

**UNIVERSITI TEKNOLOGI MARA**

**ENHANCEMENT OF PARCEL  
BASED SPATIAL INFORMATION  
VIA QUICK RESPONSE (QR) CODE**

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## ABSTRACT

Locating land parcel physically on the ground based on Certified Plan (CP) or Land Title (LT) is time consuming and costly. With the advent of Information and Communications Technology (ICT), an innovation towards locating land parcel automatically on the Google Earth with the aid of Quick Response (QR) code is introduced. In this study, selected information from the CP and Land Title is encoded towards the preparation of a QR code. The generated QR code (output) contains, attribute information as well as the coordinate which is link to the location of the parcel via online (Google Earth/Maps) using smartphones technology system. The accuracy of the smartphones also has been assessing in this study. The accuracy was execute using 29 known points (Cadastral Reference Mark - CRM) distribute around Peninsular Malaysia monitor by Department Surveying and Mapping Malaysia (DSMM). Every point was tested and the difference was recorded. The accuracy result reported for the system is  $\pm 2$  meter using Root Mean Square error (RMSe) equation. With the accuracy testified, navigating to the land parcel physically on the ground is practical and achievable. The output also been used in determining the best size and scanning resolution (standard smartphones cameras), for decode purpose. The best placement of the QR code on CP and Land Title documents also been justified. Furthermore, with the embedded QR code on CP and Land Title, locating land parcels could be done almost from anywhere, anytime all year round (24/7/365). This innovation will be of great advantage to a diversity of land related activities.). An outlined towards the creation and decoding of the QR code is presented and the prototype results wereportrayed in Appendix G.

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