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車輛智慧化
車用影像安全輔助系統、應用與未來發展趨勢

Introduction of Advanced Driver Assistance Systems

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Outline

- *ADAS Introduction*
  - *Crash Severities*
  - *ADAS Marketing Trend*
  - *ADAS Application Development*
- *Forward Collision Warning Systems (FCWs)*
- *Future Development Tech.*

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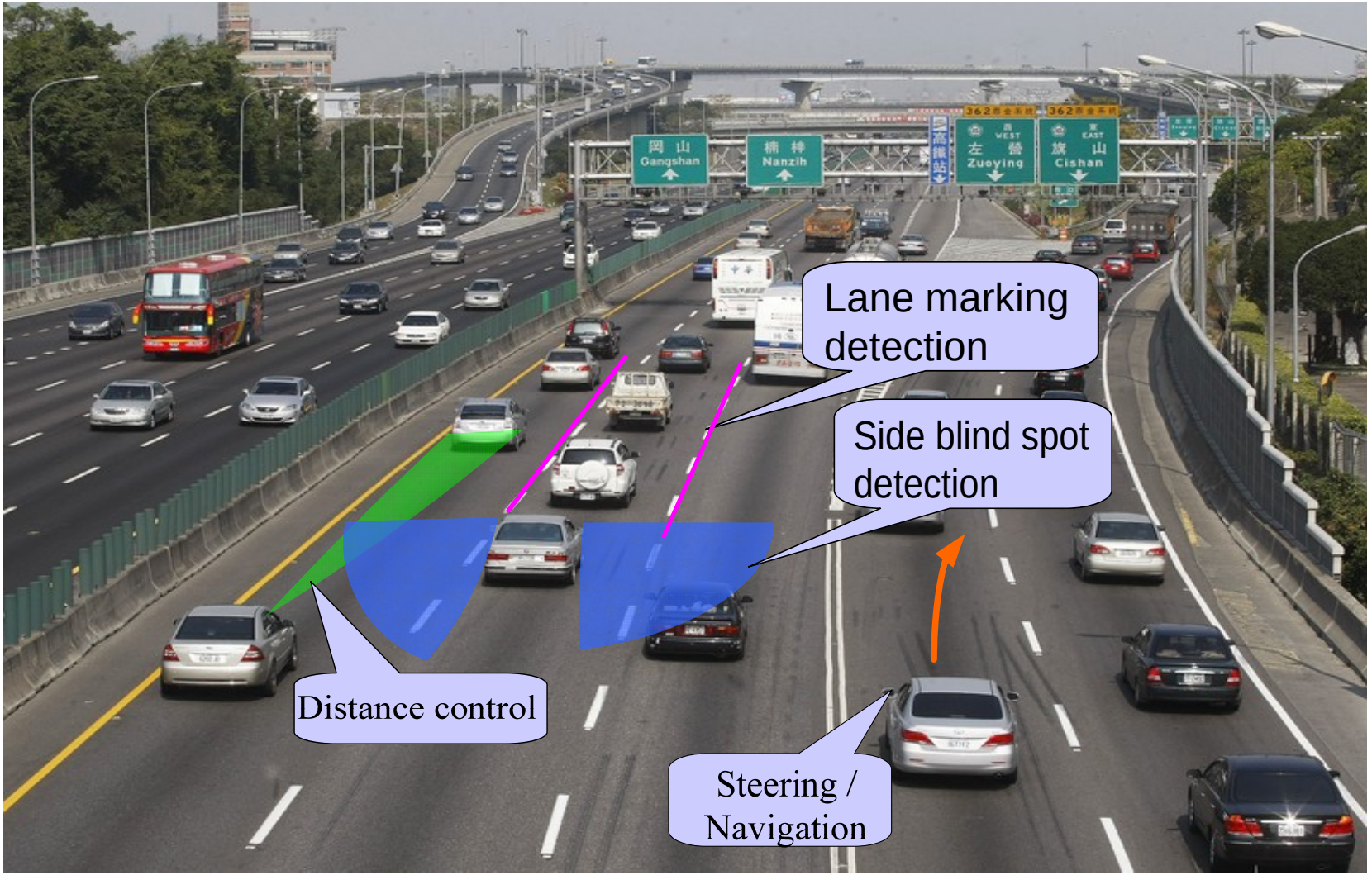
What's the "ADAS" for driving assistance?



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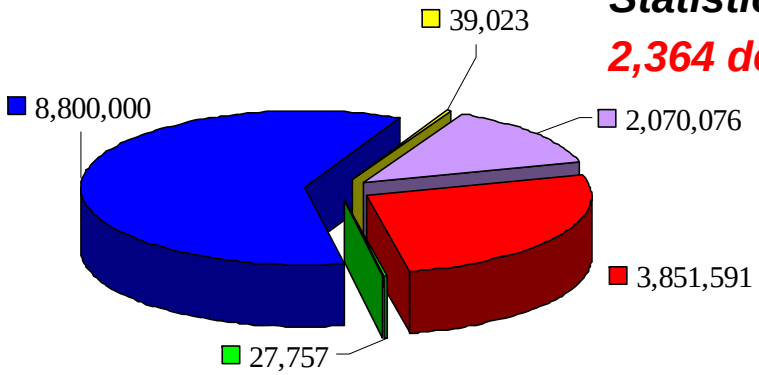
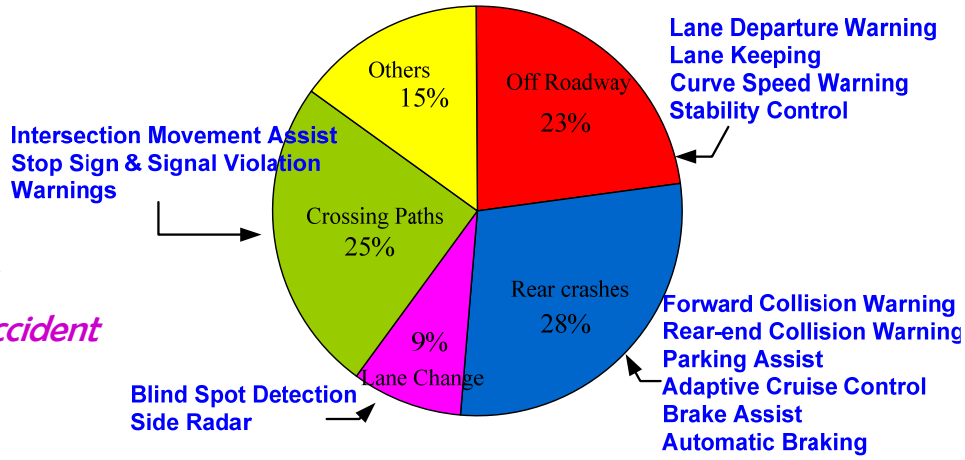
Introduction - Crash Severities

Statistics Year : 2000~2012 Oct. - Taiwan

2,364 deaths per year on average



Total Crashes 13,609,239



90% of all accidents are caused by the driver

- *Active Safety has the potential to significantly reduce accident rates & injuries.*

4 Crash Types = 85% (all crashes) and 75% (all fatalities)

Source：National Police Agency, MOI, Direcorate General of Highways, Transportation Bureau, TCG, and Transportation Bureau, KCG.

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Crash Timeline

VISION-BASED

RADAR

Front/ Side / Rear Collision Warning
AVM (Around View Monitor)

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Classification – Vehicle Safety Systems

Active Safety

正常行駛

事故前

安全功能：
輔助行車，減少駕駛負擔
事前預防，警示駕駛
相關技術：
1. 車道偏移警示系統
2. 前方防碰撞警示系統
3. 防瞌睡及分心警示系統
4. 夜視系統
5. 停車輔助系統
6. 適應性巡航系統
7. 胎壓監測系統
8. 全周防護監控系統

Passive Safety

安全功能：
輔助駕駛，避免意外發生
相關技術：
1. 防鎖死煞車系統
2. **動態穩定系統**
3. 車道維持系統

事故中

安全功能：
減少人員傷害
相關技術：
1. **安全氣囊**
2. **緊縮式安全帶**
3. 防撞鋼樑
4. 可潰縮式方向盤

事故後

安全功能：
緊急事故救援及判斷
相關技術：
1. **行車紀錄器**
2. 事故救援通知

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All-directional Vehicle Safety Products

Active Safety

ESP

Brake Disk Wiping

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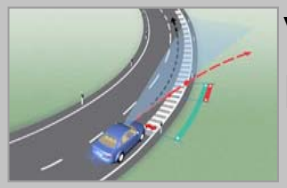
Driver Assistance

Park Assistence

ACC



Video Functions

CAPS

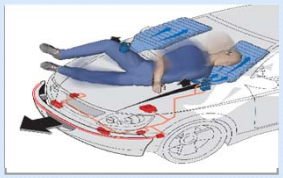
Combination of Active & Passive Safety

Passive Safety

Crash Detection

Rollover Sensing

Pedestrian Protection



Source: Bosch

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