Code	AMI- NPST007 (12-INF2816-02)
Project Name:	Intelligent Workshop in Sheet Metal Die Design and Manufacturing
Objectives:	Data Extraction for Sheet Metal Parts. Feature Recognition of Sheet Metal Parts. Process Planning of sheet Metal Part Operations. Sheet Metal Utilization. Sheet Metal Unfolding. Sheet Metal Strip Layout. Check Manufacturability. Expert System in Sheet Metal Cutting Dies (Blanking, Progressive and compound). Computer Aided Process Planning Indexing and Retrieving.
Project Period	24 Months
Start Date	1/7/2014
Budget	1651000 Saudi Riyals
Status	Ongoing
Project Outcome	The Flexibility and integrity in solving all Sheet Metal Application A more effective and efficient techniques in die design and manufacturing as a base in a concept of the Intelligent workshop.
Abstract	Die design is represents till now as a mix between science and art. In spite of the emergence of many die design software since the early seventies but there is still no program is to design for a real-life Die design and manufacturing in the factory. Real life starts when the die designer receipt the sheet metal part and ended with the fully die design manufacturing. The experts experience in the field of dies represents the main engine to the work management, and recently some software of the modern concepts appears, to quote some of these experiences and is included as knowledge bases to mimic the experts experienced. In this research proposal, assume building expert system in the die design to simulate the realistic die design process since its inception. It is initially receives the sheet metal part, analyze it to find out its included sheet metal features, define and arrange the required operation sequences for producing the part, and then select the required of types sheet metal dies, and its arrangement for the implementation of this operations. Once the program automatically recognizes the required die type, it turns automatically to its own module. For each type of sheet metal dies, there is an expert system to select the optimum die design associated to each part in its stage operation. Once selecting the optimum die design, the program implement all die design components in the form of a 3D model. Each dies component drawn in standalone layer, which controlled in appearance or in disappearance the die components. Each die 3D model components data is extracted to be indented to the processes planning program. The program is available to be built on the graphical environments such like "AutoCAD", and "CATIA", and is controlled using the Visual BASIC. It also available to build as a standalone program to avoid the package components problems that occur as a result future developments such as windows, AutoCAD, CATIA, and Microsoft products such as excel and Access. The standalone code allows the successive possibilities of future development on it. The proposed program depends on modern technologies in data transferring based on STEP files

	extension, which depends on data transferring for sheet metal parts ass STEP207 and solid modelling to be work of processes planning module through the STEP303.
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