

Suitability of Ada for Automated Cartography

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Map construction algorithms currently exist in a number of computer programming languages and in several different versions of such languages as Fortran and Basic. Like other relatively sophisticated software, mapping programs often depend heavily on special features of the operating or hardware system on which each program was originally written. This dependence stems from the system dependence of most high level programming languages and has the important consequence of making most mapping programs difficult to transport from one computer to another.

Ada is a general purpose programming language sponsored by the U.S. Department of Defense and developed with the specific objective of producing highly portable programs. If Ada is a suitable language for writing cartographic programs, its use could alleviate current portability problems. To determine whether Ada is a practical language for cartographic applications, several common mapping algorithms originally programmed in Fortran and Basic have been rewritten in JANUS/Ada. Results of this effort demonstrate that basic mapping and map data processing programs may be readily written in Ada. Conversion of Fortran programs to Ada, in particular requires changes which have proven more cosmetic than substantive even though the program code appears very different.