"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

RASSI

FUELLED BY SCIENCE.DRIVEN BY DATA.

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.

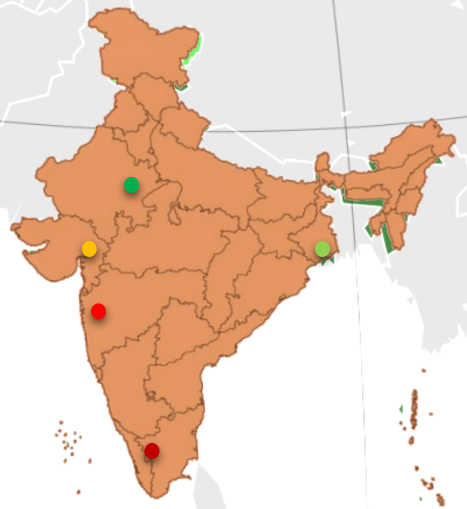
Crash Investigation → Crash Reconstruction → Victim Interviews → Injury Data Collection

Founder & Coordinator

JP RESEARCH INDIA PVT LTD

Sampling Locations

Coimbatore, Tamil Nadu
Pune, Maharashtra
Ahmedabad, Gujarat
Kolkata, West Bengal
Jaipur, Rajasthan



RASSI Consortium Members

JP RESEARCH, INC. · BOSCH · DAIMLER · NISSAN · RENAULT · HYUNDAI · HONDA · Autoliv

MARUTI SUZUKI Way of Life! · TOYOTA · TATA MOTORS

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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:

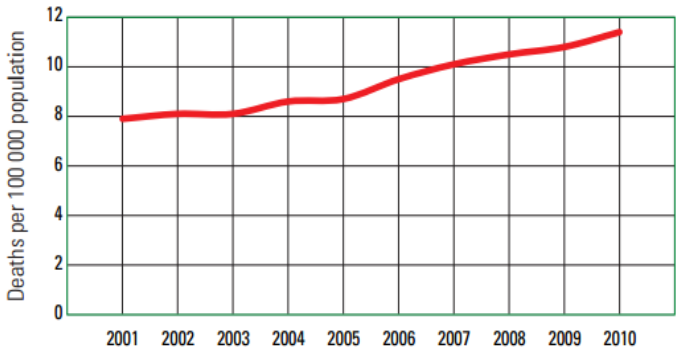
Age, Height, Weight, Alcohol use, Seating position, Ejection/Entrapment, Treatment on-scene, Discharge status

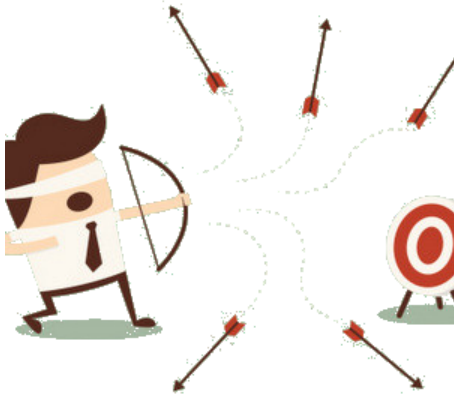
Injury level:

Injury description, Abbreviated Injury Scale, Injury Sources

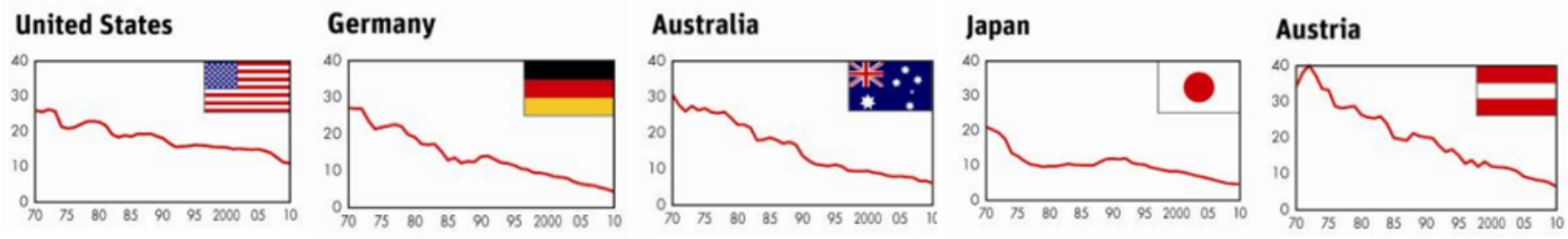
Promoting data-driven policy making

INDIA





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.

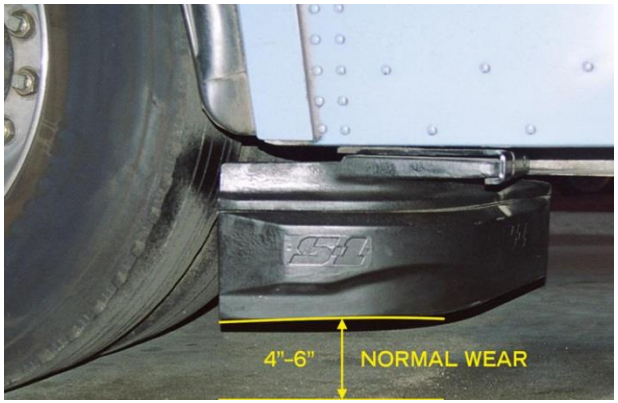
Source: www.itdp.org

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

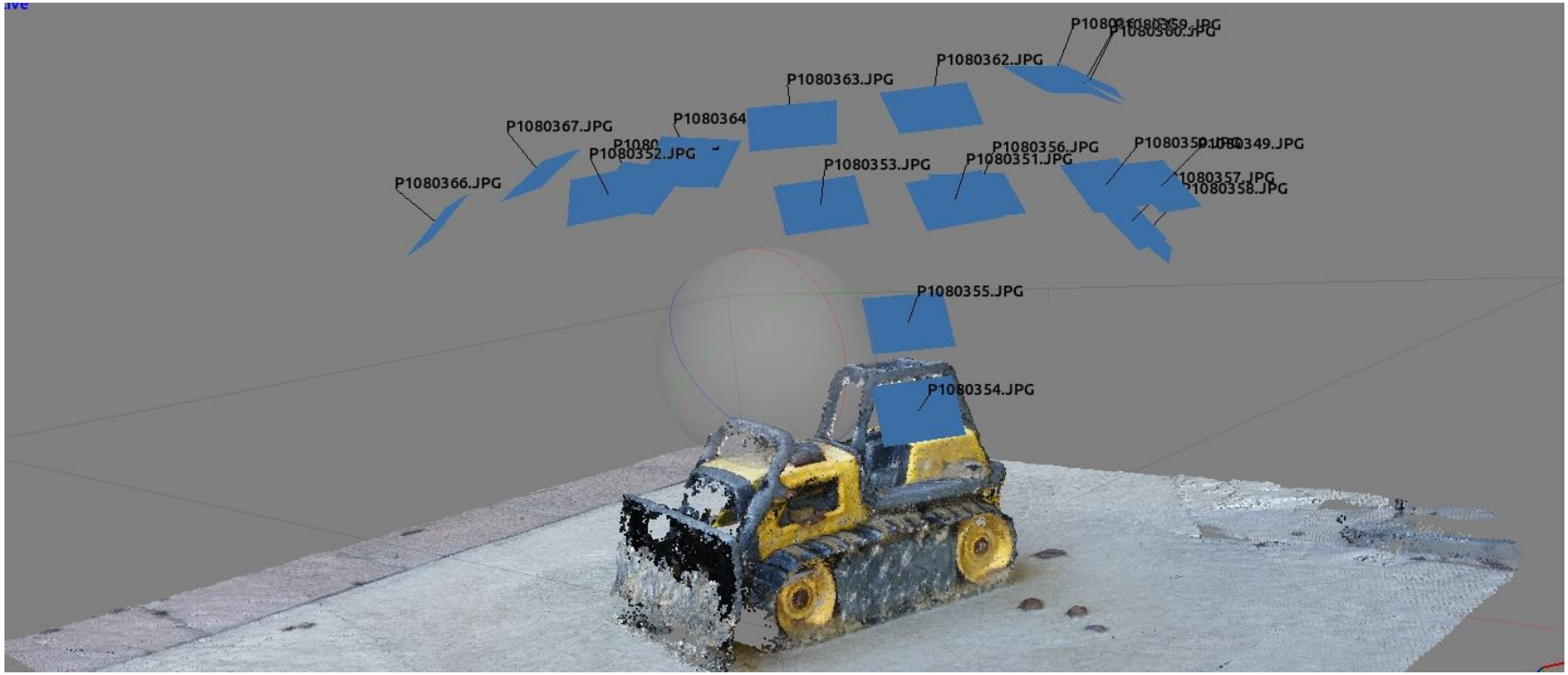
Emerging Technologies: 3D Scene Data Recording

- 3D Laser Scanners - FARO
- Photogrammetry – AGISOFT Photoscan

FARO 3D Laser Scanners

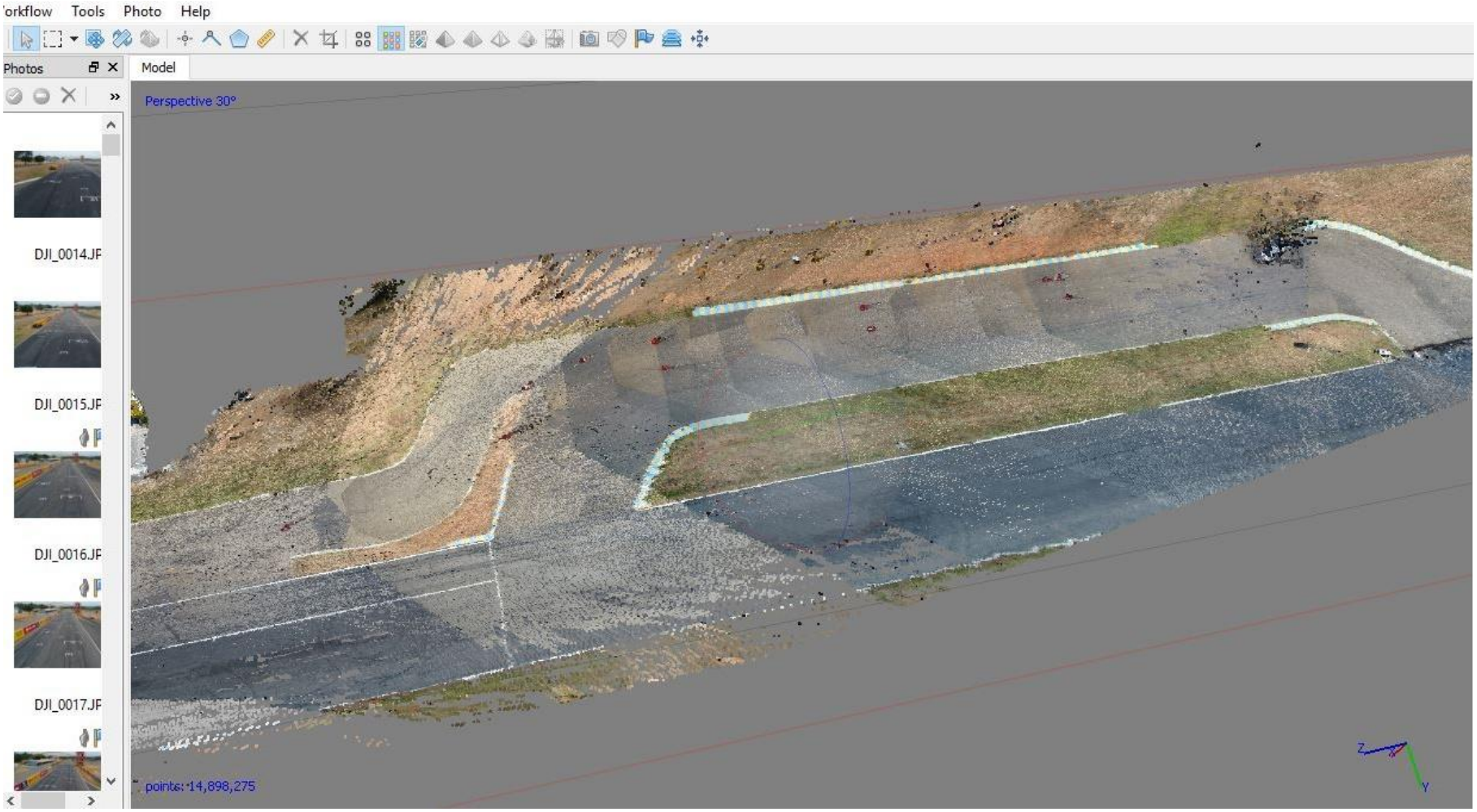
AGISOFT Photoscan

- 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

Thank you!

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