




## SAFETY ASPECTS & CHALLENGES IN PASSENGER TRANSPORTATION

*Understanding the grim reality of railway trespassing and  
suicide incidents and pursuing effective solutions*

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# UNDERSTANDING THE REALITY

**Rail trespassing and suicide accounts for the largest percentage of rail-related fatalities and severe injuries in many countries**

Results are tragic loss of life ,severe disruptions to rail services, financial burdens, and emotional trauma for families and railway staff.

**Trespassing and suicide presents its own unique risk factors that require distinct solutions in some instances but integrated solutions in others.**

Visible data and reporting in the global north, under reporting and lack of data in the Africa

**Global challenge that requires emerging technologies and innovative solutions to help prevent or mitigate**

Requires targeted infrastructure and technology investment and funding



# OVERVIEW OF RAIL TRESPASSING AND SUICIDE

## Pedestrians crossing



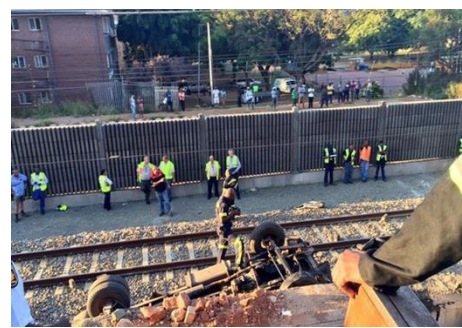
Pedestrians' cross railway tracks outside of designated areas, walk on or near tracks, or enter railway property without permission.

## Criminal activity



Criminals enter rail property with the intention of theft or damage to property e.g., stealing cables, vandalism or placing explosive device on the rail network.

## Vehicle crashes



Vehicles enter railway property without permission, cross railway tracks outside of designated areas, drive on or near tracks or crash into the fence of a rail reserve due to an accident.

## Suicide



A form of trespassing with the intention of the person being struck by a train resulting in severe injuries and often fatality.



# REGIONAL OVERVIEW

- **Europe**
  - Approximately 3,000 suicides occur annually on European railways - Union Agency for Railways (ERA).
  - United Kingdom - over 200 rail-related suicides each year.
- **North America**
  - US reported 1,378 pedestrian rail trespass casualties (fatalities + injuries) in 2023 – Federal Road Administration (FRA)
  - Approximately 246 suicide incidents annually.
- **Asia**
  - Japan reports approximately 300 - 1000 suicide incidents annually
- **Africa**
  - Significant underreporting and data analysis
  - South Africa's Rail Safety Regulator (RSR) reported 124 incidents related to persons struck by trains, however data is not categorised to differentiate between trespassing and suicide
  - Scattered data indicates that rail-related fatalities, including suicides, are a concern in the region, however efforts to collect more statistical data are critical.

# What are the contributing factors

## Accessibility and Security of Railway Line

- **Railway infrastructure challenges**

- Inadequate Fencing and Barriers: Many railway lines lack sufficient fencing or barriers to prevent unauthorised access.
- Poorly Designed Crossings: Unsecured or poorly designed railway crossings can facilitate trespassing and increase the likelihood of accidents.
- Inappropriately located level crossings: Generally slow momentum of railway operator to conduct risk assessments and identify appropriate locations for additional level crossings
- Limited Surveillance: Insufficient monitoring and surveillance of railway tracks make it difficult to deter or promptly respond to trespassing incidents or suicide attempts.
- Lack of collaboration between rail and road authorities during design resulting in vehicle crashes into rail reserve

- **Socio-economic & Psychological factors**

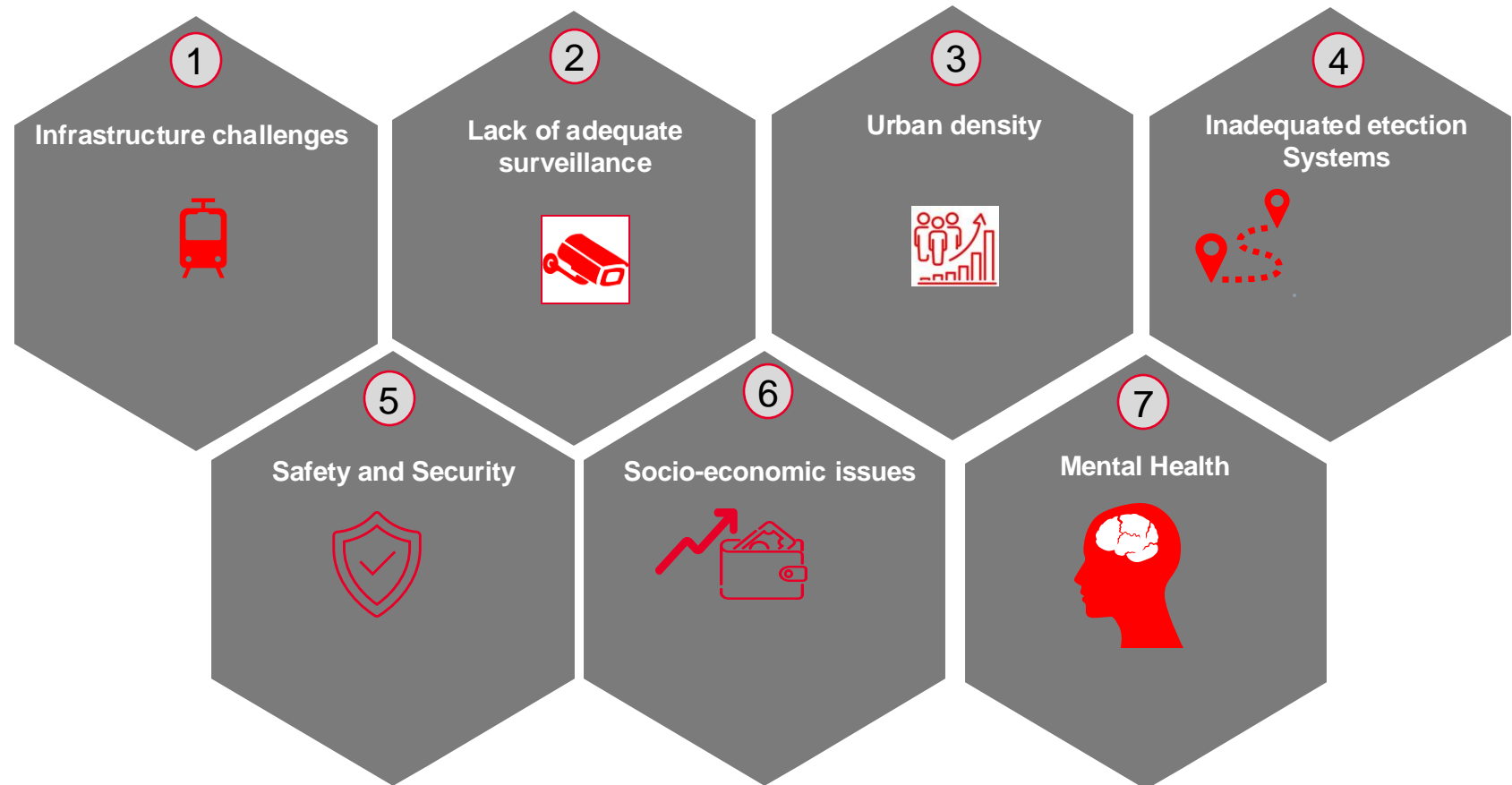
- Increasing urban population results in increased property development near railway lines and increases risk of trespassing.
- People living in poverty are more likely to experience financial and emotional stress, which can lead to mental health challenges and suicidal behavior.
- Homelessness in urban areas, homeless individuals may use railway properties for shelter.

- **Ineffective Enforcement**

- Lack of security enforcement measures such as prosecution of trespassers, fines or legal penalties. When trespassers perceive a low risk of being caught or punished, they are more likely to engage in this behavior.

# CONTRIBUTING FACTORS TO RAIL TRESPASSING AND SUICIDE INCIDENTS

## Accessibility and Security of Railway Line



# IMPACT OF RAIL TRESPASSING & SUICIDE TO OPERATIONS

- **Operational disruptions**

- Train service disruptions leading to delays and cancellations.

- **Economic costs**

- Costs related to loss of productivity, repairs, emergency & medical services, incident investigations.
- Homelessness in urban areas, homeless individuals may use railway properties for shelter.
- Protracted litigations as victims attempt to sue railway operators.
- Increased risk profile which may affect insurance premiums.

- **Emotional and Social Impact**

- Emotional and psychological impact to train drivers and train crew due to crashing into people.
- Community, family impact
- Lack of trust by rail passengers of the operations
- Risk to brand reputation.



# INTEGRATED SOLUTIONS AND INTERVENTIONS

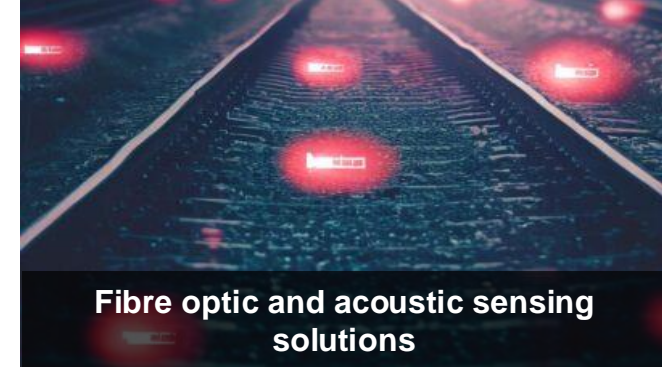
## SECURING THE RAIL RESERVE



## ENHANCED SURVEILLANCE



## DETECTION SYSTEMS



## STATION PLATFORM SOLUTIONS



## REPORTING & DATA ANALYSIS



## PUBLIC AWARENESS PROGRAMMES





**Thank you for  
your attention!**

