



indra

SECURITY AND DEFENSE

GROUND VEHICLES SIMULATION

Training devices for any kind of ground vehicle

indracompany.com

GROUND VEHICLES SIMULATION



Simulated urban environment

The most efficient training tool with all conditions under control

A new concept in drivers training

Currently Indra is a world leading provider of flight simulators. Indra has been able to joint the experience and technology gathered during more than 30 years in this area, and has applied it to the ground vehicles simulation. This brings to the market a state-of-the-art system for drivers training.

The new training system for ground vehicles drivers based on simulators brings together our customer's experience in driver selection and training, and Indra's technical capabilities in developing and applying new computer and simulation technologies to the training world.

Training goals

Improve the quality of driver practical training

All kinds of situations that condition driving can be reproduced in a controlled manner, improving training effectiveness in defensive and economical driving.

Reduce accident risk during driver training

The amount of practice on the streets is decreased significantly through the use of a simulated environment.

Reduce driver training related costs

Minimization of the negative repercussions on service exploitation of bus usage for selection (selective training courses for new drivers) and company continued training (migration to new bus models, professional practical improvement for drivers with high accident rates...).

Improve driver selection criteria

Increased number of objectively evaluable parameters such as reaction time, fatigue resistance... and provides a homogeneous set of circumstances to be evaluated during the different exercises.

Simulator overview

Driving station

Interchangeable real elements for eight different vehicles models of different manufacturers: dashboard, steering column, brake and accelerator pedals.

Side console with instruments on LCD touch screen panel.

Ticket machine for buses and operational help system.

Motion system

Acceleration and braking simulation, side acceleration (bends), bumps and potholes.

Visual presentation system

Surround field of view of more than 180°. Outside and inside rear-view mirrors.

Virtual city

Different types of elements such as: single to six lane streets, straight lines, narrow and wide bends, crossings, roundabouts, different slopes, bus lane...

Buildings, urban furniture and other elements: bus shelters, trees, container...

Specific representation of the user's own bus stations and depots.

Traffic model

Mobile controllable area centred on the current position of the vehicle. Different parameterisable vehicle models ranging from motorbikes and utility vehicles to trucks and buses.

Passenger and pedestrian model

Special buses modules: Boarding and unboarding at bus stops, passenger distribution inside the bus: incidents at bus doors, passenger falls due to aggressive driving.

Pedestrian model connected to the traffic model.

Instructor station

Allows for definition, control, supervision and evaluation of the training session.

Environmental sound generation

Engine, traffic, passengers...



Relevant system capabilities

The simulator contemplates all the typical incidents that may affect the vehicle driver's tasks, including Operation Help System capabilities, passenger interaction, and urban signalling.

The simulator also allows for the generation of events that may cause accidents and the evaluation of the reaction of both the driver and the vehicle to such events.

In particular, the simulator includes the following capabilities:

Driving

Enhancement of the acquisition, development and maintenance of the skills and capabilities necessary for driving tasks and handling of each simulated vehicle model.

Response training for usual malfunctions, unexpected and emergency situations that may affect driving safety.

Traffic

Generate different types of traffic: fluid, intermediate or dense.

Autonomous movement of each vehicle within the control area, with different driving behaviours (aggressive, intermediate, passive).

Accelerations, stops, overtaking, turns, lane changes, parallel traffic, red light running...

Pedestrian and passenger behaviour

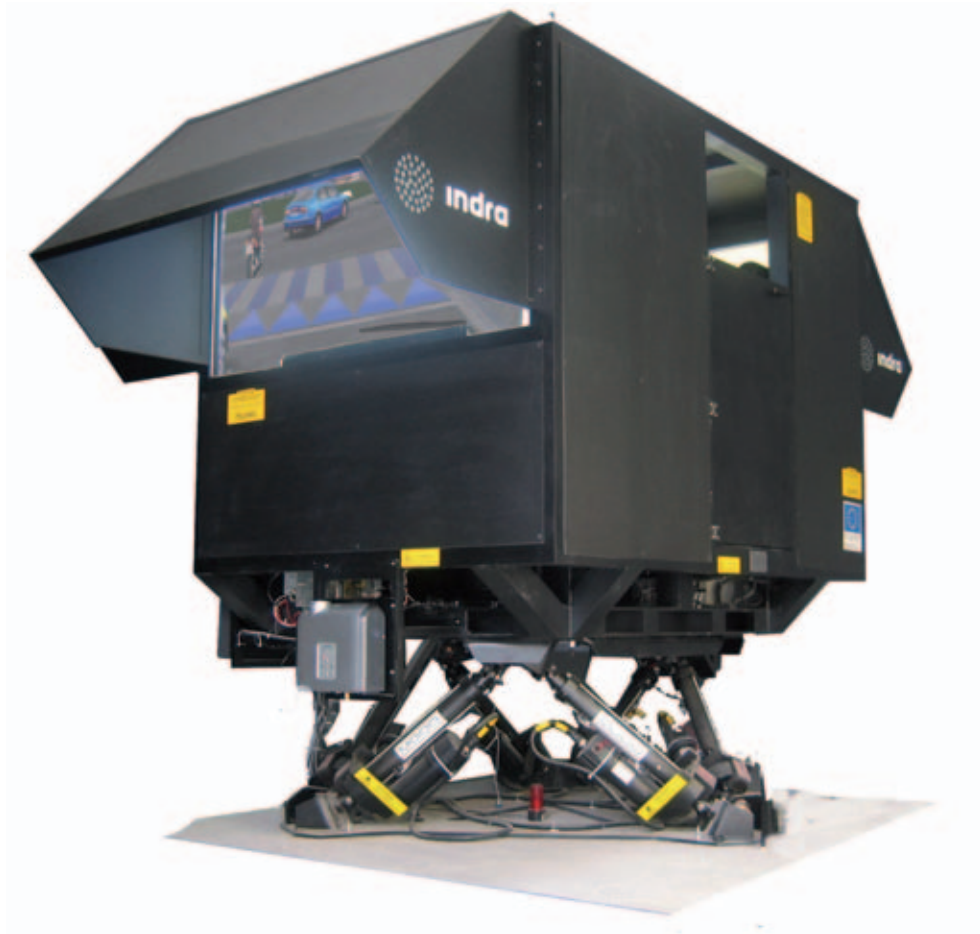
Simulation of pedestrian and passenger behaviour in the control area and inside the vehicle.

Crossings, passengers boarding and unboarding at bus stops, falls due to sudden braking...

Training exercise control

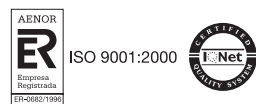
The instructor station includes the capability to plan, control and analyse the exercises, with the possibility of complete or partial exercise replay.

Planning includes selecting the line and the traffic model, and defining the incidents and events for each exercise.



Truck simulator





indra

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