2.4 Homework

Develop IDEF0 model to build a generic CIM system. The ICOM parameters are;
Inputs:

- Expertise
- Existing CIM system information
- Available resources,

Outputs:

- CIM system design
- System performance data
- CIM system model (Static & Dynamic)

Controls:

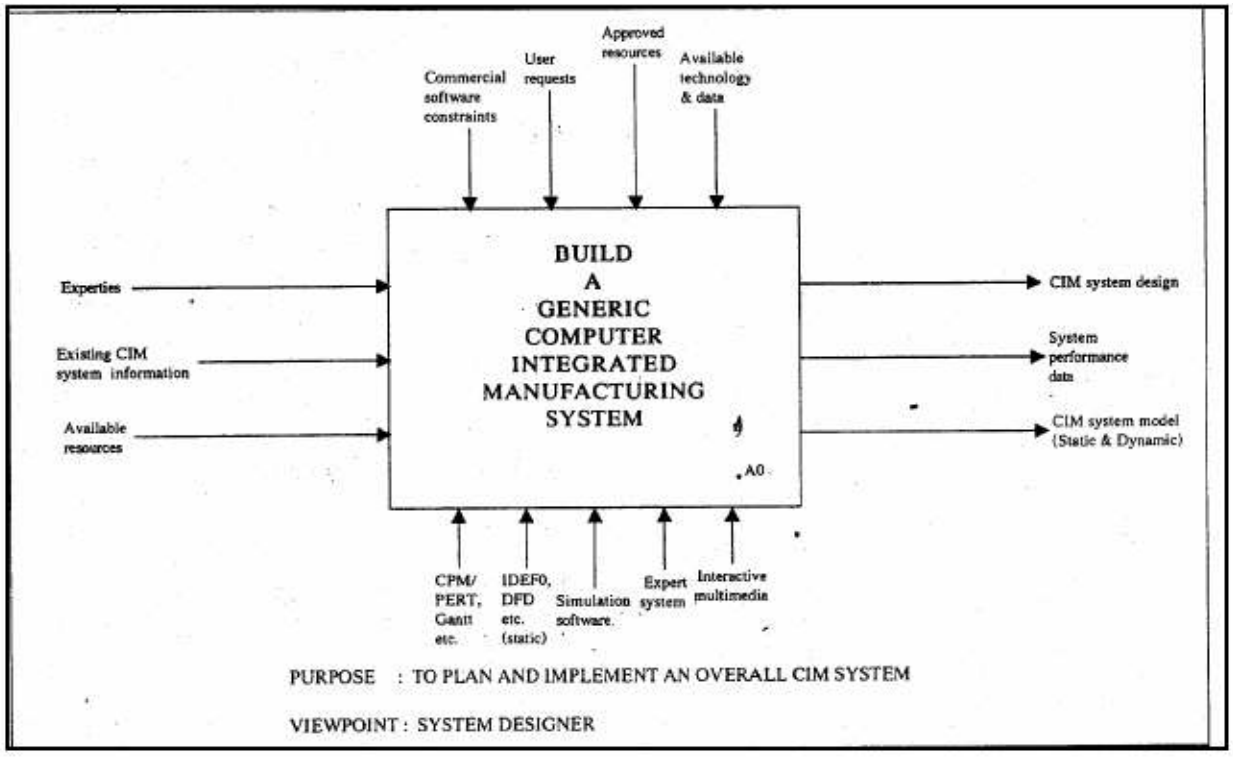
- Commercial software constraints
- User requests
- Approved resources
- Available technology & data

Mechanisms:

- CPM/PERT, Gantt chart
- IDEF0/DFD

- Simulation software
- Expert System
- Interactive multimedia

The context diagram is shown below:



The decomposition diagram of the generic CIM system building comprises three activities;

i) Plan a CIM system
ii) Design a CIM system
iii) Integrate a CIM system

The decomposition diagram is shown in Fig. 2.3.2. The decomposition diagram for first activity "Plan a CIM System" comprises four activities as follows:

i.a) Initiate Project
i.b) Conduct Preliminary Analysis
i.c) Conduct Detailed Analysis
i.d) Control CIM Project

The decomposition diagram for "i) Plan a CIM System" is shown in Fig. 2.3.3.

The activity entitled "ii) Design a CIM system" has four activities as follows:

ii.a) Design a Business System
ii.b) Design a CAD System
ii.c) Design a CAM System
ii.d) Design a FMS

The decomposition diagram for "ii) Design a CIM System" is shown in Fig. 2.3.4.

The activity entitled “iii) Integrate a CIM system” has five activities as follows:

iii.a) Install Hardware
iii.b) Install Software
iii.c) Install Machinery
iii.d) Integrate System
iii.e) Test and Monitor System

The decomposition diagram for “iii) Integrate a CIM System” is shown in Fig. 2.3.5.

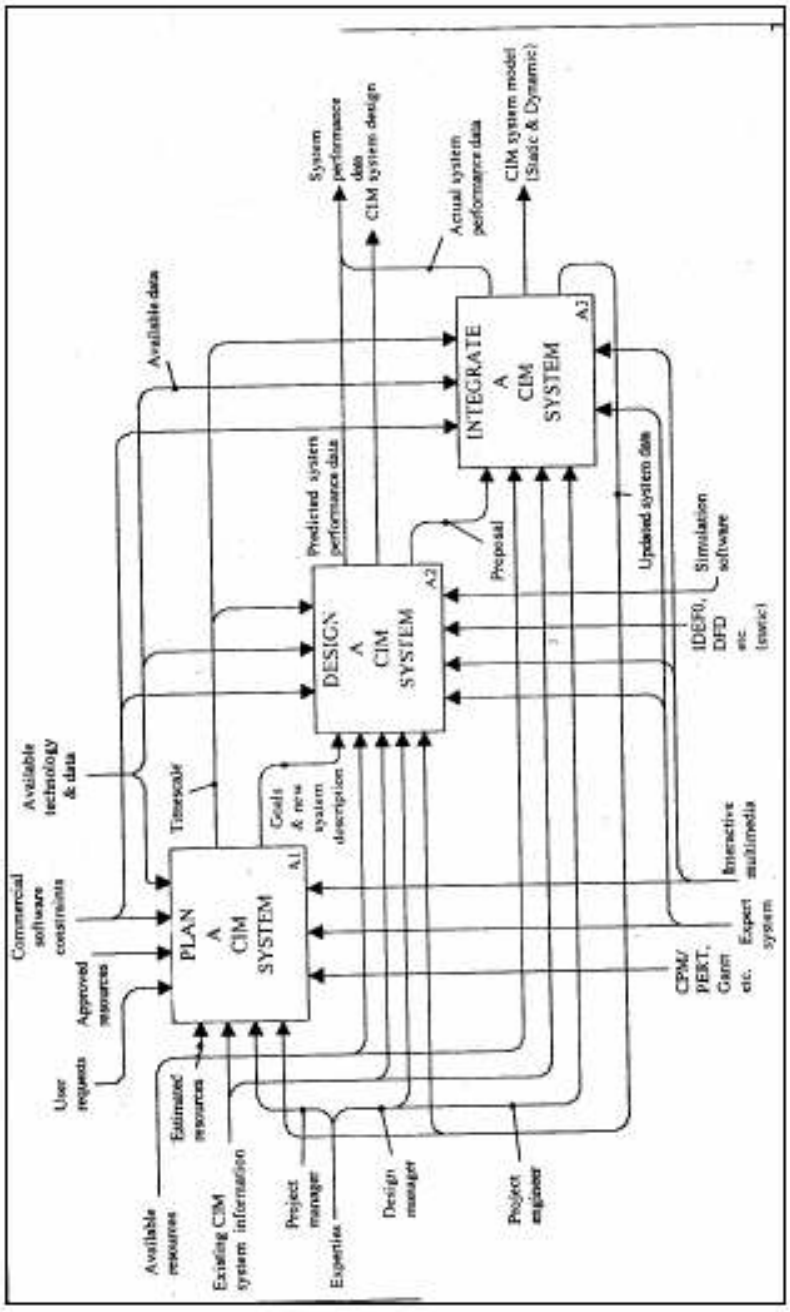


Fig.2.3.2 Decomposition Diagram For CIM Model

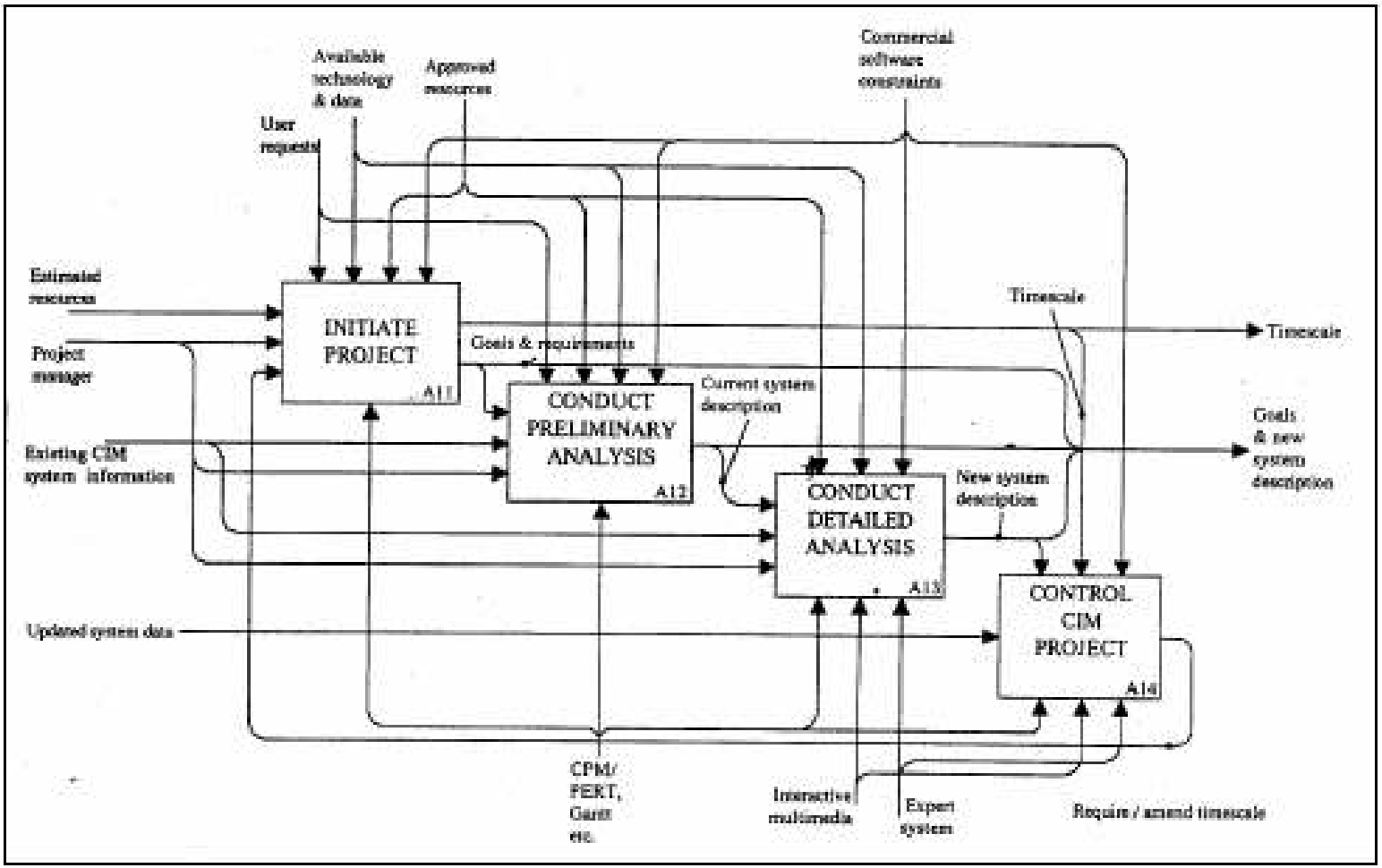


Fig.2.3.3 Decomposition Diagram For "PLAN A CIM SYSTEM"

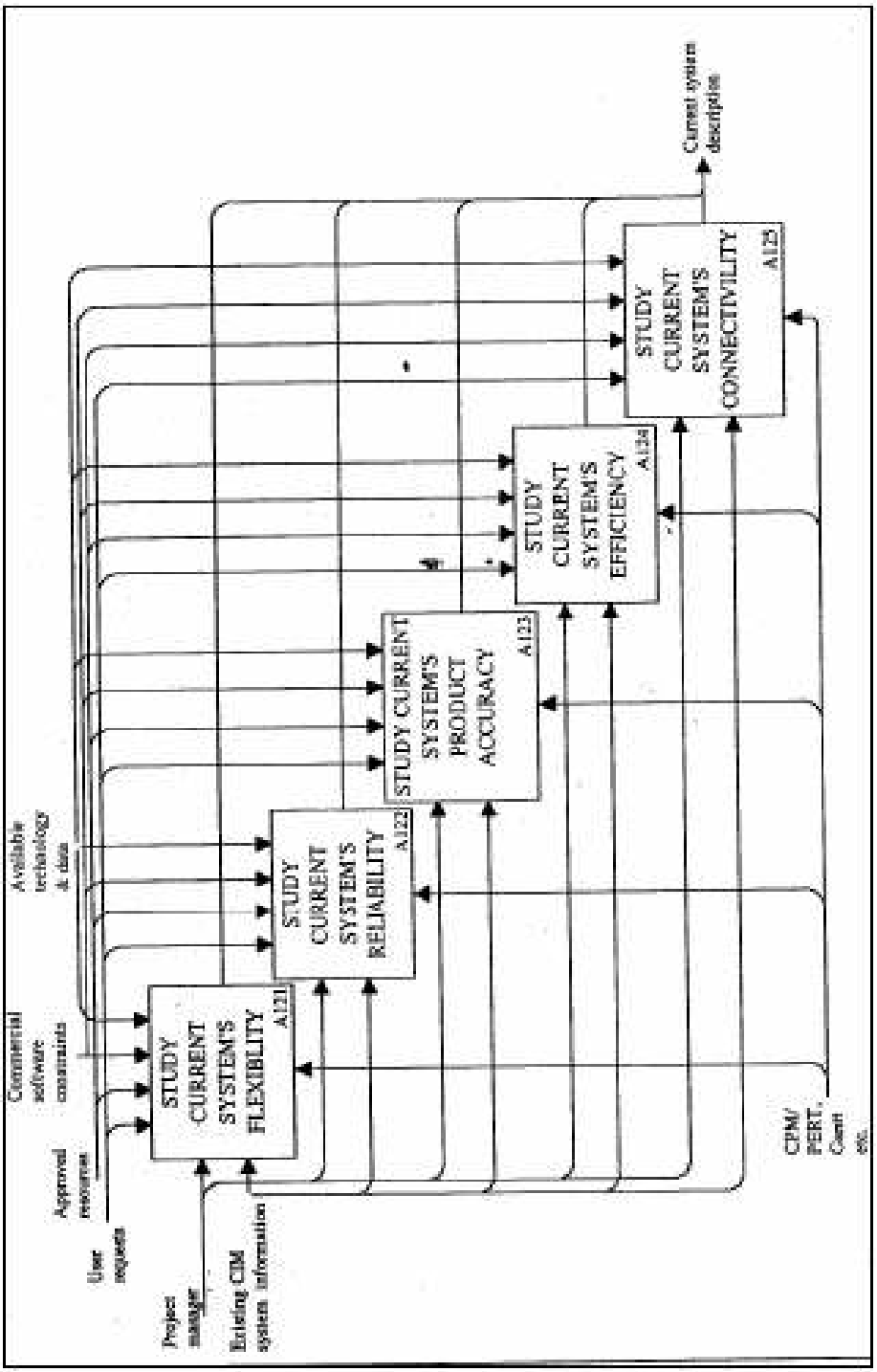


Fig. 2.3.4 Decomposition Diagram For " DESIDN A CIM SYSTEM"

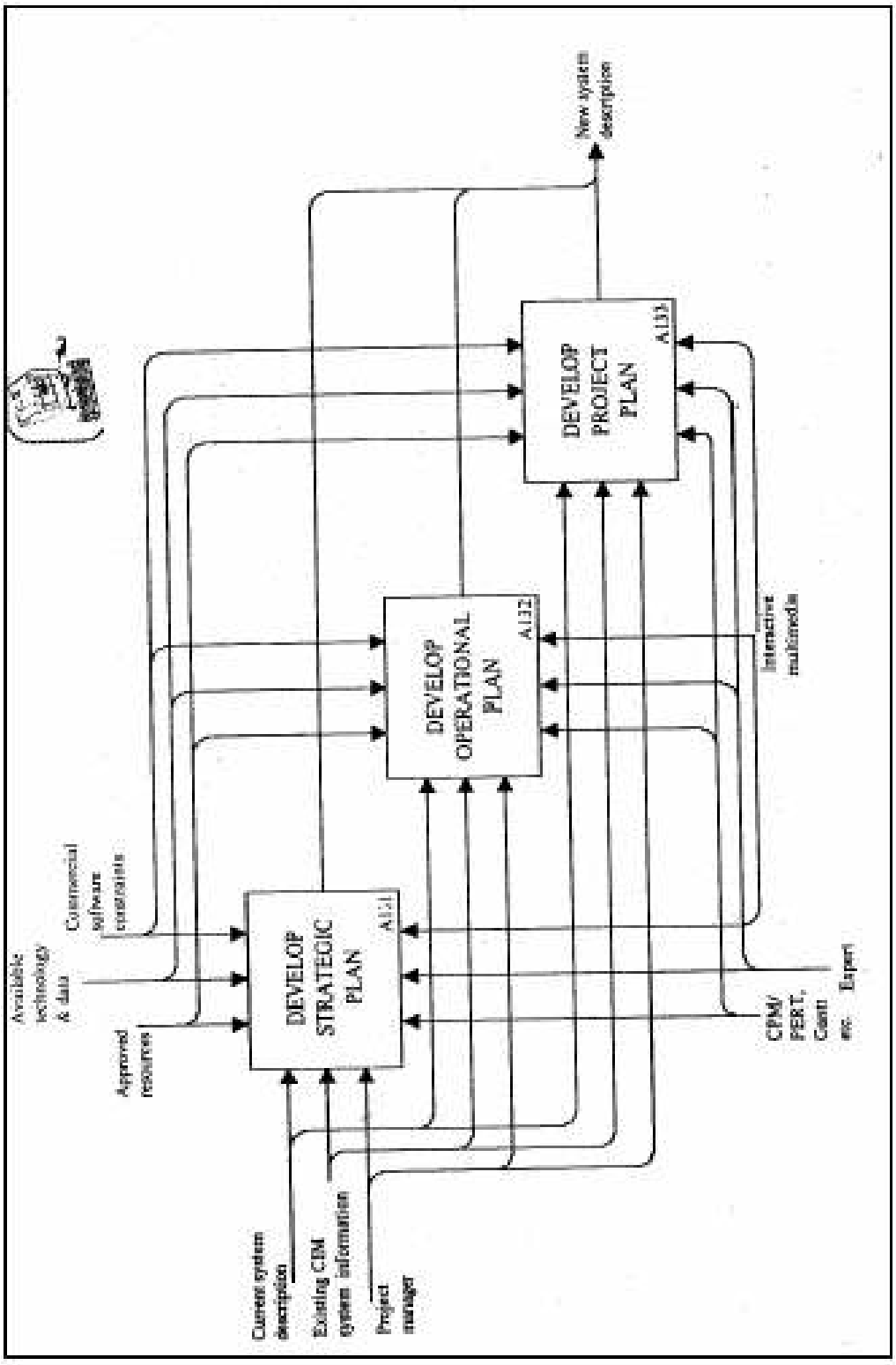
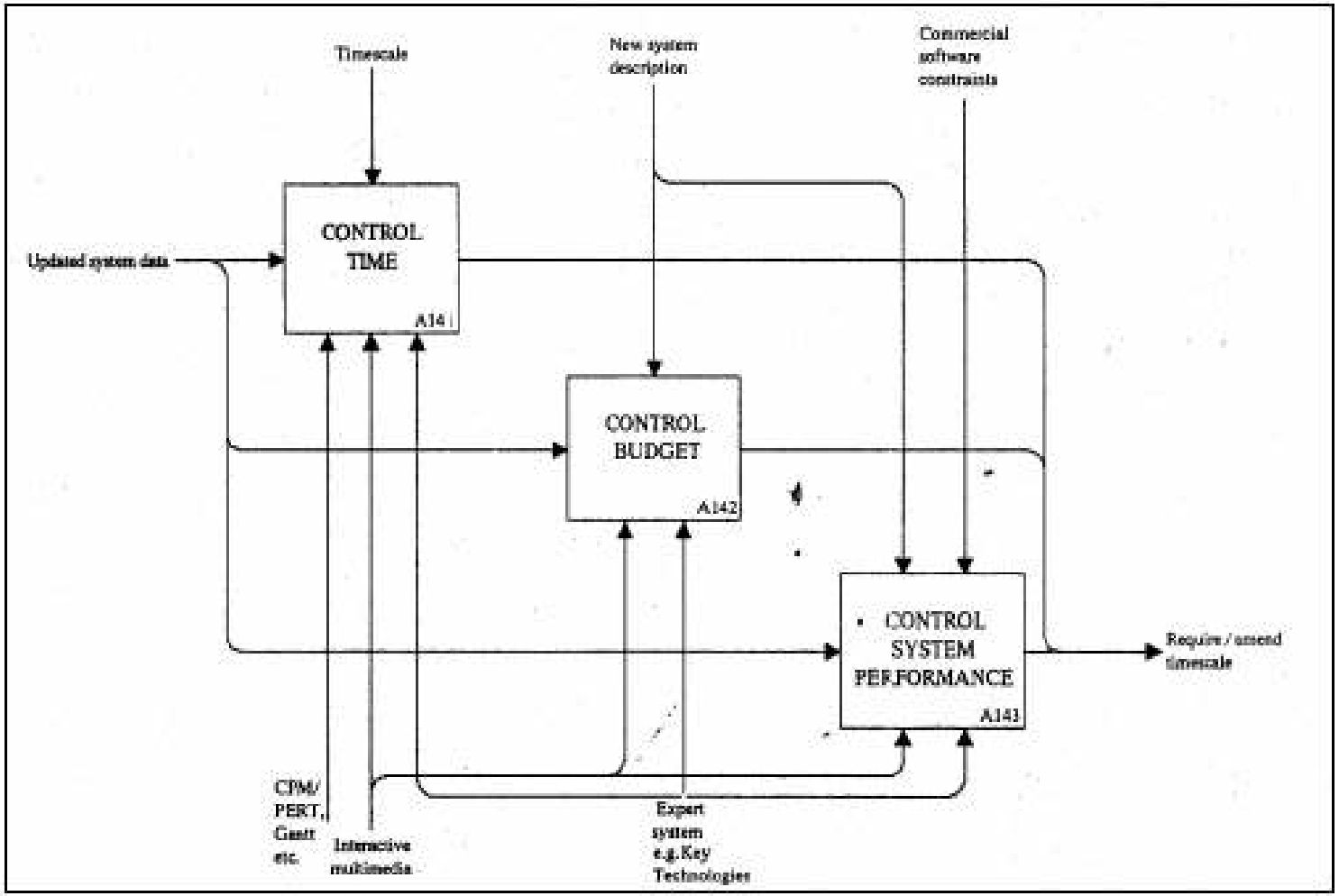


Fig. Decomposition Diagram For CIM Model


Timescale
New system description
Commercial software constraints
Updated system data
CONTROL TIME
A141
CONTROL BUDGET
A142
CONTROL SYSTEM PERFORMANCE
A143
Require / amend timescale
CPM/ PERT, Gantt etc.
Interactive multimedia
Expert system e.g.Key Technologies

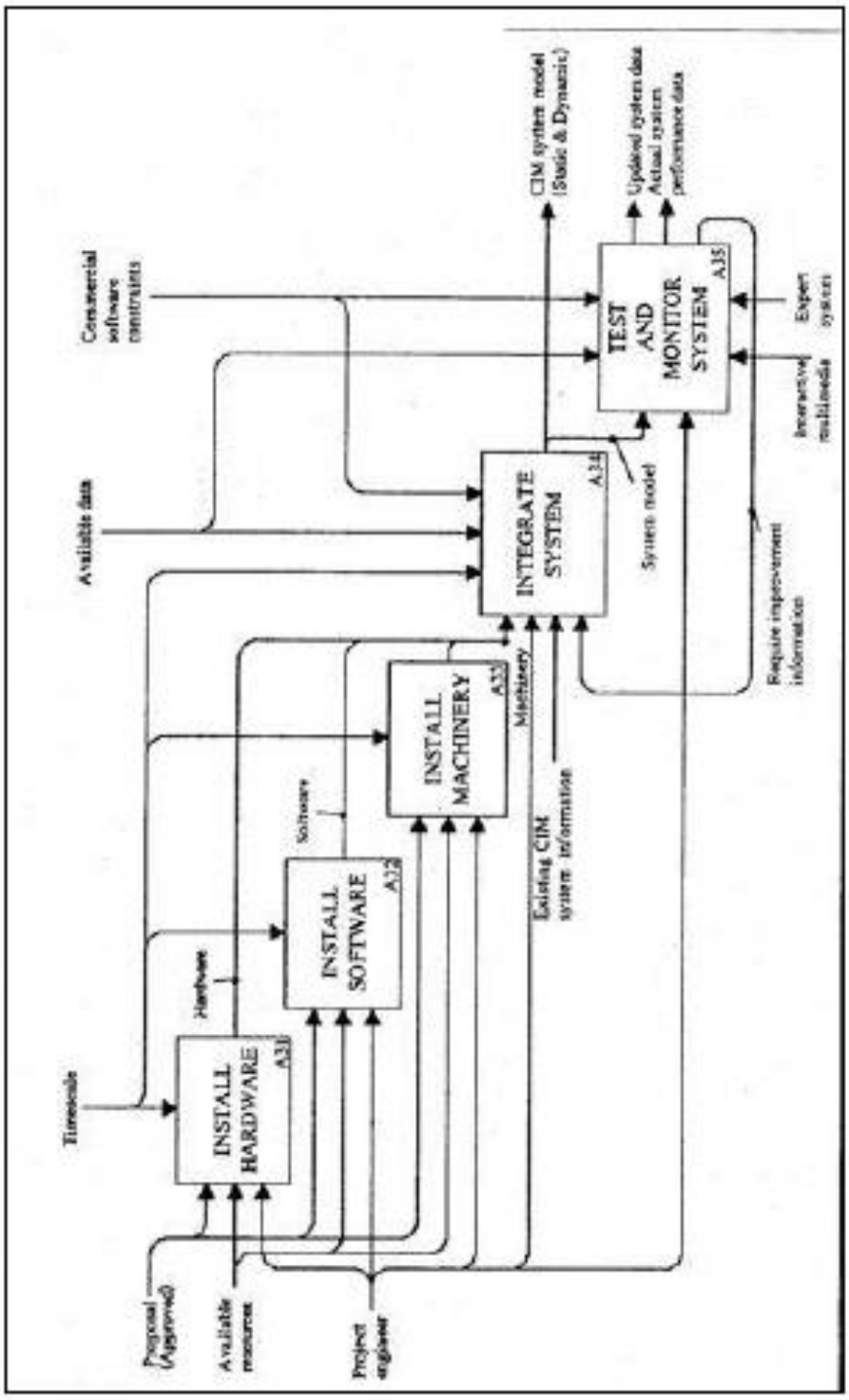


Fig. Decomposition Diagram For CIM Model