

## Use Case 4b: Realistic visualization

### Purpose

The realistic visualization is very important in tunnelling projects to communicate upon the future tunnel to the public, on the basis of the design conducted (source of truth), therefore in a credible manner, so to help with its acceptance. The exchange scenario that IFC-Tunnel must support is the exchange of models from BIM software to Visualization software; it must ensure the following goals:

- To create a photo-realistic visualization
- To develop interactive virtual tours with VR technology
- To create 360 panoramic renders

The Use Case 4a and 4c, related to Technical and Safety Visualization, are linked to this use case.



Figure 1. 3D view of road tunnel. Source: 3docean.net

### Requirements for IFC-Tunnel:

- To visualize real materials and lights
- To visualize all elements of the tunnel

#### Geometry:

The geometries must have a high Level of Geometry in order to ensure a realistic tunnel aspect. The model must include the safety objects too.

#### Semantics:

The properties and the parameters linked to the objects are not necessary in order to achieve the goal of this use case. Attention should be paid to the transfer of assignment/properties of materials and the use of lights on target system, with the aim of achieving an adequate performance in photorealistic immersion experience.