



# Vehicle Dynamic Control Strategy of Automated Driving

[For Safer and More Comfortable Automated Driving Technology]

Corporate Sponsored Research Programs

Dynamics and Control of Vehicle  
Human-Machine Systems  
Mechano-Informatic Mobility Engineering

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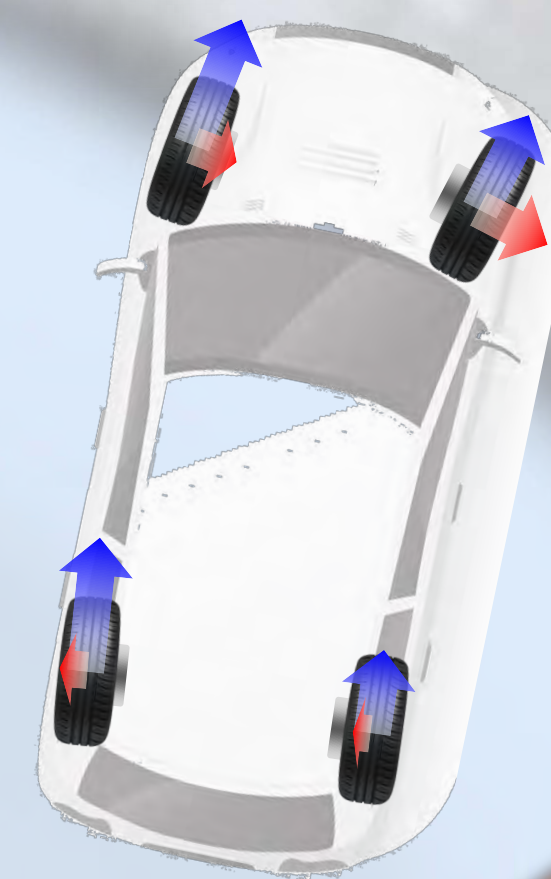
JTEKT Corporation

## Vehicle Dynamic Control

Robust Control against Disturbance and Modeling Error



Automated driving bus

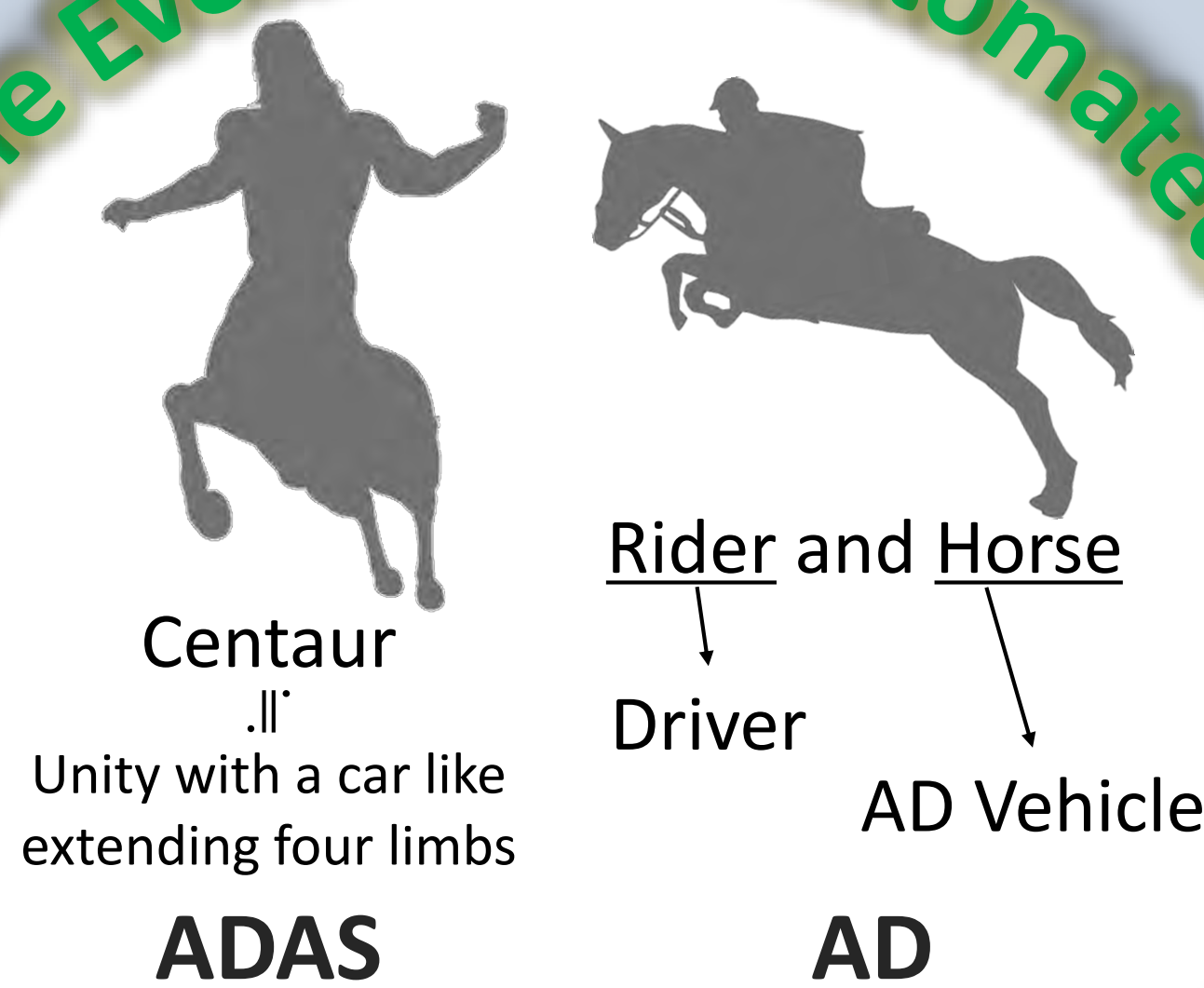


Vehicle stability control utilizing four-wheel independent braking/driving force control by in-wheel motors

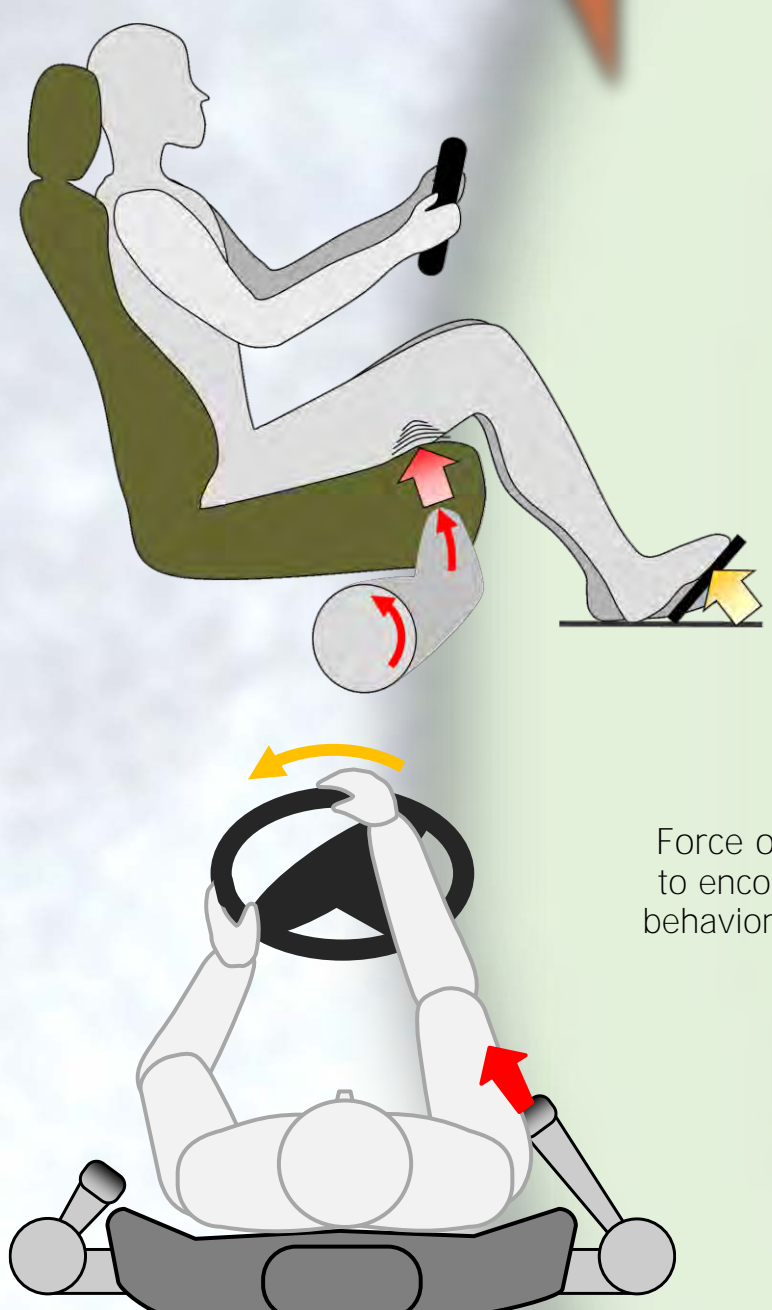


Vehicle motion control utilizing the characteristics of Personal Mobility Vehicle

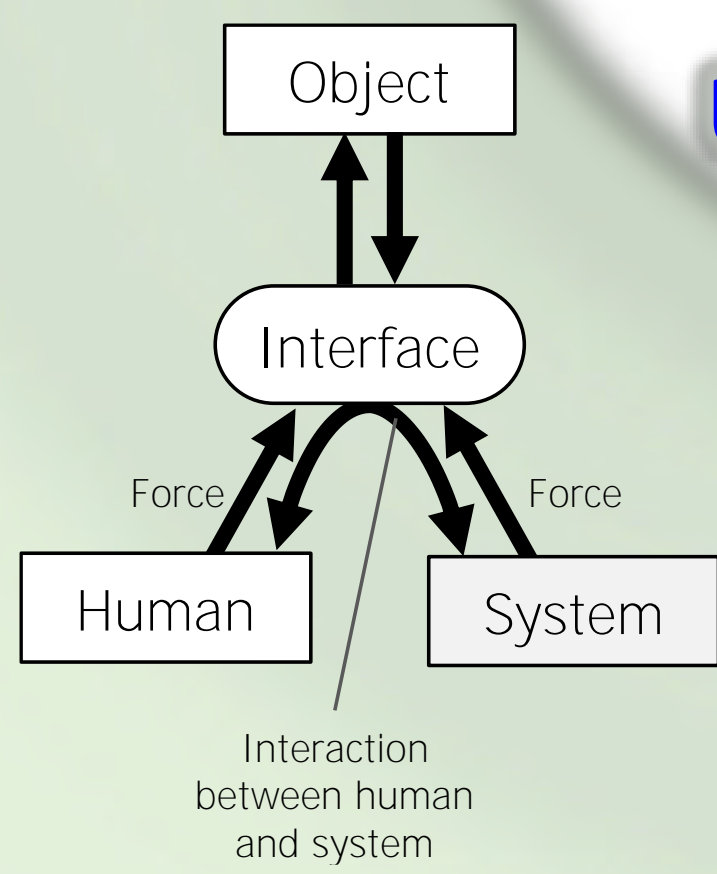
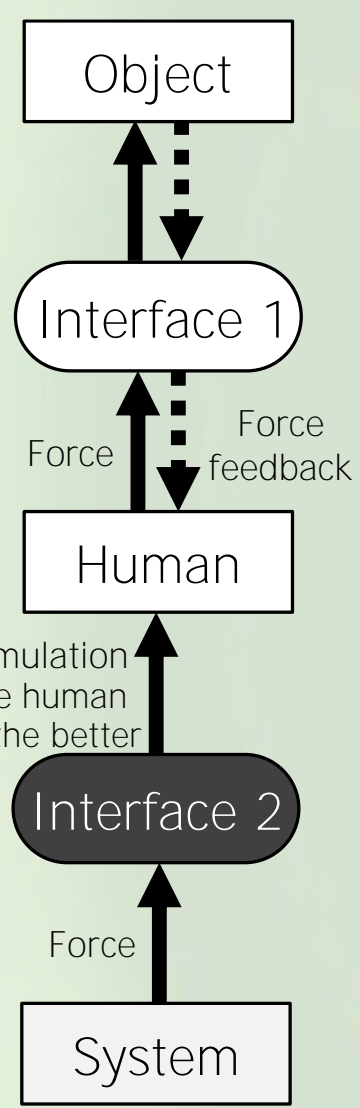
## Towards the Evolution of Automated Driving



Realization of Unity of Driver-Vehicle (Rider-Horse)



I-HSC Indirect Haptic Shared Control  
D-HSC Direct Haptic Shared Control



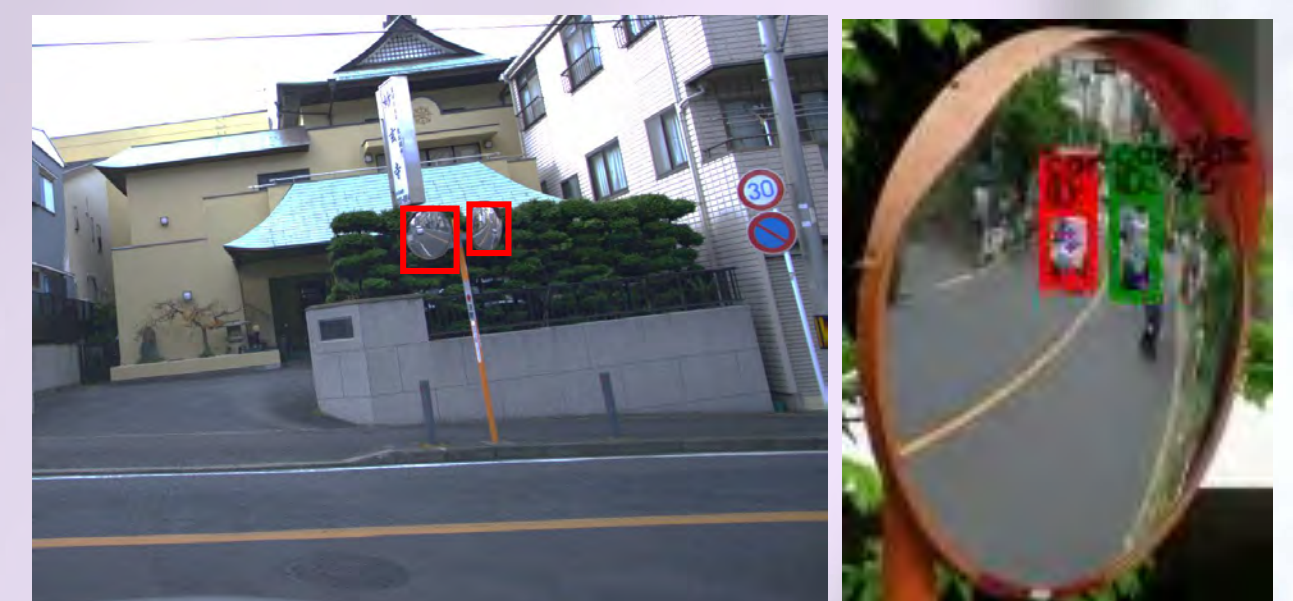
## HMI Human-Machine Interface

HMI to Encourage Driver's Spontaneous Behavioral Change

Driving simulator experiment



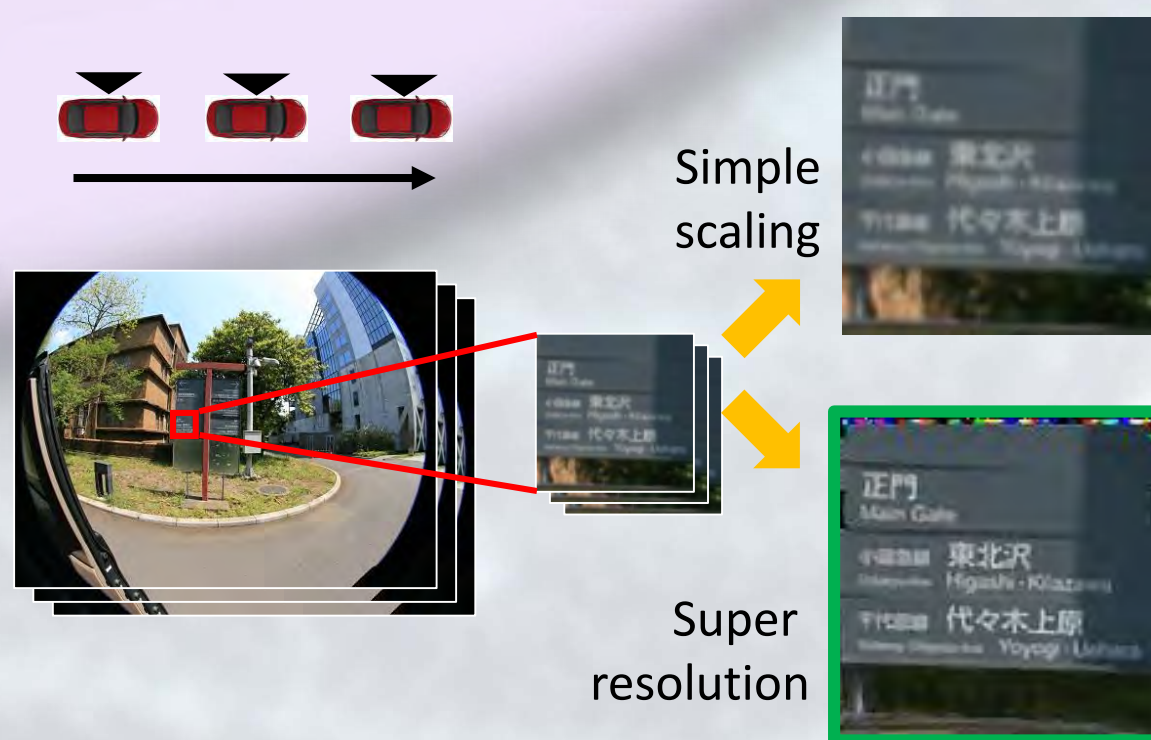
Hand signal recognition



Detecting road safety mirrors and events inside the mirror

## Environment and Driver Monitoring using Cameras and Biological Sensors

## Sensing



Super resolution (refinement) of on-vehicle camera images

Lower Implementation Cost

Vehicle Dynamic Function for Automated Driving (AD) fusing  
• Human-Machine System  
• AI and Other Advanced Technology

Better performance (precision, response) in AD control

More Reliability in AD  
Affluent Society where People Can Move Safely in Peace  
Academic Contribution



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