OMNI AdvanDrive

AUTOMOTIVE DRIVING SIMULATOR

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Workstation Automotive Driving Simulator: AdvanDrive is a real time simulation system in the form of hardware and software that is integrated with the motion system, has a driver module, and a sound special effects module.

This advanced training simulator is able to simulate the shaking during the driving process, such as the shaking of speed bumps, the shaking of uneven roads, and so on. This advanced training simulator has four simulators, namely sedan simulator, SUV simulator, bus, truck, or firefighter simulator, and aircraft towing truck or bomb lifter truck simulator.

CAR

FEATURES

Using replicas of the real car equipment (dashboard, steering wheel, pedals and all the levels).

TECHNICAL SPECIFICATIONS

Real time simulation system (hardware and software) that is integrated with motion system, has driver module, and sound special effect module.

Simulates the driving process for a sedan.

Has various components that exist in sedans, such as: seats, seat belts, steering wheels, gear shifting levers, accelerators, brakes, clutch pedals & hand brakes.
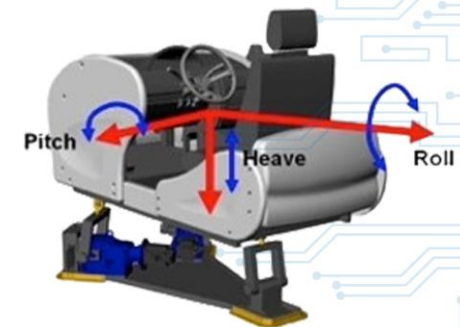
Able to be used for driving in the following areas: Limited practice area, City roads , Out of town roads, Highway.

Equipped with a motion platform, so as to simulate the shock during the driving process, such as the shock of speed bumps, the shock of uneven roads and so on.
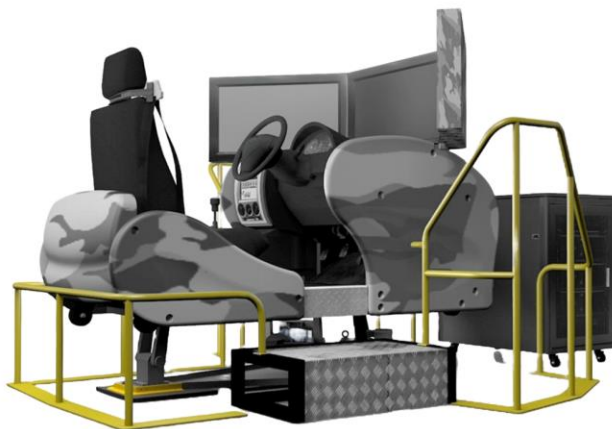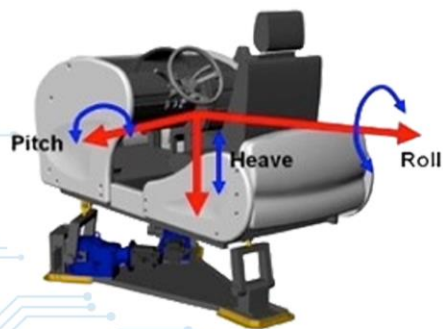
SEDAN BASIC MODEL

SEDAN BASIC + INTERMEDIATE MODEL

Pitch   Heave   Roll

SUV BASIC MODEL

SUV BASIC + INTERMEDIATE MODEL

Pitch · Heave · Roll

Real time simulation system (hardware and software) that is integrated with motion system, has driver module, and sound special effect module.

Simulate the driving process for SUV

Has various components that exist in SUVs, such as: seat, seat belts, steering wheel, gear shifting lever, accelerator, brake, clutch pedals & hand brake.

Able to be used for driving in the following areas: Limited practice area, City roads, Out of town roads, Highway

Equipped with a motion platform, so as to simulate the shock during the driving process, such as the shock of speed bumps, the shock of uneven roads and so on.

TECHNICAL SPECIFICATIONS

Real time simulation system (hardware and software) that is integrated with motion system, has driver module, and sound special effect module.
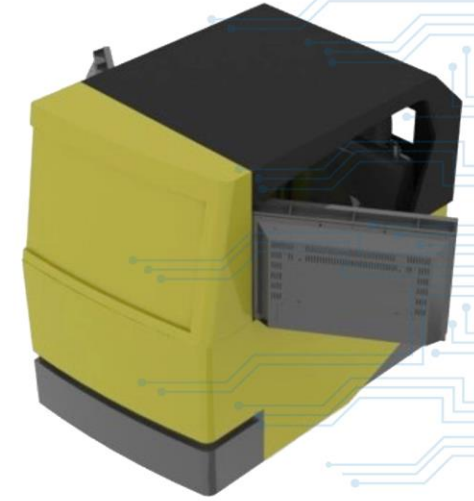
Simulate the driving process for Bus/Truck/Firefighter

Has various components that exist in Bus/Truck/Firefighter, such as: seat, seat belts, steering wheel, gear shifting lever, accelerator, brake, clutch pedals & hand brake (one lot of left steering configuration).

Able to be used for driving in the following areas: Limited training area, inner city, outer city and toll roads, Halim Airfield Aerodrome (firefighting only).

Equipped with a motion platform, so as to simulate shocks during the driving process, such as speed bumps, uneven road shocks and so on.
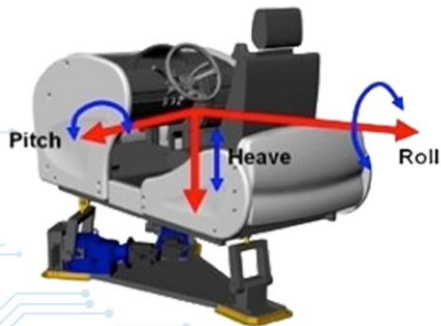
TRUCK BASIC RIGHT STEER MODEL

TRUCK BASIC RIGHT STEER + INTERMEDIATE MODEL

Pitch   Heave   Roll
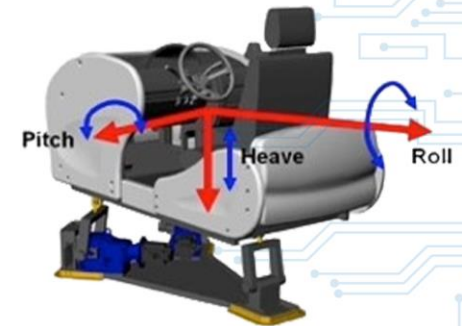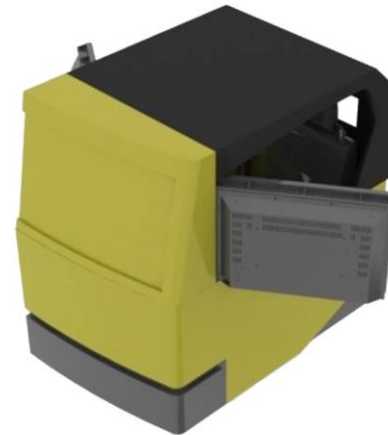
TRUCK BASIC LEFT STEER MODEL

TRUCK BASIC LEFT STEER + INTERMEDIATE MODEL

Pitch

Heave

Roll

TECHNICAL SPECIFICATIONS

Real time simulation system (hardware and software) that is integrated with motion system, has driver module, and sound special effect module.

Simulates the driving process for Aircraft Towing Truck / Bomb Lifter Truck.

Has various components that exist in the Aircraft Towing Truck / Bomb Lifter Truck, such as: seat, seat belts, steering wheel, gear shifting lever, accelerator, brake, hand brake.

Able to be used for driving in the following areas: Limited training area, Halim Aerodrome (Towing Truck), Ready AMO Shelter (bomb lifter).

Equipped with a motion platform, so as to simulate shocks during the driving process, such as speed bumps, uneven road shocks and so on.

AUTOMOTIVE DRIVING SIMULATION FEATURES

Image Generation & Display Module
- Wide Field of View with High Resolution 42 inch LCD Monitors
- World Most Largest & Complex Visual Database using 3D Special Effects
- Two Channel Side Mirror View

Control Loading Module
- Actual Vehicle Parts Used
- Full Instrumentation
- Same Feeling as Real Vehicle
- In-Vehicle Aural Environment

Auditory Module
- 5.1 ch. Digital Sound
- Hi-fi Speaker & Woofer
- Seat Vibrator

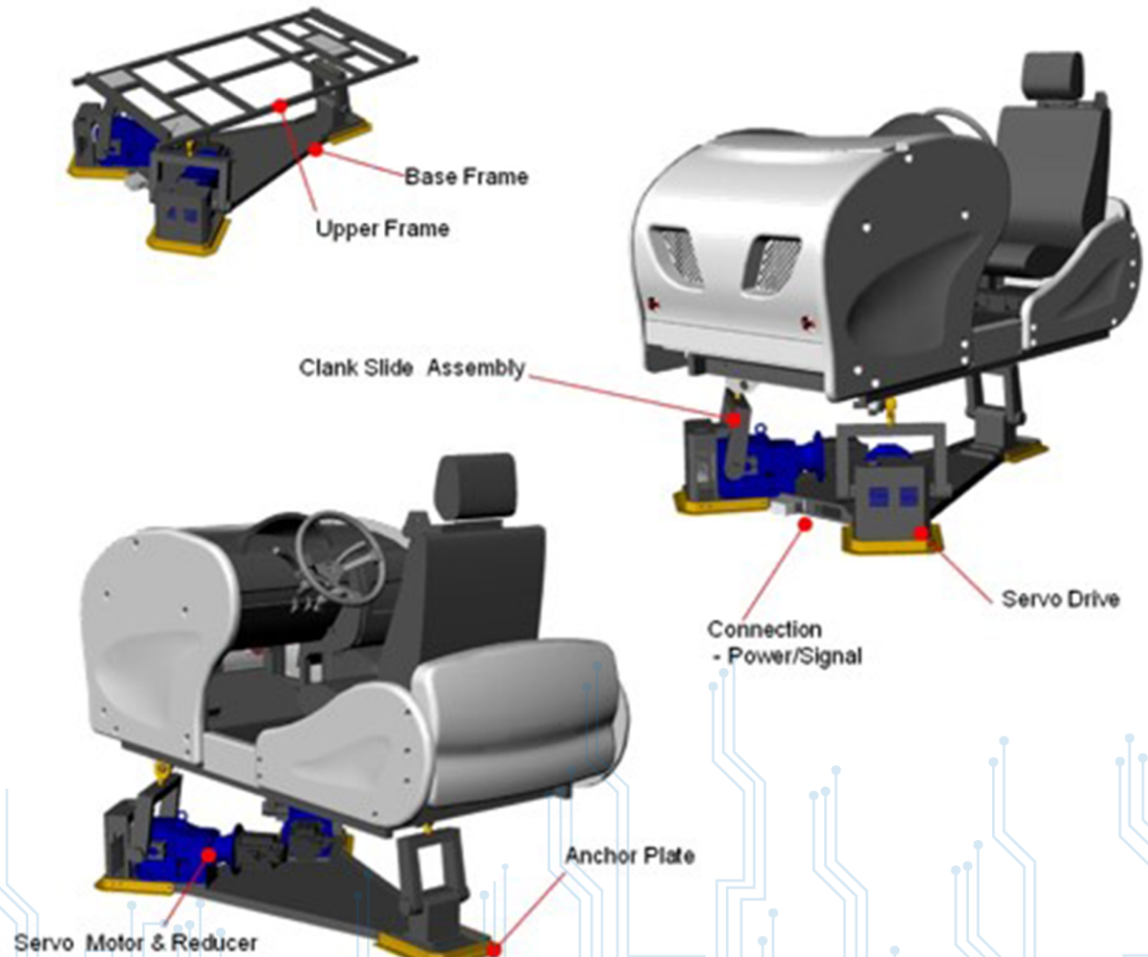## Control Module
- High-end Computer Systems
- Vehicle Dynamic Simulation
- System Operating Software
- Scenario Authoring and Play
- Traffic Display and Control
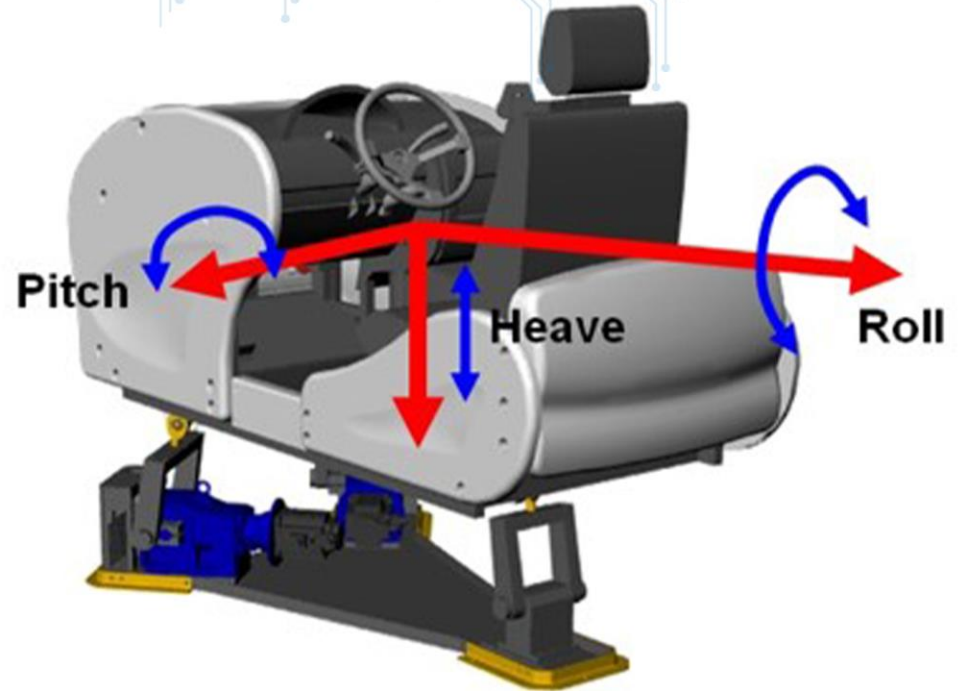- Data Record and Replay

MOTION BASE

The i-Drive electric motion system consists of a motion base assembly, power pack, motion computer with motion software, interconnecting Cabling, and documentation.

Base Frame

Upper Frame

Clank Slide Assembly

Servo Drive

Connection - Power/Signal

Servo Motor & Reducer

Anchor Plate

AXIS DEFINITION

The axis definition and the numbering of the actuators are shown below.

DoF	Displacement	Velocity	Acceleration	Remarks
Roll	$\pm 8°$	$> \pm 60°/s$	$> \pm 300°/s^2$	
Pitch	$\pm 5°$	$> \pm 60°/s$	$> \pm 300°/s^2$	
Heave	$\pm 50mm$	$> 0.2 m/s$	$\pm 0.5G$	

DRIVER CABIN

The cabin is based on an original car driver's place (but realized manufacturer independent) with:
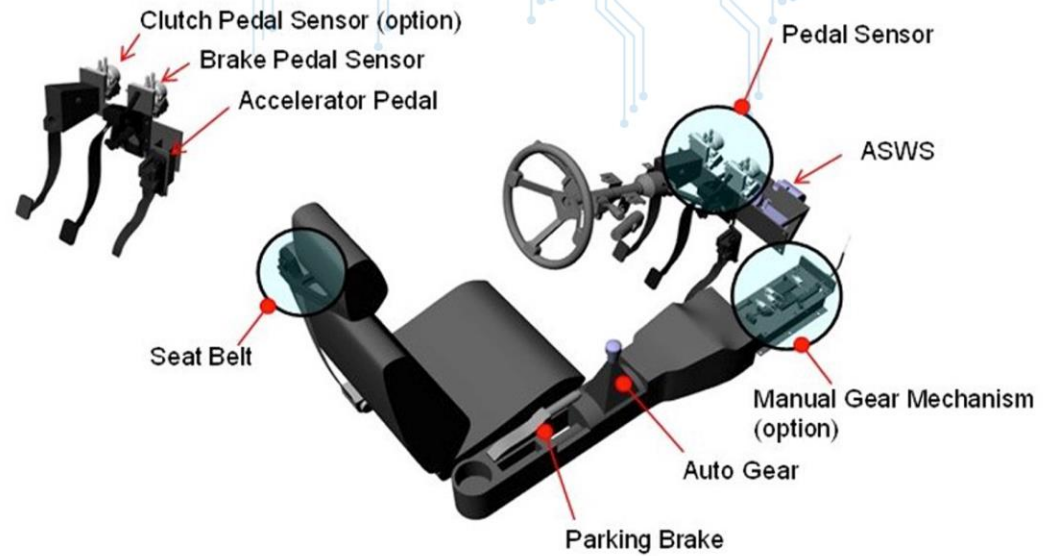
- Displays and indicators
- Steering wheel with force feed back
- Adjustable seat with vibration system (vertical) Gearbox usable as:
- Mechanical gearbox (5 gears plus reverse gear) (Option)
- Automatic gearbox (P-R-N-D-1-2)

- Pedals for clutch (Option), brake and accelerator with force simulation, the clutch pedal is removable for automatic gearbox simulation
- Parking brake
- Safety belt

SIGNAL I/O IF BOARD

[Analog Input]
- Steering Wheel : 12-bit ADC
- Acceleration : 10-bit ADC
- Clutch : 10-bit ADC
- Foot Brake : 10-bit ADC
- Parking Brake : 10-bit ADC (No Connection)

[Analog Output] -PWM, HSO
- RPM Gauge : HSO (0~270Hz)
- Speed meter : HSO (0~150Hz)
- Thermometer : 8-bit PWM (24kHz)
- Fuel Gauge : 8-bit PWM (24kHz)

[Digital Input] -32 channel
- Key Box : 2 ch
- Gear Box : 4 ch
- Auto Gear : 5 ch
- Parking Brake : 1 ch
- Seat Belt : 1 ch
- O/D OFF : 1 ch
- Light : 3 ch(Small Light Lamp, Light, Upper Light Lamp)
- Direction : 2 ch(left. Right Turn Signal & Emergency)
- Wiper : 3 ch(Low, High, Washer) •Multi SW : 5 ch
- Reserved Input : 4 ch

[Digital Output] -Open Collector Type
- Lamp : 7 ch(ENG, AIRBAG, OIL, BAT, FUEL, TAILGATE, DOOR)
- Reserved Output : 8 ch

[Direct Output]
- Back Light : 1 ch(Cluster)
- Left. Right Turn Light : 2 ch
- Lamp : 3 ch(Brake, Seat Belt, Upper Light Lamp)

[Interface]
- USB 2.0/1.0-Compliant, High Speed(480Mbps)
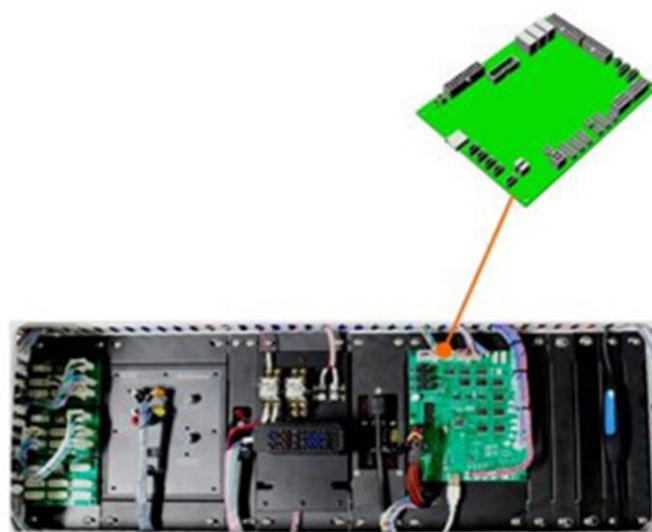- Connector Type : USB A-A

[Power]
- DC 12V . Computer power supply Acceptable

[Operating System]
- Windows 2000/XP
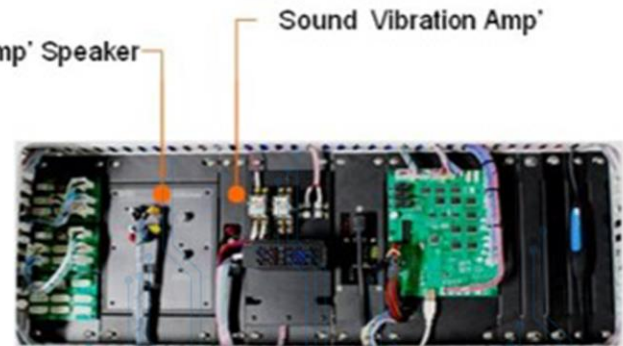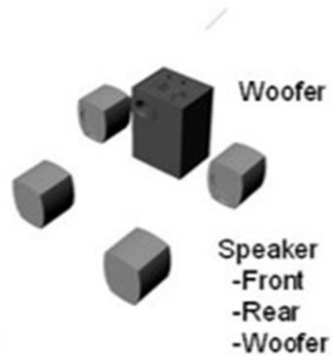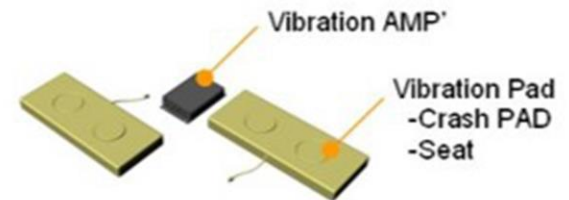
[Dimension]
- 140mm x 170mm

SIGNAL I/O IF BOARD

Sound System

- Output. Max : 2000W
- Input : Impedance 10K Ohm
- Frequency : 100Hz ~ 20Hz . 20Hz ~ 200Hz
- Power : AC220V 50/60Hz 30W
- Weight : 6.4Kg
- Operating Environment : 0 ~ 50℃

Sound Vibration System (Amplifier . Vibration Unit)

- Output (RMS) : 36W(18W x 2)
- Peak Output (P.M.P.O) : 50W(25Wx2)
- Frequency : 10Hz ~ 80Hz
- Vibration Unit : 12W x 2
- Power : DC12V
- Operating Environment : 0 ~ 50℃

Vibration AMP'

Vibration Pad
-Crash PAD
-Seat

Sound Vibration Amp'

Woofer amp' Speaker

Speaker
-Front
-Rear
-Woofer

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