VR-Design Studio Ver 8.0.0   (2012-10-17)

What's new?

1. **Multiple Levels Of Detail for the 3D models**

   In addition to the characters and trees, multiple levels of detail are now supported for the 3D models (buildings, vehicles etc...). It is possible to use a high quality model with detailed polygons at short distances and lower quality models with fewer polygons at longer distances. High and lower quality models are swapped depending on the visibility angle of the model on the screen. This allows improving the quality of the models at short distances while keeping the same level of display performance.

2. **Extension of the drive simulation feature.**

   Regarding the drive simulation, the physical model of the vehicle has been improved as follows:

   1) Improvement of the automatic transmission.

   A torque converter model is now used to calculate the transmission of the torque from the engine to the rest of the transmission. The new torque converter model improves the general behaviour of the vehicle, especially at low speed and gear shift. The parameters of the torque converter, including the torque amplification parameters are customisable in the vehicle performance editor.

   2) Customisable shift schedule.

   The timing for shift up and down of the automatic gear box is now controlled by a shift schedule. The decision of shifting up or down is now based on the throttle

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level and rotating speed of the transmission. The gear box can now shift down in acceleration phases and when driving uphill; but also shift up when less power is required from the engine.

3) Improvement of the manual transmission.

The model of the mechanical clutch used for manual transmissions has been improved to give a more realistic experience during gear shifting and clutch friction.

4) ABS

A model for Anti-lock Brake System is now available in order to prevent locking wheels at brake times.

In addition to the improvements of the physical model of the vehicles, it is now possible to save the vehicle performance profiles to separate files in order to import them later in existing or new projects.

3. **A more flexible terrain creation.**

It is now possible to create new projects with a larger terrain in a more flexible way.

1) Flexible size of the terrain.

In previous versions the terrain was basically limited to sizes of 10km x 10km, 20km x 20km or 10km x 20km with a maximum grid definition of 400x400. It is now possible to create terrains of any size.

2) A terrain can be generated for any portion of the map.

On the world map just select for witch area you want to create the terrain. There is no need to select areas from predefined cells of the map.

3) More file formats supported.

For the terrain elevation you can now use many file formats such as SRTM90 (90m mesh), ASTER (30m mesh) or even gray scale bitmaps. It is also possible to merge several elevation files in one terrain.

List of supported file formats : **http://www.gdal.org/formats_list.html**

4) Interpolation of the elevation grid.

A Bicubic filtering algorithm is used to interpolate the elevation of the points when importing the DEM with a different resolution from the one specified for the terrain creation.

4. **Display of multimedia models on cluster clients.**

The images, messages and videos used in scenarios can now be displayed on the screen of a client machine of the cluster system.

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5. **Update of the headlights**

   In addition to a slight but sensible display speed performance, the shape of the beams of the headlights has been improved and is now more realistic. The beam pattern is also automatically swapped for left and right hand side driving and it is possible to define different settings for the low beam and high beam modes.

6. **Extension of the street light feature.**

   In previous versions of UC-win/Road it was possible to display the headlights of the main vehicle and add streetlights in the scene. It is now possible to attach light sources (spot lights) to any 3D model such as a vehicle, a streetlight, a building, etc... When a model with attached light sources is placed in the 3D scene, the lights are taken in account in the lighting calculation. This feature can also be used for moving objects such as the vehicles of the traffic or flying models. Lights can be turned on at all time or only at night. The vehicles can turn them on automatically at night and in tunnels.

   To activate the lights, the option "Advanced lighting" must be activated in the visual options.

   The maximum number of lights that can be displayed at a time is limited. The upper limit can be modified at the bottom of the **performance** tab of the **visual options** window.

7. **Extension of the cockpit mirrors.**

   It is now possible to set any number of mirrors in a cockpit model used for the vehicle interiors. For each mirror, its orientation (pitch and yaw angles), size of the field of vision and type can be set in the **vehicle interior editor**.

8. **Improvement of the sounds.**

   New sound files are now used for the engine of medium size cars. The settings of the default vehicle sound profiles have also been improved.

9. **Extension of the waypoints to the intersections.**

   The waypoints can now be added to the drive paths of the intersections and used to slow down vehicles or activate some other command. These waypoints are taken in account by the vehicles of the traffic during the traffic simulation. Associated with the SDK this feature can be used for instance to count the number of vehicles going

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through an intersection, turning to a specific direction etc...

10. **New generic log export plugin.**

    A new log export plugin (option) is available in UC-win/Road V8. The information on the user's vehicle, surrounding vehicles and/or the vehicle in front of the user can be retrieved in the log either in a CSV file and/or in real time through a UDP connection.

11. **Support of FBX version 2013.**

    UC-win/Road now supports the version 2013 of the FBX standard and can now benefit from all the stability improvements of this version. It is also possible to select a previous version when importing a file to ensure the compatibility with old models.

12. **Extension of the EXODUS and Micro Simulation Player plugins.**

    It is now possible to control the playback commands of the EXODUS and Micro Simulation Player plugins in a scenario. This allows for instance to synchronise events of a scenario with the evacuation simulation imported from EXODUS or other objects movements shown with the Micro Simulation Player plugin.

13. **Support of vertical curves for railways.**

    In addition to the parabola curves already supported, it is now possible to create vertical turning points with an arc (circle) curvature.

14. **Performance improvement for the parking display.**

    The parking import plugin now displays parking models with a much higher frame rate than previous versions of UC-win/Road.

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