

# **SNS COLLEGE OF TECHNOLOGY**

**Coimbatore-35 An Autonomous Institution** 

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

## **DEPARTMENT OF AUTOMOBILE ENGINEERING**

## **19AUE302 – AUTOMOTIVE SAFETY & INFOTRONICS**

### III- YEAR V- SEM

## **UNIT II – SAFETY CONCEPTS**

TOPIC 1.A- ACTIVE SAFETY – DRIVING SAFETY





## **PRESENTATION OUTLINE**

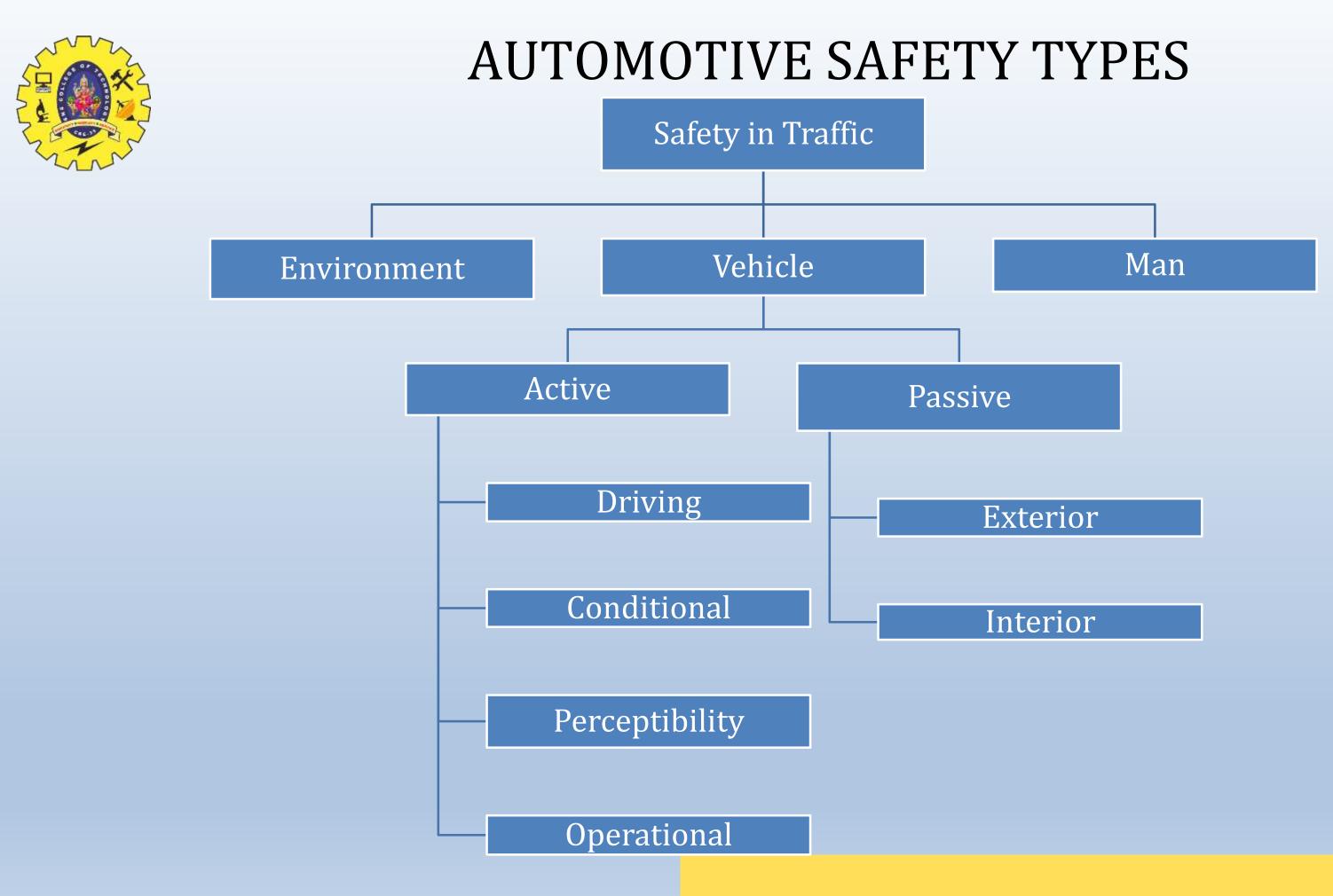
- Automobile Safety Types ullet
- Driving Safety ullet
- **Conditional Safety** ullet
- Perceptibility Safety ullet
- **Operational Safety**





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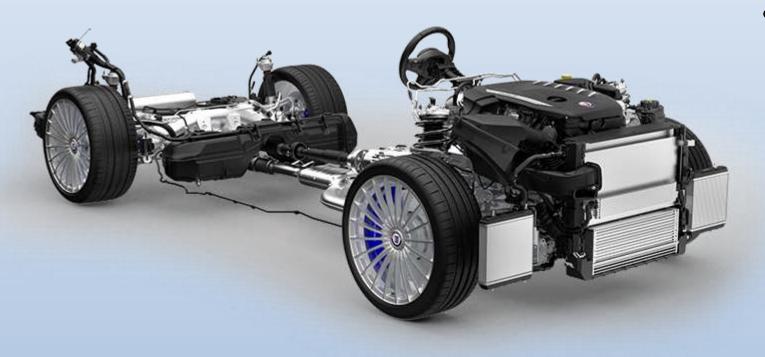


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## **DRIVING SAFETY**



• dynamic vehicle behavior

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## It is the result of a harmonious chassis and suspension design with regard to wheel suspension, springing, steering and braking, and is reflected in optimum

# **DRIVING SAFETY**



#### **Examples of active safety**

Good visibility from driver's seat,

Low noise level in interior,

Legibility of instrumentation and warning symbols,

Early warning of severe braking ahead,

Head up displays,

Good chassis balance and handling,

Good grip,

Anti-lock braking system,

**Electronic Stability Control**,

Chassis assist,

Intelligent speed adaptation,

Brake assist,

Traction control,

Collision warning/avoidance,

Adaptive or autonomous cruise control system.

**Electronic brakeforce distribution** 

front & rear wiper





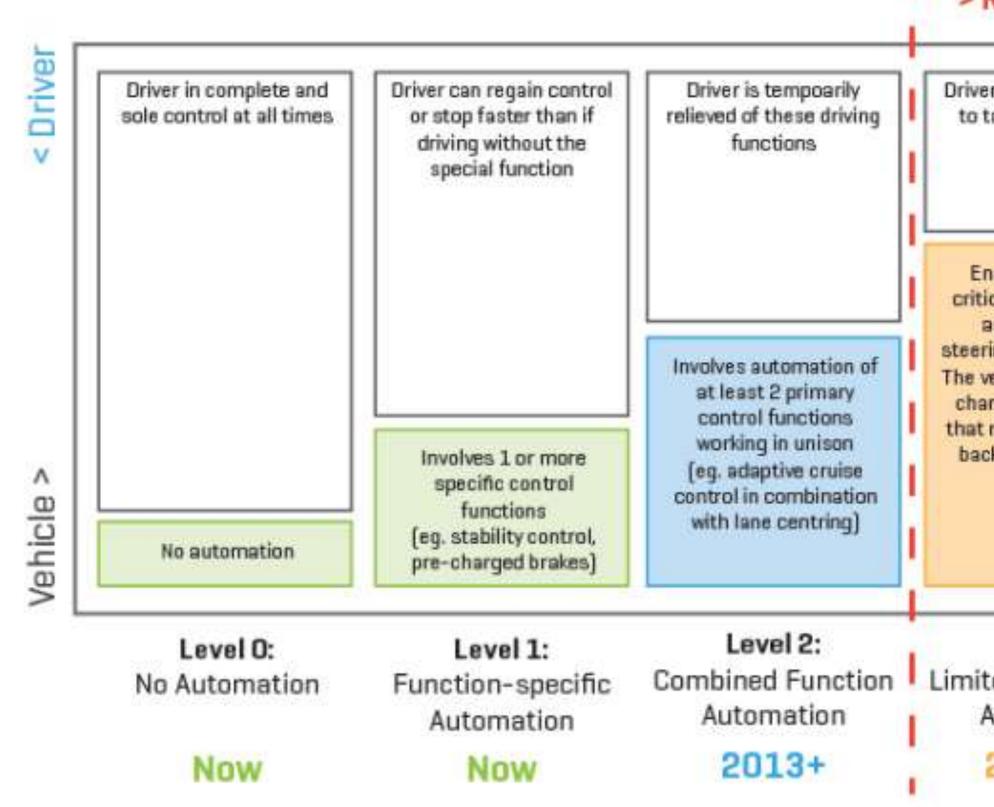
# **STAR RATING**

- 5 stars safety
- Overall good performance in crash protection; well equipped with robust crash • avoidance technology
- 4 stars safety
- Overall good performance in crash protection; additional crash avoidance technology • may be present
- 3 stars safety
- Average to good occupant protection but lacking crash avoidance technology •
- 2 stars safety •
- Nominal crash protection but lacking crash avoidance technology •
- 1 star safety •
- Marginal crash protection lacksquare



# LEVELS OF AUTOMATION





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#### > Regulatory change required?

Driver must be available to take over controls

Enables all safetycritical functions to be automated (incl steering, throttle, brake). The vehicle monitors any changes in conditions that require a transition back to driver control Driver not expected to take control at any time

Vehicle is designed to perform all safetycritical driving functions and monitor road conditions for an entire trip (Includes both occupied and unoccupied vehicles)

Level 3: Limited Self-Driving Automation

2020+?

Level 4: Full Self-Driving Automation

