibility Operations
High Speed Rail Safety
Mobile Deterrence Solution
Environmental Compliance Tool
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TrackSonic Feature and Working

The Problem

Animal collisions on railway tracks can cause significant damage to trains, leading to costly repairs, safety inspections and time out of service. Incidents can also require emergency braking, track clearance and recovery operations, disrupting services beyond the affected train.

Delays and cancellations increase costs through replacement transport, additional staffing and passenger compensation where applicable. Passengers may face missed connections, overcrowding, longer journeys and disruption to work or personal commitments.

Repeated incidents also harm wildlife and reduce confidence in railway reliability, highlighting the need for early detection and effective animal deterrence.

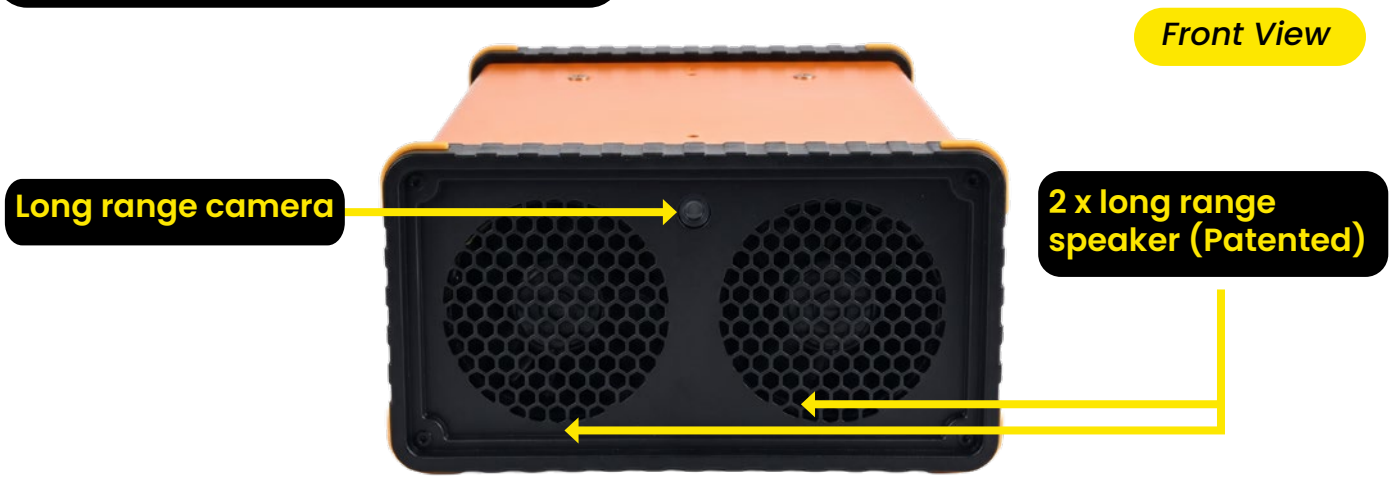
TrackSonic



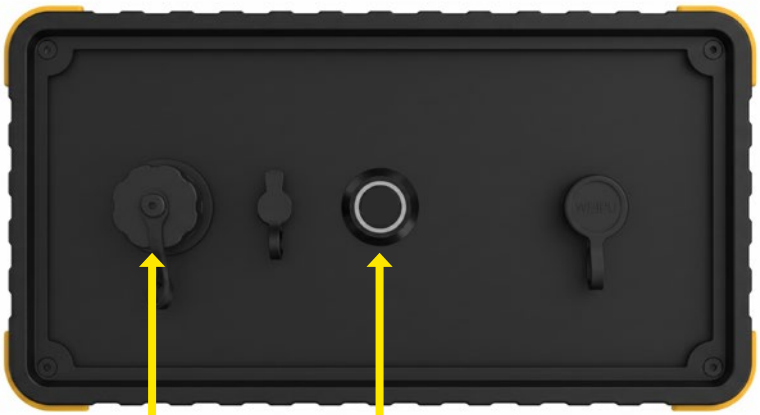
The Solution

TrackSonic is an intelligent, AI-powered animal deterrence system mounted on the front of the train, designed to proactively prevent wildlife collisions before they occur. Unlike passive or trackside-only solutions, TrackSonic moves with the train, providing forward-looking detection and deterrence in real time. The system combines AI vision, acoustic intelligence, and location-based triggering to deter animals safely and effectively, without causing harm.

TrackSonic Features



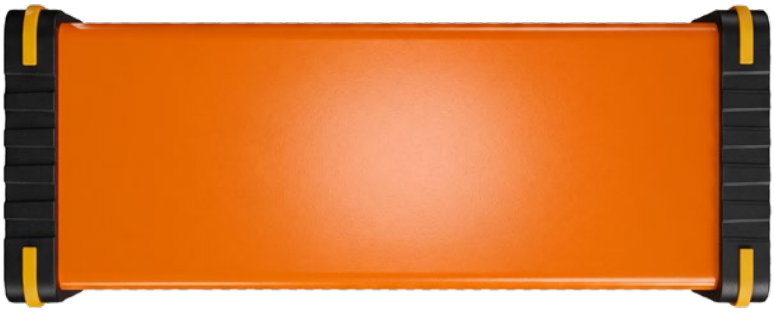
Back View



Power cable
(12-24v or 220v)

Power switch

Side View



Bracket holes

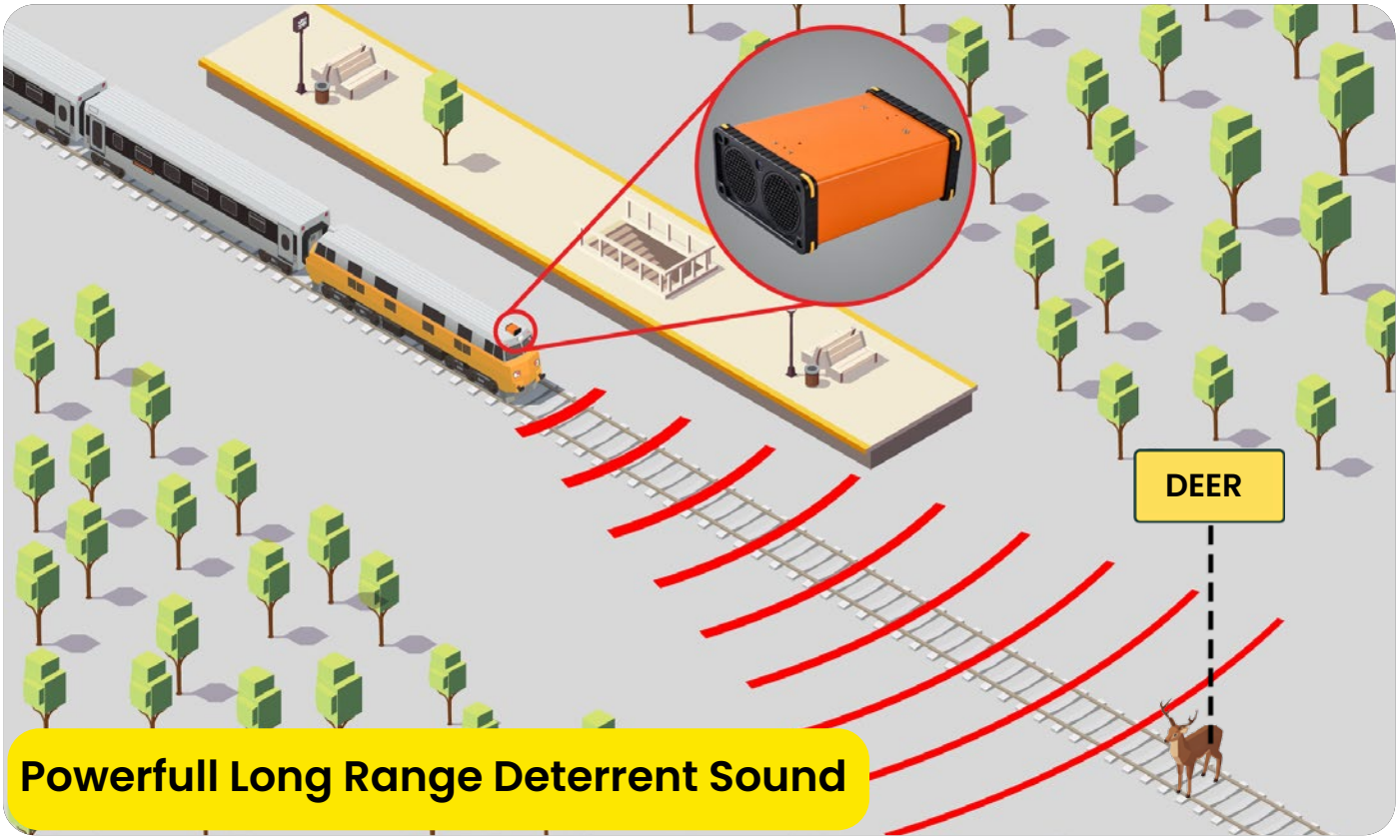


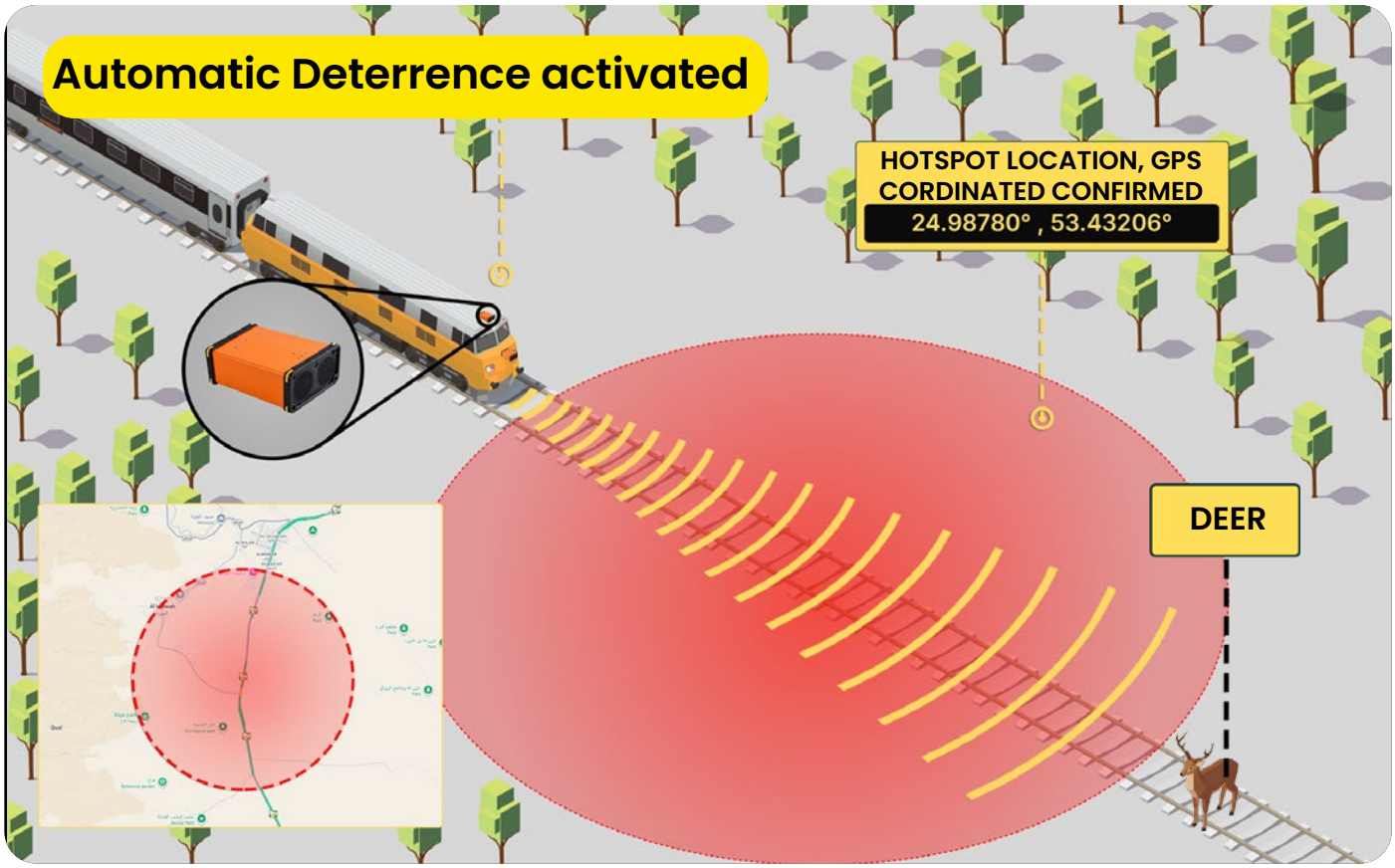
Technical Specifications (TrackSonic)

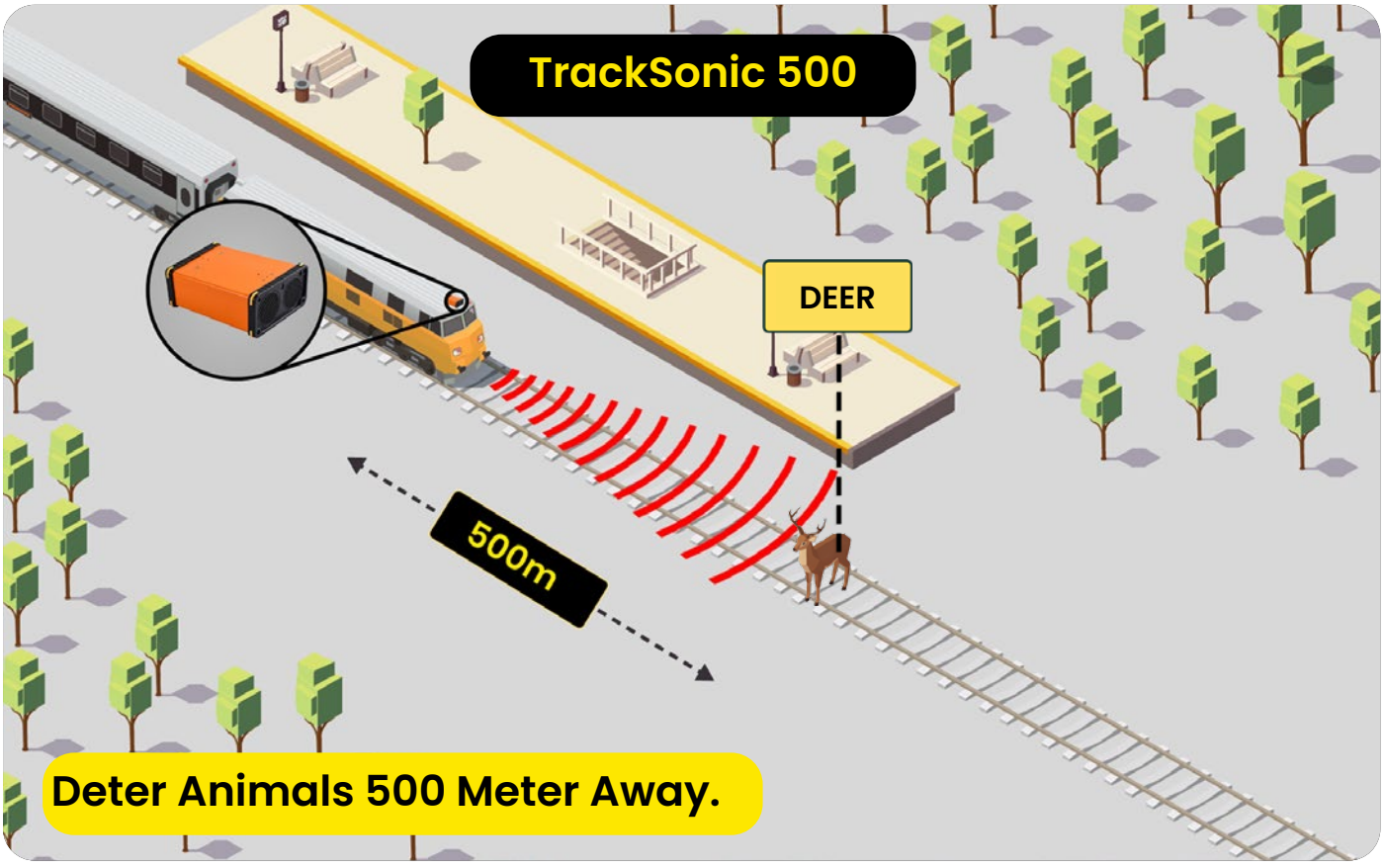
Category	Specification	Detail / Value
System Info	Model	TrackSonic 500/1000/2000
	Camera Range	Long range camera 500m/1000m/2000m
	Material	Aluminum Alloy
Day Camera	Sensor type	1/2" Progressive Scan CMOS
	Pixel	2MP, 4MP
	Frame rate	50/60Hz
	Resolution	1920×1080, 2560×1440
	Focal length	6mm ~ 210mm, 6mm ~ 300mm
	Optical/Digital zoom	35×/16×
	Iris	F1.5 ~ F4.8
	HFOV	61.9° ~ 1.9° (Wide-Tele)
	Viewing Angle	32° ~ 0.45° (Wide-Tele)
	Focus	Auto/Manual/Semi-auto
Long Range Camera	Resolution	640 × 512@17μm
	Spectrum	8 ~ 14μm
	NETD	≤40mK@F1.0,300K
	Focal length	25mm Athermal lens
	FOV	24.6° × 19.8°
	Digital zoom	1×/2×/4×/8×
	Frame rate	25Hz
	Image process	Nonuniformity Correction/Digital Filter Noise Reduction/DDE
General	Network	POE/TCP
	IP Rating	IP55/IP67/IP68
	Sound Pressure Max	146dB

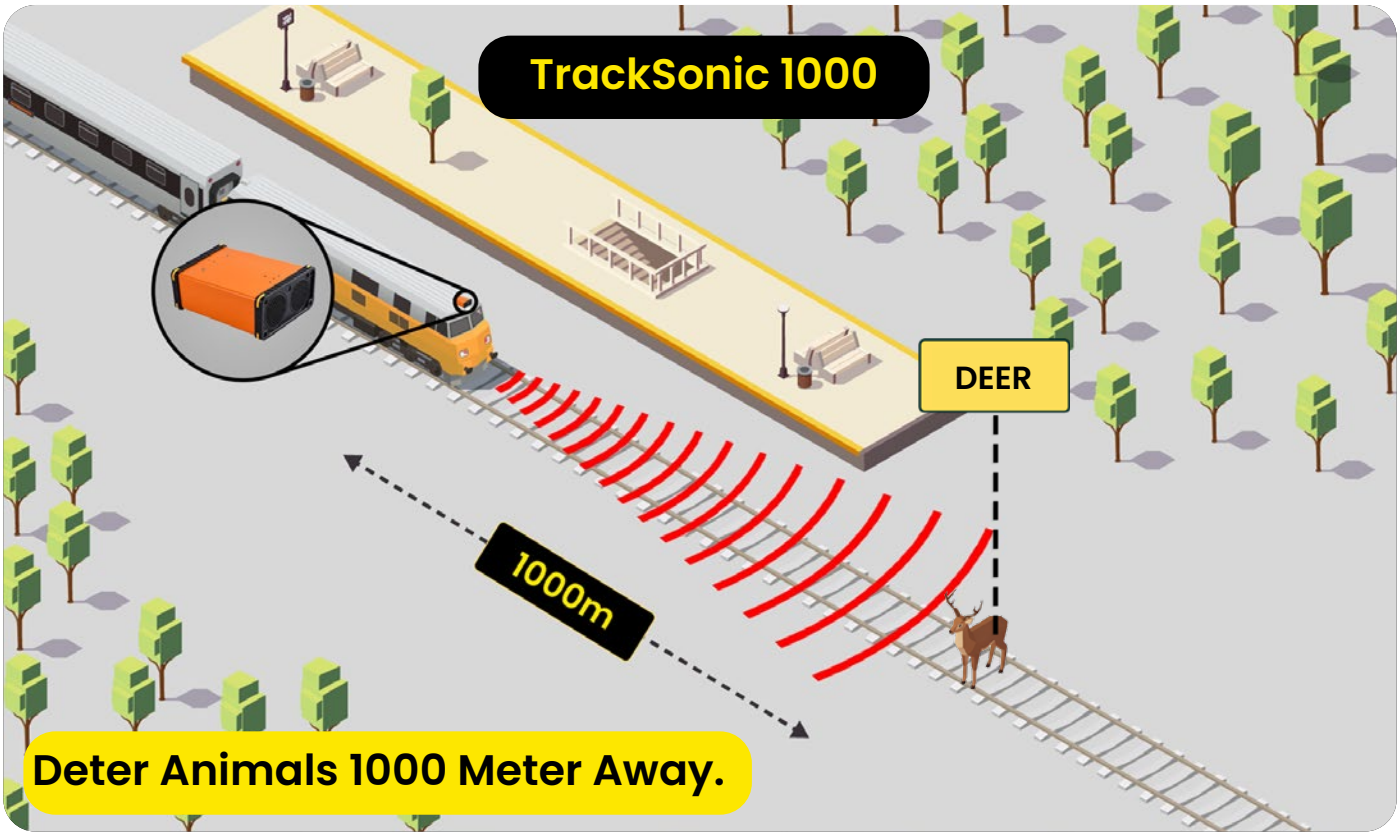
Category	Specification	Detail / Value
General	OSD	Date, time, longitude, latitude, altitude, speed, azimuth and pitch information (displaying and blanking superimposed characters)
	Encode / Compression	H.265/H.264
	Interface protocol	ONVIF/GB28181
	Communication inter-face	1×RS422/1×RJ45
	Power interface	DC24V
	RH	<90%RH
	Anti-salt-fog	PH value 6.5 ~ 7.2, continuous spraying for 48 hours, no surface change
	Operating temperature	-40°C ~ +55°C
	Storage temperature	-55°C ~ +65°C
	Consumption	≤50W Static / ≤200W Peak
	Weight	≤12Kg
	Dimension	Φ 260mm × 400mm

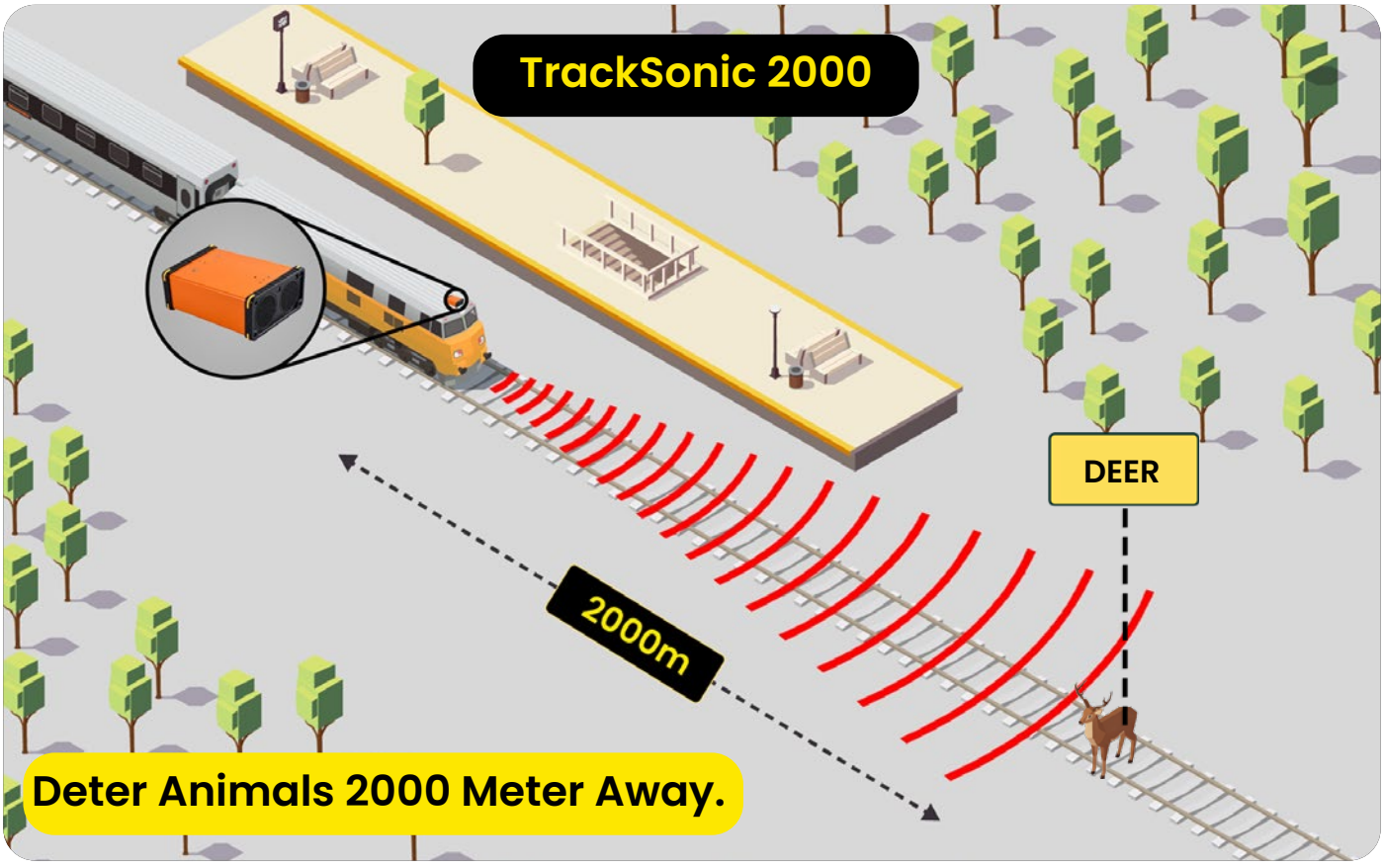
TrackSonic System

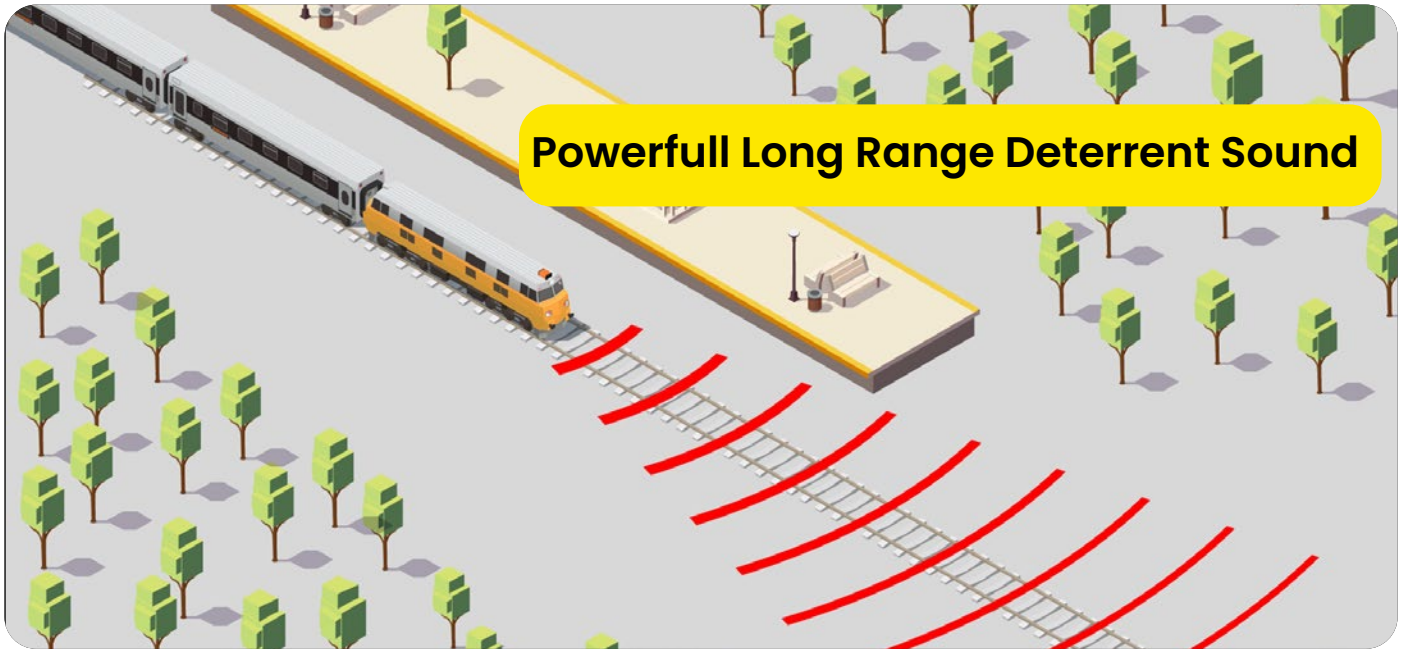



Automatic Deterrence activated
HOTSPOT LOCATION, GPS CORDINATED CONFIRMED
24.98780° , 53.43206°
DEER


TrackSonic 500
DEER
500m
Deter Animals 500 Meter Away.


TrackSonic 1000
DEER
1000m
Deter Animals 1000 Meter Away.

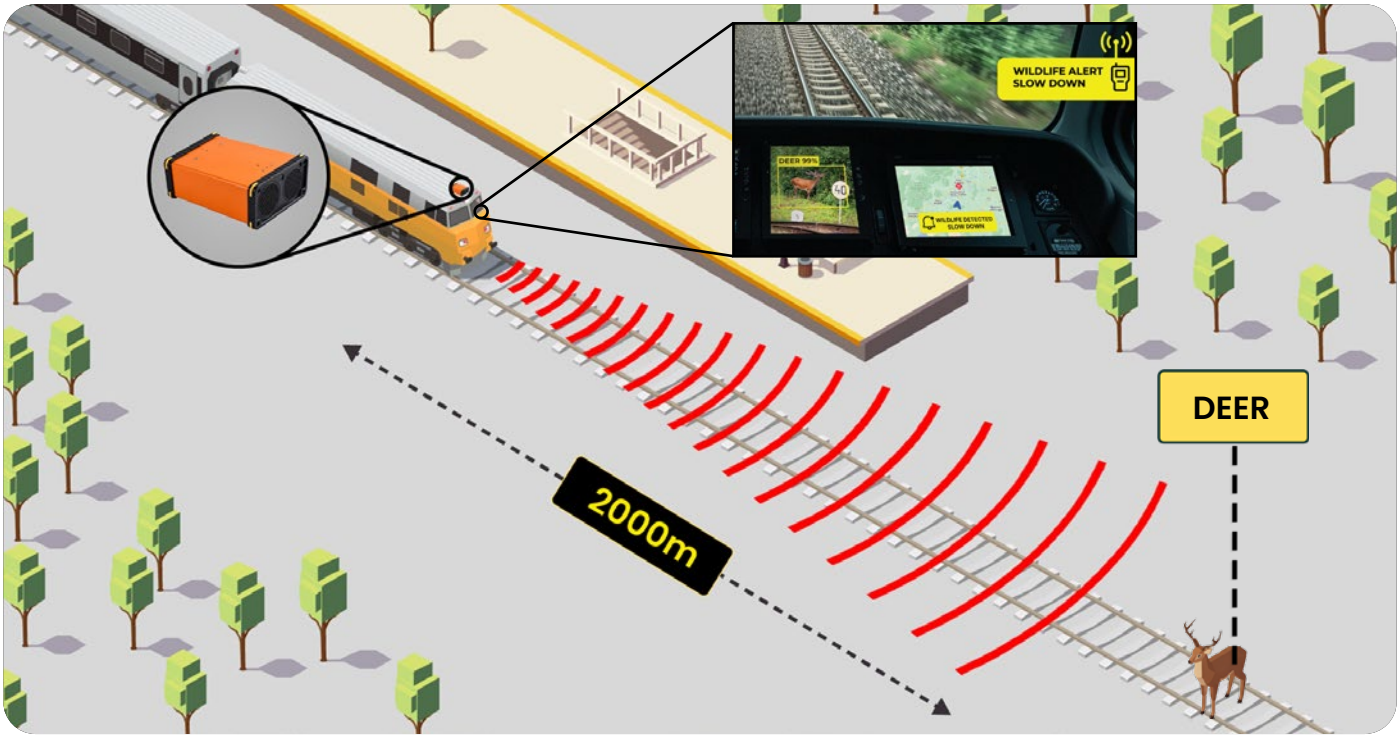

TrackSonic 2000
DEER
2000m
Deter Animals 2000 Meter Away.


Powerfull Long Range Deterrent Sound


Deterrent Sound Audible up to 2km Ahead


Deterrent Sound Audible up to 2km Ahead

Train Driver Warning System



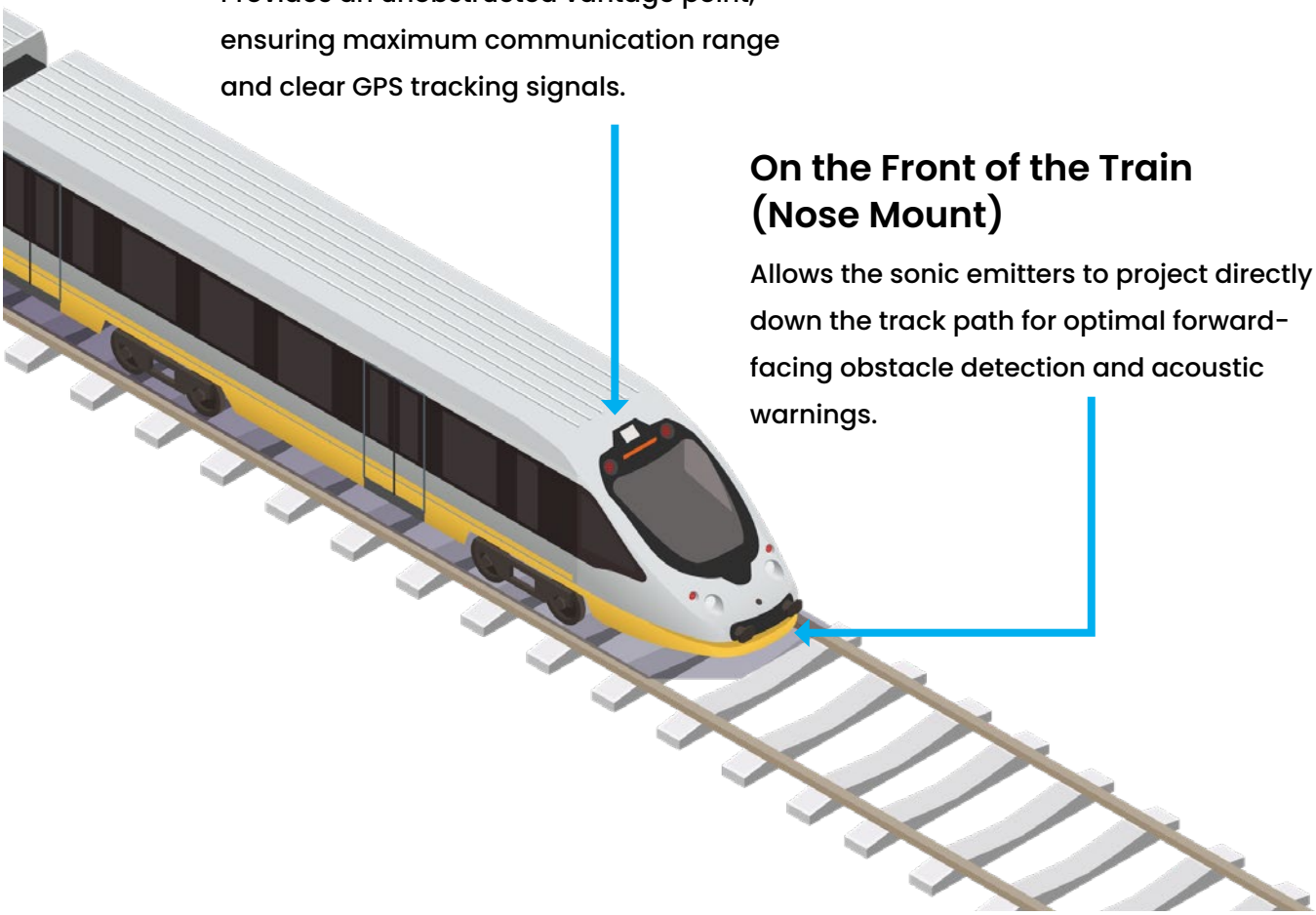
TrackSonic Mounting Options

On Top of the Train (Roof Mount)

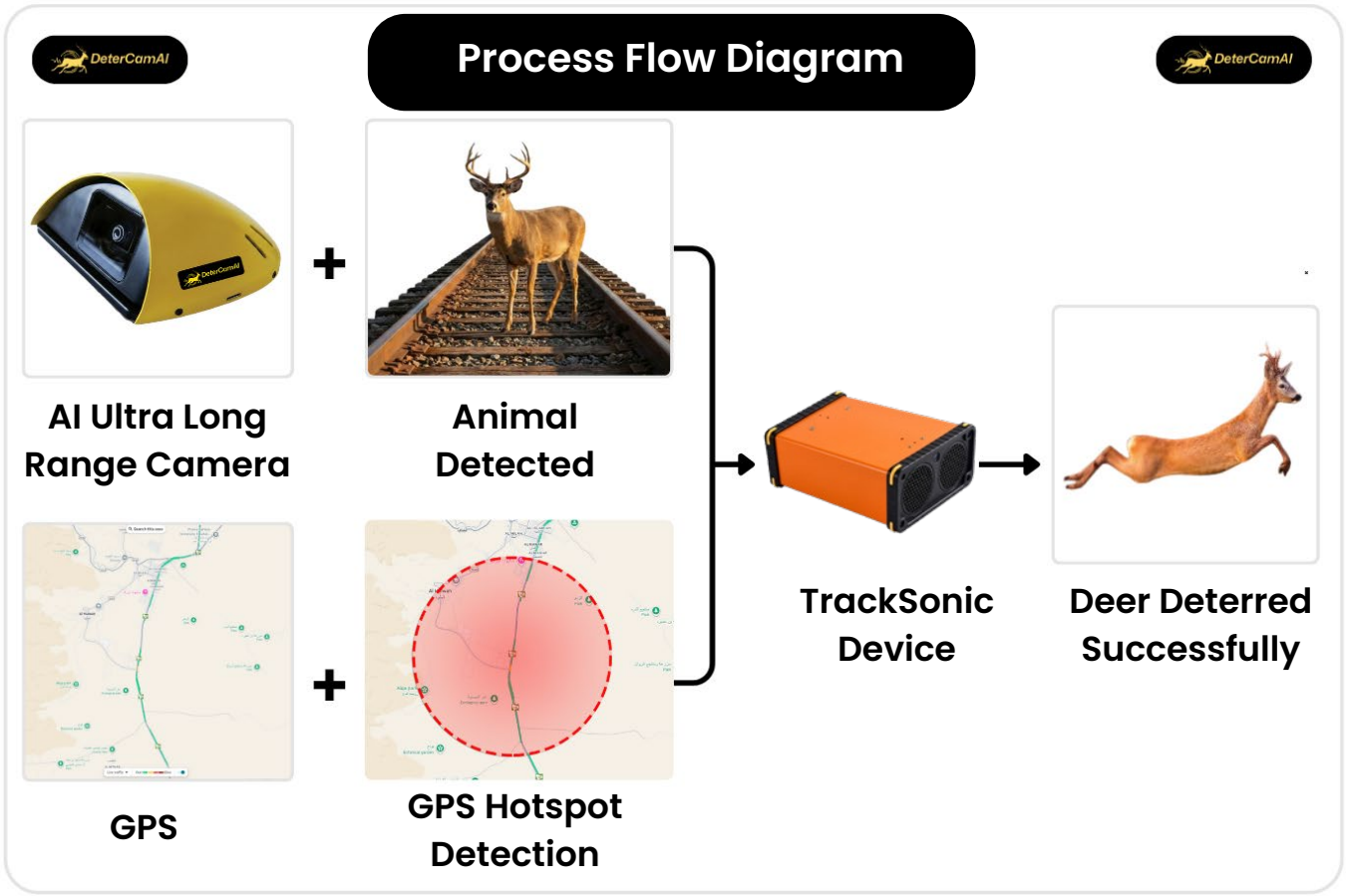
Provides an unobstructed vantage point, ensuring maximum communication range and clear GPS tracking signals.

On the Front of the Train (Nose Mount)

Allows the sonic emitters to project directly down the track path for optimal forward-facing obstacle detection and acoustic warnings.



System Response Overview



Key Advantages of TrackSonic

- Works in real time and in motion with the train
- Reduces animal strikes, train damage, delays, and safety risks
- Adaptive and species-aware deterrence rather than one-size-fits-all noise
- Non-lethal and wildlife-friendly, aligned with environmental and ethical standards
- Complements trackside detection and monitoring systems
- Scalable across passenger, freight, metro, and high-speed rail

Impact

By combining AI detection, acoustic deterrence, and location-based intelligence, TrackSonic transforms wildlife collision prevention from a reactive process into a predictive and proactive safety system, protecting both animals and rail operations.

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Irish Rail


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قطارات الاتحاد
Etihad Rail

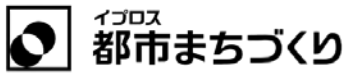

SNCF


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