

GIS for 3D Object Generation, Modelling, and Exploitation

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ABSTRACT

This presentation provides an overview of relevant 3D capabilities of a modern GIS. It concentrates on 3D modelling for National Mapping Agencies, and particularly on the modelling and generation of manmade structures such as buildings and roads within the natural environment.

It presents the Esri 3D Cities Information Model, its relevance to NMAs generating 3D objects, and relationship to CityGML. It describes 3D Base Layers and 3D Base Scenes, and their use of NMA data, including tools for heighting of 2D building footprints. It introduces the new ArcGIS Pro desktop environment which integrates 2D and 3D data in a unified environment. It covers the CityEngine procedural rules mechanisms and their relevance to realistic rendering of 3D landscapes. Finally it overviews 3D webscenes as a route to deployment and exploitation of the 3D data being generated by NMAs, including forthcoming capabilities for streaming of 3D scenes.

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