VR-Design Studio Customization:
Railway Simulator

The Forum8 Interactive 3D VR Simulation & Modelling software **VR-Design Studio** (**VDS**) can be used to develop a wide range of virtual railway systems.

Such systems can be used to interactively simulate trains, LRTs and underground metro units for use in a variety of different application areas, including:

- training drivers and other onboard railway staff
- training station and control centre staff
- the design & planning of new / refurbished rail networks, stations & platforms
- the design & planning of security and emergency scenarios
- the analysis of accidents and / or potential accident situations
- passenger movements and evacuation analysis

The Forum8 Rail Simulation System:

- ## 3D Environment Development:
  VDS enables the user to develop an interactive, photo-realistic 3D environment detailing every aspect of the target rail network, including: engines, carriages, tracks, cuttings, level crossings, bridges, tunnels and station platforms, as well as railway infrastructure / furniture such as; switches, lighting, signals, electric gantries and of course passengers. It also enables the user to control the environmental conditions within the 3D Space such as time of day, wind, rain, snow, fog, leaves, flooding and the GPS location on the planet.

- ## Interactive Scenario Production:
  The embedded VDS scenario editor enables the user to develop any number of different events / actions within the whole 3D VR rail environment. Scenarios can be activated dynamically if, for example, the system was being used for driver training, or if a series of 'what-if' emergency scenarios were being analysed.

- ## 3D City Models / Railscapes:
  The VDS software enables the development of either real or hypothetical 3D environments. These are built using both the comprehensive features of VDS itself, its free database of over 6000 3D models, existing 3D City Models, as well as with the help of a wide range of industry standard modelling techniques and software products. The overall VR rail network could potentially be of any length within an overall '3D canvas' of 20km x 20km.

- ## Scheduling:
  By assigning IDs onto each train, and by taking into account train performance, numbers of stops etc., new train timetables can be developed within the safe virtual environment of Forum8's Rail Simulator software.

- ## Train Travel Analysis:
  Train performance, the weight (of the carriages and the passengers/cargo), track inclination, headwind, speed limits and other traffic regulations can be included within the Railway Simulation to assist with the scheduling, training and network planning.
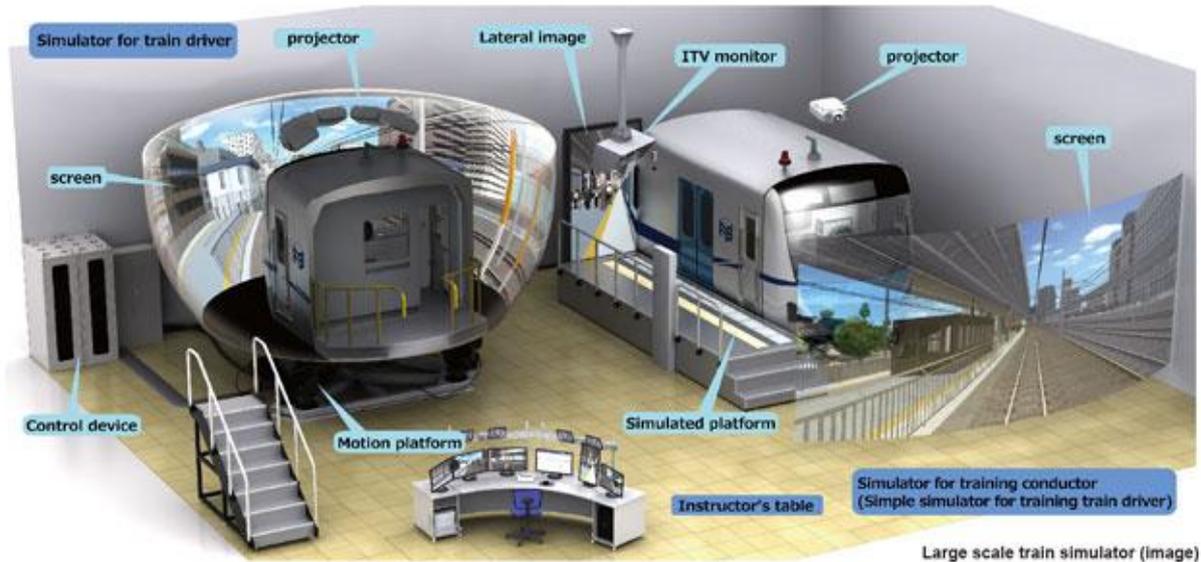
- ## Vehicle Position Display:
  The location and position of all trains can be displayed within the overall 3D environment.

- ## Driver's view
  The user can not only observe the view from inside the driver's cab of any trains on the VR rail network, he or she can also drive the train and control its speed.

- ## Log Function:
  The VDS data log function enables the system to log any data regarding the operation of any of the trains within the VR network. This is a particularly useful feature for reporting on driver performance during training exercises.

Large scale train simulator (image)

VR-Design Studio has been used many times for a number of rail-related projects, including simulating LRTs as part of urban planning in Phoenix, Arizona, USA and Osaka, Japan. It has also been successfully used to visualize and simulate metro and commuter trains in Tokyo, and is currently used for training drivers of the high-speed intercity trains in Japan. In the UK it was used to produce an interactive model of a newly refurbished train station and through its micro-simulation plug-in to the pedestrian simulation software Legion, was used to simulate passenger movement along the platform. See http://www.forum8.com/movies.asp

Rail Simulation Movie Case Studies:

Croy Train Station UK

http://www.youtube.com/watch?v=y1xHpkppnIY

Bullet Train, Japan
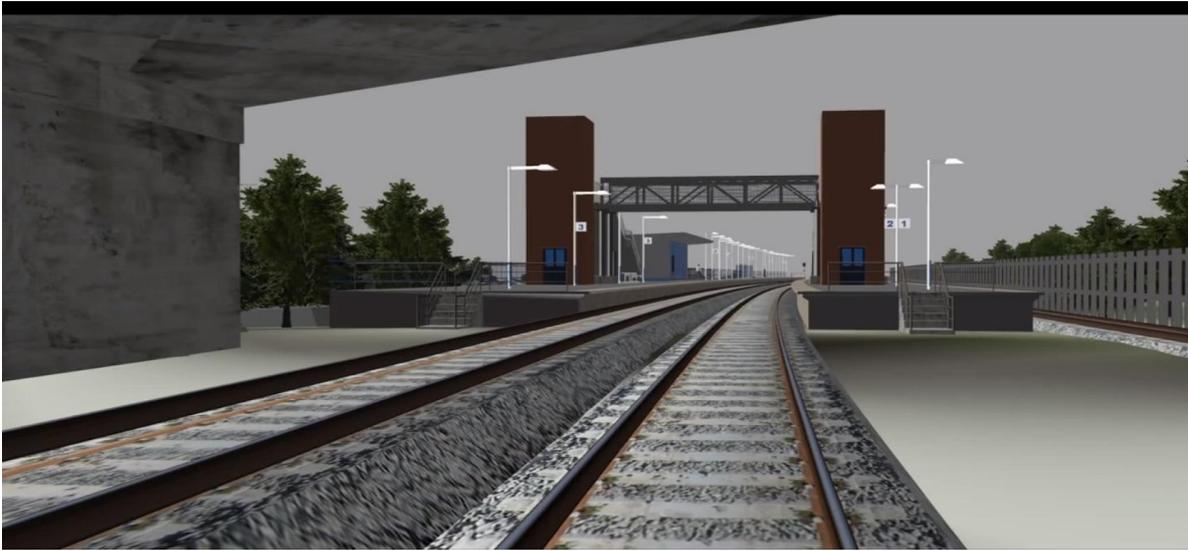
http://www.youtube.com/watch?v=2cqkXIbeTEk

Warning Signal Positioning

http://www.youtube.com/watch?v=VXjXwQ_y6jE

See **www.forum8.com** for more information

The Company:

FORUM8 is the leading Japanese producer of state-of-the-art 3D Engineering software. Established in 1987 this award-winning software house has offices and partners on every continent.

VR-Design Studio is the ideal solution for urban and transport planning and design projects, either on its own or in conjunction with 3rd party 3D design or micro-simulation software & data sources such as point-clouds and photo-logs. It is also used extensively for the interactive visualisation of rail, road and pedestrian-based situations and environments, as well as emergency and security planning / training scenarios. VR-Design Studio powers many different Hardware Simulators, from desk top units to multi-million dollar hexapod systems.

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