

Also the documentation would serve as an aid to the team leader in the management of the project.

A new set of dictionary documentation may well cause an immediate response. If a data name reads unsatisfactorily when seen in context the on-line facility enables immediate substitution of a more suitable one. A field specification may have been omitted in error and this will be remedied on seeing the list of undefined data names. The project leader may note that a comment indicates misunderstanding within the group or that ascertainable value restrictions have been omitted. In general use of on-line facilities will greatly assist the production of good documentation. They make 'working on one's work' less of a chore than is otherwise possible.

Whilst we suggest that on-line processing is useful in providing the facilities needed, the activity described can

also be carried out in a conventional batch processing environment. The benefit of the on-line technique in this context is essentially one of time scale. It allows the user to effect small updatings of his files as the need arises and eliminates the need for interim manual alterations to documentation. In a batch processing context numerous small updating runs would not be practical and additions and amendments would have to be batched into reasonable sized jobs. This means that a certain amount of interim manual updating of documentation is probably necessary. Nevertheless it seems that suitable facilities can be provided on relatively small conventional computers and such implementations should prove valuable, particularly where frequent small updatings can be tolerated and the working dictionary files therefore kept up to date.

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Book Review

Optimisation in Control and Practice, by I Gumowski and C. Mira, 1968; 242 pages. (London: C.U.P., £3 5s. 0d.)

This is an extremely odd book. It is mostly devoted to variational problems of general interest to mathematicians and physicists but such engineering and technology as enter into the text is of a curiously antiquated variety. Furthermore, there is very little that is concerned with practical applications of control theory and consequently one can only conclude that the title is particularly unfortunately chosen. I doubt if mathematicians will find much pleasure in the text, since many difficult mathematical results needed are either quoted without proof or dealt with heuristically.

In fact one wonders where the authors have been in the last twenty years, since they use a notation alien to control people. The whole topic of the use of iterative gradient procedures for solving the difficult non-linear control prob-

lems that are worrying us today, and all the numerical difficulties of handling large-scale calculations in these terms seem to have missed their gaze.

However, if one forgives the authors for their title, there is some useful content. The authors favour the method of tackling extremal problems developed by Caratheodory at the turn of the century which leads to a partial differential equation system. This is a point of view which not everybody would subscribe to. The references quoted are almost exclusively European and Russian sources, many of them unfamiliar, and this perhaps helps to give the book its distinctive flavour.

However, in the end one cannot quite forgive the authors their title which promises so much but in the event yields so little.

J. WESTCOTT (London)