IMPLEMENTING FLEXIBLE MACHINING IN AN INTEGRATED MANUFACTURING SYSTEM

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Flexible automation offers improved productivity and product affordability, yet it retains the benefit of improved quality that comes with hard automation. Not only does flexible automation offer increased process speeds, it also permits users to adapt rapidly to changes in product or product mix. The flexible machining system is the most prevalent form of flexible automation in use today. Two systems namely the Flexible Machining Cell (FMC) and the Integrated Machining System (IMS) are possible alternatives within a factory automation life cycle.

The first phase in the implementation of a flexible machining system would be the identification of a candidate system for the factory automation through systems engineering analyses performed against specific program needs. The major system elements are defined and refined through a series of documented development tasks and the specification of the desired system and its major elements such as computer control, machining centres etc. are verified through simulation and modelling.

Thus when compared with conventional stand-alone machining, the highly versatile flexible machining system uses less of the same resources to meet the machining needs of a given part population.