

A CORBA BASED DISTRIBUTED CLIENT/SERVER MODEL FOR BEAM DYNAMICS APPLICATIONS AT THE SLS

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A distributed object oriented client/server model using CORBA has been established to interface beam dynamics application programs at the Swiss Light Source (SLS) to the TRACY accelerator physics package and to the CDEV package. The software architecture allows for remote clients to invoke computer intensive methods, such as beam orbit correction procedures, on a dedicated model server running Linux. Client programs typically make use of the GUI features provided by the tk toolkit or Java, while monitored data required by procedures utilising the TRACY library, such as beam optics parameters, are marshalled to the model server for fast analysis. The interface to the controls system is achieved through CDEV, using the tcl or Java release depending on the native language of the API; more complex applications however make use of a CORBA interface to a dedicated C++ CDEV controls server to download new setpoints to the controls hardware. Details of the model components are described and applications within the beam dynamics environment are presented. In particular the impact of the interface to the TRACY based machine model on achieving an improved understanding of the SLS machine is emphasized.