Contribution ID: **178** Contribution code: **THPD077** Type: **Poster Presentation**

WRAP: Integrating an event processing framework

Thursday 25 September 2025 16:15 (1h 30m)

The Web Rapid Application Platform (WRAP) provides a centralised, low-code environment for building Graphical User Interfaces (GUIs) through an intuitive drag-and-drop interface. These GUIs act as high-level user interfaces to the complex network of devices within CERN's accelerator control system. Some WRAP applications are relatively simple, displaying device data or setting control parameters as entered by the user. However, more advanced scenarios require correlation and processing of multiple asynchronous events triggered by independent devices. In such cases, where data from different sources must be synchronised and transformed before presentation, a more sophisticated processing layer is essential. To this end, an event processing framework has been implemented in TypeScript and integrated into the WRAP front-end. The framework allows users to express data correlations via event building logic and to implement lightweight data processing scripts. Given that the primary WRAP users are not software developers, a simple Domain Specific Language (DSL) was designed to express logic in an accessible and declarative manner. This paper presents the motivation for the event processing framework, the design philosophy and architectural choices made, the technical implementation, and integration into WRAP. Challenges encountered are also described and future directions are outlined, including how the framework positions WRAP as a successor for GUIs developed on older platforms.

Footnotes

Funding Agency

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Session Classification: THPD Posters

Track Classification: MC11: User Interfaces & User Experience