“Emerging Technologies and Innovation”
in
Crash Investigations

By

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JPRI Expertise

- Crash investigation and in-depth accident data collection
- Crash reconstruction and testing services
- Road Safety Audits
- Data analysis and reporting
- Road Safety Awareness Programs
An in-depth crash database containing detailed crash data collected through on-site crash investigations with the cooperation of the police. The crash data, including reconstruction and injury information, is shared by a consortium of OEMs for scientific crash analysis.

**Sampling Locations**
- Coimbatore, Tamil Nadu
- Pune, Maharashtra
- Ahmedabad, Gujarat
- Kolkata, West Bengal
- Jaipur, Rajasthan

**RASSI Consortium Members**

**Website:** www.rassi.org.in  
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Data Levels in RASSI Database

**Accident Level:**
Accident Summary, Pre-crash event, Crash configuration, Road Structure, GPS Log, Scene Diagram and Pictures

**Vehicle Level:**
Specifications, Pictures, Deformations, Intrusions, Contacts, Compliance, Reconstruction

**Person Level:**
Age, Height, Weight, Alcohol use, Seating position, Ejection/Entrapment, Treatment on-scene, Discharge status

**Injury level:**
Injury description, Abbreviated Injury Scale, Injury Sources
Promoting data-driven policy making

Need for in-depth scientific data to make better decisions!

Data-driven road safety strategies have proven to be highly effective in mitigating fatalities and injuries around the world.
Mumbai – Pune Expressway

• Zero Fatality Corridor Project: A data-driven approach.

• MoU between SaveLIFE Foundation, MSRDC and Mahindra.
  • JPRI is the technical partner of SaveLIFE Foundation.

• Road engineering changes in 2016 based on crash data.
  • Mumbai – Pune Expressway Road Safety Survey Report.

• Reduction in fatalities by 58%.
  • Comparing fatal crashes investigated by JPRI in 2016 and 2017 in the period between January to June.
Opportunities for saving lives in Kolkata City

Pedestrians constitute nearly 60% of fatalities.

• Pedestrian crossing infrastructure improvements.
  • Intersection alignment.
  • Refuge islands.
  • Crossings.
  • Pedestrian signals.

• Provision of footpaths.

Source: www.itdp.org
Opportunities for saving lives in Kolkata City

**Bus modifications:**

- Additional mirror for drivers to check for pedestrians in front of the bus, when starting off.
- Tyre run-over prevention device.
Crash Scene Examination

- Working at a crash scene is hazardous and time consuming.
Crash Scene Examination

Emerging Technologies: 3D Scene Data Recording

• 3D Laser Scanners - FARO

• Photogrammetry – AGISOFT Photoscan
Saving lives through accident research!

FARO 3D Laser Scanners
AGISOFT Photoscan

- Performs photogrammetric processing of digital images and generates 3D spatial data.
Pictures of the Scene using a drone
Creation of 3D Scene in AGISOFT Photoscan
Reconstruction on 3D Scene
Summary

• RASSI: An innovative approach for promoting data-driven road safety.
  • Fatalities reduced by 58% in Mumbai-Pune Expressway.
  • Opportunities for saving lives in Kolkata City.
    • Pedestrian crossing infrastructure.
    • Bus design.

• Crash Scene Examination Technologies
  • 3D Laser Scanning – FARO
  • Photogrammetry – AGISOFT Photoscan
Saving lives through accident research!

Thank you!

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