

Abstract

A modeling and validation approach extending the formalism of Time Petri Nets for the analysis of real time systems with flexible scheduling capabilities is introduced. The new formalism is called AdaptiveTPNs. State space analysis of the model supports exhaustive prediction of the time needed to complete critical functions, and permits automatic identification of loading conditions which determine the reduction of the quality of produced results.

Keywords: *hard real time systems, process scheduling, flexible computation, Petri nets, timed behavior, enumerative analysis, validation.*