

# The Daily Telegraph

C A D C A M

C L I N I C

## CUSTOMISING CAD/CAM SYSTEMS

The performance of standard general purpose CAD/CAM systems is often disappointing and many systems are clearly not being exploited to the full. Customising is needed to tailor CAD/CAM to your own requirements and to handle specialist applications.

### Customising Applications

The best opportunities are found where:

- The application is relatively well constrained and somewhat repetitive, for example, families of similar-to parts.
- Engineering procedures are well defined ie. little or no black art or 'engineer's experience'.
- Specialist or company specific areas where the market is too small for a standard product.

A reasonable volume of work is required to justify software development costs. More and more automation becomes feasible as volumes increase but it is usually better to start with simple design aids and then progress towards extra automation gradually.

### Linking Systems

Customised software is usually needed to achieve integration or linking of systems. Common examples include:

- Passing parts list data from CAD to production control systems.
- Passing CAD geometry to NC or design analysis systems.
- Using a database to help component selection.

Passing data between systems obtained from different suppliers is usually best achieved via an intermediate ASCII text file. More interactive links tend to be relatively expensive and difficult to maintain. Once the specification of the intermediate file is agreed, software development can then proceed independently on the two systems.

The handling of design modifications is usually the most difficult problem area to be considered when designing a system link. To pass a complete new set of data after each modification is one solution, whilst a difference report highlighting new, modified and deleted data is a more useful but difficult alternative.

# Development Basis

The following are the features to check to ensure a CAD/CAM system will provide an adequate basis for a customised system:

## A Hardware

General purpose computers and peripherals supplied by one of the well-known manufacturers are usually preferable to hardware which is specifically made for a CAD/CAM system. The availability of sufficient memory and disc space should also be checked.

## B Software

A standard general purpose operating system is preferable to one which has been modified by a CAD/CAM vendor. Increasingly Unix is the preferred choice for CAD/CAM applications. Compilers for programming languages such as BASIC, FORTRAN or C will be required for more complex programming work and systems such as databases, spread sheets or word processors may also be required.

## C System Interfaces

The most important aspect to check is the access the CAD/CAM system provides for user developed programs. For example:

- Database interfaces eg: a FORTRAN sub-routine library
- Command language interfaces eg: macros
- High level of macro language
- ASCII data input & output facilities.

By adding functionality to meet your specific requirements, customising can transform the benefits of CAD/CAM. The best proof to be had of this is to talk to CAD/CAM users who have already taken this route.

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