

Unit 5

COMPUTER INTEGRATED MANUFACTURING (CIM) (cont)

Objectives

Knowledge

- Understand the concept of CIM and CAD/CAPP/CAM system
- Explain the functions of CAD/CAPP/CAM

Skill

- Develop reading comprehension skills through technical texts about CIM and its components.
- Practice answering comprehension questions and translation exercises in the field of CIM.

Attitude

- Diligent and responsible in learning
- Having self-discipline in daily study and practice.

Text 1

Because CIM concept is very large, so in this lesson we just learn technical aspects of CIM and its components.

CAD/CAPP/CAM

CAD/CAPP/CAM stands for Computer Aided Design/ Computer Aided Process Planning/ Computer Aided Manufacturing. CAD/CAPP/CAM subsystem is one of the important factors of CIM system.

- **CAD** is a process that uses computers to assist in the creation, modification, analysis, or optimization a product design. It refers to the integration of computers into designed activities by providing a close coupling between the designer and the computer.
- **CAPP** is responsible for detailed plans for the production of a part or an assembly. It acts as a bridge between design and manufacturing.
- **CAM** is concerned with the preparation of automatic manufacture; including code generation for NC machines, cutting tools, tool position, tool motion... All these elements must be determined before manufacture.

The integration of CAD/CAPP/CAM is an important way to enhance the product design standards.

Flexibility Manufacturing System (FMS)

Product flexibility is referred to the ability to change to a new set of products economically and quickly in response to market. It is a very important factor to win the competition. FMS can be defined as “a set of machines in which parts are automatically transported under computer control from machine to machine for processing.” In general, FMS can be classified:

- Automated manufacturing devices.
- Automated material handling system.
- Automated tool system.
- Computer control system.