

1593 - Mapping offshore resources of the Belgian Continental Shelf using 3D voxel modelling

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Sustainable management of marine geological resources starts with a deep understanding of their diverse qualities and quantities. To facilitate comprehension of these variables a 3D voxel model of the subsurface of the Belgian part of the North Sea has been created in the scope of the Belgian Science Policy project TILES ('Transnational and Integrated Long-term Marine Exploitation Strategies'). The construction of the model follows a standardised methodological approach that is versatile in the addition of data that comes from different sources. In this case the voxels are filled with geological data originating from boreholes and seismic lines. The resulting 3D voxel model gives a detailed image of the distribution of different sediment types and provides valuable insight on the different geological settings. The voxel model also allows estimating resource volumes (e.g. availability of particular sand classes), enabling a more targeted exploitation. The primary information of the model is related to geology, but the model can additionally host any type of information, e.g., relevant from an industry perspective. Web querying tools have been developed of which the functionalities were mainly driven by end-users. Furthermore, a virtual reality application was built projecting the 3D models in their true dimensions and allowing more comprehensive interaction with the viewer.