Intelligent Transportation System (ITS) Technologies for Motorcycle Crash Prevention and Injury Mitigation

presented by

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Research Tasks

- Identify existing & emerging ITS technologies for both vehicles & motorcycles
- Examine potential application of these technologies to improve motorcycle safety
- Integrate findings into strategic motorcycle safety plan




Crash Prevention

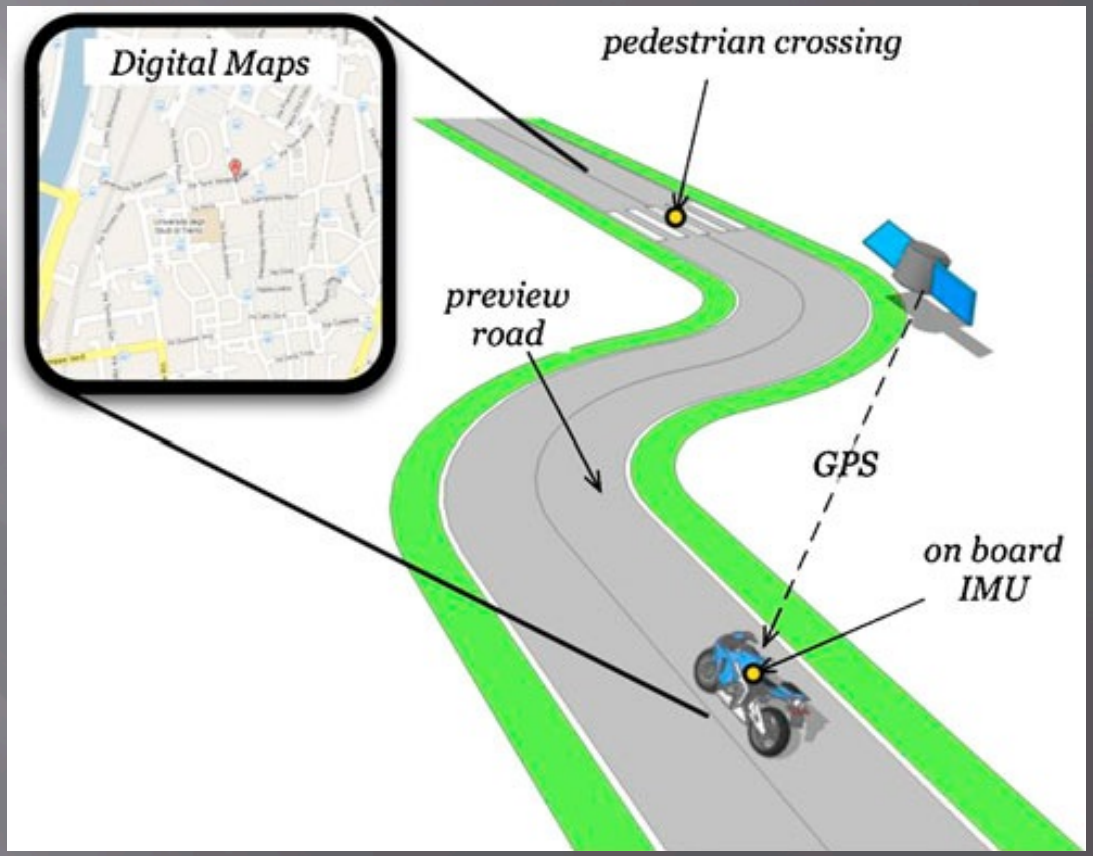
- electronic stability
- curve speed warning
- lane keeping & departure
- adaptive front lighting
- braking systems
- collision warning & avoidance
- detection systems
- driver assist & monitoring
- smart technologies




Injury Mitigation

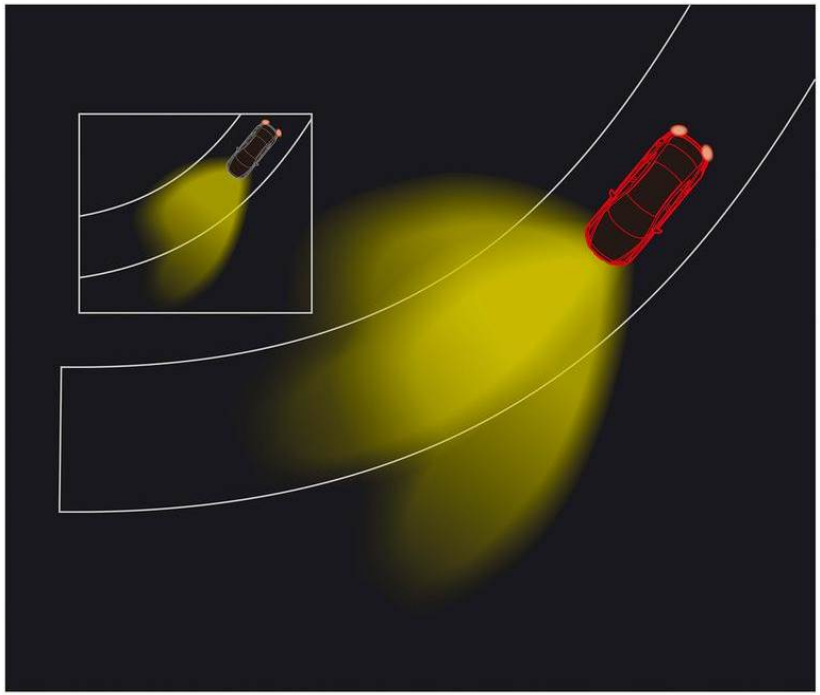
- airbags
- airbag vests
- detection systems
- automated crash notification system
- crash data recorder

Curve Warning



Typical scenario and main sensors used in the curve warning function (Biral, et al. An intelligent curve warning system for powered two wheel vehicles, 2010)

Adaptive Front Lighting



2014 Mazda 6 Adaptive Front-lighting System (AFS) photo
Source:
http://www.bing.com/images/search?q=Adaptive+Front+Lighting+System+(AFS)&FORM=HDRSC2#view=detail&id=316096632B2331CA36737DA9BF712B178935F1B8&selectedIndex=0

Helmet Mounted Displays

Airbag System

http://world.honda.com/news/2005/2050908_4.html

"Effective" Technologies Rated by Motorcyclists

- Anti-lock brakes (motorcycle)
- System to warn drivers about nearby motorcycles (vehicle)
- Blind-spot detector (vehicle)
- Traction control (motorcycle)
- Adaptable headlights (motorcycle)

THANK YOU!

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