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POINT CLOUD VISUALIZATION IN AN OPEN SOURCE 3D GLOBE

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Abstract. During the last years the usage of 3D applications in GIS is becoming more popular. Since the appearance of Google Earth, users are familiarized with 3D environments. On the other hand, nowadays computers with 3D acceleration are common, broadband access is widespread and the public information that can be used in GIS clients that are able to use data from the Internet is constantly increasing. There are currently several libraries suitable for this kind of applications.

Based on these facts, and using libraries that are already developed and connected to our own developments, we are working on the implementation of a real 3D GIS with analysis capabilities.

Since a 3D GIS such as this can be very interesting for tasks like LiDAR or Laser Scanner point clouds rendering and analysis, special attention is given to get an optimal handling of very large data sets. Glob3 will be a multidimensional GIS in which 3D point clouds could be explored and analysed, even if they are consist of several million points.

The latest addition to our visualization libraries is the development of a points cloud server that works regardless of the cloud's size. The server receives and processes petitions from a 3d client (for example glob3, but could be any other, such as one based on WebGL) and delivers the data in the form of pre-processed tiles, depending on the required level of detail.

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