To: MTB Distribution

From: Gary Dixon

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Subject: Documenting System Programming Techniques

Traditionally, Multics system programming techniques have been passed on from programmer to programmer by word of mouth. This has proven to be a very effective way for new programmer's to learn the "tricks of the trade".

Some problems have arisen with this approach as more new programmers have replaced experienced programmers on the project. As the number of programmers who know the techniques has decreased, more of each individuals time has been spent passing along techniques to newer staff members. While the benefits derived from increasing the effectiveness of new programmers are well-worth the costs on an individual basis, the time spent working with many new programmers greatly reduces the experienced programmer's effectiveness as an individual contributor.

Also, many Multics sites are performing system programming and application programming tasks. These sites have fewer (often no) experienced Multics programmers to pass along the programming techniques.

PROPOSED SOLUTION

The Standards SDN (AN82) should be the repository of such programming techniques and conventions. It is usual in Multics programming that there are several ways of accomplishing a particular programming function. AN82 should describe the acceptable techniques. Where more than one technique exists, it should discuss the pros and cons of each technique, to enable the developer to pick the technique which best suits his needs.

To facilitate gathering information for AN82, I suggest that several of the experienced programmers in the Multics Project form a Programming Techniques Committee. The committee would suggest techniques for incorporation into AN82, based upon their experience with other programmers, based upon input from other staff members (via a techiques continuum meeting, for instance), based upon ideas suggested from passed MCRs (the leading edge at which new techniques are often proposed), etc.

Periodically (perhaps quarterly or bi-annually), the committee members would review the accumulated suggestions, decide which are worthwhile for incorporation into AN82, and pass this input to a tech writer. The tech writer would draft changes to AN82 which could then be reviewed by the committee, by management, and by other programmers (via MTB distribution of the proposed addendum).