

## 3D Virtual line simulations

Normally, the line ahead is represented in the simulator cabs with a virtual three-dimensional landscape. This landscape can be real or fabricated.

In the case of a virtual line, station facilities can be placed in any sequence or at any distance without restrictions. It is possible to place along a virtual line any signals or indicators. Objects (buildings, vegetation, but also trains traveling in opposite directions) can be installed without problems. Through an interface to the data format of Microsoft Train Simulator, these objects can be created fairly easily with the editor programs available for that purpose.

The track plan to scale, complete with all its indicators and signals, level crossings, platforms, simulated train and trains traveling in opposite directions is depicted on the the instructor's monitor. The position of signals and the lighting in front of trains traveling in opposite direction can be changed simply by clicking.

### Database

- Landscape data from digital elevation model (eg DHM25 in Switzerland, DTM in Italy),
  - Line data (gradients, curves etc. in function of location),
- Data will be provided by the client.

### Costs

At least CHF1000 per km (single or multi-track lines without tunnels),

Trains in the opposite direction, objects, signal dependencies, according to time (CHF115 / h)

### Signals/Indicators

Can be inserted in any place.

Currently available: complete Swiss signals and indicators (FDV) including the supplements of private railways, SNCF, (D), (I)

### Sounds

Background noise (eg level crossings) can be inserted as wav files.

### Liaison with Microsoft Train Simulator

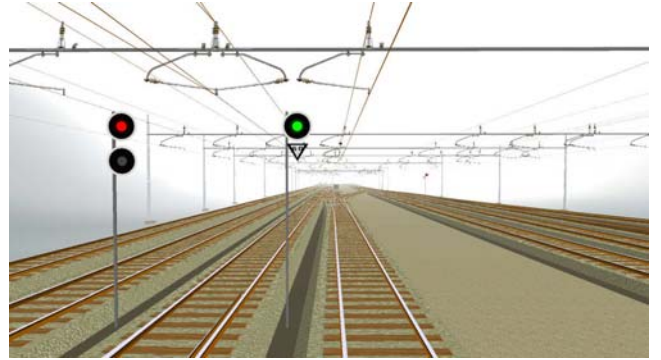
Objects and vehicles can be inserted in any location and can be used eg as trains traveling in opposite directions. Files with eng, wag, s and ace extensions are used.

### References

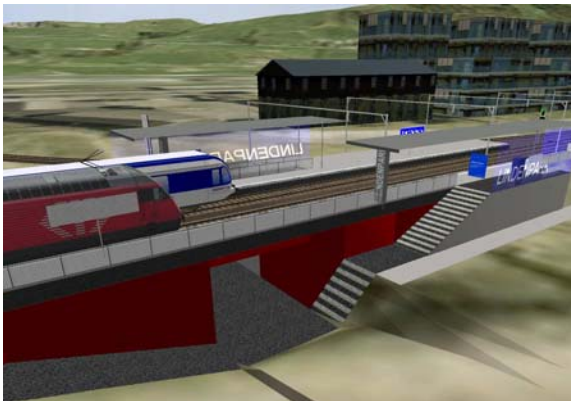
RER Zug  
Virtual training line of RAILplus  
Bussoleno-Bardonecchia  
Erstfeld-Göschenen  
Zurich Löwenstrasse station



(Torino)-Bussoleno-Bardonecchia line  
Salbertrand station  
Train composed of Microsoft TrainSimulator-Models



(Torino)-Bussoleno-Bardonecchia line  
Salbertrand station  
Fog



Baar-Cham-Rotkreuz line (RER Zug)  
Lindenpark station  
Any view point and viewing angle is possible



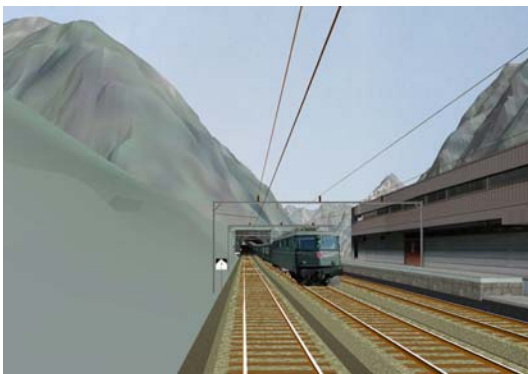
Baar-Cham-Rotkreuz line (RER Zug)  
Choller Müli station  
Animated buses and train in opposite direction



Erstfeld-Göschenen line (Gotthard line)  
near Wassen  
Any view point and viewing angle is possible



Zürich Löwenstrasse station



Erstfeld-Göschenen line (Gotthard line)  
Wassen station



Virtual training line of RAILplus