

Automation (21-541)

*Advanced Manufacturing Laboratory
Department of Industrial Engineering
Sharif University of Technology*

Session # 17



Session Schedule

- *Computer Integrated Manufacturing (CIM) models*
 - *Models*
 - *ESPRIT - CIM OSA Model*
 - *NIST-AMRF Hierarchical Model*
 - *Siemens Model of CIM*

Introduction to manufacturing automation and CIM (Computer Integrated Manufacturing)

- *Computer Integrated Manufacturing (CIM) encompasses*
 - *The entire range of product development and manufacturing activities with all the functions being carried out*
 - *With the help of dedicated software packages.*
 - *The data required for various functions are passed from one application software to another in a seamless manner*
- *CIM considers*
 - *All activities from the design of the product to customer support in an integrated way,*

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Computer Integrated Manufacturing (CIM) models

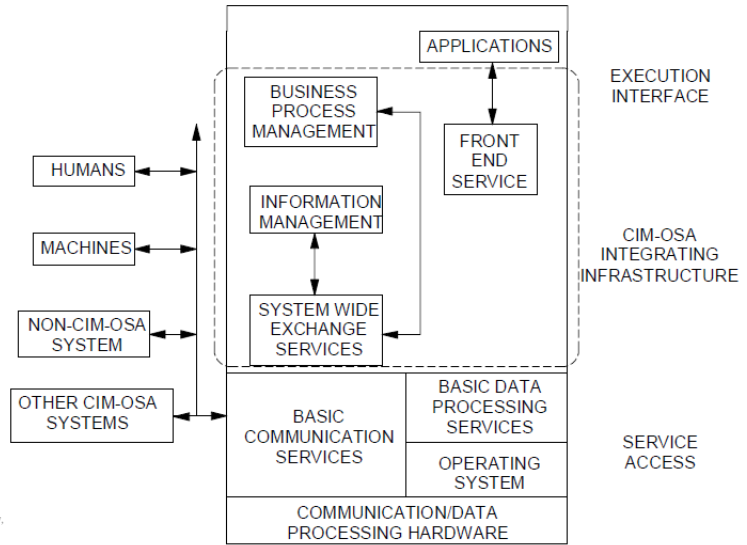
- *ESPRIT - CIM OSA Model*
 - *European Strategic Program for Research and Development in Information Technology (ESPRIT)*
 - *is an industrially oriented R&D program with the aim of improving the competitiveness of the European Community industries*
 - *The ESPRIT strategy has been the creation of an environment in which multi-vendor production systems can be implemented at reasonable cost.*
 - *CIM- OSA was developed by AMICE (a consortium of 30 major European vendors and users of CIM systems (e.g. IBM, HP, DEC, Siemens, Fiat, and Daimler-Benz) for ESPRIT*

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Computer Integrated Manufacturing (CIM) models

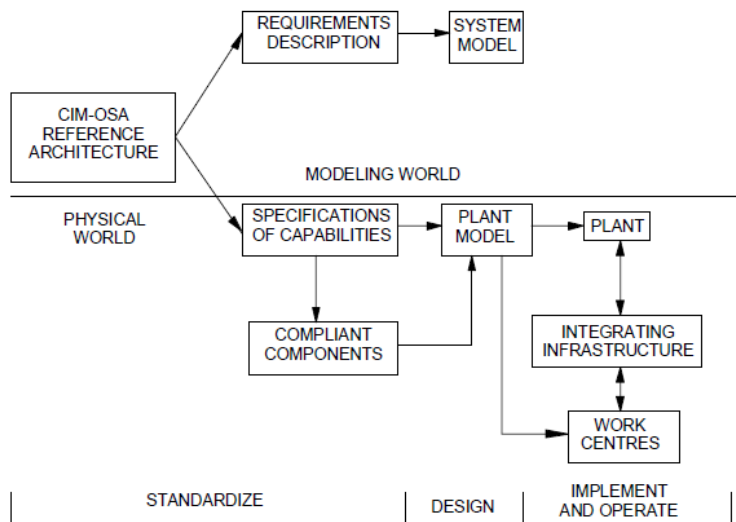
- *ESPRIT - CIM OSA Model*



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Computer Integrated Manufacturing (CIM) models

- *ESPRIT - CIM OSA Model*



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Computer Integrated Manufacturing (CIM) models

▪ NIST-AMRF Hierarchical Model

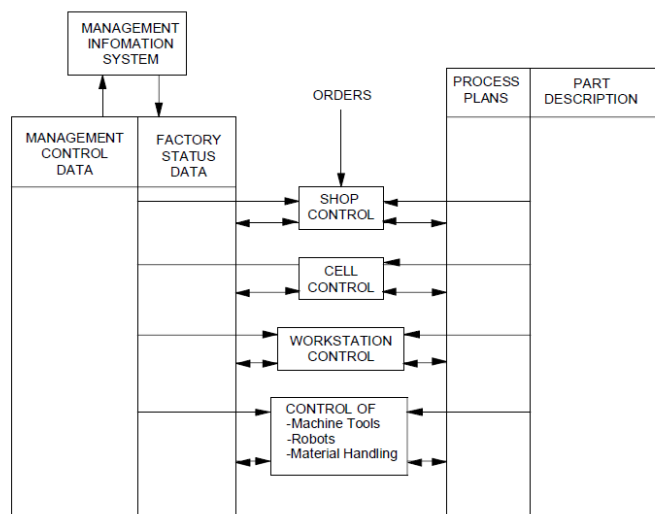
- At National Institute of Standards and Technology (NIST, Germany), an Advanced Manufacturing Research Facility (AMRF) was built and operated to work out the hardware and software standards for computer controlled manufacturing system.
- The NIST model greatly facilitates the configuration of a control system for manufacturing.
- The model is of particular value to small and medium sized batch operations.

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Computer Integrated Manufacturing (CIM) models

▪ NIST-AMRF Hierarchical Model



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Computer Integrated Manufacturing (CIM) models

Siemens Model of CIM

The Siemens model of CIM comprises the main functions of

- Planning,
- Sales,
- Purchasing,
- Production planning and control,
- Computer aided design,
- Computer aided quality control and
- Computer aided manufacture

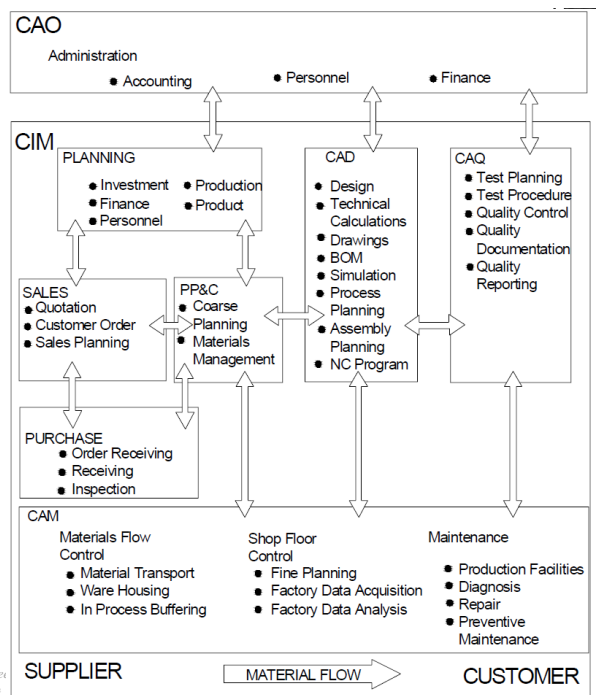
interconnected by intensive information flow.

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Computer Integrated Manufacturing (CIM) models

Siemens Model of CIM



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