# Augmented Reality Application Using 3D Model of TLS (Terrestrial Laser Scanner) (Case Study: Plaosan Lor Temple, Klaten Regency)

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**SUMMARY**

Technology developments are increasingly expanding along with the rolling of 4.0 industries resulting on Augmented Reality (AR). AR provides an overview to the user about the merging of the real world with the virtual world seen from the same place. The application of AR in this study is aimed at the education and tourism sector through the development of a 3D model in Plaosan Lor Temple. The 3D model in this study was generated from data recording using TLS. TLS will generate a point cloud that is processed with the Poisson Surface Reconstruction method so that it becomes a 3D model that can provide information on Plaosan Lor Temple through the CloudCompare software. The resulting 3D model then displayed in the AR world using the Unity software. Next, the software and the target image registered in the Vuforia. It will produce AR of Plaosan Lor Temple in .apk form which can be accessed by the public via Android smartphone. The final result of this research shows the number of point clouds generated from TLS data with a points cloud of 7,198,274 points and produces a 3D mesh model of 12,959,390 faces. The AR application test results on the Android system show good application performance on the Android 8 system. As well as the usability test results show good performance for the application so that it can be used as a learning medium and scientific discipline collaboration in the field of Geodesy and Information Technology.