

A MODULAR CONTROL SYSTEM ARCHITECTURE USING COM/DCOM FOR THE CRYRING SYNCHROTRON/STORAGE RING IN STOCKHOLM.

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The purpose of the system is to provide access to control system parameters in a generic sense. The communication hardware consists of a CAMAC bus, serial modbus and socket connections. Client programs communicate with servers using DCOM. A basic server controls access to a hardware communication port. Basic servers can be combined to create higher level parameters. The server loads in-process module drivers specific for each parameter type and access protocol. When a client makes a request the server passes the request to the appropriate module driver which converts it into a request-specific job-object and puts this object in a job-queue. The module driver itself is placed in a main queue. A clock interrupts a main work thread regularly. This thread scans the main queue, and if some module driver has pending jobs executes them. The job then either finishes, signalling the client, or if the parameter access protocol needs wait states it gets placed in a sleep state. The module drivers themselves load other in-process COM objects driving lower levels of communication. At the lowest level modules communicate with hardware or network endpoints. This way multiple target device protocols are implemented sharing a common communication medium.