

TAG SYSTEMS
TS 4000
REAL CAR
SIMULATOR



WWW.TAGSYSTEMS.COM.AU

THE SIMULATOR

TAG SYSTEMS TS4000 REAL CAR SIMULATORS ARE THE WORLDS FIRST DRIVING SIMULATORS THAT ALLOW YOU TO DRIVE A REAL VEHICLE WITHIN A VIRTUAL WORLD.

ALL OF THE CAR'S COMPONENTS ARE IN FULL OPERATION INCLUDING THE ENGINE, TRANSMISSION, STEERING, ACCELERATOR, BRAKES AND ALL CABIN CONTROLS.

The simulator itself is housed in a custom designed 20' High Cube Shipping Container and operates on single phase power. This transportable model comes as a complete turn key operation which includes a new motor vehicle.

The vehicle securely drives on custom designed rollers which continually send data for power, speed and braking to the TAG System computers which provide living three dimensional moving scenes travelling in synchronization with the car.

The imagery of numerous road networks and driving scenarios are controlled by a user friendly operators console or remotely by laptop computer. This imagery is viewed by the driver on 3 x 65" Plasma Screens which provide for a 180 degree horizontal field of view of the virtual world.

All fumes are extracted directly from the vehicles exhaust system via unobtrusive ducting into the open air ensuring occupational health standards are met and the cooling of the vehicle's engine is ensured by a direct fan to the radiator and engine assembly.

The end result means a trainee can be taught the skills of operating a motor vehicle and the correct management of dangerous driving situations without putting themselves or the public in danger.....all while driving a real car.



LEADING THE WORLD IN SIMULATOR TECHNOLOGY

The Dubai Government Roads and Transport Authority conducted an independent and uncommissioned evaluation of TAG Systems Simulators and concluded:

- TAG Systems Simulators are advanced, highly developed simulators that are considered world class performers
- There were no issues, failures or unexplained events with the performance over the full evaluation period and the system performed faultlessly
- The use of this technology is expected to quickly increase the quality of novice driver training

THE REASONS WHY!

A FULLY OPERATIONAL MOTOR VEHICLE

TAG Systems is the only company in the world where the driver is in control of a fully operational motor vehicle as part of the simulator. Unlike “mock-up” or “half-cabin” cars and desktop simulators, the occupant drives a TAG System simulator vehicle the same way as they would in the real world with the engine and transmission in operation along with full use of steering, accelerator, brakes and cabin controls. This ensures the ultimate in realism.

CUSTOM DESIGNED IMAGERY AND SCENARIOS

Whilst all TAG Simulators come with complete operating software and educational road networks, our in-house software development team offers the services to individualise the virtual world imagery to the customer’s precise requirements. From replicating exact road networks and landmarks, to user defined driving hazards and scenarios, the purchaser can have complete control over the virtual world contents to suit their end goals.



INTERACTIVITY

Multiple systems can be networked together to allow for full interaction between multiple drivers in the same virtual world. This adds a human element to the driving within a scene.

TRANSPORTABILITY

The TS4000 is designed to take advantage of standard transport infrastructure including road, rail and shipping throughout the world. The vehicle is mounted in such a way that it is secured for transportation yet still easily removed for updating or servicing if required. Once on site, the Simulator can be set up and operable within minutes.

THE VIRTUAL WORLD

The training requirements of all clients are not the same. With the software design and implementation all developed and controlled in-house by the Tag Systems team, the range of imagery and driving scenarios can be designed specifically for the end users needs.

However, purchasers can be rest assured that the operating and training software that is supplied with all TAG Systems Simulators is extensive and includes, amongst numerous other scenarios, the following:

THE DRIVING ENVIRONMENT:

- A variety of driving scenes in day and night format from open country settings to freeways, busy narrow industrial streets, dirt tracks and multi lane highways.



- Scenes feature hills, tunnels, off camber corners and various road surfaces.
- The road network includes all types of controlled and uncontrolled intersections ranging from Traffic Lights, Stop and Give Way Signs through to Roundabouts (single and multilane).



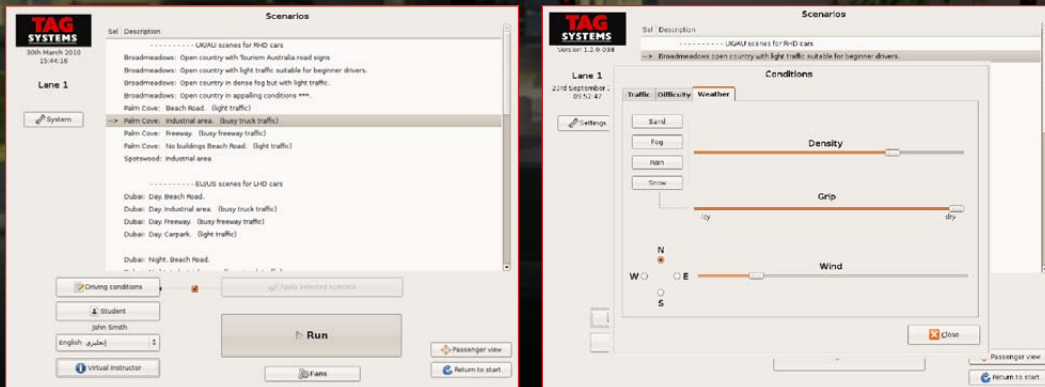
- Varying weather conditions such as fog, rain, snow and sand storms are continuously variable throughout the drive and have the appropriate effect on the road surface grip.



- Road networks can be in left hand or right hand drive format.

EASE OF OPERATION:

- The TAG System software development team have designed the programs with absolute ease of operation in mind. Simple mouse clicks on easily defined tabs ensures the system is extremely user friendly, from changing scenes to varying driving conditions.



THE TRAFFIC:

- The Artificial Intelligence (AI) cars and trucks within the scene behave just like real life road users but the operator has the ability to alter their driving behaviour and density throughout the drive.
- Vehicles can be programmed to obey all traffic rules such as speed limits, give way, keep left, stop etcetera, or they can be controlled to disobey certain aspects of correct driving procedures. Examples of which are:

- Aggressive AI vehicles may exceed the speed limit, fail to give way and tail gate.
- AI vehicles may react to the students driving behaviour, for example apply the brakes if the student is following too close.
- Vehicles may cross over the centre line in order to turn or may pull out from side streets or driveways without warning.



- Vehicles can be paused to allow driving through "frozen" traffic.
- The density of traffic on the road is also variable.

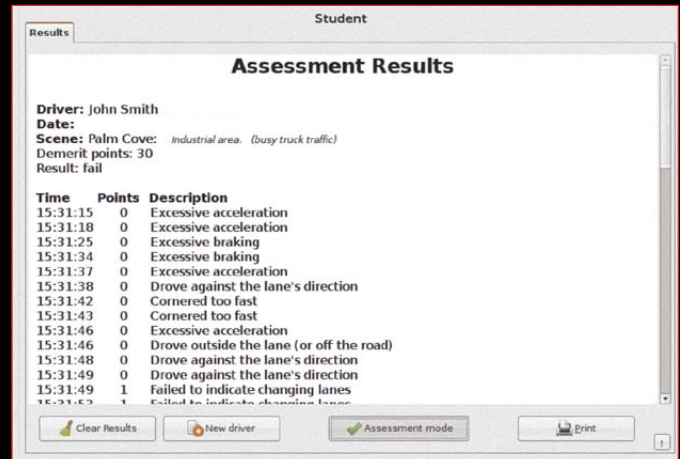
THE VIRTUAL INSTRUCTOR:

- Students can learn to drive with an instructor in the passenger seat, but the simulator also features a "virtual instructor". The virtual instructor is an audible in car voice prompt to give routing instructions to the student.
- The virtual instructor also gives voice warnings for speeding or following too close etcetera.
- Research shows that 25% of provisional driver crashes involve colliding with the rear of another vehicle travelling in the same direction (New South Wales Road Traffic Authority figures). To teach students the recommended safe stopping distances required while driving, TAG systems has introduced the "safety zone"; a transparent overlay on the road ahead. It is green when the student is following a vehicle at a safe stopping distance or approaching an intersection at a speed to safely stop. The "safety zone" turns red if the student does not leave enough distance behind a vehicle or time to stop safely. This feature can be turned on or off by a simple click of the mouse on the operators console, before or during the drive.



STUDENT MONITORING:

- The system is aware of the driver's adherence to the road rules, their position within the lane, appropriate use of acceleration and braking and cornering speeds etcetera. This is continuously measured and recorded by the system's computers.
- The driver's behaviour is also continuously monitored and any noted driving infringements are displayed on the rear audience monitor.
- A printed report is available post drive in two formats:
 - Summary report noting mistakes and how many times they occurred. For example, failing to stop at stop signs, speeding – by what speed, for what distance and in what speed zone.
 - Assessment report listing every infringement in chronological order with any demerit points incurred with an optional pass/fail statement.



- All monitored data can be exported to an industry standard file format for collating or research.
- Measurements can be obtained in metric or imperial formats.
- The driver's entire lesson is recorded from the rear audience monitor view. This can be produced to a DVD showing the actual drive and the infringement notes on the screen, allowing the student to examine their own driving behaviour and to assist in further tuition after the lesson.

MULTI LINGUAL:

- All on screen messages, printed reports and in-car voice prompts etcetera can be in any language(s) of choice. (optional at time of order)



THE PHYSICAL WORLD

The Simulator itself is housed in a custom designed 20' High Cube Shipping Container and operates on single phase power. This transportable model comes as a complete turn key operation which includes a new motor vehicle.

A robust steel frame is mounted on to a turntable on the floor of the Container. This frame houses the computers, the 3 drivers view plasma screens, the exhaust extraction and the cooling fans as well as the TAG engineered roller system, all of which are designed to be mechanically simple and robust for long life and minimal maintenance.

THE CONTAINER:

- Custom designed 20' High Cube Shipping Container which opens up both longitudinal sides for easy access and perfect audience presentation.

VISUALS:

- Drivers view: 3 x 65" high definition plasma screens which provide for a 180 degree horizontal field of view of the virtual world.
- Audience view: 50" high definition plasma screen.
- All imagery is displayed at a high refresh rate run at a constant (locked) 60 frames per second.

COMPUTERS:

- 5 x standard high end consumer PC systems integrated with "off the shelf" electronics for data acquisition and control.

ACOUSTICS:

- In car sound system provides voice prompts, wind noise, tyre squeals and AI horn noises etcetera.

POWER REQUIREMENTS:

- The Simulator operates on single phase electricity comprising of three separate 10amp circuits.
- A Generator option is available for use in remote areas.

EXHAUST EXTRACTION:

- All fumes are extracted directly from the vehicle's exhaust system using an industrial strength extraction fan and are expelled via unobtrusive ducting into the open air ensuring occupational health standards are met.

ENGINE COOLING:

- Cooling of the vehicle is ensured by an industrial strength cooling fan mounted directly in front of the vehicle's radiator and engine assembly. This fan is enclosed by a regulated safety cage structure to ensure occupational health standards are met.

TURNTABLE:

- The Simulator is permanently mounted on a steel fabricated turntable. This turntable allows for the system to be rotated 90 degrees within the container. The Simulator runs length ways when it's closed for lock-up or transportation and simply rotates 90 degrees when open for operation. A locking device ensures the turntable cannot move from either required position. It is a very quick and simple procedure that can easily be completed by one person.

DIMENSIONS:

- Closed position: 6mtr Length, 2.5mtr Width, 2.9mtr Height
- Operating position: 6mtr Length, 8.5mtr Width, 2.9mtr Height



DRIVER TRAINING

Pre-Learner drivers can now safely learn the complex controls of a motor vehicle in a totally safe and non stressful environment away from the hectic and dangerous roads we all drive on daily.

The driving techniques that licensed drivers take for granted are key elements in teaching Pre Learner students the skills of driving in the real world.

For instance, Learner Books detail the rules of the road, but have you ever stopped to think that they don't teach the student how to use a clutch, how and when to brake safely, the consequences of turning a steering wheel severely when you are travelling at fast speeds around a corner etcetera. The fact is, that when a student passes his or her learners exam and obtains their "L-Plate" licence, they are expected to know how to drive a car immediately without any training whatsoever. In the TAG TS4000 simulator, they are taught the skills required BEFORE they hit the road.

At the click of a mouse, students can be taught driving skills required in day and night driving, on wet and dry roads, in quiet and busy streets or freeways, in amongst law abiding or erratic other road users and in any number of differing intersection configurations.

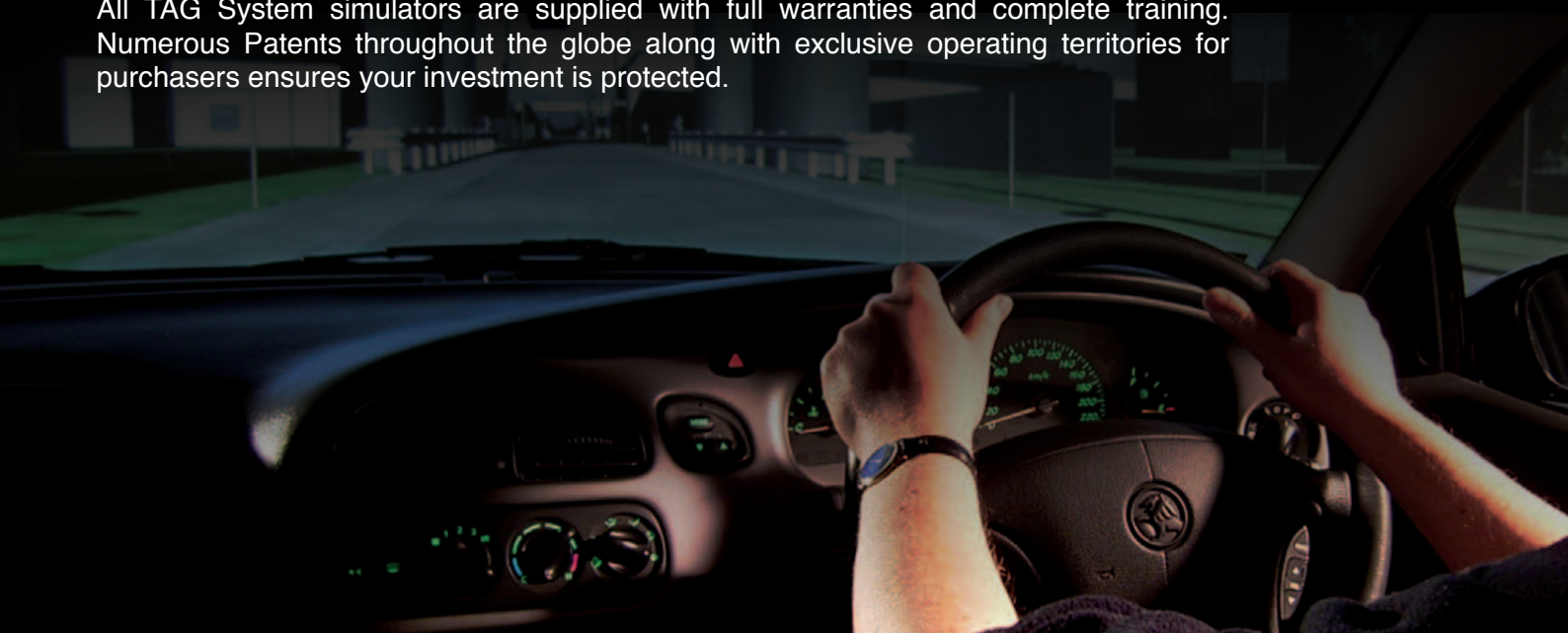
A major cause of accidents on our roads is driver distraction. Texting or talking on a mobile telephone, programming and reading a GPS Unit, changing CD's or radio stations, even a simple task like turning on the air conditioner can all be fatal distractions whilst driving in the real world. By recreating these scenarios in the TS4000, the student has a means of watching and learning the consequences of their driving actions while being distracted. This post drive tuition can occur AFTER their lesson through the generated reports and recorded DVD of the drive.

Hazard perception is taught globally at learner driver stage but do we teach hazard management enough? Using the TS4000, any number of dangerous on road situations can be programmed into the software to create a potentially fatal scenario. What if in the real world a truck pulls out from a side street without warning? The student may see the truck, but what actions do they take? Do they avoid it, collide with it or cause an accident? By replicating this scene and numerous other hazardous situations, the simulator becomes a crucial tool in teaching perception awareness and more importantly the management thereof.

BEST OF ALL FOR THE STUDENTS, ALL OF THEIR LEARNING IS CONDUCTED IN A 100% SAFE, EFFECTIVE AND ENJOYABLE ENVIRONMENT.

THE TAG ASSURANCE

All TAG System simulators are supplied with full warranties and complete training. Numerous Patents throughout the globe along with exclusive operating territories for purchasers ensures your investment is protected.



OTHER PRODUCTS

TSF1-4000

THE TRANSPORTABLE ENTERTAINMENT EXCITEMENT MACHINE!

Formula 1 “wanna-be” race car drivers this ones for you!

Driving this simulator is an exhilarating, powerful adrenalin rush. It comes supplied with a custom designed and built open wheel Formula 1 type race car which, like all TAG Systems simulators has the engine and transmission running while in operation. This vehicle revs to 16,000 RPM!

The noise, vibrations and genuine 180 degree wrap around vision will have you thinking you’re doing laps around Monaco, Albert Park or Silverstone. Fully transportable by road, rail or sea, the TSF1-4000 is the ultimate travelling roadshow. Perfect for amusement, corporate entertainment, promotions and product launches to name a few.

This system comes with a choice of vehicles from V8 race cars through to the Formula 1 type open wheel car.

TS6000

MIX THE EDUCATIONAL AND ENTERTAINMENT APPLICATIONS OF THE TS4000 SERIES AND BUILD THE SIMULATOR IN-GROUND IN A LARGER, FULLY ENCLOSED CELL AND YOU HAVE THE TAG SYSTEMS TS6000.

With a choice of rear wheel drive motor vehicles to be supplied with the system, this model is for the business that wants to operate education, entertainment or a mix of both from a permanent venue.

TS8000

THE PINNACLE IN THE TAG SYSTEM SIMULATOR RANGE.

TS8000 rear wheel drive simulators are fixed permanently in the ground. This particular system caters for the general public to use their own car and is specifically designed so that vehicles can be loaded and unloaded in a short space of time, giving a high turnover of customers which is perfect from both the end users point of view and from a business cash flow perspective.

It can be used for both entertainment and education applications.

The vehicle is simply driven on to the system and is secured to the dynamometer within seconds by TAGs patented hold down system. 3 screens measuring a massive 4.5 metres x 3.2 metres each give the driver an unprecedented 200 degrees peripheral view of the virtual world. After the drag race, circuit race or training session the vehicle is released from the system, the motorised middle screen is raised and the vehicle drives forward off the system allowing for the next entrant to enter the lane. Turn around time from releasing one vehicle to loading the next can be under one minute.

Whilst the general public is able to use their own rear wheel drive vehicle on the system, a venue that utilizes the TS8000 simulators may also want to purchase specific cars for the public to hire, for example a high performance V8 or a Formula 1 type open wheel race car.

The TS8000 is the perfect system for a wide range of applications including driver education, entertainment, product launches and corporate functions to name a few.



WWW.TAGSYSTEMS.COM.AU

TAG SYSTEMS

More detailed information on these models can be found on the TAG Systems website or by contacting a TAG Systems representative.

**TAG SYSTEMS
20 AINSLIE ROAD
CAMPBELLFIELD
VICTORIA
AUSTRALIA 3061
TELEPHONE: +61 3 9305 1122
FACSIMILE: +61 3 9305 1466
WEBSITE: WWW.TAGSYSTEMS.COM.AU
EMAIL: INFO@TAGSYSTEMS.COM.AU**

**MEMBER OF SIMULATION INDUSTRY
ASSOCIATION OF AUSTRALIA**