

## INTEGRATION OF CONTROL AND MAINTENANCE IN MACHINING PROCESS AS AN INTERMEDIARY STEP

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**Abstract:** The approach of machine tool design is contradictory with the usual view on production upgrading, because the implementation of integration in the machining process is limited and such, production control and maintenance of the machines are more significant at the beginning than automation of machining process. A possible solution to these problems is the integration of the machining process control with the activities of preventive maintenance in the early phases of product design or machine tool design, and technology.

For the control and support the simulation technique is used, based on the technologies such as: virtual reality, visual simulation, use of neural, fuzzy and genetic algorithms etc. For real time-maintenance, new sensors, coupled with knowledge-based systems, will make it possible to automate the diagnosis of routine machine tool failures.

It is obvious that this approach is an intermediary step which assure enough time for expert system technology to mature and to be included as a built-in component of a machine tool. In such a way the reduction of production costs, shortening of flow times, production based on the clients' orders and considerable shortening of product development cycle is expected.

**Key words:** data acquisition, monitoring, sensors, prediction, productive maintenance.