



**Realtime Technologies** (RTI) is proud to offer a turn-key driving simulation platform that can be applied to research, training, or automotive product development programs. RTI's modular, scalable system design

means you can build from your original simulator design, adding components and avoiding the need to replace your entire simulator as your fidelity requirements increase.



*Half cab driving simulator with three channel display.*

#### System Performance

Performance that rivals or bests other simulators on the market today is the result of RTI's uncompromised attention to simulation engineering details. The core simulator and visuals subsystems operate at a 60 Hz update rate, supporting smooth graphics presentation and rapid system response in complex driving environments. RTI's driving simulators have demonstrated measured latency of less than 50 ms from step input on the host to visuals output.

#### Dynamics

Fast, accurate vehicle dynamics are the cornerstone of any high performance driving simulation platform. RTI's driving simulator comes complete with a dynamics model of your choice of compact, mid-size, full-size passenger car; sport utility passenger vehicle; van; or pickup truck. Large truck and bus models are also available upon request. All of RTI's dynamics models support accurate modeling of vehicle response to a given set of conditions.

#### Visuals

In a simulation, the quality of visual graphics directly affects a user's ability to become immersed in the virtual environment. Our simulator supports visual effects such as fog, rain, dynamic shadows, headlights, deformable terrain, ambient lighting models, and pre-rendered light maps.

#### SimVista Scene and Scenario Control

All the tools you need to author your own simulation scenarios are available with SimVista, RTI's scene and scenario control subsystem.

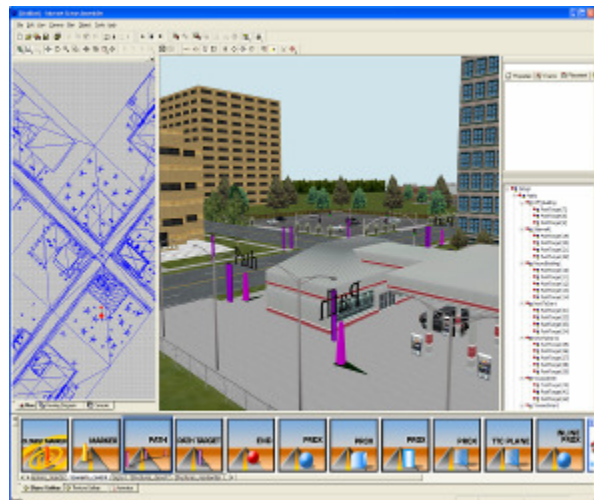
## highlights

- Modular, scalable system design.
- 60 Hz update rate, supporting smooth graphics presentation and rapid system response.
- Fast, accurate vehicle dynamics.
- Measured latency of less than 50 ms from step input on the host to visuals output.
- Extensive visual effects (fog, rain, dynamic shadows, headlights, deformable terrain, ambient lighting).
- Modified production vehicle cab included.
- Plentiful visual display configuration options.
- Spatialized audio presentation via audio subsystem.
- Fast, smooth, accurate motion cueing avail with addition of 3DOF and 6DOF motion solutions.

The SimVista graphical user interface (GUI) gives you the power to drag and drop objects into your virtual world and to give them scripted behaviors, bringing them to life.

SimVista comes complete with pallets of objects that can be placed in the scene. It also includes set of tiles that can be arranged within SimVista to make a seamless driving environment.

Other objects that can be dragged off a palette and added to enhance the visual complexity of the scene include buildings, trees, parked vehicles, terrain features, signs, and construction barriers among many others.



*SimVista user interface.*

Still more objects such as sensors, vehicles, and pedestrians can be introduced and assigned behaviors that will play out during scenario execution. With SimVista you can regulate nearly all aspects of virtual traffic, pedestrian movements and simulator operation.

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On Road Driving Simulator



### Cabs

RTI's driving simulator comes complete with a modified production vehicle cab. The cab can be developed to specifications that match your budget and facilities requirements.

Typically, a production mid-size or compact passenger vehicle is modified to remove powertrain components while electronic instrumentation is added to allow communication with the simulator. The result is a real vehicle that interacts seamlessly with the simulation. Both full vehicle or front half cabs are available.

### Control Loading



Steering force feedback servo motor.

A high-fidelity control loading system provides feedback on the steering wheel that is directly coupled with the vehicle dynamics at 2000 Hz. Important factors such as power steering boost curves, and tire aligning torque are included in the steering model. You configure the steering feedback to represent the vehicle you're simulating.

### Display Options

The visual display configuration options on RTI's driving simulator are plentiful. You can make use of CRT monitors, plasma monitors, CRT, LCD, or DLP projectors in a front or rear projection configuration. Field of view, resolution, vertical and horizontal offsets, and aspect ratios can

be independently configured on a per channel basis. A typical simulator makes use of 180° forward field of view front projection with optional LCD panel rear view mirrors.

### Audio

RTI's audio subsystem supports spatialized audio presentation. The ambient vehicle noises include engine, transmission, wind and tire noise. In addition, sounds can be localized to a specific location or object.

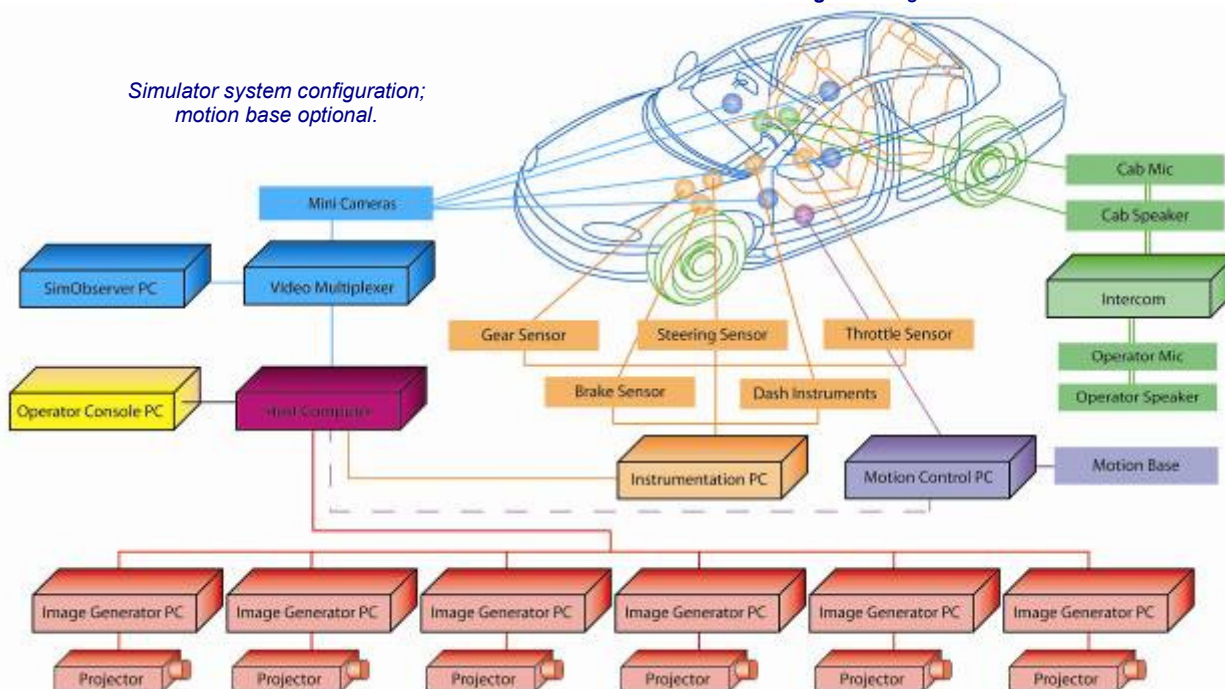
### Motion (Optional)

RTI's driving simulator is fully motion compatible. Both 6DOF and 3DOF low profile motion solutions can be added to your driving simulator to provide fast, smooth, and accurate motion cueing.



Left: Industrial Smoke & Mirrors 3DOF motion base. Right: Moog 5000E 6DOF motion base.

Simulator system configuration; motion base optional.



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# On Road Driving Simulator



Realtime Technologies, Inc. (RTI), specializes in real time multibody vehicle dynamics, and graphical simulation and modeling. We offer simulation software applications, consulting services, custom engineering, software and hardware development. Realtime Technologies' customer base includes international, government and private entities. RTI was founded in 1998. For more information, visit us at [www.simcreator.com](http://www.simcreator.com).

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