

LIVE CAPFAST SCHEMATICS IN THE ISAC CONTROL SYSTEM

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ABSTRACT

For the EPICS-based control system of the ISAC radioactive beam facility, the Capfast schematic editor is used to design EPICS IOC runtime databases. This graphical tool provides a view of the database with strong visual cues about the functional behavior of the database elements and their inter-relationships, modularity, and hierarchy. The EDM display manager tool is used for the Human-Machine-Interface, providing a graphical view of the accelerator state to machine operators. This paper describes a new tool Sch2EdI, which combines some of the functionality of Capfast and EDM. Sch2EdI creates a view of the runtime database in a format geared toward the system developer/tester/debugger. Sch2EdI is a perl script that translates a set of Capfast schematic files into a corresponding set of EDM screens. The visual representation of the runtime database on the EDM display is nearly identical to the static Capfast views and hierarchies, but incorporates the display of online runtime data. This allows software developers to examine and modify some aspects of a working runtime database in an environment that is rich in visual information.

Sch2EdI Capfast schematics displayed online in EDM

A typical top-level capfast schematic: one symbol per device

Device symbol details

Uses symbol macro & symbol label position to create related-display callsups

Sch2EdI transforms Capfast schematics to EDM Displays

A toplevel schematic display converted to an EDM format display

One menu drills down through hierarchy & displays zoomed detail

Related-display callups drill down to record-level detail

Composite symbol full zoom level

Composite symbol internal details

Detailed views of EPICS records

The Capfast 'Properties' view

The EDM view. Online, interactive, complete

The iocShell 'dbpr' view

Record level views available from capfast and IOC console command 'dbpr'

Legacy style views of an EPICS record

A composite capfast schematic, containing primitive EPICS symbols, and other composite symbols

Now, live online display of record instances

- * Modifiable fields displayed distinctly
- * Updates via monitor subscriptions
- * Actual run-time values displayed

Enumerated fields provide all allowable values for entry. Simple to use.