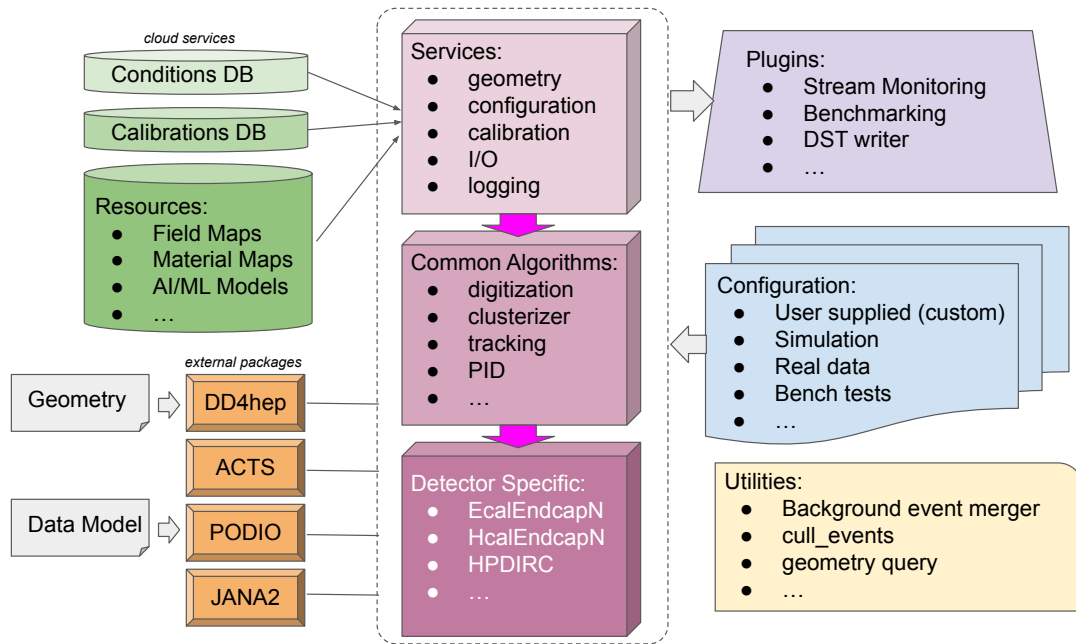


EIC Software: Next Steps

Dec. 7: Discussion on Reconstruction Software Stack ([Indico](#), [Live Notes](#))

Two presentations

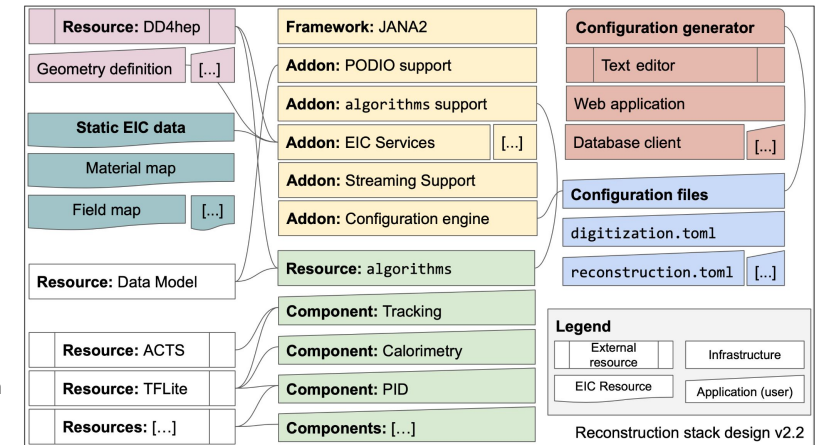
David – EICrecon Refactoring



Sylvester – algorithms: The case for framework- and experiment-independent algorithms at EPIC

A strawman re-design of the EPIC reconstruction stack

- Strictly modular approach reduces scope of each component
- Easier to onboard new users in any singular piece of the stack
- Every user can find their place based on experience and needs
- Better maintainability and more resilient against changing software needs
- Baked-in reproducibility by enforcing configuration files in every workflow



Statement of Software Principles (SP) on Reconstruction Algorithms

- **SP3** We will have a modular software design with structures robust against changes in the computing environment so that changes in underlying code can be handled without an entire overhaul of the structure.
- **SP4** We aim for a modular development paradigm for algorithms and tools without the need for users to interface with the entire software environment.
- **SP7** We will ensure that mission critical software components are not dependent on the expertise of a single developer, but managed and maintained by a core group.

Recommendations

- **We would like to work towards algorithms:**

- This requires a discussion of timelines and how the work on refactoring of JANA2 for the EIC and the implementations of algorithms in the reconstruction software could benefit (or impact) the studies for the pre-TDR.
- Before we can discuss timelines and priorities, we need a prototype of algorithms in JANA2. Sylvester will discuss the work on the prototype in today's meeting.
- We also need to discuss the boundaries between the JANA2 framework and the various reconstruction algorithms and the additional layers we introduce by using algorithms instead of JANA2 classes.
- how we can ensure that algorithms remains an API and does NOT develop into a framework.

- **We have learned new lessons and need:**

- We need guidelines on source code management. This will be a topic of a future meeting.
 - The guidelines will not be enough though. We need to work on team building and how to work on software as a diverse community.
- We need a policy on licensing. This will be a topic of a future meeting.
- We need strict guidelines on units. Sylvester will present in today's meeting our recommendation for discussion.
- We need to discuss a consistent set of detector names in simulation, digitization, and reconstruction.