Accelerator Fault Tracking (AFT)

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BE-CO-DS

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https://indico.cern.ch/event/561968/

Purpose

Complete and coherent fault capture for LHC (*initially*) from an operational perspective in order to identify problems as early as possible with the aim of increasing general availability.

In other words, be able to:

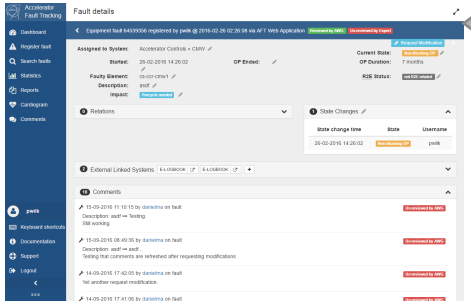
- Analyse downtime
- Find a real root cause and relations between systems
- Look for patterns
- Limit downtime

Users

Target audience is:

- **Operators** – to easily track faults, identify how operational procedures may be tuned.
- **Equipment Groups** – to follow their system failures, impact on operation, and identify areas for improvement.
- **Management** – to recognise progress, endorse consolidation strategies etc.
- **Working Groups** targeting availability and reliability improvements (AWG, R2E) – as a knowledge base for their studies and proposals for improvement strategies.

Place in the environment



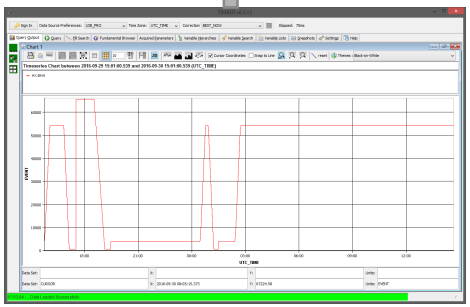
Web interface allowing to browse, edit and analyse fault data. Colaboration between operators, system experts and AWG members

DB

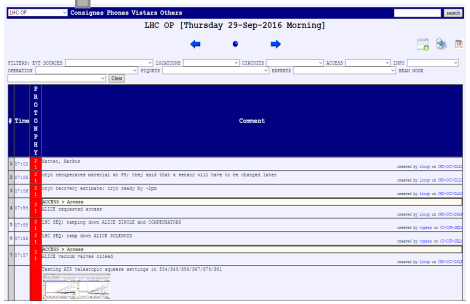
Storing filtered data coming from other systems correlated with faults details entered in AFT

AFT server

Additional systems in future



Logging System – machine info

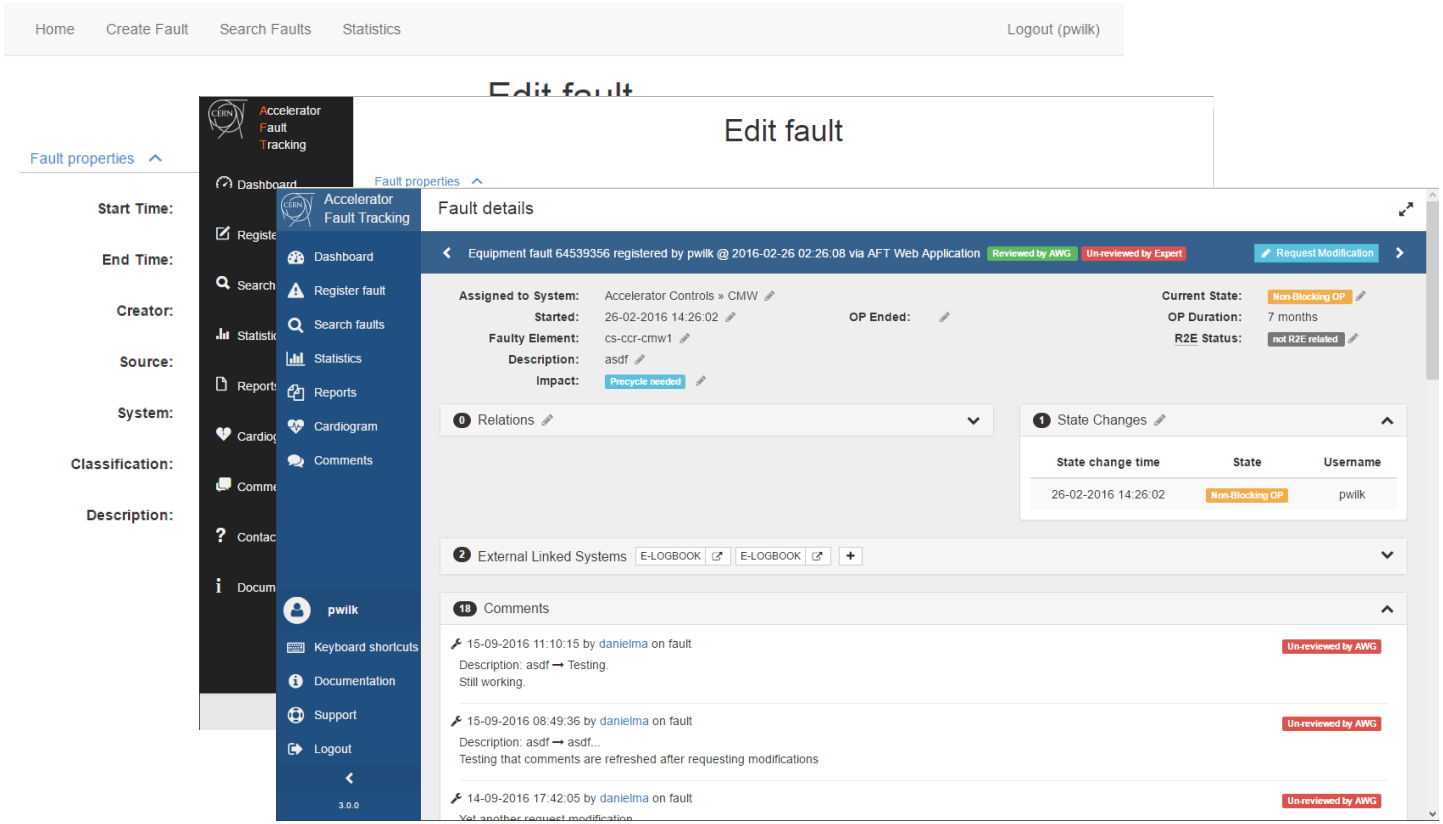


eLogbook – fault basic data

The system needs to be highly-available - as operators need to be able to register faults whenever they occur

History

AFT is the first Angular JS application in CO, dating back to early 2014.
During the years it has evolved a lot and continues to do so.



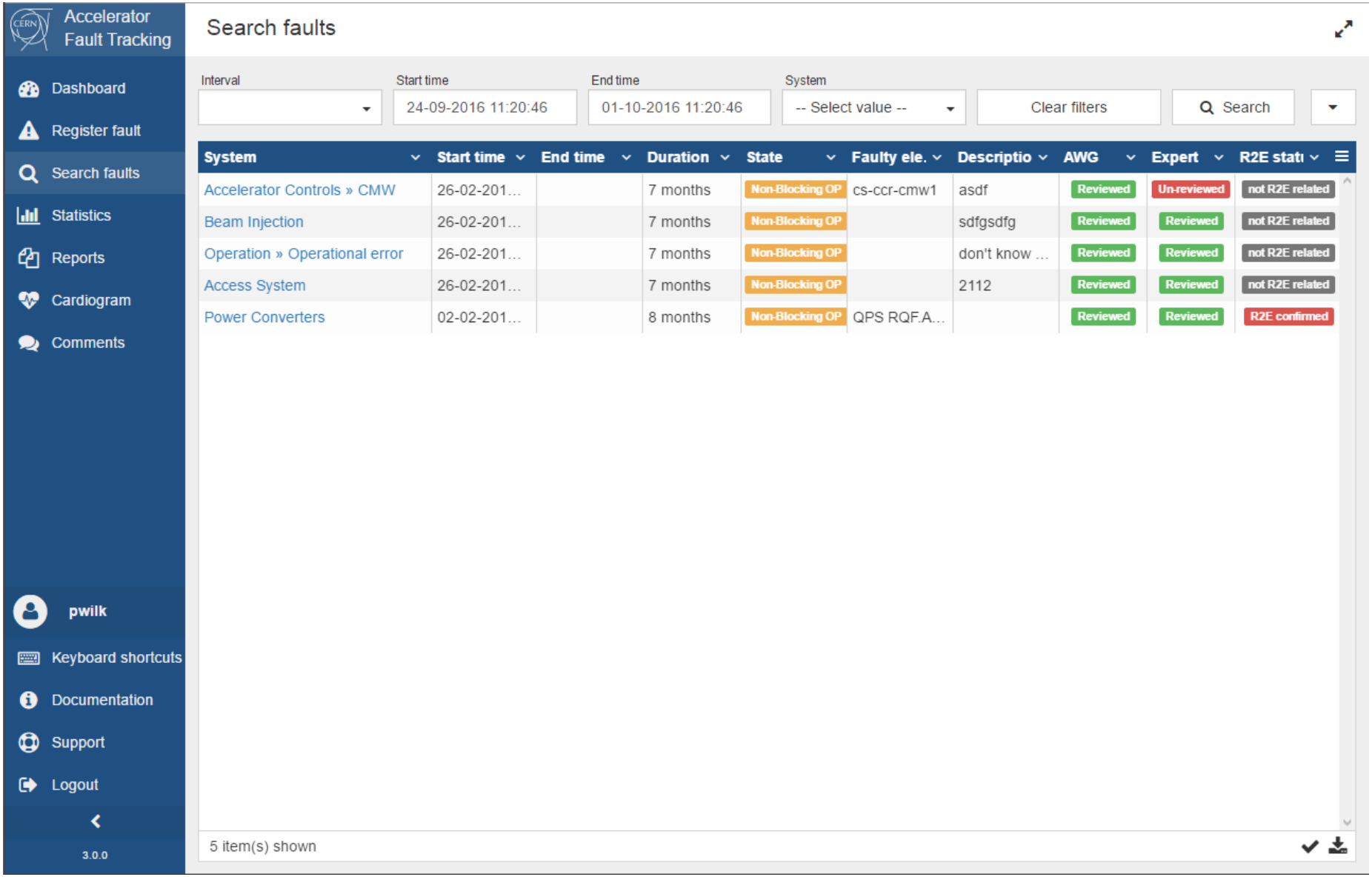
Current state

Used in production since end of LS1 – contains fault data from LHC re-start in 2009.

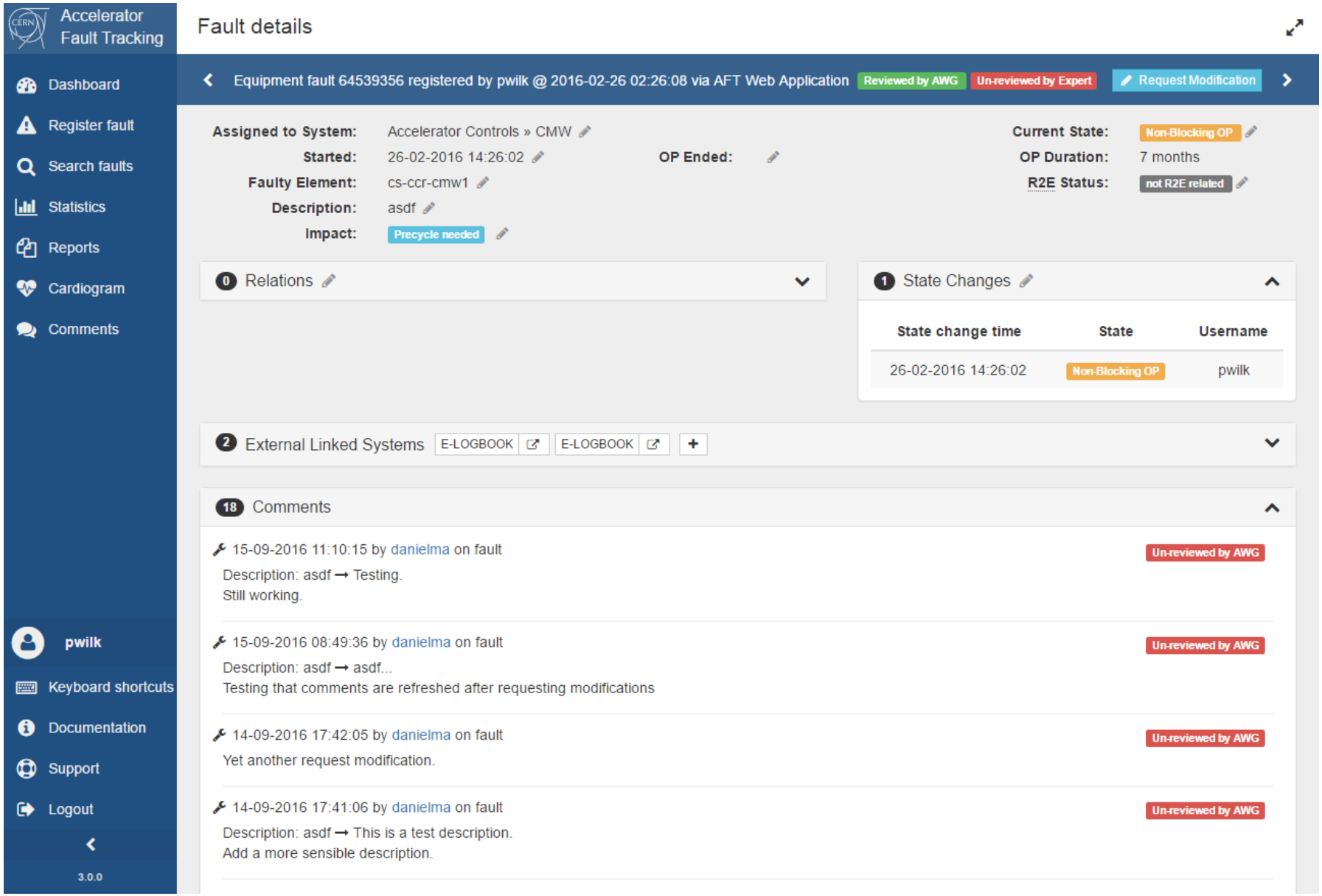
In the process of completing migration to the latest ACW version, Angular 1.5 (components), and Typescript

Demo

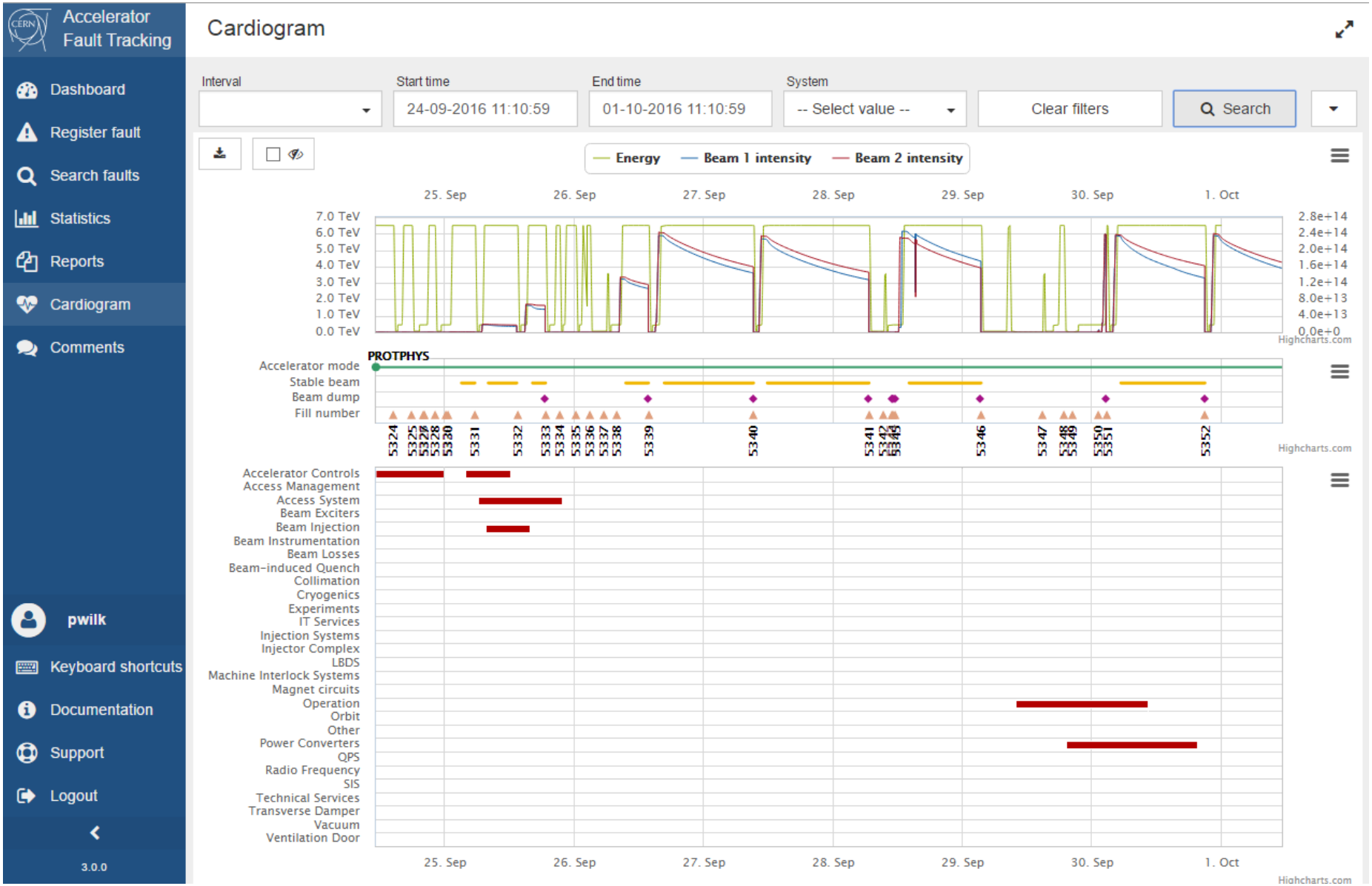
Pre-release preview



Pre-release preview



Pre-release preview



Future Developments

- Integrating **equipment group specific properties** – suppressing the need for some existing expert tracking tools
- **Layout & CCDB integration** – to link faulty HW/SW elements
- **Expansion to cover all accelerators** – as mandated at Chamonix workshop in January 2016)
- Generally bringing **lots more functionality** e.g. search capabilities (using ACW search / reporting), basic analyses and reporting enhancements (based on ACW reporting), user specific customisations (based on ACW profiles)

Questions?

https://wikis.cern.ch/display/aft