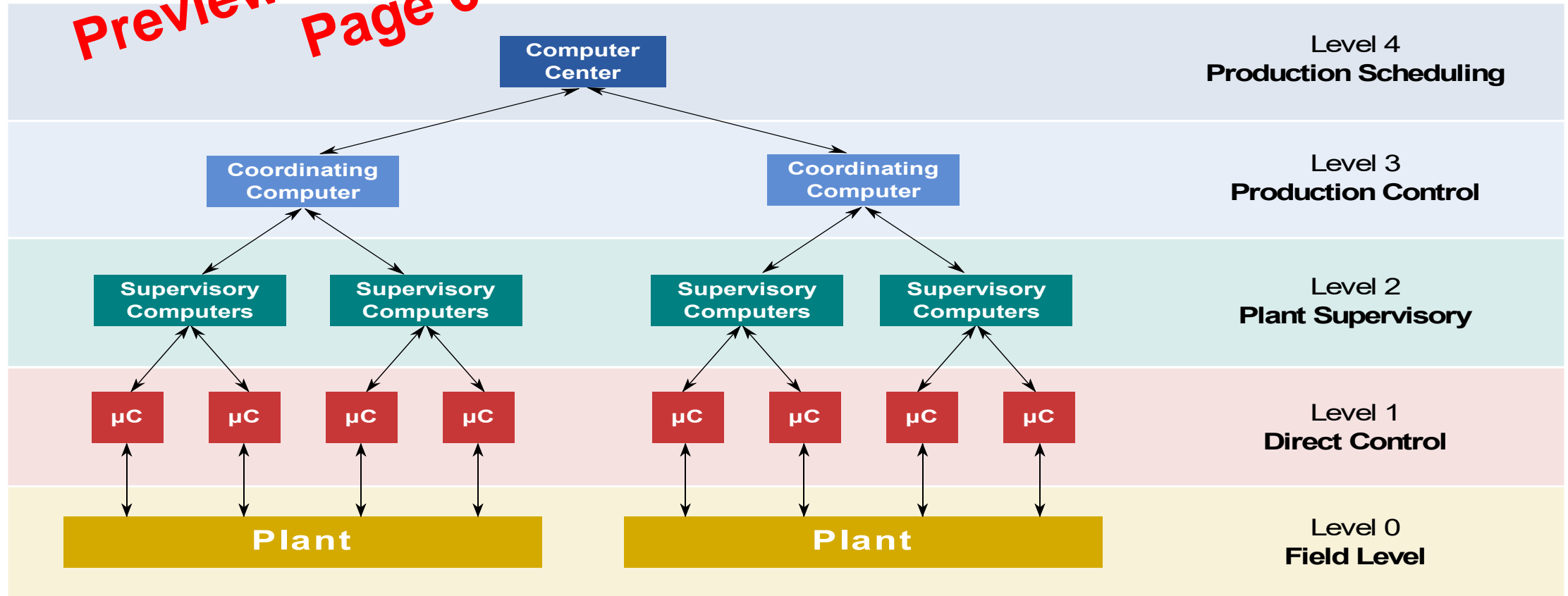


FMS Planning

- Planning Issues. The initial phase of FMS planning must consider the parts that will be produced by the system. The issues are similar to those in cellular manufacturing. They include the following:
 1. Part family considerations:- Any flexible manufacturing system must be designed to process a limited range of part or product styles. In effect, the part family to be processed on the FMS must be defined. Part families can be based on product commonality as well as part similarity. The term product commonality refers to different components used on the same product.
 2. Processing requirements:- The types of parts and their processing requirements determine the types of processing equipment that will be used in the system. In machining applications, nonrotational parts are produced by machining centers, milling machines, and similar machine tools; rotational parts are machined by turning centers and similar equipment.
 3. Physical characteristics of the work parts:- The size and weight of the parts determine the sizes of the machines and the size of the material handling system that must be used.
 4. Production volume:- Quantities to be produced by the system determine how many machines of each type will be required. Production volume is also a factor in selecting the most appropriate type of material handling equipment for the system.

Hierarchical of computer control

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Hierarchical of computer control

- A hierarchical control system (HCS) is a form of control system in which a set of devices and governing software is arranged in a hierarchical tree. When the links in the tree are implemented by a computer network, then that hierarchical control system is also a form of networked control system.
- The accompanying diagram is a general hierarchical model which shows functional manufacturing levels using computerised control of an industrial control system. Referring to the diagram;
- Level 0 contains the field devices such as flow and temperature sensors, and final control elements, such as control valves.
- Level 1 contains the industrialised Input/Output (I/O) modules, and their associated distributed electronic processors.
- Level 2 contains the supervisory computers, which collate information from processor nodes on the system, and provide the operator control screens.
- Level 3 is the production control level, which does not directly control the process, but is concerned with monitoring production and monitoring targets
- Level 4 is the production scheduling level.