基子GJB5000A的软件配置管理技术研究与应用\_张少林 系统实现

软件配置管理辅助系统的设计与实现\_李园园 系统设计和实现

Content-based Configuration Management System for Software Research and Development Document Artifact

基于内容的软件研发文档构件配置管理系统

Because of the properties of software such as invisibility, complexity, and changeability, software configuration management (SCM) for software artifacts generated during software life-cycle has been used for guarantee of the quality of the software. However, the existing SCM system has only focused on code artifacts and software development document artifacts such as Software Requirements Specification (SRS), Software Design Description (SDD), and Software Test Description (STD). Moreover, software research-oriented project comes out late the code artifacts and the software development document artifacts. Therefore, there is a need for trace and management of software research document artifacts composed of highly abstracted non-functional requirements like ‘the purpose of the project’, ‘the objectives’, and ‘the progress’ before generation of the code artifacts and the software development document artifacts for a long time. Nevertheless, the existing SCM system cannot trace and manage them. In this paper, we propose content-based configuration management system comprised of the relevance link generation phase and content-based testing phase to trace and manage them. The preliminary application results show applicability and feasibility of the proposed system.

由于软件的不可见性、复杂性和易变性等特性，软件生命周期中生成的软件构件的软件配置管理(SCM)被用来保证软件的质量。然而，现有的SCM系统只关注代码构件和软件开发文档构件，例如软件需求规格说明(SRS)、软件设计描述(SDD)和软件测试描述(STD)。此外，面向软件研究的项目出现得较晚，包括代码构件和软件开发文档构件。因此，有必要对软件研究文档构件进行跟踪和管理，这些构件由高度抽象的非功能需求组成，如“项目的目的”、“目标”和“生成代码构件和软件开发文档构件之前的“进展”。然而，现有的SCM系统无法跟踪和管理它们。本文提出了基于内容的配置管理系统，该系统由关联链接生成阶段和基于内容的测试阶段组成。初步应用结果表明了该系统的适用性和可行性

Dart, Suan. “Concepts in configuration management systems,” in Proc. of the 3rd international workshop on Software configuration management, pp. 1-18, May, 1991

Configuration Management Best Practices: Practical Methods that Work in the Real World

配置管理最佳实践:在现实世界中工作的实用方法

The existing SCM system has carried out the SCM of the software artifacts based on the configuration items which only have one meaning as the requirement. Therefore, it cannot have managed the software research document artifacts which have various meanings such as sufficient, necessary, equal and partial equal. To solve this problem, we propose the content-based configuration management system. It identifies configuration items from software R&D document artifacts, and extracts corresponding items from the configuration items in a basis document artifact and compared document artifacts. Then, it maps between the corresponding items and the relevance rule to generate the relevance link. Finally, it performs the content-based test of the software R&D document artifacts using the relevance link. The results of the content-based test provide grounds for determining consistency and completeness of the tested software R&D document artifact. Moreover, it can assist objective evaluation of the software R&D document artifacts. For the future work, we plan to study how to determine consistency and completeness. In addition, we will expand the content-based test to be automatically tested by using the textual inference.

现有的配置管理系统基于配置项对软件构件进行配置，配置项作为需求只有一个意义。因此，它无法管理具有充分、必要、相等和部分相等等多种含义的软件研究文档构件。为了解决这一问题，我们提出了基于内容的配置管理系统。它从软件研发文档构件中识别配置项，并从基本文档构件和比较文档构件中的配置项中提取相应的项。然后，将相应的条目与关联规则进行映射，生成关联链接。最后，利用关联链接对软件研发文档构件进行基于内容的测试。基于内容的测试结果为确定被测试软件研发文档构件的一致性和完整性提供了依据。此外，它可以帮助软件研发文档工件的客观评估。对于未来的工作，我们计划研究如何确定一致性和完整性。此外，我们将扩展基于内容的测试，通过使用文本推理自动测试。