

Function

Rendering of a given wind farm project or any 3D object (e.g. power mast) in a landscape photo, to give the realistic visual impression on the wind farm. It is also possible to generate artificial landscapes as a wire grid or with artificial surface textures.

Calculation model

The technique behind doing a photomontage is to establish a camera model, which can transform any point with known elevation and coordinates from a map to a 2-dimensional photo. Once the camera model is established, a render function can position a 3-dimensional model of a WTG into the image with the correct proportions. The date and time is used to simulate the correct lighting on the WTGs to give a very realistic result.

Necessary Input Data (objects)

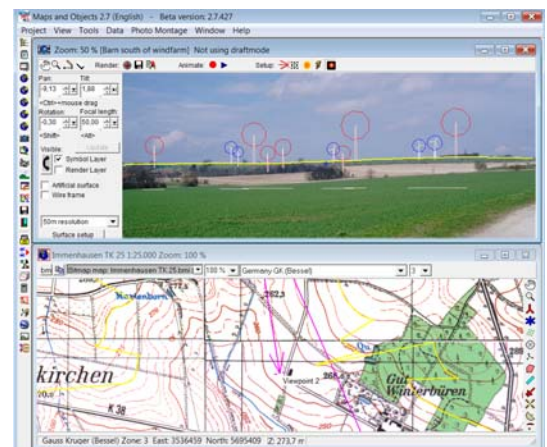
Please note that the objects are entered in the WindPRO module BASIS. Please read the description of the WindPRO module BASIS for further details.

Wind turbines:

One or more WTGs are entered (position and type). The WTG can usually be found in the WTG Catalogue, which contains more than 700 different WTG types. In the WTG Catalogue, the WTG is described 3-dimensionally with dimensions and colors. Aviation lights can be defined for each WTG.

Camera Object with Camera Model, landscape photo, etc.:

The camera object contains all relevant visualization information as e.g. type of camera lens used, field of view for panoramas, the position and direction. The digital photo is attached and the EXIF properties from the file are inserted automatically. If you generate an artificial landscape it is not necessary to have any photo - instead enter specifications for the artificial landscape (colors, details, etc.).



Reference elements:

Control points, obstacle objects, existing wind turbines can be used as reference to calibrate the camera model very precisely. From the height contours, the horizon line is a strong facility to make the calibration even faster.

3D landscape elements:

Area objects, line objects, obstacles and 3D objects can be assigned visual properties and used to bring artificial landscape elements into the photomontage. For example landscape types from GIS systems can be imported into an area object and shown on the picture as forests, houses, lakes etc.

Description

The WindPRO module VISUAL Photomontage is used to create a realistic visualization of a WTG project (or any other project) before it is installed. The photomontage can be used to evaluate different project alternatives, in discussions with planning authorities, neighbors, etc. and to adjust a project to fit into the landscape in the best possible way. A range of objects can be used to assure an accurate calibration of the camera model.

Height contours are a strong feature in photomontage. They enable: fast calibration with the horizon line, erasing of the WTGs (or parts) hidden by the terrain; creation of pictures of your project in a virtual landscape without having to take a photograph and verification of the orography data used in energy calculation.

Calculation report

The report generator of the module offers a range of options for printing photos and maps.

The user may combine a map with specifications of the WTG project and camera position with a photo of the WTGs, a "before" and "after" image or two photos with alternative project presented on the same page. Of course, all photos and maps can also be printed as full page, or you can export them in graphics format so that they can be printed from another PC or sent by email/internet to a professional printing shop. You could also provide a disk with the image file together with the project documentation in order for the receiver to study the image on his own PC and print it in a freely chosen format or integrate it into a report. Photomontages can be exported to Google Earth where the fly into option gives a good presentation of the project in public meetings.