

## Construction and Maintenance of the Knowledge Base Used in GSIES-TOOL

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### ABSTRACT

In this paper, the construction and the maintenance of the knowledge base of GSIES-TOOL used in the domain of geotechnical engineering security inspection is introduced in detail. The knowledge representation method of this knowledge base is a kind of object-oriented rule, which is designed by us and named OORL. The major sections of this paper are as follows. First, the structure of the base is stated. According to the character of the problem solving model of this domain, the OO method and hierarchy are used to construct the knowledge base. There are four levels in the base, project, subject, rule and formula. The lower level is the property of the consecutive upper level. Secondly, the construction of the content of each level of the base is explained. The rule and the formula are also constructed using OO method. Finally, the maintenance of the base is illuminated. The consecutive levels of the knowledge base are tightly connected with a bidirectional chain. It is safe for the user to maintain the base. The knowledge base that we have built basing on the tree structure and OO technology has better inheritability and expandability, and is easy to be managed and maintained. Its design idea can be used for reference for the relative domain.

**Keywords:** Knowledge base, Construction, Maintenance.