Comments on “Elements of Software Configuration Management”

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I am quite pleased that my paper1 attracted so much interest. Since “modern” system configuration management, and especially its software component, is frequently a controversial subject, especially among “traditional” practitioners of the discipline, I greatly appreciate the opportunity that the editors have afforded me to deal with some of the questions and criticisms that have arisen from that paper.

First let me take care of an administrative matter. In the final editing of the manuscript, some of the relevant footnotes linking the text to the references were inadvertently omitted. Most of the definitional material included in the paper and Figs. 1–4 first appeared in our book [1] and/or in related papers ([2] and [3]). At that time, and to this day, the definition of software we use has generated some critical comment. To restate that definition (see [1] and [2]), software is information that is

- structured with logical and functional properties;
- created and maintained in various forms and representations during the life cycle;
- tailored for machine processing in its fully developed state.

The point here is that configuration management must be applied not only to the product of the software development process, but also to the requirements and design documentation which precedes and supports it. This comment clearly applies to those in the systems and hardware world as well. Configuration management begins at the beginning of the life cycle. Our definitions are all geared to that fundamental premise.

Another controversial area that my paper dealt with concerned configuration auditing. Often when configuration management practitioners define their role in the audit process, it is either misstated or misunderstood. As I pointed out, and as originally delineated in [4], auditing is a process required to be accomplished prior to the establishment (or sanctioning) of a baseline by a configuration control board (CCB). If organizations are in place to perform quality assurance (QA) or verification and validation (V&V), then there may be no need for the CM organization itself to perform the audit function. What is important is that management must recognize that in order to responsibly baseline a system product, an audit must be performed. As I mentioned in my original paper, [4] provides a comprehensive treatment of the audit process.

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One final point. We have been very successful recently in applying the configuration management principles we espouse in large real-world applications. However, many configuration management “traditionalists” and some in the systems engineering world are skeptical of the overall benefits of the global discipline embodied in the processes we have described. They see the discipline as an inhibitor of the system/software development activity, rather than as a contributor to that development. In configuration management often foster such beliefs by your own actions. The CM practitioner is something like a traffic cop. Some people view the traffic cop as a dogmatic enforcer of the law, often impeding the flow of traffic. In reality, the effective traffic cop may even allow the breaking of the law (letting you proceed through a red light, for instance) in order to improve the flow of traffic. Zealous and dogmatic practitioners who do not understand their real role (i.e., to promote quality and efficiency in the system development process), do a disservice to those who do. When those in the business of developing systems view CM as a proactive contributor to the development, we will have achieved our objectives.

REFERENCES


Correction to “A Concurrency Measure”

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The above paper1 was published as authored by M. G. Khayat. However, other contributors to the paper should have been included. The authors were as follows: M. G. Khayat, W. S. Breger, M. Freiling, and T. G. Lewis.

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