Call for Participation

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Predictability Issues in Operating Systems
Wolfgang Schröder-Preikschat
Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)

Predictability is always subject to the underlying assumptions being made. For real-time systems, the time response of processes in relation to the strictness of deadlines is of particular importance. With an additional focus on embedded systems, space and energy requirements become relevant as well and need to be considered in combination. As far as software is concerned, structure and organization of the programs to be executed determines whether or not predictable processes will take place in a given computing system. Design for predictability is an overarching aspect that crosscuts the whole computing system and particularly addresses operating systems.

This talk is about structuring principles of non-sequential programs - in the shape of but not limited to operating systems - to abet predetermination of quality attributes of non-sequential (real-time) processes, it is not about analytical methods to effectively predetermine these attributes. Issues in operating systems as to space, timing, and energy requirement are touched. Emphasis thereby is on the coordination of cooperation and competition between processes, namely synchronization. It is shown how measures of process synchronization against the background of many-core processors cater to these issues.

Dr. Wolfgang Schröder-Preikschat studied computer science at the Technical University of Berlin, Germany, where he also took his doctor's degree and venia legendi. After a long-term period of extramural research at the GMD---German National Research Centre for Information Technology (later transferred into the Fraunhofer-Gesellschaft), Berlin, Germany, and the International Computer Science Institute (ICSI), Berkeley, USA, he became full professor for computer science at University of Potsdam, Otto von Guericke University Magdeburg, and Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany, likewise. He (co-)authored over 200 publications in the areas of operating systems, parallel systems, distributed systems, embedded systems, real-time systems, computer architecture, and software engineering. He has been working as a reviewer for many international scientific conferences and journals (incl. Concurrency, TAOSD, TOCS, TPDS). In addition, he served as general chair as well as programme committee co-chair and member in numerous national and international conferences such as ATC (USENIX), EMSOFT (ACM), EuroSys (ACM), Middleware (ACM), OSDI (USENIX), and RTSS (IEEE). Dr. Schröder-Preikschat acted as an officially appointed expert for the Federal Court of Justice (BGH) and has been a member of the Senate Panel and Grants Committee on Research Training Groups of the German Research Foundation (DFG). He is an elected member of the DFG Review Board on the subject area on Operating, Communication, Database, and Distributed Systems. He has a seat in the steering committee of the Embedded Systems Institute (ESI) at FAU and functions as deputy spokesman. Dr. Schröder-Preikschat is member of ACM, EuroSys, GI, IEEE, and USENIX. His main research interest is on resource-aware (parallel) operating systems, notably process coordination, especially as to time/energy-dependable application and problem domains.