



# Australian Synchrotron

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## Control Systems EPICS to MySQL flange for Internet Applications

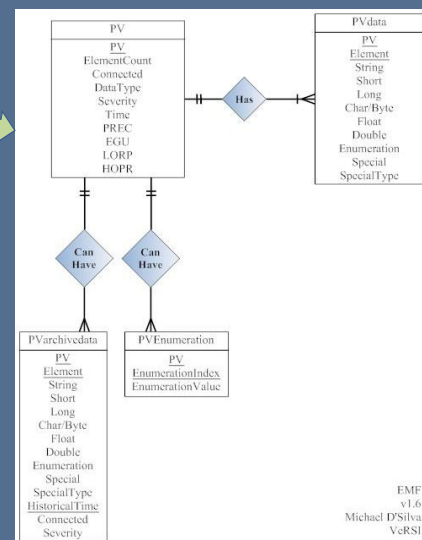
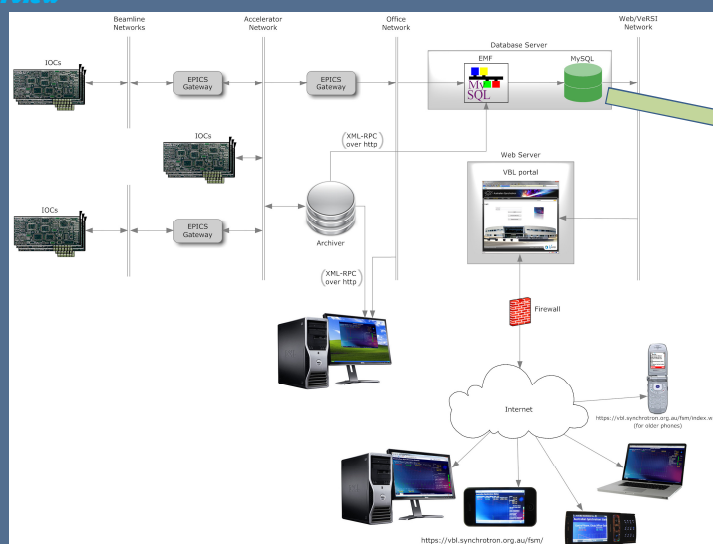
Andrew Starritt<sup>1</sup> Richard Farnsworth<sup>1</sup> Chris Myers<sup>2</sup> Michael D'Silva<sup>2</sup>

1. Australian Synchrotron Clayton, Vic. Australia
2. Victorian eResearch Strategic Initiative, Vic. Australia

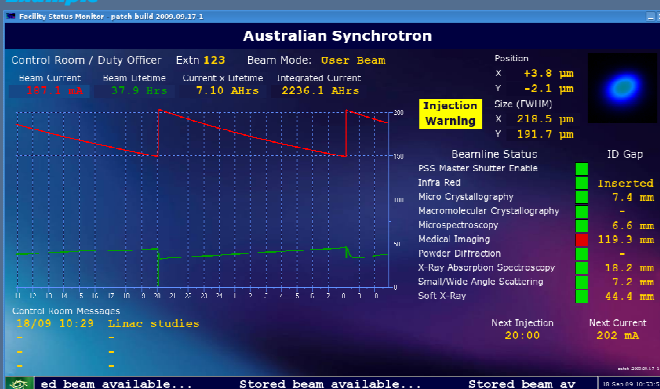
### Abstract

A technique for delivering EPICS Process Variables (PVs) to web enabled applications has been collaboratively developed by the Australian Synchrotron Controls team and a local e-research initiative the Victorian eResearch Strategic Initiative (VeRSI). EPICS PVs are collated by a program called the "EPICS to MySQL Flange" (EMF) which acts as a gateway and passes the PV values and selected metadata to a MySQL database. This database contains current values and optional short term historical records which then allows standard web based applications, in our case Asynchronous JavaScript and XML (AJAX) web applications. The EMF supports a Historical Backfill from the EPICS archive, throttling, i.e. minimum updates and dead banding, and finally image processing, useful for taking arrays and waveforms, and converting to standard image formats stored in the MySQL database.

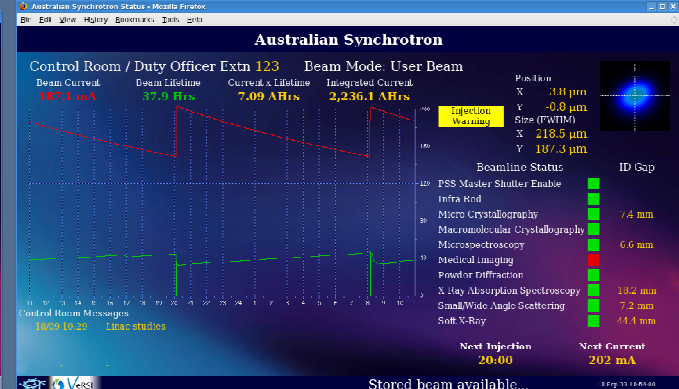
### Overview



### Example



Original Facility Status Monitor (FSM) program



Web based FSM <https://vbl.synchrotron.org.au/fsm/>

### Specifications

- Currently run with ~1500 PVs – have tested up to ~20000 PVs.
- Can maintain and/or backfill archive PV data.
- Configured by parameter files.
- Can generate JPEG image from waveform record.

- Three instances of the EMF program run in parallel. Together with MySQL program make optimum use of 4 core CPU.
- Update dead-banding (cf ADEL/MDEL) can be set per PV.
- PV name aliasing also possible.