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WebGL Visualisation of 3D Environmental Models Based on Finnish Open Geospatial Data Sets

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Abstract. Recent developments in spatial data infrastructures have enabled real time GIS analysis and visualization using open input data sources and service interfaces. In this study we present a new concept where metric point clouds derived from national open airborne laser scanning (ALS) and photogrammetric image data are processed, analyzed, finally visualised a through open service interfaces to produce user-driven analysis products from targeted areas. The concept is demonstrated in three environmental applications: assessment of forest storm damages, assessment of volumetric changes in open pit mine and 3D city model visualization. One of the main objectives was to study the usability and requirements of national level photogrammetric imagery in these applications. The results demonstrated that user driven 3D geospatial analyses were possible with the proposed approach and current technology, for instance, the landowner could assess the amount of fallen trees within his property borders after a storm easily using any web browser. On the other hand, our study indicated that there are still many uncertainties especially due to the insufficient standardization of photogrammetric products and processes and their quality indicators.

[Conference Paper](#) (PDF, 689 KB)

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