

**Control System for Accelerator with Distributed Intelligence Based on a "Family of Smart Devices",**  
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approach for construction of an accelerator control  
system is based on a few basic ideas: 1) system  
intelligence responsible for the handling of the control  
tasks should be spread as even as possible; 2) as much  
as possible feedback control loops should be closed  
locally and digitally; 3) interfaces for interconnection  
of the system levels should be as standard as possible;  
4) all components of the system should be control  
oriented and 5) price/performance ratio should be  
optimised. "Family of Smart Devices" based on digital  
signal processors (DSP) and RISC-based  
microcontrollers forms hardware core for the  
components of the system. An idea of "shared  
memory" is used for construction of low level software  
and access to the controlling object from a top level of  
the system. Standard high level software for control  
database and man-machine interface support is used.  
Modern tendencies in architecture of real-time control  
system are discussed.