THERAPY SLOW CONTROL AND ONLINE MONITORING

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The software control system for the therapy treatment consists of three parts. The operator interface based on FactoryLink ECS, the Frontend-Daemon[1] controling the hardware and the Therapy Online Monitor TOM. The treatment procedure is designed to be operated by a medical assistant. FactoryLink ECS is used to provide a graphical user interface to the operator and to survey alarm conditions. Alarms and trending data are stored to a database. An information panel provides a symbolic view of the setup. Detailed informations, database contents, logfiles and alarms are displayed in the operating panel on request. A treatmentplan is identified by a unique combination of name, date and patients barcode. It must be chosen and it is then downloaded automatically. When the treatment is started, the start procedure checks for data consistency and active alarms and releases control to the interlock system if everything is ok. The Frontend-Daemon provides an object oriented access to the distributed control hardware. Long lasting commands and the readout are implemented as POSIX-Threads. The Therapy Online Monitor TOM displays the requested and measured data, positions and particle integrals point by point, in realtime on a second screen. Thirty patients were successfully treated with this system at GSI since December 1998.

[1] H. Butler, D.R. Myers, W. von Rüden and J. Yang, Beamline Operation using an Industrial Control System and Distributed Object-Oriented Hardware Access, IEEE Trans. on Nucl. Sc., Vol. 41, No. 1, February 1994