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Motor Fraudulent Claims

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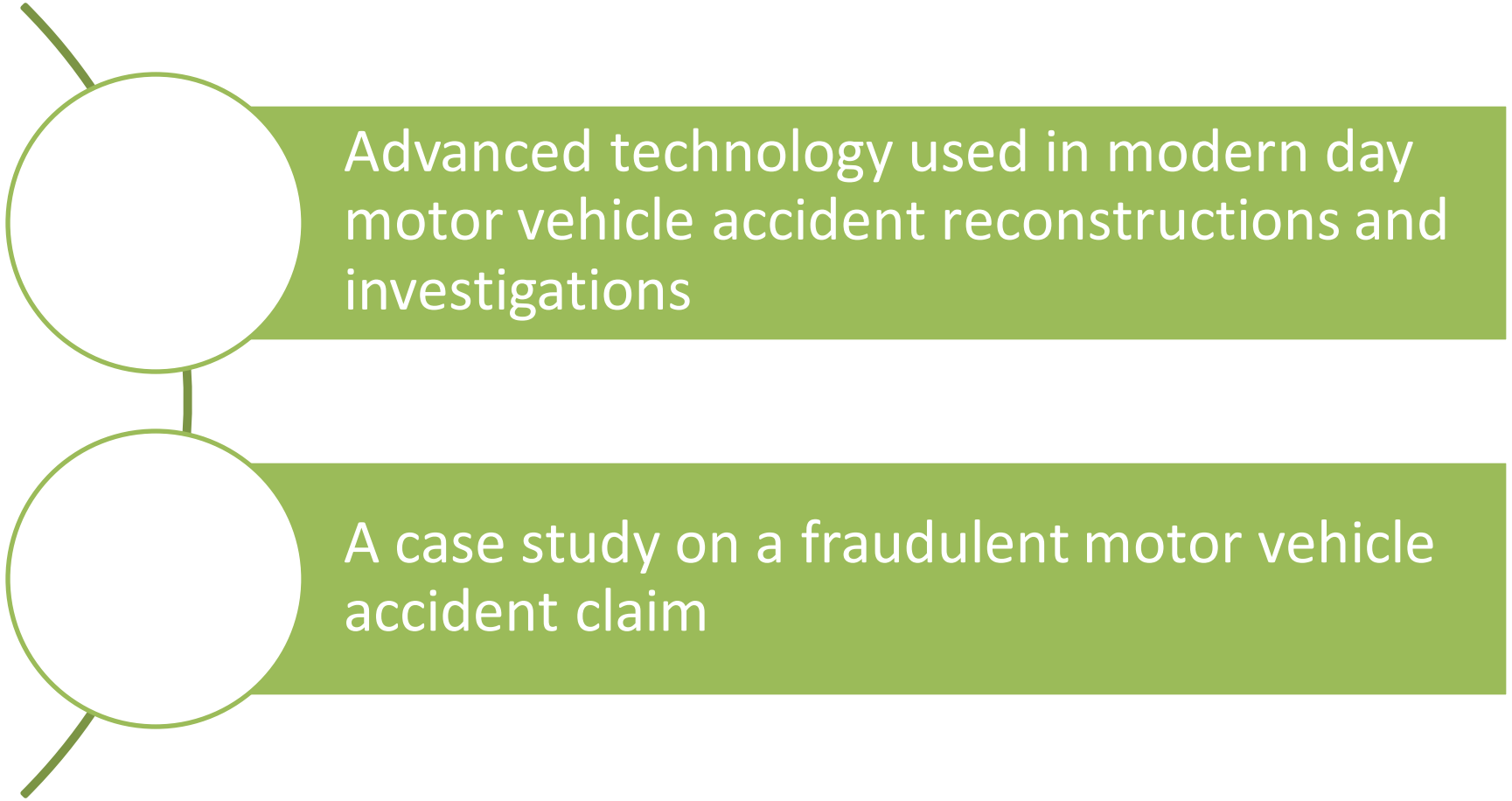
Speaker's Background

- Bachelor's Degree in Mechanical Engineering, Universiti Teknologi Petronas
- Registered Graduate Engineer with Board of Engineers Malaysia
- Attachment with Schlumberger & Proton as trainee, Project Engineer and Production Engineer
- Forensic Engineer and Accident Reconstructionist in AGI

Outline


Advanced technology used in modern day motor vehicle accident reconstructions and investigations
A case study on a fraudulent motor vehicle accident claim

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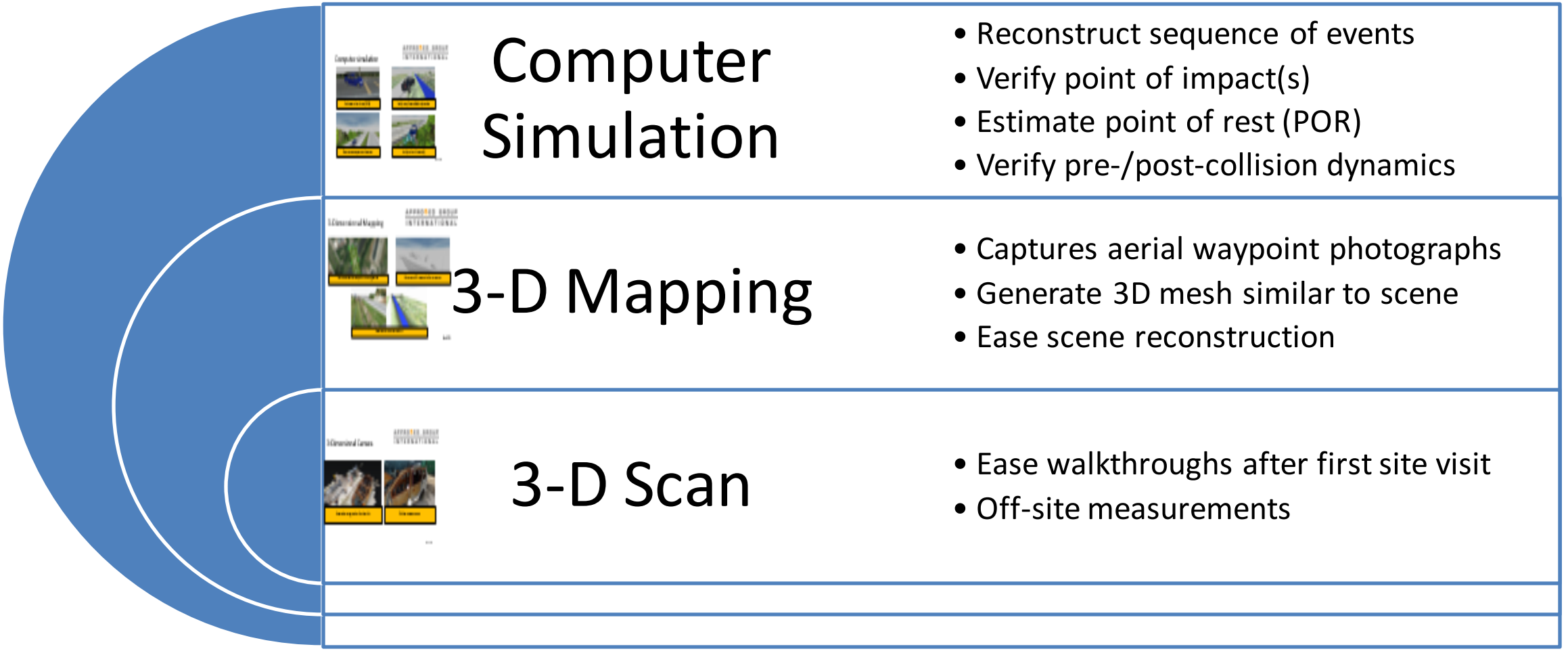
Enhancement of investigations through

ADVANCED TECHNOLOGY

Examples

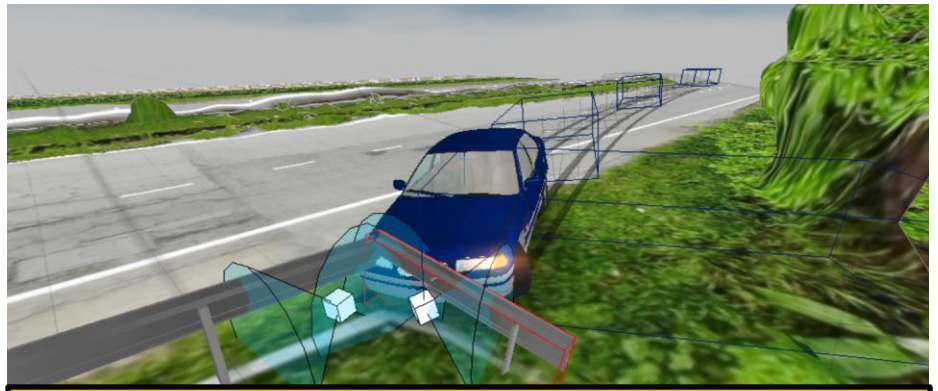

Computer Simulation
• Reconstruct sequence of events
• Verify point of impact(s)
• Estimate point of rest (POR)
• Verify pre-/post-collision dynamics
3-D Mapping
• Captures aerial waypoint photographs
• Generate 3D mesh similar to scene
• Ease scene reconstruction
3-D Scan
• Ease walkthroughs after first site visit
• Off-site measurements

Computer simulation

Estimate point of rest (POR)

Verify pre-/post-collision dynamics

Reconstruct sequence of events



Verify point of impact(s)

Example of Computer simulation

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3-Dimensional Mapping

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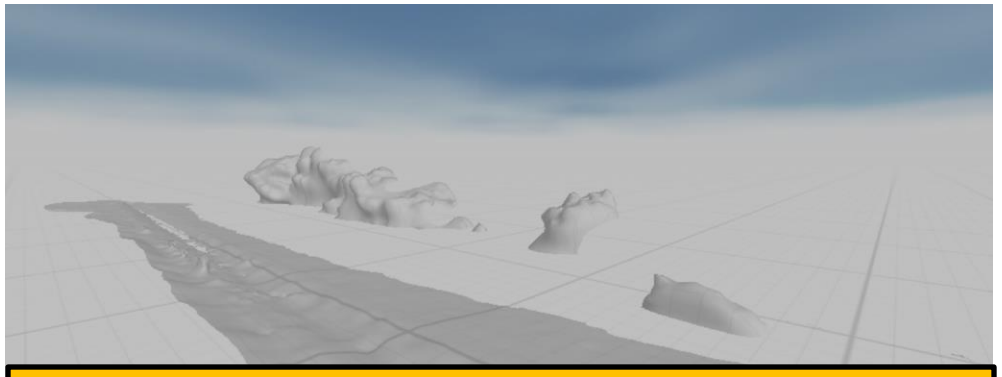
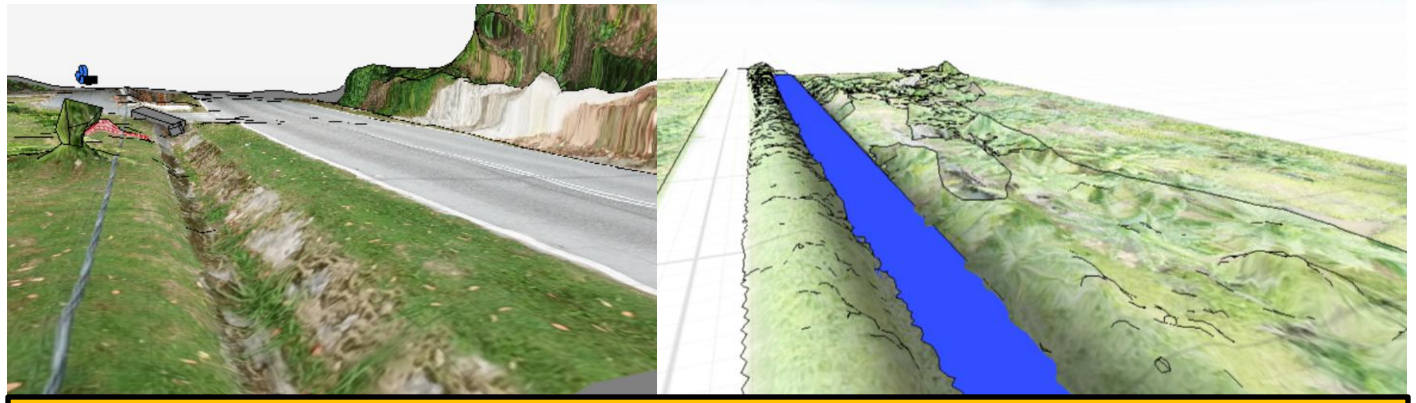
Captures aerial waypoint photographs



Generate 3D mesh similar to scene



Ease scene reconstruction

3-Dimensional Camera

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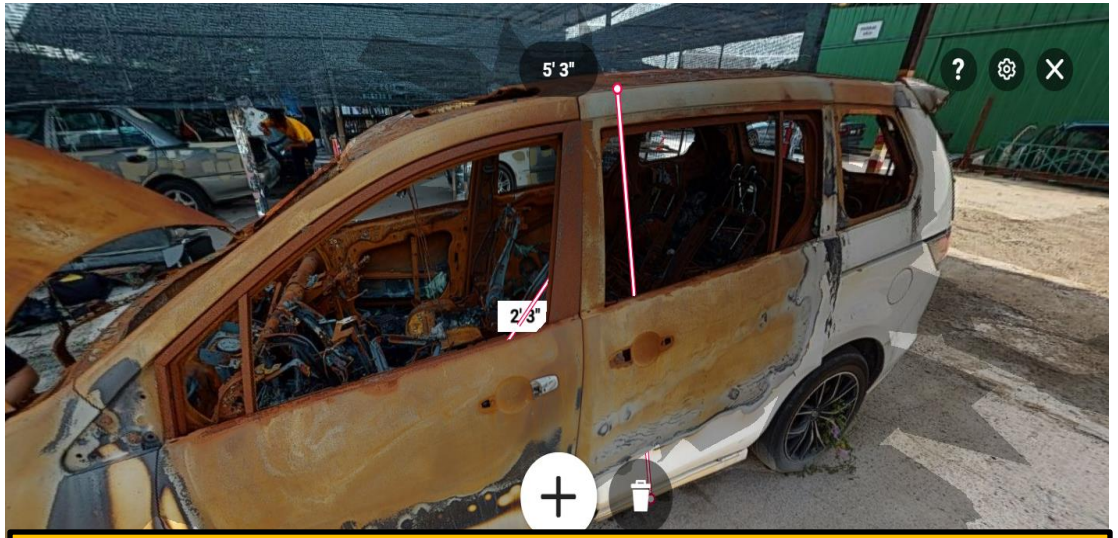
Ease walkthroughs after first site visit



Off-site measurements

Example of 3-Dimensional Scan

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An incident involving a BMW

CASE STUDY

Circumstances

Scene Photograph

Scene Photograph provided by insurer

Damage Analysis

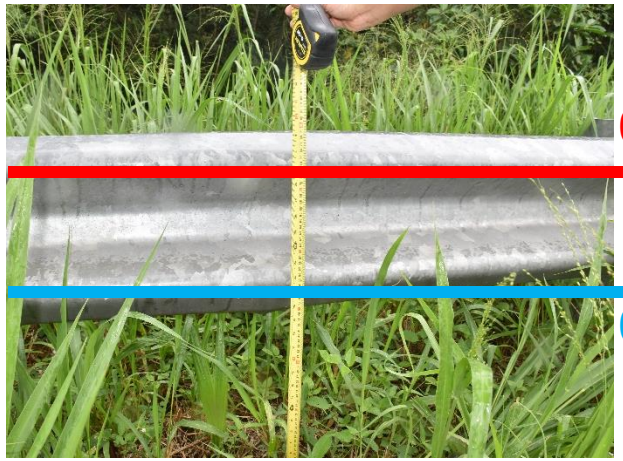
Indentation on bonnet, bonnet deformed backwards

Damage Analysis of the vehicle

Damage Analysis

Damage Analysis of the vehicle

Damage Interpretation



0.75 m from ground

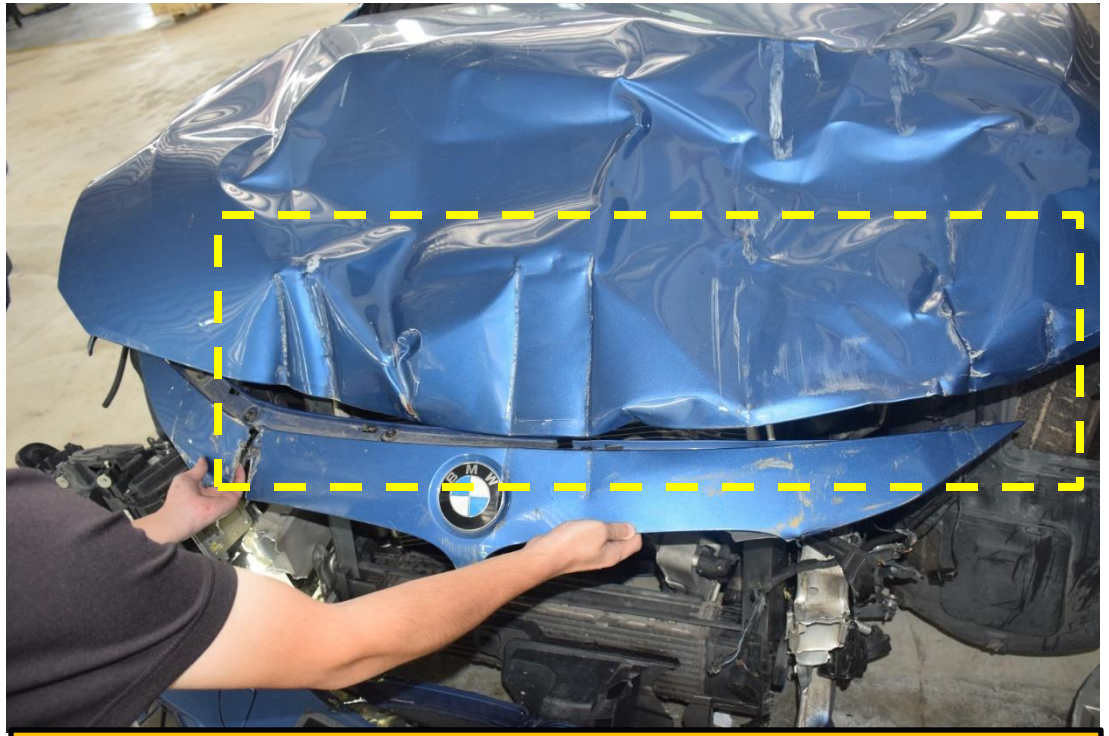
0.54 m from ground

0.73 m from ground

0.53 m from ground

Height comparison of road object vs damage

Damage Interpretation

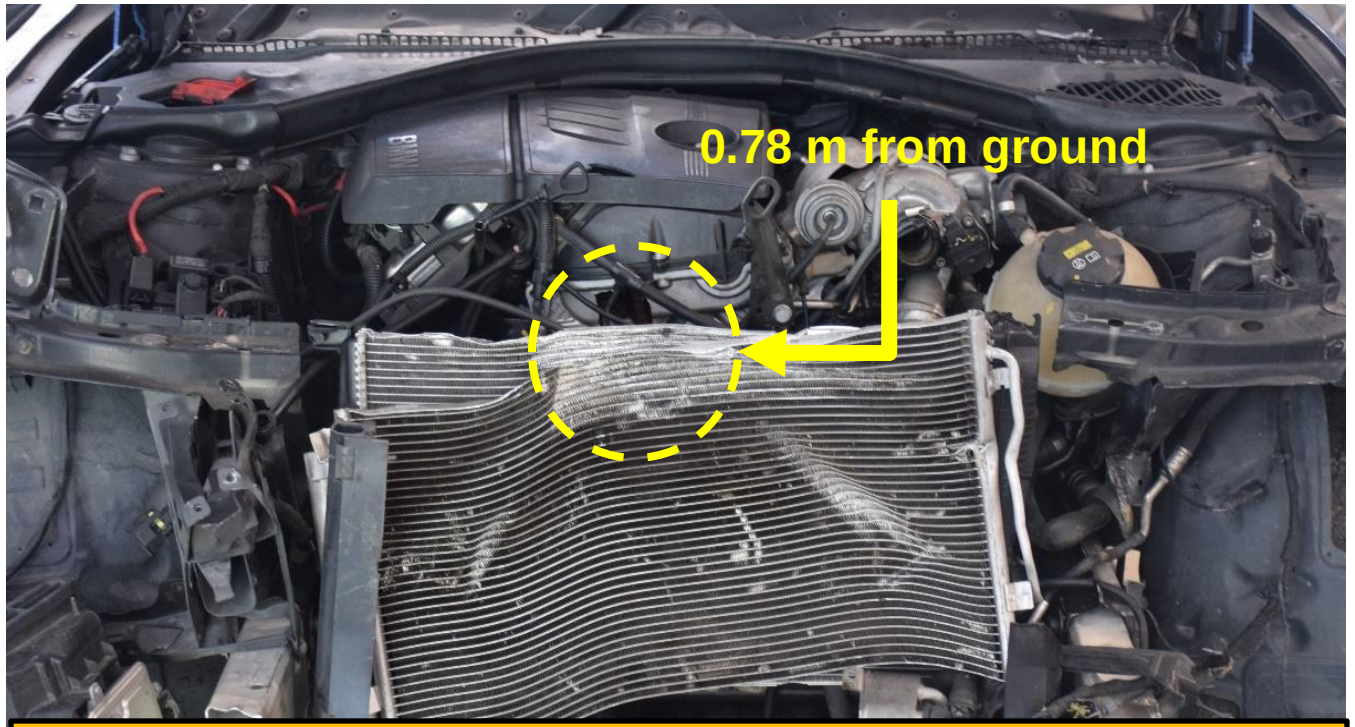


Vertical indentation on bonnet

Horizontal protruding section

Comparison of road object characteristics with damage pattern

Damage Interpretation



Narrow damage on the radiator, condenser and cylinder head

Surface of sigma post was significantly flat

Comparison of road object characteristics with damage pattern

Computer Simulation

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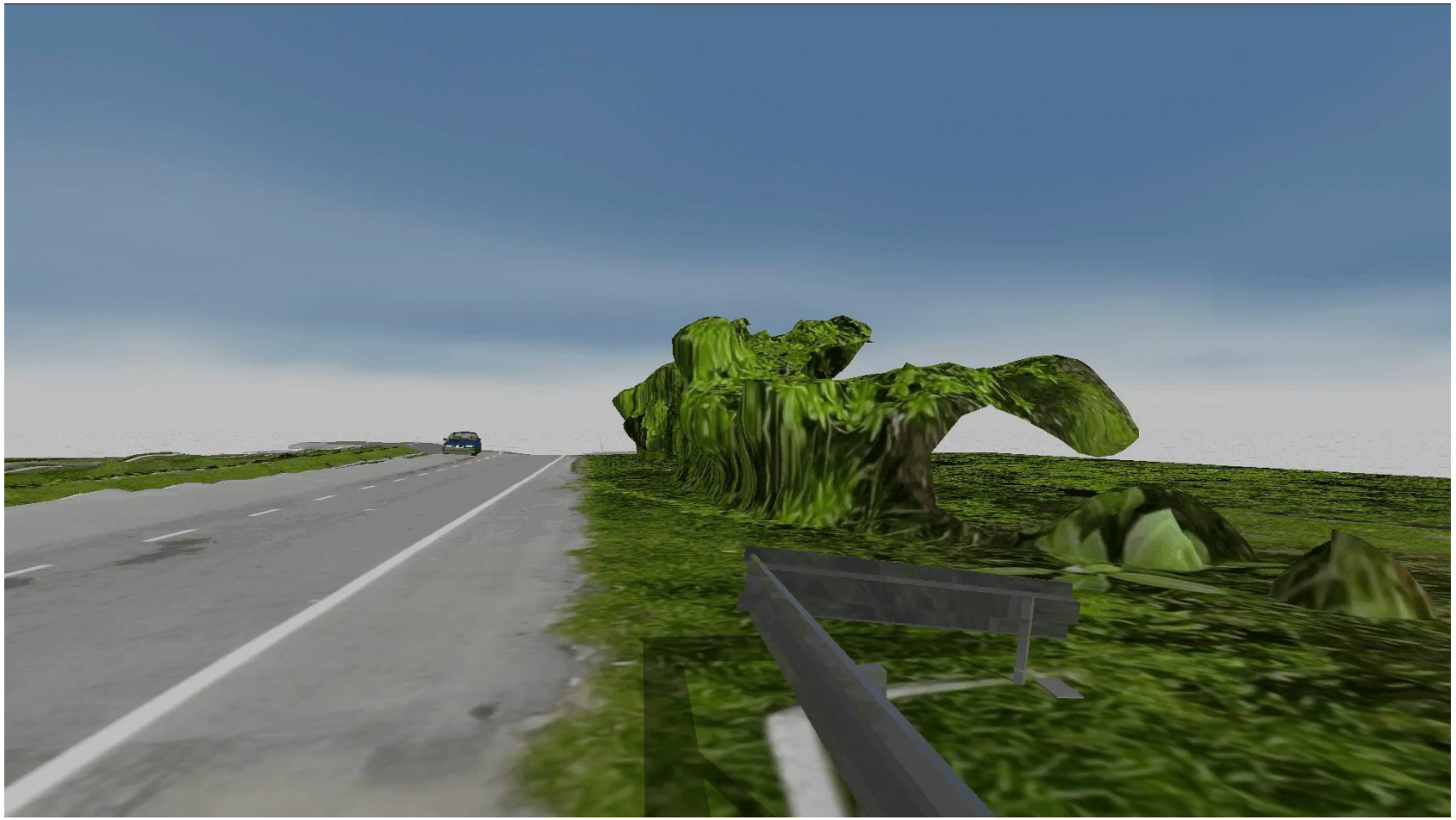

Computer Simulation

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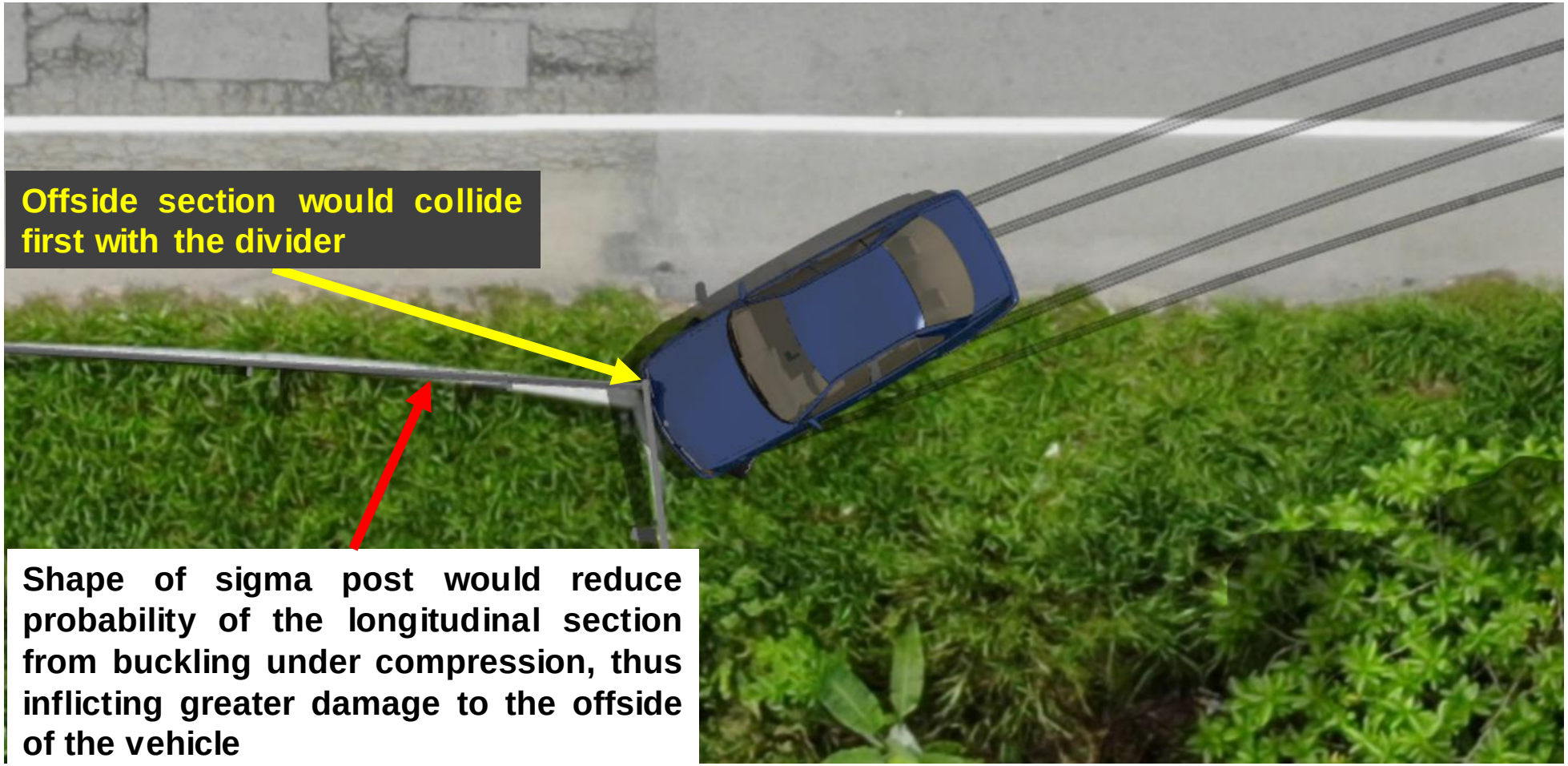
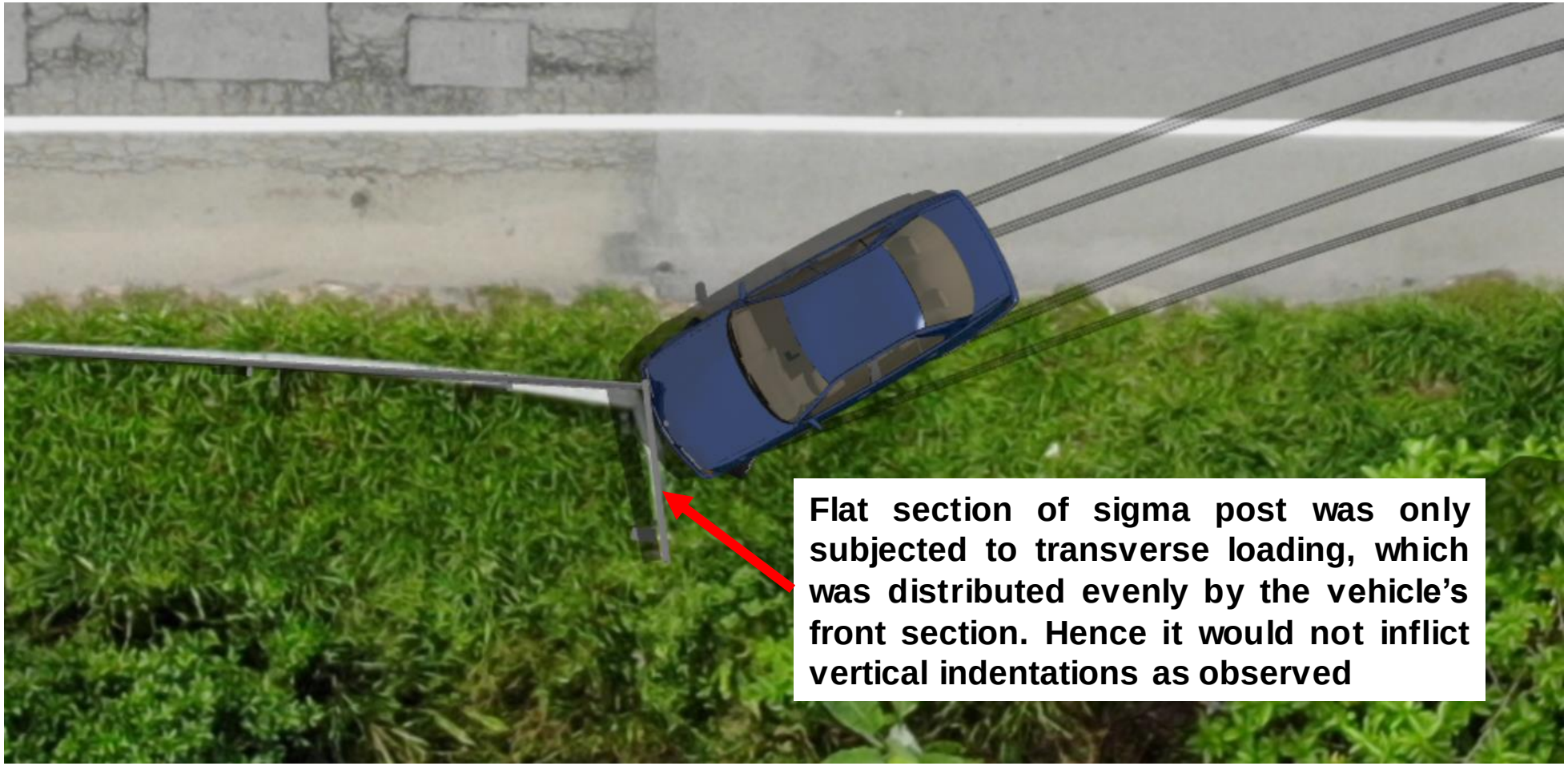
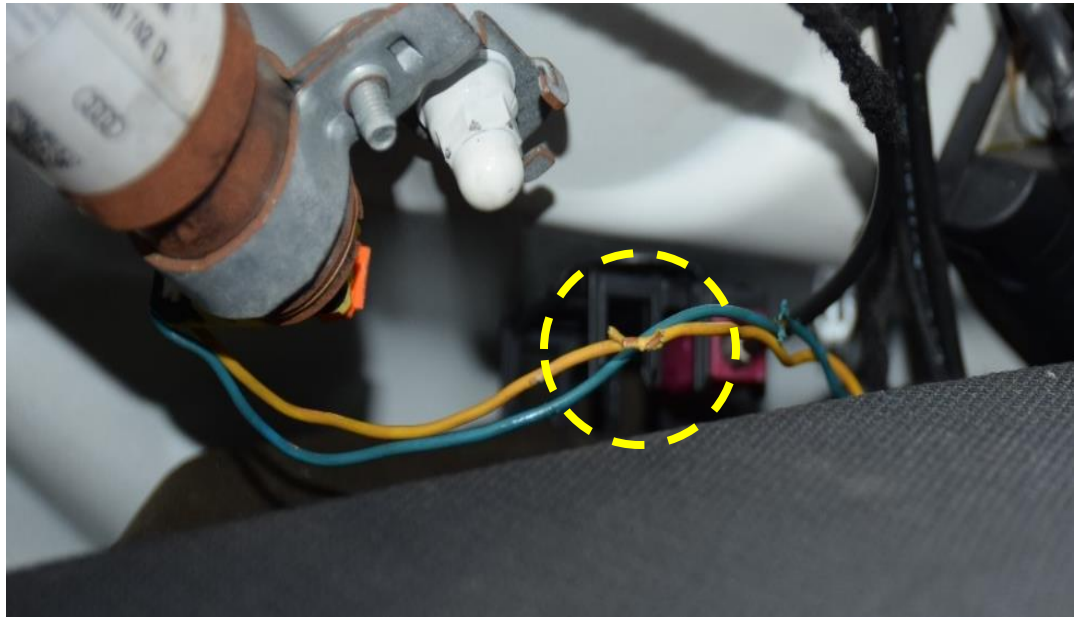
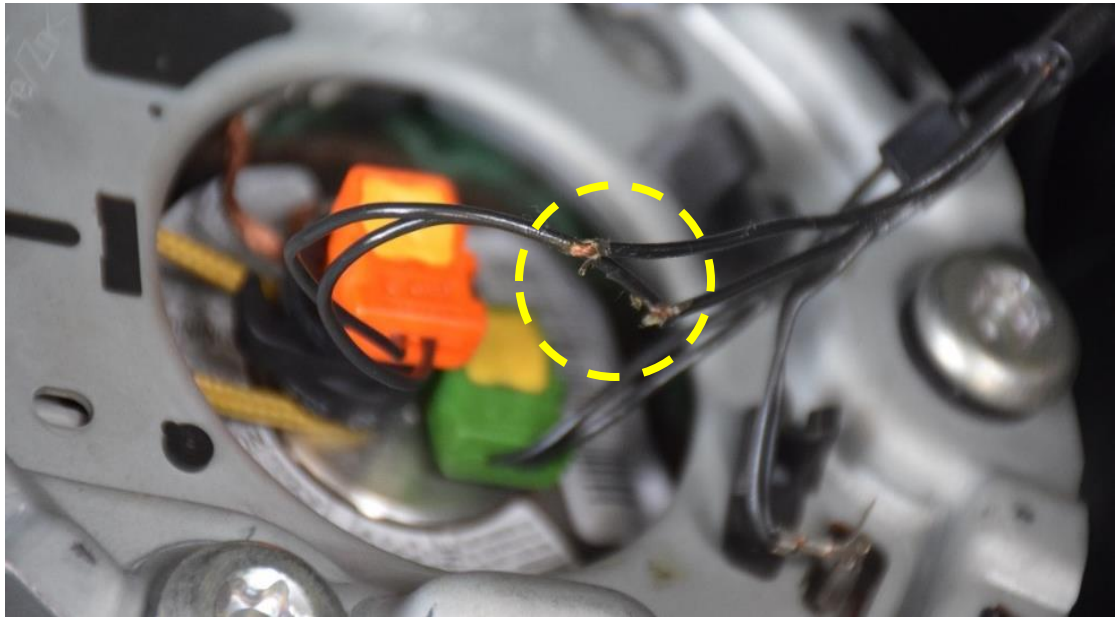


Computer Simulation



Airbag System





Signs of tampering on airbag inflator wires

Airbag System

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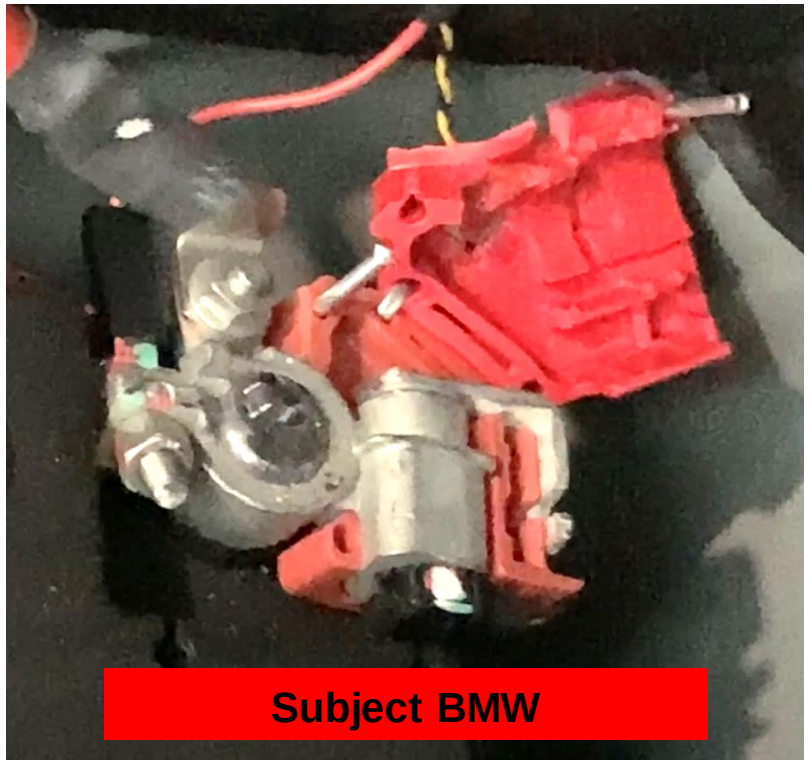
Safety terminal should be blown off in case of airbag deployment in the BMW



Conclusion

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Damage interpretation	Indentation on bonnet was vertical, no vertical structure on sigma post	Inconsistent
	No narrow object that could have caused the deformation on radiator and condenser as well as breakage of cylinder head	Inconsistent
Computer simulation	Offside would be expected to be more severely damaged	Inconsistent
Airbag system analysis	Battery safety terminal did not blow off	Inconsistent

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Global Solution to:

Fire, Explosion & Implosion Investigation
Vehicle Accident Reconstruction
Mechanical, Electrical and Electronic Failures Investigation
Complex Engineering Loss Investigation
Metallurgical Analysis
Questioned Documents & Handwriting Examination
Damage Assessment & Disaster Restoration
Infrared Thermography
Covid-19 Sterilization
3D Imaging

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