

Accurate, Reliable, and up to Date Geospatial Data Above and Below Ground Is Essential for Planning and Designing Infrastructure for the Development of the Kingdom of Bahrain

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SUMMARY

Bahrain is an island state in the Arabian Gulf with a surface area of 781 km sq. and a population of over 1.6 Million with the capital Manama. The Survey and Land Registration Bureau (SLRB) is the government body in charge of land and property registration, cadastral survey, national mapping, and charting of the land and sea of the Kingdom of Bahrain.

The national topographic mapping of Bahrain is mapped at a base scale of 1:000 and is very rich in detail with some 137 surface feature types being collected including all surface utility features. SLRB at present is undertaking several initiatives to improve the currency of this data through As-built surveys as a source for national infrastructure data, modernisation of data capture through UAV's and progressing towards a modern object feature based national mapping environment.

This drive to provide accurate, reliable and current geospatial information is to improve planning, decision making, infrastructure and services, housing and urban development and to help achieve Bahrain's Vision 2030, the Government Programme and support the SDGs. This cannot be complete without the same for underground utility information.

Bahrain's modern and world leading utility and services infrastructure is predominantly underground. This presents a challenge as they are almost all in congested urban areas where the different utility owners contest for space and allocation of corridors for their own utility. The country has some ambitious projects planned which will require careful planning as the utility corridors will be squeezed further by the need to re-route utilities for future projects.

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The ministerial committee for infrastructure and urbanisation recognised a need to improve coordination, reliability and accuracy of location surveys carried out within the utility sector and they commissioned SLRB to lead a study with partners. The output was the production of the Bahrain Underground Utility Standards and Bahrain Data Capture and Delivery Specification for the Survey and Mapping of Underground Utilities and Assets.

This paper will cover the development of the standards and specifications and how this will be the basis to improve the locating of underground utilities, utility record keeping and information management. It will discuss how the Kingdom of Bahrain is working to solve one of the greatest challenges of the urban environment in a modern city – knowing where utilities assets located at the planning stage and how to manage the common underground with limited space to not hinder infrastructure and urban development.

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