

Reducing Qualification Cycle Time of a High-Tech Low-Volume Production

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Qualification of high-tech, low-volume products is a critical bottleneck that limits the production throughput of high-value systems. This talk addresses a two-phase qualification process, in which a scheduled qualification phase is followed only when needed by an unscheduled correction phase. Two complementary approaches are presented to reduce its cycle time. The first predicts the qualification outcome early using in-process measurements, so that a system unlikely to qualify can be abandoned quickly rather than running to its full scheduled duration. The second determines the optimal scheduled time by minimizing the expected cycle time given the qualification time distribution. Together, the two approaches reduce qualification cycle time, pointing toward an integrated framework for high-tech, low-volume production.