

One of the problems of real-life production scheduling is dynamics of manufacturing environments with new production demands and breaking machines during the schedule execution. Simple rescheduling from scratch in response to unexpected events occurring on the shop floor may require excessive computation time. Moreover, the recovered schedule may be prohibitively deviated from the ongoing schedule. This thesis reviews existing approaches in the field of dynamic scheduling and proposes techniques how to modify a schedule to accommodate disturbances such as resource failure, hot order arrival or order cancellation. The importance is put on the speed of suggested procedures as well as on a minimum modification from the original schedule. The scheduling model is motivated by the FlowOpt project, which is based on the Temporal Networks with Alternatives. The algorithms are written in the C# language.