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Maximum predictability in signal interactions with HARETICK kernel

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Abstract: This paper addresses the problem of the predictability of the critical digital-signal acquisition and processing applications while interacting with signals. The hard real-time compact kernel (HARETICK) is briefly presented along with the model of the hard real-time tasks: the ModX. This paper focuses on the specification, analysis, scheduling, and implementation of the applications able to generate perfectly periodic signals on the HARETICK-based platforms. A specific nonpreemptive technique for scheduling a set of the ModXs with fixed-execution times during their periods-the fixed execution nonpreemptive (FENP) algorithm-was introduced. Some of the most interesting experimental results are also discussed.

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