

## Development of an Integrated Route Information Management Software

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**Abstract :** The need for the complete automation of every procedure of surveying and most especially, its engineering applications cannot be overemphasized due to the many demerits of the conventional manual or analogue approach. This paper presents the summarized details of the development of a Route Information Management (RIM) software. The software, codenamed 'AutoROUTE', was encoded using Microsoft visual studio-visual basic package, and it offers complete automation of the computational procedures and plan production involved in route surveying. It was experimented using a route survey data (longitudinal profile and cross sections) of a 2.7 km road which stretches from Dama to Lunko village in Minna, Niger State, acquired with the aid of a Hi-Target DGPS receiver. The developed software (AutoROUTE) is capable of computing the various simple curve parameters, horizontal curve, and vertical curve, and it can also plot road alignment, longitudinal profile, and cross-section with a capability to store this on the SQL incorporated into the Microsoft visual basic software. The plotted plans with AutoROUTE were compared with the plans produced with the conventional AutoCAD Civil 3D software, and AutoROUTE proved to be more user-friendly and accurate because it plots in three decimal places whereas AutoCAD plots in two decimal places. Also, it was discovered that AutoROUTE software is faster in plotting and the stages involved is less cumbersome compared to AutoCAD Civil 3D software.

**Keywords :** automated systems, cross sections, curves, engineering construction, longitudinal profile, route surveying

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