

Virginia Tech Renewal Engineering Selection Tool VT-REST

ABSTRACT:

Federal, state, and private organizations highlight an urgent need for renewing the drinking water and wastewater pipelines. Delay in addressing the issues will cause a cumulative increase in investment and operating costs, while commercial products are readily available to address pipeline renewal. A pertinent gap remains in understanding the relationship between deteriorated host-pipe conditions and renewal products cost and performance. This gap is addressed by providing a comprehensive Decision-Support tool that supports the use and methodology of water and wastewater pipeline renewal products based on performance. Various renewal products fit utility needs, and the optimization of this process streamlines the decision-making for renewal product selection. This thesis has classified various factors for use in the renewal product decision-making process. Application, Pipeline Condition, Material and Diameter govern the use of renewal product, while excavation, service connections, annular space and corrosion are a few controlling factors. The Decision-Support tool called Renewal Engineering Selection Tool (REST) is developed in user-friendly Visual Basic forms with information from approximately ninety reputed vendors. REST allows the user to edit the list of vendors, factors affecting decision-making and the classification of each factor. This allows for ease in modification, utilization and collaborative understanding. The proposed renewal engineering tool will be hosted on the web to allow accessibility and validity of the renewal decision-making process for water pipeline infrastructure.

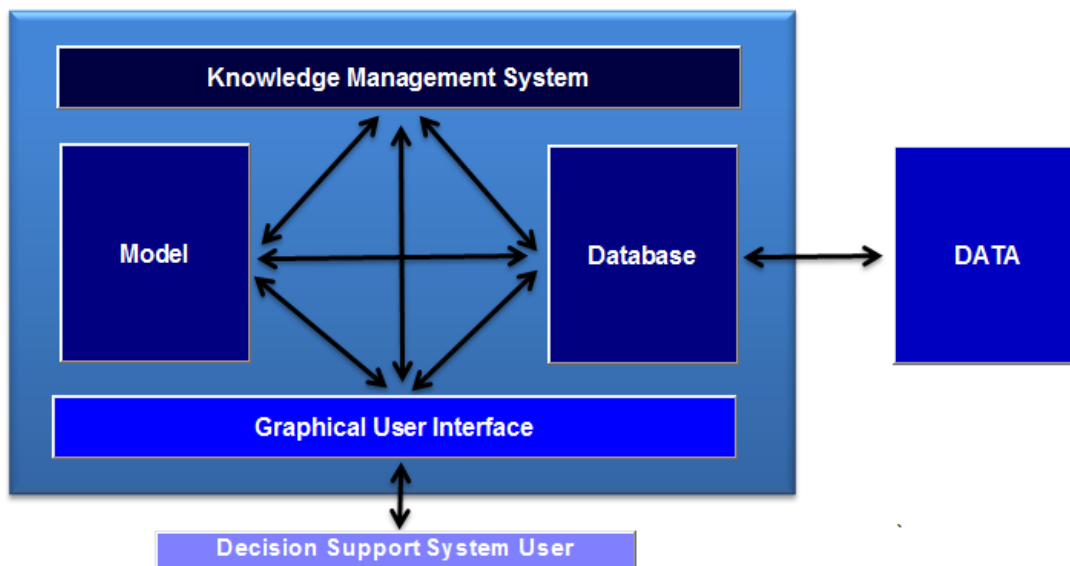


Figure 1: Research Methodology for REST Tool

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