

DECISION

**THE COMPTROLLER GENERAL
OF THE UNITED STATES**
WASHINGTON, D. C. 20548

FILE: B-180586

DATE: July 9, 1974

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95272

MATTER OF: Manufacturing Data Systems Incorporated

DIGEST: Specifications in RFP for commercial computer processing service for numerical control (NC) machines will not be questioned by GAO, since it cannot be concluded that contracting agency has no reasonable basis for RFP requirement restricting proposals to those offering APT language, in view of interim nature of procurement, Army policy of in-house NC control and back-up capability where possible and procuring agency's existing APT language proficiency, source programs, and post-processors.

By telegram dated February 4, 1974, Manufacturing Data Systems Incorporated (MDSI) protested the allegedly restrictive specifications under request for proposals (RFP) DAAA22-74-R-0073, issued by the United States Army, Watervliet Arsenal (Watervliet), Watervliet, New York, for commercial automatic programmed tools (APT) processing for numerical control (NC) machines via computer service. APT is a universal and highly versatile part programming language developed for computer assisted part programming for NC machines and has the widest application and broadest capability of any parts programming language.

The service being procured pursuant to the RFP is intended to cover Watervliet's interim needs (for a period not to exceed one year) for computer assistance and preparation of tapes for Watervliet's NC machine tools. Currently, Watervliet is sharing an in-house IBM 360/44 computer for its NC machine computer assistance requirements. However, while the IBM 360/44 is capable of accommodating the APT system, it cannot now provide sufficient response time to Watervliet's NC part programming needs, since the computer must also be used for other purposes. After the interim period expires, Watervliet intends to either expand the capabilities of its IBM 360/44 to accommodate its NC needs or use the CDC 6600 at Picatinny Arsenal (Picatinny), Dover, New Jersey, on a remote batch basis.

MDSI objects to the RFP's requirement restricting proposals to those offering the APT language. It contends that its COMPACT II NC

part programming system can also satisfy the Government's requirements. In support of this contention, MDSI makes a comparison of COMPACT II and APT which purports to show the superiority of COMPACT II in several respects. MDSI further contends that the "APT standard" is a myth in that there are many versions of APT exhibiting various differences in syntax, computer hardware, vocabulary interpretation, processing methods and post-processor structure and implementation.

We agree with the protester insofar as it contends that there is no total compatibility within the many APT dialects and systems. Nevertheless, we do believe there is a basic APT language, even though there is not really a standard APT system. Although the various APT suppliers have made various syntax addenda to the basic APT language to allow for additional NC capabilities for their particular APT systems, the basic APT language has essentially remained the same. It should be noted that the RFP recognized these subtle differences in syntax and it requires "as a minimum * * * (1) APT III through at least version 4 (and) (2) A simplified turning lathe routine written specifically for an APT system." In any case, it is clear that, unlike the relatively minor differences in syntax among the various APT versions acceptable under this RFP, the COMPACT II language in no way resembles APT.

The Army Materiel Command (AMC) has established the APT language as an interim standard for computer assisted programming for NC machines at AMC installations. In line with this determination, those AMC installations which use a generalized part programming language, use an APT or APT compatible system. The Army further states that many of its part programmers at Watervliet and other AMC installations have been using APT in writing source programs for computer assistance for NC machines. Moreover, AMC has established a training course in APT which has already trained approximately 150 AMC part programmers.

Also, the Army states that Watervliet has used the APT language exclusively, since entering the NC field 12 years ago, in its computer assistance for its more than 50 NC machines. It is conceded that Watervliet's part programmers, many now trained in APT, would have to be retrained in COMPACT II, if the latter system is procured under this RFP. Although MDSI minimizes the time and effort needed for this retraining, claims COMPACT II is easier to learn than APT and states that it offers this training free of charge, the fact remains that, due to the part programmers' lack of familiarity and experience with COMPACT II, much more time and existing APT proficiency would be lost in becoming proficient in COMPACT II than

will be lost in learning the possible minor differences in the procured APT system. Moreover, since it is intended that after the interim period covered by this procurement that Watervliet will go to either its in-house IBM 360/44 or Picatinny's CDC 6600, both of which are programmed in APT, for computer assistance for its NC machines, it would not seem appropriate to train Watervliet's part programmers in a completely new language for the one-year interim period, when they will eventually have to return to using APT.

The Army further contends that the post-processors (software which converts the generalized computer cutter line (CL) output to the individual machine tool tape format) for the NC machines at Watervliet are all APT post-processors. Although post-processors are included in the procured service here, unless the contractor wants to use the existing post-processors, these existing APT post-processors will still be kept by the procuring activity for use on the IBM 360/44 after the interim period covered by this procurement elapses. MDSI contends that most of the existing post-processors are inoperative. However, the Army states that only five of the post-processors are deficient in any way, of which four have only minor deficiencies which are being corrected under warranty by the post-processors' supplier. In any case, completely new and expensive post-processors would have to be procured if the IBM 360/44 was reprogrammed in COMPACT II. The Army has clearly enunciated its objections to such a conversion for reasons which are stated elsewhere in this decision.

Furthermore, while it is conceded that total systems compatibility does not exist between the various APT systems and dialects, it is clear that the existing source programs for the various parts prepared in APT at Watervliet can be readily used for preparing the same or similar parts or for incorporating engineering changes under the procured APT system. This would not be the case if the COMPACT II system were procured where completely new programs would then have to be written.

Finally, the Army claims that it needs mutual back-up service capability among AMC installations in order to balance workloads, gain maximum utilization of NC machines and make possible the use of centralized processing where it is feasible. Although AMC installations have apparently not often interchanged such work or performed such back-up service in the past, the Army has clearly endorsed this practice as a desirable goal and recognized the

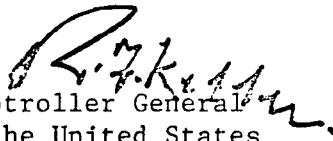
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necessity of at least having this kind of capability where it is possible. Such back-up service would only be effective if source programs are programmed on some common basis, that is if they are APT or compatible with APT. This kind of capability would not exist for Watervliet, if it used an NC system not compatible with APT.

It consistently has been held by our Office that the drafting of specifications to meet the Government's minimum needs is properly the function of the procuring agency. 38 Comp. Gen. 190 (1958); B-174140, B-174205, May 16, 1972; B-178288, May 24, 1973. We will not question the agency's determinations in this regard unless there is a showing that the determinations have no reasonable basis. B-169868, September 17, 1970; B-174775, March 29, 1972; B-176708, February 2, 1973.

On the basis of the present record, we cannot say that there is no reasonable basis for the RFP's APT requirements. Since we have found that the APT requirements are otherwise justified, it is not necessary for us to make any comparison of the relative advantages and disadvantages of the APT and COMPACT II systems.

In view of the foregoing, the protest of MDSI is denied.


Deputy Comptroller General
of the United States