

Down by The River

2010 HVE Forum

Workshops

- **NEW!** Using New Features (Automatic Transmission, Distance Tool, Speed Follower, Hydroplaning, ...)
- **NEW!** Environment Building for the Professional Graphic Artist
- Using **EDCRASH**, **EDSMAC**, **EDSMAC4**, **EDSVS** and **EDVTS** in **HVE-2D**
- Creating and Enhancing Environments Using the 3-D Editor
- **DyMESH** 3-D Collision Model Overview and Applications
- Importing Scene Drawings as Environment Models
- Tractor-Trailer and Commercial Vehicle Simulation
- Advanced Multi-vehicle Simulation Using **SIMON**
- Importing 3-D Environments from Total Stations
- Theoretical and Applied Vehicle Dynamics
- Simulating Curbs, Potholes and Soft Soils
- Multi-Vehicle Collisions Using **EDSMAC4**
- Building Vehicles for **HVE** and **HVE-2D**
- Brake System and ABS Simulation
- Simulating Blow-outs and Rollovers
- Details of the **HVE** Vehicle Model
- **HVE** and **HVE-2D** User's Groups
- Recording Simulation Movies
- Advanced **HVE** and **HVE-2D**
- **HVE** White Paper Session

• = New Content

 Animation



March 1 - 5, 2010
Hotel Contessa – On the Riverwalk
San Antonio, Texas



Workshop Registration



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2010 HVE Forum

Workshop Schedule

March 1 – 5, 2010
Hotel Confessa
San Antonio, TX US

	Room	Monday**	Tuesday	Wednesday	Thursday	Friday
8:30 a.m.	A	Advanced HVE - Part I	Advanced HVE - Part III	3D Vehicles - Part I: Details of the HVE Vehicle Model	3D Vehicles - Part II : SIMON	3D Vehicles - Part III: HVE Brake Designer & ABS Model
** Monday 8:30 am – 9:00 am Opening Remarks in General Session Meeting Room	B	Advanced HVE-2D – Part I	Advanced HVE-2D – Part III	Heavy Vehicle Brake Simulation in EDSMAC4	Advanced 3D Environments: Part I	Building a Vehicle for HVE & HVE-2D
	C	HVE & HVE-2D System Overview	Using EDSMAC & EDSMAC4	3D Editor: Functionality, Friction Zones & Importing Models	EDSMAC4: Model Overview	3D Vehicles - Part IV: Blowouts & Rollovers
	D		Environment Building for the Professional Graphic Artist		Theoretical and Applied Vehicle Dynamics Part I	Theoretical and Applied Vehicle Dynamics Part III
12:00 p.m. -1:30 p.m.		Lunch Break	Lunch Break	Lunch Break	Lunch Break	End of 2010 HVE Forum
1:30 p.m.	A	Advanced HVE - Part II	Advanced HVE - Part IV	HVE Users Group	DYMESH Collision Algorithm	
	B	Advanced HVE-2D – Part II	Advanced HVE-2D – Part IV	HVE-2D Users Group (1:30 – 3:00)	Advanced 3D Environments: Part II	
	C	Using EDSYS & EDVTS	Using EDCRASH	HVE White Paper Session (3:15 – 5:00)	Simulation Movies: Learning the Basics	
	D		Environment Building for the Professional Graphic Artist		Theoretical and Applied Vehicle Dynamics Part II	
5:00 p.m. - 6:00 p.m.		Social Hour - Event Room (5:00 – 7:00 pm)	Social Hour - Hotel Lounge	Social Hour - Hotel Lounge	Social Hour - Hotel Lounge	11/9/09

INTRODUCTION TO *HVE* & *HVE-2D*



HVE & *HVE-2D* System Overview

Instructor: Daniel Peralta
Time: Monday, 9:00 AM

Description:

The purpose of this workshop is to introduce the student to the basic features and capabilities of *HVE* & *HVE-2D*. The following material is covered:

- Basic Overview – The student will learn about the capabilities and enhancements of the *HVE* & *HVE-2D* simulation environments.
- User Interface – The student will learn how to use the Vehicle Editor, Environment Editor, Event Editor, and Playback Editor.

Upon completing this workshop, the student will understand the fundamentals of using *HVE* & *HVE-2D* and will be prepared to apply these fundamentals in other workshops at the *HVE* Forum.

Using *EDSVS* & *EDVTS*

Instructor: Daniel Peralta
Time: Monday, 1:30 PM

Description:

The purpose of this workshop is to familiarize the student with the basic features and capabilities of *EDSVS* and *EDVTS* in real world applications.

The following material is covered:

- Basic Overview – The student will learn about the capabilities and enhancements of the programs.
- Real world example – The student will work through a case study which showcases the capabilities.

Upon completing this workshop, the student will be able to take advantage of the capabilities of *EDSVS* and *EDVTS* in the *HVE* or *HVE-2D* simulation environment.

Using *EDSMAC* & *EDSMAC4*

Instructor: Joseph H. Canova
Time: Tuesday, 8:30 AM

Description:

The purpose of this workshop is to familiarize the student with the basic features and capabilities of *EDSMAC* and *EDSMAC4* in real world applications. The following material is covered:

- Basic Overview – The student will learn about the capabilities and enhancements of the programs.
- Real world examples – The student will work through case studies which showcase the capabilities and also the differences between *EDSMAC* and *EDSMAC4*.

Upon completing this workshop, the student will be able to take advantage of the capabilities of *EDSMAC* and *EDSMAC4* in the *HVE* or *HVE-2D* simulation environment.

Using *EDCRASH*

Instructor: Joseph H. Canova
Time: Tuesday, 1:30 PM

Description:

The purpose of this workshop is to familiarize the student with the basic features and capabilities of *EDCRASH* in real world applications. The following material is covered:

- Basic Overview – The student will learn about the capabilities and enhancements of *EDCRASH*.
- Real world example – The student will work through a case study which showcases the capabilities of *EDCRASH*.

Upon completing this workshop, the student will be able to take advantage of the extended capabilities of *EDCRASH* in the *HVE* or *HVE-2D* simulation environment.

Students are strongly encouraged to bring their computers to work through examples provided in this introductory level series of workshops.

ADVANCED HVE

Advanced HVE - Parts I, II, III and IV

Instructors: Terry D. Day and Kenneth S. Baker
Times: Part I - Monday, 9:00 AM
Part II - Monday, 1:30 PM
Part III - Tuesday, 8:30 AM
Part IV - Tuesday, 1:30 PM



Description:

This workshop is designed for the advanced user who really wants to learn to apply *HVE's* advanced feature set to real-world cases. If you're looking to learn solid, proven techniques for applying *HVE* to your work through a hands-on approach, this is the workshop for you.

The Advanced Workshop for 2010 goes through *from start to finish* the complete, step-by-step procedures for building the case file used in EDC's Bullitt chase scene simulation found on EDC's web site (see www.edccorp.com/bullitt). Bring your popcorn; we'll also show you the actual chase scene filmed in 1968! The simulation uses a wide variety of *HVE's* powerful features. In fact, it is quite reasonable to say that this simulation could not be created without these features. At the conclusion of the workshop, the attendee will have created their own version of the Bullitt chase scene on their computer, including several movies. The Advanced Workshop closes with an technical overview for each of *HVE* Version 7.1's new features, including the *HVE* Hydroplaning Model, the Distance Tool, the *HVE* Automatic Transmission Model and the *HVE* Driver Model, Speed Follower option.

Students are strongly encouraged to bring their computers to work through the Bullitt chase scene simulation and build their own case file.



ADVANCED *HVE-2D*

Advanced *HVE-2D* - Parts I, II, III and IV

Instructors: James P. Sneddon
Times: Part I - Monday, 9:00 AM
Part II - Monday, 1:30 PM
Part III - Tuesday, 8:30 AM
Part IV - Tuesday, 1:30 PM



Description:

This workshop series is designed for the user who really wants hands-on exposure to using *HVE-2D* to simulate and reconstruct vehicle crashes and potential loss-of-control scenarios. The student will edit environments, build and edit vehicles and then use these objects in simulation studies based upon examples applicable to the real-world. If you're looking to learn solid, proven techniques for applying *HVE-2D* to your work, then this is the workshop series for you.

Attendees of this workshop series should be familiar with the use of all of the editors (Vehicle, Environment, Event and Playback) of the *HVE-2D* simulation environment, as they will be used extensively in the workshops. Attendees should also be prepared to use physics models such as *EDCRASH* and *EDSMAC4* during the workshops.

Each workshop builds upon experiences from the previous workshop, so students should plan to attend all parts. It is highly recommended that each student bring their own laptop computer to use during the workshops.

Upon completion of the workshops, the student will have a solid understanding of how to use the actual vehicles and the actual roadways in their simulations and reconstructions. They will also have greater insight into the capabilities of the physics models for real-world applications, which will help improve their accuracy, their efficiency and their workflow as a user.

Students are strongly encouraged to bring their computers to work through examples provided in this series of workshops.

COMMERCIAL VEHICLE SIMULATION

Heavy Vehicle Brake Simulation in *EDSMAC4*

Instructor: James P. Sneddon
Time: Wednesday, 8:30 AM

Description:

The purpose of this workshop is to show the student how to analyze heavy truck braking issues when using *EDSMAC4*. The S-cam brake system will be reviewed, and simple hand-calculations based on the Heusser equations published in SAE 910126 will be shown. Once these equations and concepts are presented, the calculated values will be used in the *EDSMAC4* model to study vehicle braking events.

Upon completing this workshop, the student will be able to better study braking issues and crashes involving trucks where braking is a part of the analysis.

This workshop is intended for experienced *HVE* and *HVE-2D* users, but all levels are encouraged to attend as the concepts presented are extremely powerful and beneficial for all users.

3-D VEHICLE SIMULATION

3-D Vehicle Simulation, Part I: Details of the *HVE* Vehicle Model

Instructor: Terry D. Day
Time: Wednesday, 8:30 AM

Description:

The purpose of this workshop is to acquaint the student with the details of the complete *HVE* Vehicle model. This model is used in the *SIMON*, *EDVSM* and *EDVDS* simulations. The following material is covered:

- Complete walk-through of the *HVE* Vehicle Editor. This includes the Sprung Mass, Suspensions, Tires, Brakes, Drivetrain and Steering Systems.
- Details regarding the sources of the data.
- Description of how each parameter is used.
- Description of how each parameter influences vehicle handling and simulation.

Upon completing this workshop, the student will understand all vehicle parameters as required to achieve valid simulation results. The student will also gain an understanding of how various parameters affect vehicle handling.

3-D Vehicle Simulation, Part II: *SIMON*

Instructor: Terry D. Day
Time: Thursday, 8:30 AM

Description:



The *SIMON* (Simulation Model Non-linear) vehicle simulation model is the first vehicle simulation model built by EDC from the ground up. *SIMON* incorporates not only new, object-oriented design technologies, it also is the first model to use all of *HVE*'s advanced features. The following materials are covered:

- Basic Model Overview - The student learns about the basic features incorporated into the *SIMON* program.
- Vehicle Dynamics Model - The student learns how a truly 3-dimensional vehicle dynamics model is designed and implemented.
- *SIMON* Extended Options - The student learns about options for performing single vehicle and articulated vehicle simulations, and for performing true 3-dimensional collision simulations using EDC's patented *DyMESH* technology.
- *SIMON* Output - The student learns about all the output parameters produced by *SIMON*, and how to debug and improve simulation results by evaluating the output parameters.
- Examples - This workshop provides numerous examples of the use of *SIMON* for vehicle handling and collision studies. A special emphasis is placed on reviewing and understanding *SIMON*'s output variables to improve analysis and interpretation of complex events and maneuvers.

Upon completing this workshop, the student will understand *SIMON*'s general design assumptions and feature set.

3-D VEHICLE SIMULATION (CONT'D)

3-D Vehicle Simulation, Part III: *HVE* Brake Designer & ABS Model

Instructor: Terry D. Day
Time: Friday, 8:30 AM

Description:

In this workshop the student will learn the theoretical basis and practical application of the *HVE* Brake Designer. Specifically, the course will cover:

- Free-body analysis of various brake types
 - Temperature model for drum brakes
 - Using the *HVE* interface to simulate a complete brake system, from the brake pedal to the wheel brake assemblies
 - Examples using the *HVE* Brake Designer for parametric studies and ways to accurately simulate a failed brake system
- The student attending this workshop will also learn about ABS and the *HVE* ABS Simulation Model. Specifically, the course will cover:
- An overview of ABS and current ABS methodologies
 - A detailed discussion of the *HVE* ABS Simulation Model user interface and how various parameters are used.
 - The updated model for displaying skidmarks from tires on ABS-equipped vehicles
 - Examples comparing maneuvers with ABS-equipped and non-ABS-equipped vehicles

Upon completing this workshop, the student will have the background and practical knowledge necessary to incorporate custom brake and ABS models into their *HVE* vehicle simulations.

3-D Vehicle Simulation, Part IV: Blowouts and Rollovers

Instructor: Kenneth S. Baker
Time: Friday, 8:30 AM

Description:

The purpose of this workshop is to acquaint the student with the use of *EDVSM* and *SIMON* for studying complex accident scenarios involving tire blow-out, traversing soft soil, curb impact and vehicle rollover. The following material is covered:

- *HVE* Tire Blow-out Model - The student is exposed to the analytical method used to simulate air loss in a tire. Model parameters are investigated and tire modeling effects are studied.
- Using *EDVSM* and *SIMON* to Study Rollover – The student learns basic techniques for simulating rollovers, including the influence of friction, terrain discontinuities, CG height, suspension characteristics and driver inputs.
- Vehicle Body vs. Ground Interaction – The student learns how *EDVSM* and *SIMON* model the interaction forces and moments between the vehicle body and terrain during a rollover.
- Tire-Terrain Models - The student is introduced to the *HVE* Radial Spring, Sidewall Impact and Soft Soil Tire-Terrain models, and how they differ from the Point Contact model that is commonly used.
- Examples - This workshop provides several examples using *EDVSM* and *SIMON* to study tire blow-outs and rollovers. Validations for *EDVSM* and *SIMON* and the *HVE* Tire Blow-Out Model are included.

Upon completing this workshop, the student will be able to use *EDVSM* and *SIMON* to study tire blow-outs, soft soil traversals, curb impacts and vehicle rollovers.

COLLISION SIMULATION

DyMESH 3-D Collision Algorithm, Version 2

Instructor: Terry D. Day
Time: Thursday, 1:30 PM

Description:

The purpose of this workshop is to acquaint the student with the capabilities of the updated *DyMESH* collision model. The following material is covered:

- Basic *DyMESH* Overview - The student is exposed to the basic modeling approach used by *DyMESH*.
- *DyMESH* Integration into *SIMON* – The student learns how *DyMESH* is incorporated into the *SIMON* model to provide a complete simulation of a collision event.
- *DyMESH* Output Parameters – The outputs resulting from a collision simulation are explained.
- *DyMESH* Validation - Validations are presented providing examples of the use of *DyMESH* for vehicle vs. vehicle and vehicle vs. barrier crashes.

Upon completing this workshop, the student will understand the theory of *DyMESH* and its applications to real-world 3-dimensional collision simulation problems. The workshop will include a special emphasis on the differences between *DyMESH* versions 1 and 2.

EDSMAC4: Model Overview

Instructor: Kenneth S. Baker
Time: Thursday, 8:30 AM

Description:

The purpose of this workshop is to acquaint the student with the modeling procedures and capabilities of the *EDSMAC4* simulation model. The following material is covered:

- General overview of the *EDSMAC4* simulation model
- Detailed discussion of the improvements to the collision model and comparison with *EDSMAC*
- Detailed discussion of the articulated vehicle model
- Examples – This workshop provides several examples using *EDSMAC4* to simulate collisions involving passenger vehicles and heavy trucks.

Upon completing this workshop, the student will understand the basic concepts and capabilities of the *EDSMAC4* simulation model.

VEHICLE DYNAMICS

Theoretical and Applied Vehicle Dynamics, Part I

Instructor: L. Daniel Metz
Time: Thursday, 8:30 AM

Description:

This workshop will provide an overview of vehicle dynamics concepts discussed in greater detail in the EDC Theoretical and Applied Vehicle Dynamics course. The following material will be discussed in this workshop:

- Introduction to Vehicle Dynamics
- Tire Mechanics
- Control Theory Concepts

Upon completing this workshop, the student will have an increased understanding of the basic concepts of vehicle dynamics.

Theoretical and Applied Vehicle Dynamics, Part II

Instructor: L. Daniel Metz
Time: Thursday, 1:30 PM

Description:

This workshop will provide an overview of dynamic and transient model concepts discussed in greater detail in the EDC Theoretical and Applied Vehicle Dynamics course. The following material will be discussed in this workshop:

- Dynamic/Transient Handling Models
- Dynamic/Transient Acceleration Models
- Dynamic/Transient Ride Models

Upon completing this workshop, the student will have an increased understanding of dynamic and transient models related to vehicle dynamics.

Theoretical and Applied Vehicle Dynamics, Part III

Instructor: L. Daniel Metz
Time: Friday, 8:30 AM

Description:

This workshop will provide a hand-on understanding of vehicle dynamics by performing simulations of vehicle handling maneuvers using *HVE*. The students will work through several computer exercises of real-world proving ground tests.

Upon completing this workshop, the student will have greater understanding of vehicle dynamics by the use of simulations to reinforce concepts presented in lecture. Students wishing to further their understanding are encouraged to attend the EDC Theoretical and Applied Vehicle Dynamics course.

BUILDING ENVIRONMENT MODELS

Environment Modeling for the Professional Graphic Artist, Part I & II

Instructor: Jay Syverson / OnPoint Productions, Seattle, WA
Times: Part I - Tuesday, 8:30 AM
Part II - Tuesday, 1:30 PM



Description:

This new workshop is designed to give the professional graphic artist using 3D Studio Max, the background required to properly build 3-D environment models for use in *HVE*. The course content will provide step-by-step instructions for the construction of custom environments that are easily imported into *HVE*. Attention is also focused on building surfaces that vehicles can drive on and interact with during rollover simulations.

Specific course topics include:

- Working as a team with the *HVE* user
- The production mindset you must have (For admissibility, foundation is everything!)
- The basic site information you need
- Construction basics (coordinate system and units)
- Additional site information to add detail and accuracy for the *HVE* simulation
- Environment surveying overview: simple total station to complex professional surveys
- Reference photographs - scene and vehicles
- Cleaning up the initial survey data
- Importing the survey data into MAX and positioning the base model
- Identifying essential objects to include in the environment model
- Adding necessary, additional interactive objects other than road surfaces
- Adding visual reference elements to the environment model
- Using texture maps - what works and what to avoid
- Exporting the model from MAX into *HVE*
- Importing *HVE* output into MAX to produce high-end visual presentations
- Practical examples - good, bad and...start over

Professional graphic artists who attend this workshop will fully understand how to build environment models for *HVE* that provide for predictable simulation results, as well as a smooth, accurate and admissible presentation to the court or mediator.

All users should encourage their graphics partners to attend this workshop!

BUILDING ENVIRONMENT MODELS (CONT'D)

Advanced 3-D Environments, Part I & II

Instructor: James P. Sneddon
Times: Part I - Thursday, 8:30 AM
Part II - Thursday, 1:30 PM

Description:

The purpose of this workshop is to extend a *HVE* User's abilities to build detailed terrain models for their simulation studies. Using a combination of CAD tools, NURBS modeling software and the 3-D Editor, a terrain model will be built of a real-world roadway example. This workshop uses Rhinoceros extensively.

The following material is covered:

- Review of actual site and identification of key elements
- Planning terrain model requirements
- Discussion of surveying and data collection methods
- Creating a preliminary terrain model
- Add additional roadway markings such as center lines and fog lines
- Establishing mesh density and surface normal orientation
- Importing 3-D Environment from 3rd party CAD or COGO software
- Quality checking the finished terrain model using simulations of vehicles driving on the surface

Upon completing the Advanced 3-D Environments workshops, the student will understand the methodology used to build a preliminary model and be able to acquire point data themselves, or work with a surveying company to develop a model for their use in *HVE*. Additionally, the student will be familiar with the processes required to build detailed models of any roadway or terrain required for their own detailed simulation studies.

USING THE 3-D EDITOR

3-D Editor: Functionality, Friction Zones & Importing Models

Instructor: Daniel Peralta
Time: Wednesday, 8:30 AM

Description:

The purpose of this workshop is to expose the student to the features and capabilities of the 3-D Editor. The 3-D Editor can be used for creating simple environment models or for enhancing imported DXF or VRML format environment models. Most importantly, the 3-D Editor is the only tool for assigning friction factors to areas of the environment model.

The workshop will cover the basic functionality of the 3-D Editor, develop simple environment models to reinforce the concepts, and then focus on importing and enhancing DXF format models for use in simulations and reconstructions.

The following material is anticipated to be addressed:

- Basic Overview - The student will learn the basic capabilities of the 3-D Editor, including creating surfaces, boxes, spheres, cylinders and text.
- Editing Overview - The student will learn how to edit the geometry and material attributes of previously created environments.
- Using Friction Factors - The student will learn about `GetSurfaceInfo()`, the basic object types (*Road*, *Friction Zone* and *Other*), and how to edit an object's friction factor.
- Object Precedence - The student learns about object hierarchy and how *HVE* deals with tunnels, bridges, overlapping surfaces and any other issues related to object precedence using examples such as an oil slick, speed bump, sidewalks and others.
- Saving Files - The student learns various methods of saving imported files, including saving the environment for use in other cases or saving objects into the library for use in later environments.
- File Types - The student learns more about the various types of file formats supported by *HVE*.
- Pre-processing Environment Models - The student learns how to prepare an environment model in AutoCAD for importing into the Environment Editor.
- Using Aerial Photos – The student learns how to build a scaled surface and properly apply an aerial photo or bitmap image to the surface.
- Creating a Complete Environment – The student will build a complete environment using the individual items created in this workshop.

Multiple examples will be explored by the students using handouts or materials provided in the workshop. Attendees are encouraged to bring their laptops along with their AutoCAD (or similar) CAD software in order to produce sample DXF files for import into their *HVE* or *HVE-2D* software. The CAD application used for examples provided by the instructor will be AutoCAD.

Upon completing this workshop, the student will be able to use the 3-D Editor to create and edit virtually any type of drivable surface, as well as import files created in AutoCAD, Rhinoceros, 3DStudio (or other programs) into the Environment Editor and save them in the case file or as a separate file available for use in other cases.

CREATING SIMULATION MOVIES

Simulation Movies: Learning the Basics

Instructor: Daniel Peralta
Time: Thursday, 1:30 PM

Description:

The purpose of this workshop is to acquaint the student with the capabilities of the Playback Editor. The following material is covered:

- Creating and Printing Reports - The student will learn how to select and print the various output reports produced by each event.
- Variable Output - The student will learn how to select and print time-dependent parameters produced by each simulation event.
- Creating Trajectory Simulations - The student will learn how to select Trajectory Simulations produced by each simulation event.
- Viewer Basics - The student will learn how to use the two basic methods available for setting the view: Viewer Thumb Wheels and Set Camera dialog.
- Creating a Playback Window - The student will learn how to combine multiple simulations into a Playback Window. The "rules of precedence" will be addressed.
- Object-based Cameras - The student will learn how to attach the view (camera) to a moving object (e.g., vehicle). The use of a "Camera Car" is also addressed.
- Creating Real-time Simulations - The student will learn how to use the *HVE* video compression system to create and store a real-time video of the current sequence in the Playback Window.

Upon completing this workshop, the student will be able to view and print output reports, trajectory simulations and variable output tables. The student will also be able to create a Playback Window that includes a multiple-event accident sequence, from which one can then create and replay simulation movies, as well as output simulation movies to other formats.

BUILDING VEHICLE MODELS

Building a Vehicle for *HVE* & *HVE-2D*

Instructor: Daniel Peralta
Time: Friday, 8:30 AM

Description:

The purpose of the workshop is to familiarize the student with the processes and standards EDC uses to build vehicles for *HVE*. The following material is covered:

- Vehicle Data Files- The student is presented with a detailed overview of the process used by EDC for obtaining the necessary vehicle data and for reducing these data into the form required by the *HVE* Vehicle Data structure. A sample Vehicle Data File is reviewed in detail.
- Vehicle Geometry Files- The student is presented with an overview of how to create a vehicle geometry file using a digitizer, as well as customize the geometry using 3-D CAD software. This will provide the user with an outline for creating a geometry file and tools for customizing the appearance of a vehicle.
- Building Your Own Vehicles – The student is presented with a detailed overview of the process to customize a generic vehicle from the Generic Database in *HVE* and *HVE-2D* by editing data parameters and geometry file. The process of saving this customized vehicle into the User Database for use in future cases is also discussed.

Upon completing this workshop, the student will have a good outline to follow for building a vehicle for *HVE* and *HVE-2D* and the necessary tools for customizing its appearance and data parameters.

USERS GROUP MEETINGS

HVE Users Group Meeting

Open Forum Discussion about *HVE*

Moderator: Kenneth S. Baker

Time: Wednesday, 1:30 PM

Description:

The purpose of this workshop is to provide and encourage an open forum for discussing user's experiences with *HVE*. The *HVE* Users Group Meeting has several goals:

- Creative Applications - Experience has shown there are often several different ways to approach a problem using *HVE*. Usually one method stands out as the superior method. Users are encouraged to come to this meeting ready to share their experiences with other users.
- Wish List - Users are encouraged to come to this meeting with their Wish List of improvements or added functionality that would be helpful in their use of *HVE*. A Wish List will also be compiled during the Advanced *HVE* workshops and presented during this meeting.
- Pipeline to EDC - Personnel from EDC will be in attendance; however, they shall play the role of listeners, rather than active participants. EDC's goal is to learn directly from *HVE* users what they like now and need most in the future.

HVE-2D Users Group Meeting

Open Forum Discussion about *HVE-2D*

Moderator: James P. Sneddon

Time: Wednesday, 1:30 PM

Description:

The purpose of this workshop is to provide and encourage an open forum for discussing user's experiences with *HVE-2D*. The *HVE-2D* Users Group has several goals:

- Creative Applications - Experience has shown there are often several different ways to approach a problem using *HVE-2D*. Usually one method stands out as the superior method. Users are encouraged to come to this meeting ready to share their experiences with other users.
- Wish List - Users are encouraged to come to this meeting with their Wish List of improvements or added functionality that would be helpful in their use of *HVE-2D*. A Wish List will also be compiled during the Advanced *HVE-2D* workshops and presented during this meeting.
- Pipeline to EDC - Personnel from EDC will be in attendance; however, they shall play the role of listeners, rather than active participants. EDC's goal is to learn directly from *HVE-2D* users what they like now and need most in the future.

HVE WHITE PAPER SESSION

HVE White Paper Session

Moderator: Joseph H. Canova

Time: Wednesday, 3:15 PM

Description:

This session is an opportunity for *HVE* users to showcase their skills to other *HVE* users, as well as to non-*HVE* users who may require the services of a consultant. The following subjects may be addressed in the presentations:

- *HVE* Case Studies
- Innovative Tips and Techniques Using *HVE*
- Any Application of *HVE* Showcasing its Capabilities (especially events involving important 3-dimensional vehicle behavior)

Papers from each year's *HVE* White Paper Session are made available to download directly from the Library section of the EDC website, thereby expanding the awareness of the work beyond just the attendees of the *HVE* Forum.

Four presentations are scheduled for this session.

2010 HVE FORUM

Registration

March 1 - 5, 2010
 Hotel Contessa
 San Antonio, TX USA

Please select the workshops you would like to attend from the schedule below. You may only register for one workshop per time slot. Because space is limited in each workshop, pre-registration to secure a spot in the workshops is strongly recommended. You will be advised if a selection is no longer available. Please note that your selections are not guaranteed until your payment is received.

A special room rate of \$159.00 +tax per night has been arranged for your stay at the Hotel Contessa during the 2010 HVE Forum. To receive this special room rate, you must reserve your room directly using the link on the main 2010 HVE Forum webpage, or by calling the Reservations Desk at the Hotel Contessa at 210.229.9222 or 866.435.0900. When making your reservation, be sure to indicate the Group Code 'HVE Forum' in order to receive the special rate.

Workshop Selection: Please sign me up for the following workshops:
 (Select only one workshop per time slot)

Monday, 8:30 – 9:00 a.m.

- Welcome & Opening Remarks

Monday, 9:00 a.m.

- Advanced HVE: Part I of IV
- Advanced HVE-2D: Part I of IV
- HVE & HVE-2D System Overview

Monday, 1:30 p.m.

- Advanced HVE: Part II of IV
- Advanced HVE-2D: Part II of IV
- Using EDSVS & EDVTS

Tuesday, 8:30 a.m.

- Advanced HVE: Part III of IV
- Advanced HVE-2D: Part III of IV
- Using EDSMAC & EDSMAC4
- Environment Building for the Professional Graphic Artist

Tuesday, 1:30 p.m.

- Advanced HVE: Part IV of IV
- Advanced HVE-2D: Part IV of IV
- Using EDCRASH
- Environment Building for the Professional Graphic Artist

Wednesday, 8:30 a.m.

- 3D Vehicles Pt. I: Details of the HVE Vehicle
- Heavy Vehicle Brake Simulation in EDSMAC4
- 3D Editor: Functionality/Friction/Importing

Wednesday, 1:30 p.m.

- HVE & HVE-2D Users Groups and HVE White Paper Session

Thursday, 8:30 a.m.

- 3D Vehicles, Pt II: SIMON
- Advanced 3D Environments: Pt. I
- EDSMAC4: Model Overview
- Theoretical & Applied Vehicle Dynamics I

Thursday, 1:30 p.m.

- DyMESH Collision Algorithm
- Advanced 3D Environments: Pt II
- Simulation Movies: Learning the Basics
- Theoretical & Applied Vehicle Dynamics II

Friday, 8:30 a.m.

- 3D Vehicles Pt III: HVE Brake Designer & ABS Simulation Model
- Building a Vehicle for HVE & HVE-2D
- 3D Vehicles Pt. IV: Blowouts & Rollovers
- Theoretical & Applied Vehicle Dynamics III

Attendee Information:

Name _____

Company/Agency _____

Mailing Address _____

Phone _____

Fax _____

Email _____

Forum Cost in US\$:

	By 12/31/09	After 12/31/09
5 Days	\$ 995	\$ 1,195
3 Days	\$ 845	\$ 1,045

Payment Method:

Purchase Order #: _____

Check (Enclosed)

Charge My: (Circle One)

 Visa / MasterCard / American Express

Account #: _____

Expiration: _____

Signature: _____

Cancellation Policy:

A full refund is allowed up to Jan 15, 2010.
 A 50 % refund is allowed up to Feb 1, 2010.
 No refund is allowed after Feb 1, 2010.

Hotel Reservation:

- Yes, I am going to stay at the Hotel Contessa and will make my reservation using the link on the main HVE Forum webpage, or by calling the hotel directly at 210.229.9222 or 866.435.0900. (Use the Group Code 'HVE Forum' to receive the special rate of \$159+ tax per night.)

I plan to arrive on Feb/March _____, 2010.

I plan to depart on March _____, 2010.

- No, I am going to stay at a different location of my own selection.

Bringing a Computer:

- Yes, I am going to bring a laptop computer and use HVE/HVE-2D during the workshops.
- I am not bringing a laptop computer.

2010 HVE Forum T-Shirt Order:

All 2010 HVE Forum attendees will receive a complimentary T-shirt. My size is:

Medium Large X-Large XX-Large

Other: _____

2010 HVE FORUM - HOTEL INFORMATION

The 2010 HVE Forum will take place at the Hotel Contessa on the Riverwalk in San Antonio, Texas. Special hotel room rates of \$159 + tax per night have been arranged for your stay during the 2010 HVE Forum. To receive this special room rate, you must reserve your room directly with the Hotel Contessa reservations desk at 210.229.9222 or 866.435.0900, or by using the online reservation link for the Hotel Contessa on the HVE Forum page on the EDC website. Be sure to indicate the Group Code 'HVE' in order to receive the special rate.

The special room rate is only offered to 2010 HVE Forum attendees while space is available in the room block or until January 20, 2009. It is strongly recommended to make your reservations as soon as possible.

Hotel Address:

Hotel Contessa
306 W. Market Street
San Antonio, TX 78205 USA

Phone: (210) 229-9222
Toll Free: (866) 435-0900
Website: www.thehotelcontessa.com

About The Hotel:

A reflection of the state's most popular destination, this contemporary 12-story property captures both the historic and cultural essence of San Antonio. From the atrium lobby overlooking the Riverwalk, and the warmth created by the Mediterranean design, to the overall comfortable elegance, Hotel Contessa establishes a friendly welcoming environment from the moment of your arrival. This 2010 HVE Forum location is convenient to shopping, restaurants, entertainment, and nightlife. On-site amenities include:

- 265 Guest Suites featuring a bedroom, separate parlor with sleeper sofa, flat screen televisions and oversized bathrooms
- Numerous in room conveniences, with a hairdryer, iron and ironing board in each room.
- Wireless Internet Access
- Convenient dining choices on-site: Select from Las Ramblas, specializing in Spanish cuisine and regional American classics, or the Cork Bar, featuring the Riverwalk's most sophisticated specialty drink list in addition to specialty wines and appropriate beer selections.



Airport Transportation Suggestions:

San Antonio International (SAT)

Distance: 8 MI/13 KM • Taxi Fee: \$25.00 • Van: SATRANS Airport Express \$32.00 RT (210-281-9900 or www.sairportshuttle.com)

Hotel Parking:

Distance: 1 block from hotel • Self Parking: \$24.00 + tax • Valet Parking: \$32.50 + tax • Height Restrictions – No High Tops Allowed

Other Hotels Nearby:

A wide variety of other accommodations are available nearby. If you find that your choice of room at the Hotel Contessa is not available, please call EDC Customer Service for a list of other nearby hotels.

SEE YOU IN SAN ANTONIO!