

Web-based presentation of multisensoral 3D data on the example of the Church of St. Augustine in Warsaw

Jakub Gryzio, Paweł Czernic and Łukasz Wilk (Poland)

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SUMMARY

The aim of the paper will be to discuss the course of the project, including the measurement techniques, algorithms, and methodology used. Photogrammetric technologies and 3D data web visualization are currently one of the most dynamically developing branches of science used in broadly understood geomatics.

As part of the research, measurements of the Church of St. Augustine in Warsaw were made. The three-dimensional point cloud was obtained using terrestrial laser scanning and short-range photogrammetry (visualizing the church roof with a drone). Both data types were integrated using survey measurements (GNSS and total station).

The first issue discussed will be the ability to combine data obtained using the methods mentioned above to create one coherent point cloud of architectural objects, like the church. The paper will be considered the accompanying data integration from different sensors. In the next part of the presentation, the possibilities of using open-source 3D visualization web libraries (eg. CesiumJS) will be considered. Visualization using the web browser is an exquisite way to present geospatial data of cultural heritage for the common user. This type of processed 3D model can be easily adapted to modern video games engines or to create virtual reality.

At the end of the presentation, the research results will be discussed, in particular: the accuracy of the obtained point cloud, the quality of generated mesh model, the effectiveness of 3D data web visualization, and the conclusions drawn during the project. The presentation will end with a short forecast of the development of these technologies and their impact on the science associated with spatial data.

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