
2.2 PRODUCTION

MANUFACTURING PLAN

Focused Factory - Short Cycle Manufacturing

The concept of short cycle manufacturing (SCM) focuses on structured flow paths, people leverage, continuous flow, linear operations, and dependable sources of supply. Short cycle manufacturing is applicable to most of Motorola GEG projects. For example, the APACHE project has shown production improvements due to SCM. Since December 1985 through the projection for December 1988, the total cycle time has been reduced 73%. For the same time frame, material inventory has been reduced 67%. In fact, about 10% of the material as received is moved directly from the dock to the manufacturing line. The appropriate operator then accepts the material. The advantages of SCM include inventory reduction, reduced cost and waste, and forcing the timely correction of problem areas. However, smart preselection of components is necessary and changing the production schedule may be difficult.

A public address system is used frequently to communicate with those on the floor, thus avoiding the rumor mill. The KAN-BAN card system is a factory cell approach to request or pull just enough product up to the next process. This greatly reduces the continued production of defective product to only a few units because large quantities are not produced and then left to sit on a staging shelf, awaiting the next process. KAN-BAN is one of the essentials in the short cycle time of the just-in-time approach, which has increased throughput so drastically.

QUALIFY MANUFACTURING PROCESS

Process Characterization/Standardization

A comprehensive effort to characterize, optimize and standardize existing and new manufacturing processes is being implemented at GEG. The purpose is to develop Group Standard processes and documentation using a statistical approach to qualifying best performance capabilities. This will result in developing a set of Producibility Guidelines for Engineering to insert into the Design Drafting Standards and enable process capabilities are maintained. It will also eliminate redundant and conflicting process documentation.

These documents will be broken into two types of documents. Process Requirements Documents (PRD's) are non-proprietary documents which will provide for the input/output requirements for a given process. Process instructions are proprietary documents which are "How to's," written to meet the needs of the PRD's. Many benefits can be obtained through the standardization of processes and process requirements. The key element is the commitment to achieving this goal. This commitment was made by assuring that the standardization committee would include key technical people and by providing the necessary funding (13-20M for materials and labor). Conceptually, process characterization/standardization forms the basis for best manufacturing processes. The key elements of this concept involves complete understanding of the materials used and the process from pre-control through in-process control. Statistical process control is built into the operation. Pre-control establishes an acceptable zone of operation, but also