P.O.Box 8718, Beijing 100080, China	Journal of Software, Mar. 2005,16(3):427-433
E-mail: jos@iscas.ac.cn	ISSN 1000-9825, CODEN RUXUEW, CN 11-2560/TP
http://www.jos.org.cn	Copyright © 2005 by The Editorial Department of Journal of Software

软件需求定量分析及其映射的模糊层次分析法

熊 伟, 新藤久和, 渡边喜道

熊 伟1, 新藤久和2, 渡边喜道2
1(浙江大学 工商管理系,浙江 杭州 310027)
2(Department of Computer Science, Faculty of Engineering, Yamanashi University, Kofu 4008510, Japan)
作者简介: 熊伟(1963－),男,江苏金坛人,博士,教授,主要研究领域为软件质量保证技术,质量管理(QM);新藤久和(1947－),男,日本人,博士,教授,博士生导师,主要研究领域为软件工程,质量管理(QM);渡边喜道(1964－),男,日本人,博士,副教授,主要研究领域为软件工程.
联系人: 熊 伟 Phn: +86-571-87951770, E-mail: wxiong@zju.edu.cn, http://zjux.org

Received 2002-12-30; Accepted 2003-03-05

Abstract
In this paper, software requirements are analyzed by using quantification theory of type 3 (QT3). On the basis of this quantitative analysis, by utilizing the house of quality (HOQ) matrix of quality function deployment (QFD), and based on the fuzzy analytic hierarchy process (FAHP) improved by fuzzy technique, a method of mapping software requirements going through the process of software design is proposed. Its effectiveness is presented by applying this method to the development process of the CD-R/RW recording device software.

Xiong W, Shindo H, Watanabe Y. A quantification approach to software requirements analysis and its fuzzy analytic hierarchy process mapping. *Journal of Software*, 2005,16(3):427-433.
http://www.jos.org.cn/1000-9825/16/427.htm

摘要
在用数量化理论3类(quantification theory of type 3,简称QT3)定量地分析软件需求的基础上,以质量功能展开(quality function deployment,简称QFD)中的质量屋(house of quality,简称HOQ)系列矩阵为纲领,基于由模糊技术改进后的模糊层次分析法(fuzzy analytic hierarchy process,简称FAHP),提出了一种软件需求定量分析及其向设计实现过程模糊映射的方法.将该方法具体应用于CD-R/RW光盘刻录机软件的开发过程,其有效性得到了验证.

基金项目：Supported by the National Natural Science Foundation of China under Grant No.70472056 (国家自然科学基金)

References:

[1] Akao Y. Introduction to Quality Deployment. Tokyo: JUSE Publishing Company, 1991.

[2] Kobayashi R. Introduction to Quantification Theory. Tokyo: JUSE Publishing Company, 1981.

[3] Xiong W. Study on software system description and it's structuralization [Ph.D. Thesis]. Japan: Yamanashi University, 1996.

[4] Tone K, Manabe R. The Casebook of AHP. Tokyo: JUSE Publishing Company, 1990.

[5] Kobayashi M, Shindo H. Prioritization of items in quality function deployment. Research Report of Engineering Faculty of Yamanashi University, 1993,44:46-52.