

EPICS Web Services at ESS

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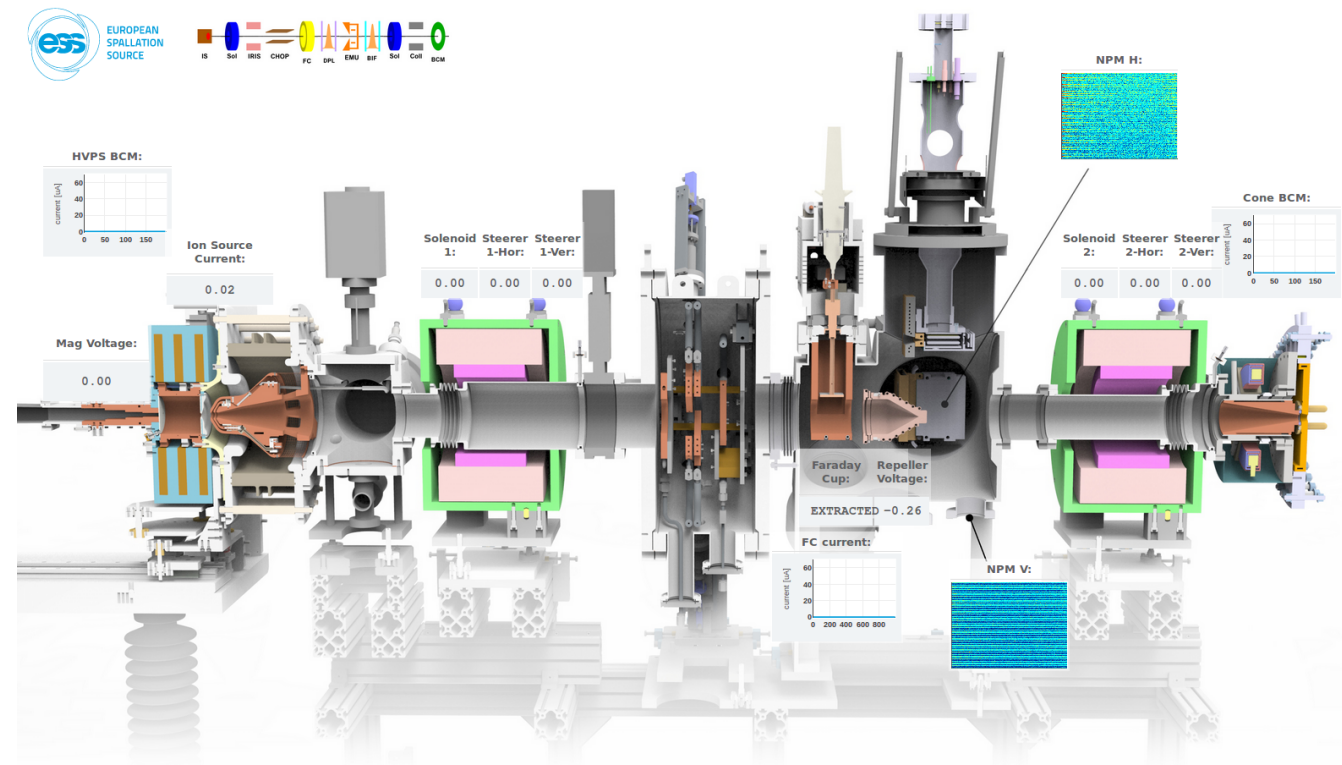
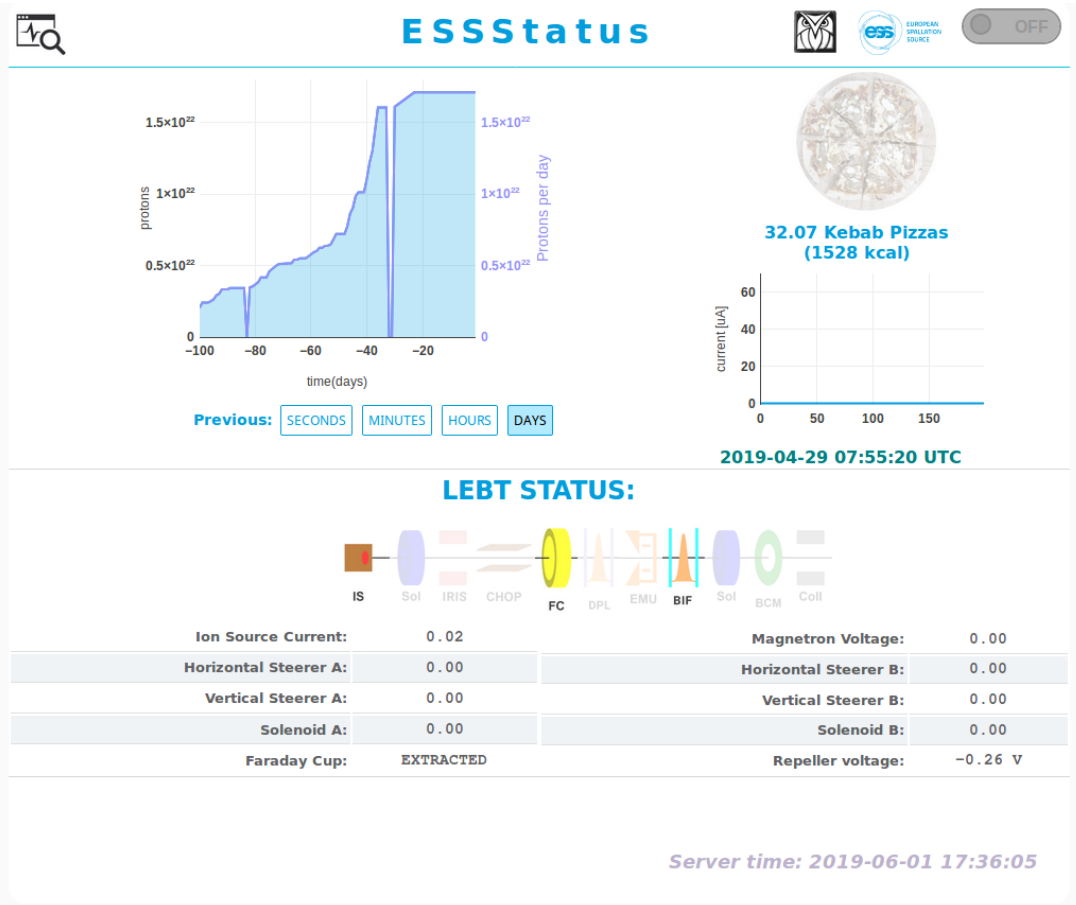
Software Engineer – Beam Diagnostics

European Spallation Source ERIC

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WebPV - <http://webpv.esss.lu.se>

- Homepage <http://webpv.esss.lu.se>



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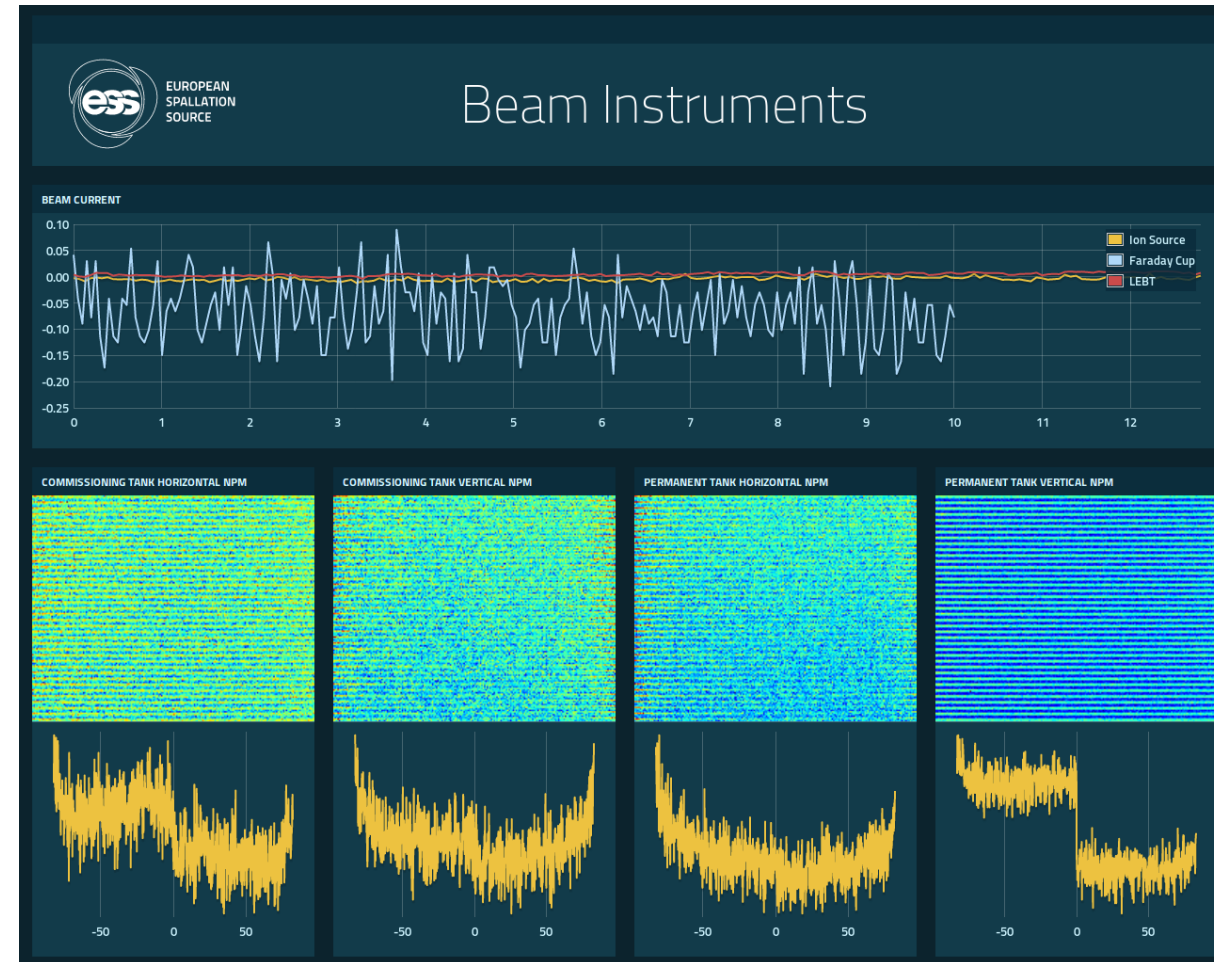
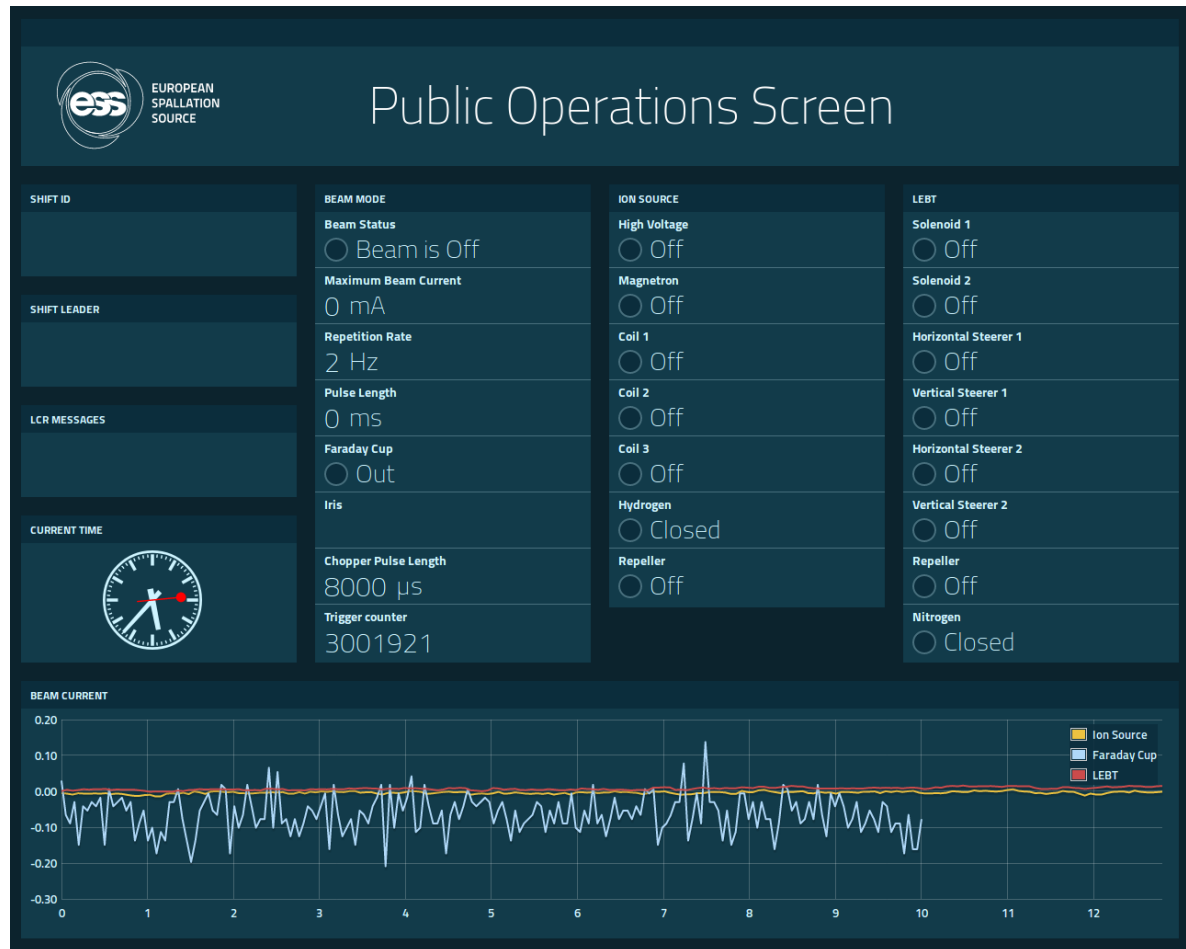
- Created by two engineers at ESS AD/BD
- Based on webEPICS from ORNL/SNS (<https://github.com/klemenv/WebEPICS>)
- Adapted for python3 and pyepics3 on top of EPICSv3 (not EPICSv4 / pva)
- Read-only (no "caput")
- No conversion of OPI/BOB files to HTML/JS (hand crafted web pages)
- Basic JS/HTML for text and graphics, plotly.ly for plots
- Can connect directly to live IOC PV
 - Also with a python3 based IOC (using pcaspy) that performs proton counting
- Websocket communication between the web server and the client

WebPV – <http://webpv.esss.lu.se>

- Cool looking, with graphics from real 3D model
- For showing off what is going on at ESS to the wider audience
 - For non-technical, non-scientific folks; for layman as in “a guy in a bar”
- Beam diagnostics focused
 - But with no restrictions on having other discipline, such as RF or vacuum, included
- No so much RAD friendly
 - HTML/JS is hand crafted
 - New features can be added, but need manual change of JS/HTML code

Public Operations Screen – <http://pos.esss.lu.se>

- Homepage <http://pos.esss.lu.se>



Public Operations Screen – <http://pos.esss.lu.se>

- Created by controls/operator/scientist guy at ESS ICS
- Based on freeboard (<https://github.com/Freeboard/freeboard>)
- python3 only code generator – no JS/HTML coding required
- Uses JSON strings for data delivery
- Read-only (no "caput")
- Generated JS/HTML/CSS for text, plots made with Flot Extended Widget
- Using direct access to IOC PVs through PV gateway
- No dedicated backend IOC

Public Operations Screen – <http://pos.esss.lu.se>

- For quick & simple and unobstructed view of the ESS accelerator
 - No logins, no VPN, mobile friendly out of the box
 - For scientists visiting ESS, public displays within science village, at the ESS bus stop,...
- RAD concepts are followed
 - Can add new field/widget/plot in matter of minutes
- Very clean & minimalistic, at the price of "eye candy"
 - No fancy graphics and distracting features
 - Less is more
- Scalable and versatile in use case support
 - Different use cases are quickly deployed
 - Comes with UI builder

Authors

- Presented were pet projects of certain individuals
- In the future ESS might come up with more defined web page(s)
 - Up to communications team and with ICS to solidify the concept
 - Ideas presented today might be a good start in getting there
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