Abstract

This project establishes a way to measure a characteristic of a product and a characteristic of a process involved in the requirements analysis phase for the development of management information systems (MISs) by adapting and enhancing McCall's Factor Criteria Metric (FCM) model. The two selected characteristics are the understandability of a software requirements specification (SRS) and effectiveness of a requirements gathering interview (RGI). To define the measurement for these two characteristics, a structure of factors, criteria, checklists and metrics for the characteristics of the products and processes is established based on McCall's FCM model. In addition, a software tool, FCMware, is developed to implement the established structure. The developers of the MISs can use the FCMware to determine the extent to which the products and processes in the development of MISs exhibit a certain characteristic. A survey form is designed to elicit the opinions on the appropriateness of the suggested FCM for the understandability of an SRS and effectiveness of an RGI. The survey is conducted with the software engineering professionals. The finalised FCM for the understandability of an SRS and effectiveness of an RGI is then established based on their opinions. Another outcome of this project is the determination of an appropriate grading scheme for the understandability of an SRS. Thirty projects by the students of the Faculty of Computer Science and Information Technology University of Malaya are selected for this case study. For each project, the FCMware is used to obtain the understandability score of its SRS (0%-100%). The understandability score for each project is graded with three suggested grading schemes. These grading schemes grade the understandability as Very Poor,

Poor, Acceptable, Good and Excellent. For each project, each understandability grade obtained with each grading scheme is compared with the final product quality grade. The grading scheme that grades the most of the understandability scores closest to the respective final product quality grade is the most appropriate grading scheme for the understandability of an SRS.