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DEVELOPMENT OF GIS FOR WATER PIPE DISTRIBUTION NETWORK

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ABSTRACT

Urban infrastructure management is becoming more and more important for cities around the world. This paper present one of the management strategy for water distribution network, which to ensure GIS technology could be a cost effective way to help reduce of water loss over extended period of time. This project aims to demonstrate a prototype of GIS for water pipe network by gather user requirement and designing the GIS database. This study will be significance for SATU staff and for organization in order to improve their decision-making and also their services. SATU not have any digital data or any systems regarding the water pipe network accept in AutoCAD format. They still use conventional method in their daily job. They do not have proper recorded information regarding leakage or new development. In term of water pipe network, they do not have overall view for their area. It could make some tacit knowledge will loss within new staff. The coverage area for this study is at Kemaman area under SATU authority. This study is focusing in design of GIS for water pipe network including its component. In this study, data preparation and verification process occupied above 70% of the project time. The development of the prototype system also includes the creation of spatial database to cope with the spatial features which exist in the system. GIS functionality also involves the design and customization of the interface, where among the system can be adjusted to suit the style of the organization, functions, computer literacy, and frequency of use. This study also suggests that a common sense approach to adaptive interface is through a consultative process that enables fast design prototyped. This is called Rapid Prototyping. Rapid prototyping strategy involves three stages: defining the requirements specification, prototype design specifications, and evaluated the prototype to achieve this specification. Adaptation strategies have been used to improve system usability and user performance in Syarikat Air Terengganu (SATU). It also offers specific techniques to achieve three-level rapid prototyping. Based on customization and system prototype design which have been done by 'walk through' method, user from SATU absolutely can use this prototype system. All objectives of this project are achieved. As a conclusion this project is significant not only for SATU but also for the researcher. This study also can be recommended to explore the maximum potential of GIS adoption in any organization.

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TABLE OF CONTENTS

CHAPTER 3: METHODOLOGY