A Development Environment for High Performance Embedded Systems

By David Levy

LAP Lambert Acad. Publ. Mrz 2010, 2010. Taschenbuch. Book Condition: Neu. 220x150x9 mm. This item is printed on demand - Print on Demand Neuware - This work discusses distributed, high performance, multiprocessor, embedded real-time systems and the difficulties encountered in implementing such systems. A high performance embedded real-time system architecture is proposed, together with a set of CAD tools intended to facilitate the prototyping of control algorithms on it. The complete system comprises a) a transputer-based hardware platform with I/O and timing appropriate for demanding real-time applications; b)a real-time operating system for task management on the platform; c) a graphical CAD tool for specifying control algorithms, sampling rates and I/O in a block diagram format; d) software for converting the block diagram to code, allocating it to processors, compiling, linking and downloading it onto the target hardware; e) tools for capturing and displaying process variables at run-time; f) techniques for connecting several controllers in a multi-controller system and g) methods for ensuring the predictability of the system operation and timing. The results of the implementation of the first prototype of the system are evaluated, and a complete example of a motion control system is presented. 144 pp. Englisch.

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