

RECOGNITION OF PRIMITIVE FEATURES OF PRISMATIC PARTS HAVING ORTHOGONAL AS WELL AS INCLINED SURFACES FROM STEP DATA

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Abstract

Integration of CAD and CAM through CAPP is one of the key issues in the realization of CIM which is expected to fulfill the need of current manufacturing industry in terms of automation of its activities. The automation of process planning begins with the implementation of feature recognition procedure, as it is the first and most important activity in the development of a CAPP system which leads to the automation of subsequent activities of manufacturing planning and also shop floor activities such as scheduling. This paper presents an approach for recognizing the primitive manufacturing features of prismatic parts both with orthogonal and inclined surfaces. For demonstration Blind_Slot and Slanted_Through_Step, which are commonly found in the prismatic parts are considered. The proposed approach employs the STEP (Standard for Exchange of Product model data) neutral file which is generated from the CAD model of the part and employ combination of hint based and syntactic pattern recognition methods, which is termed as Hybrid method. The work presented in this paper is a part of the ongoing research work in the development of Computer Aided Process Planning (CAPP) using ISO standard STEP 10303-21 and application protocol AP – 203 neutral file.

Keywords : CAD , CAPP , CAM , CIM, Feature recognition and STEP

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