

3D Visualisation services

Environmental management and assessment

PML Applications Ltd's 3D visualisation team offers high quality 3D software models for use in environmental management and environmental impact assessment. These high resolution virtual worlds are as close as you can get to physically viewing environmental change or a proposed development in the context of a realistic landscape before these events actually occur or a development has been completed. The high degree of realism and the flexible nature of the software models make it a powerful tool for visually modelling and communicating change in the environment.

This 3D visualisation is of value to anyone involved with marine or terrestrial spatial planning and developers in the marine environment. The ability to seamlessly merge marine and terrestrial data sets is invaluable to design engineers planning layouts and allows rapid and cost-effective landscape and seascape visual impact assessment. As a tool for communication its strength is its simplicity and ease of use that is readily accepted by stakeholders.

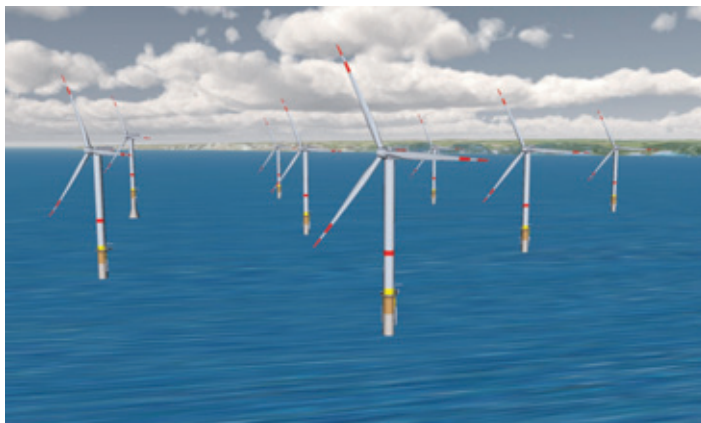
State-of-the-art technology

PML Applications Ltd's 3D visualisation business unit has been engaged in a publically funded 2 year research and development programme to commercialise 3D visualisation in marine and coastal environmental management and consultancy.

Applying state-of-the-art software (Geovisionary) provides the ability to handle extremely large topographic data sets efficiently. This software is closely integrated with existing GIS systems and provides high quality visual rendering of the 3D environment. The software can be run on a 'good' laptop and consequently provides a highly portable tool.

Environmental management and assessment 3D applications include:

- Environmental impact assessment
- Technical design aid for developments
- Flood risk assessment
- Coastal erosion assessment
- Environmental research



Offshore wind farm visualisation

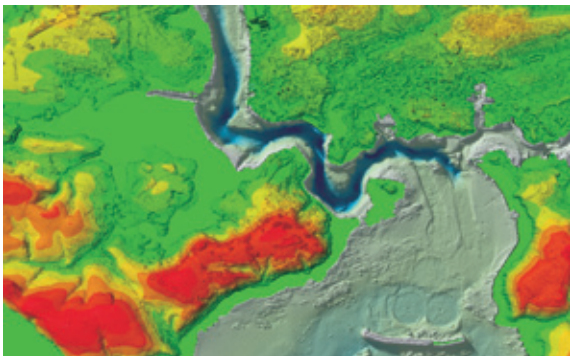
Our expertise

PML Applications Ltd has developed the capability to compile and present different geospatial datasets aggregated as a single scene in 3D using Geovisionary software. This allows for a seamless merge of different marine data sets (e.g. bathymetry, environmental data such as temperature, salinity, biotopes) together with coastal topography (e.g. LiDAR, SAR, aerial photography and other data) into one high quality 3D model.

In addition, "man-made" objects can be introduced into the model to, for instance, demonstrate a proposed commercial development (e.g. wind farm) or the introduction of an environmental management feature (e.g. sea wall). Environmental change such as coastal erosion over time, flooding by rivers or coastal inundation, can also be modelled into the 3D visualisation.

Key features - 3D visualisation

- Highly realistic virtual worlds based on real world survey data
- Model any number of objects (e.g. wind turbines and turning blades)
- View any location in model from any position or angle (land or sea)
- Seamlessly model & view coastal topographic and sea floor survey data
- Easily overlay other GIS data (e.g. roads, boundaries, power cables, geology, archaeology, habitats, shipping lanes)
- View the visualisation under different times of day or night and under different densities of fog
- Provide topographic cross-sections and distance measurements
- Quickly export photographs ("screenshots") and fly-through videos



Plymouth Sound / Tamar River bathymetry and coastal topography (height coloured)



Coastal visualisation (with navigator 'on')

Key benefits - 3D visualisation

- Is as close as you can get to seeing a development proposal in a realistic landscape before it is built, thereby providing a visually objective and common focus for EIA stakeholders. The same is applicable for a proposed management action that results in change.
- Is an extremely powerful tool for sharing and communicating a development proposal to EIA stakeholders, the visual element resonates strongly with viewers
- Is very specific, you can fly to any location in a model within seconds and check actual views
- Draws together and makes it easier to understand relationships between complex GIS data in the context of landscape, for EIA stakeholders and for technical design
- Is an excellent project management tool for drawing together spatial data
- Has potential to reduce costs in EIAs for visual assessment as it can assist with field survey planning and execution
- Allows for rapid assessment of technical development prototypes where visual impacts are of concern
- Can assist with technical design in developments such as routing (e.g. roads) and positioning of structures (e.g. power pylons), can do topographic cross-sections
- Screenshots & fly-through videos are high-impact for marketing and public outreach

About PML Applications Ltd

PML Applications Ltd is the wholly owned trading subsidiary of PML (www.pml.ac.uk). It was set up in 2002 to broaden the application of PML's research products and to drive the process of knowledge transfer, identifying and bringing to market the next generation of innovation and products.

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