

# Vection™ Real-Time Simulation Software

Vection™ is DriveSafety's high fidelity real-time driving simulation software. It is an essential component of the DS-600c and DS-100c simulators. It is the brains behind the system. Vection™ is comprised of the following core software and data subsystems:

**Core Software** is the deterministic, main real-time executive, handling subsystem coordination and data communications. A constant clock operating at 60 Hz per second (<48 msec latency) provides a dependable core leveraged by the various subsystems.

**Vehicle Dynamics Subsystem** is a physics-based model of the simulated vehicle's ride, handling and performance characteristics. The Control Loader couples the Vection™ software with the vehicle, creating the effective driving simulation. Associated with this is the optional Q-Motion™ roll and pitch platform that enhances the real-life driving experience. Q-Motion's total range of longitudinal travel is approximately five (5) inches.; pitch range is approximately ±2.5 degrees.

**Scenario Control Subsystem** is management software for controlling dynamic entities and states within the simulated driving environment and surroundings outside of the actual vehicle dynamics. Scenario control includes autonomous traffic simulation, scripted events, relational behaviors and environmental controls. This subsystem interfaces with DriveSafety's HyperDrive Authoring Suite™ — the drive scenario creation software.

**Visual Subsystem** includes software and data components of the high resolution (1024 x 768) visual rendering process, including visual database models and extensive real-time graphics API functions. Visuals rendered through 3-6 projectors and 3 rear-view mirror LCDs.

**Audio Subsystem** includes software and data components of audio simulation process, including sound samples, synthesis and control plus engine noise, wind noise, tire squeal, scenario vehicles, and doppler effect are delivered through 4 integrated cab speakers.

**Instrumentation and Control Loading Subsystem** interfaces with the DS-600c cab's dashboard instrumentation. It operates at 2400 Hz delivering force feedback steering through its electric servomotor.

**Data Collection** at rates from 1 - 60 Hz including over 80 standard performance measures. Users can define 25 unique measurements. Integrates with third-party data collection systems including head monitoring, eye tracking and various psychological devices.

## Ordering Information

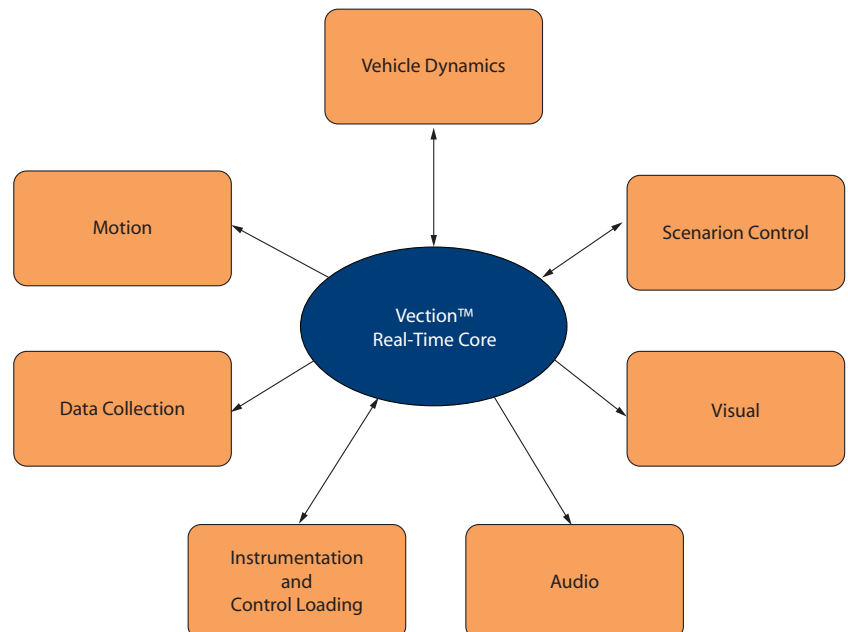
- Host license  
1 required
- Channel licenses  
5 required for 180° simulator  
6 required for 240° simulator  
7 required for 300° simulator  
8 required for 360° simulator
- HyperDrive Authoring Suite™ license  
1 required
- DashBoard operator's console license  
1 required

## Operating System Requirements

- Linux (customized by DriveSafety)

## Hardware Requirements

- DriveSafety supplied (mandatory)
- Customer supplied (not applicable)



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