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# ESS live-data prototype

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European Spallation Source

## Challenges at ESS

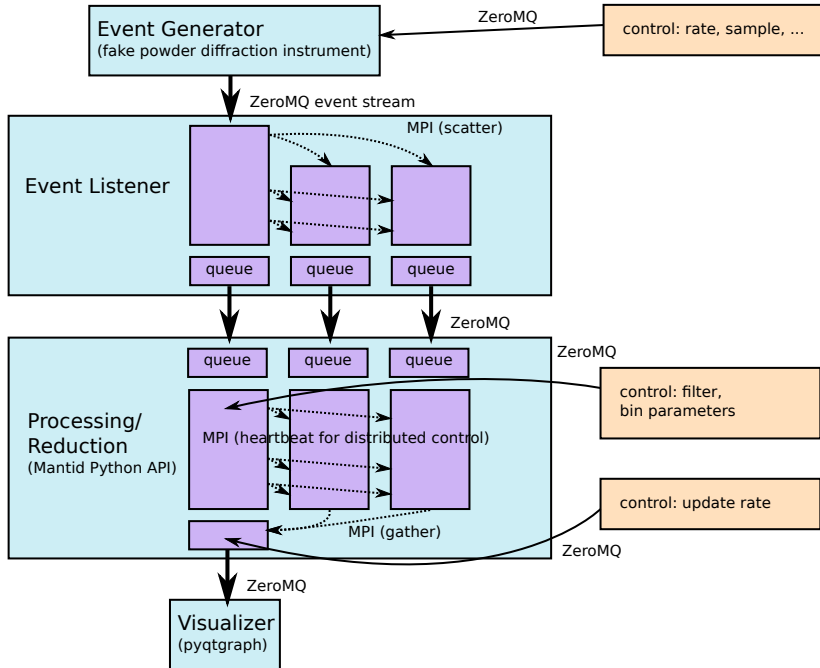
- much higher event rates
- event mode
- live reduction

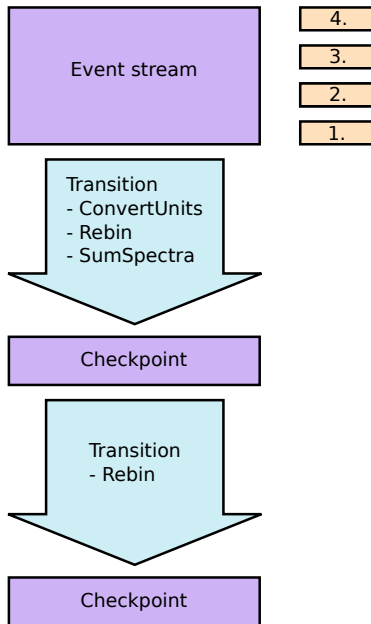
⇒ risks, unknowns, big changes in software architecture?

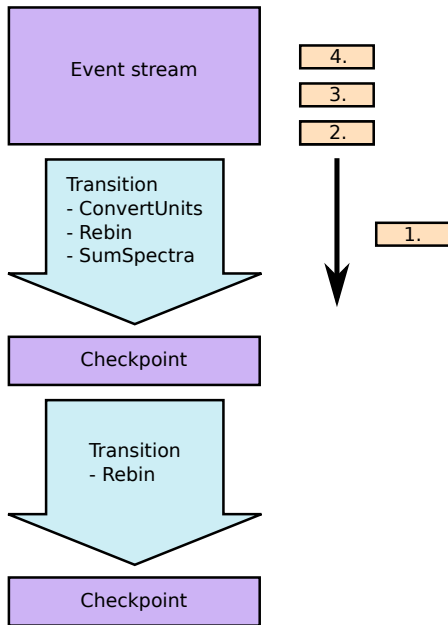
## Python-based live-data prototype

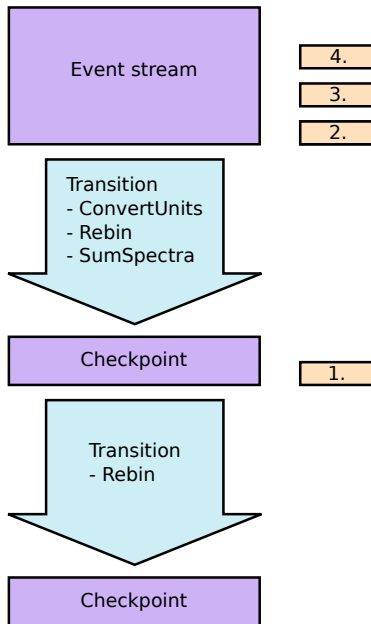
Live reduction and visualization of fake stream

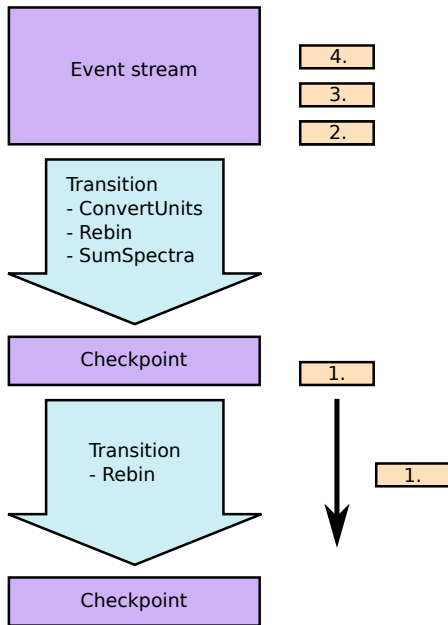
- study possibilities and problems of event mode
- investigate new architecture:
  - back end: data reduction with Mantid on a cluster (parallelized with MPI)
  - front end: control & visualization
  - integration in experiment control?

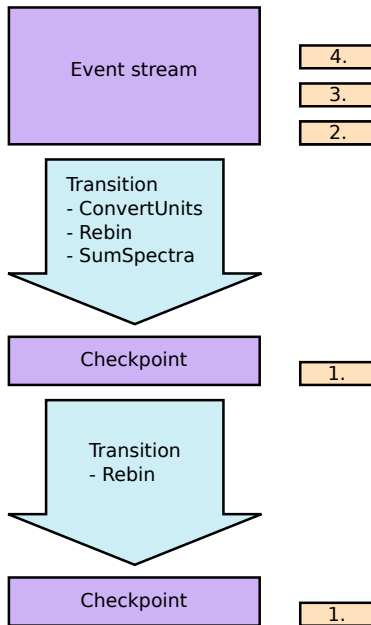




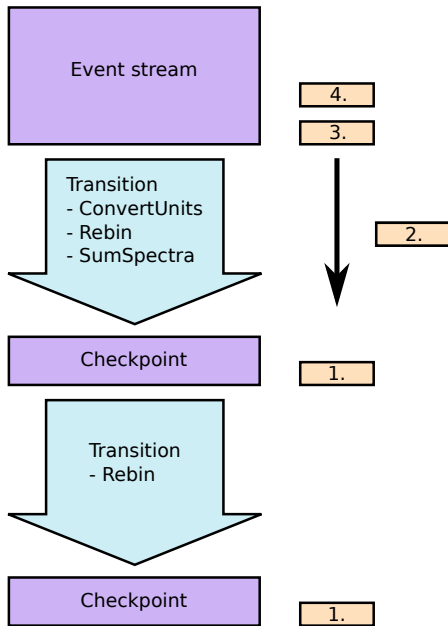


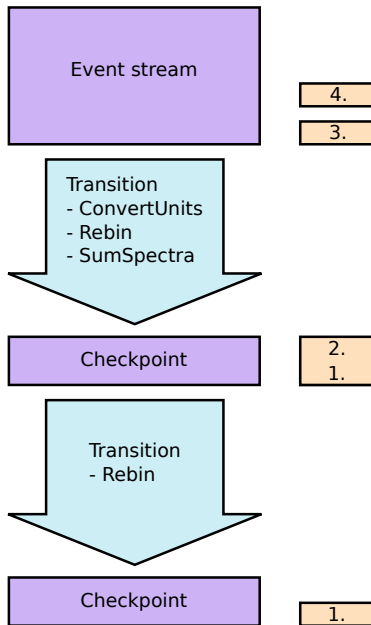


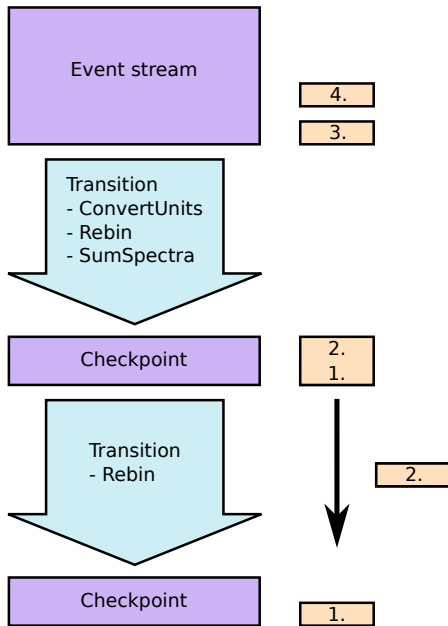


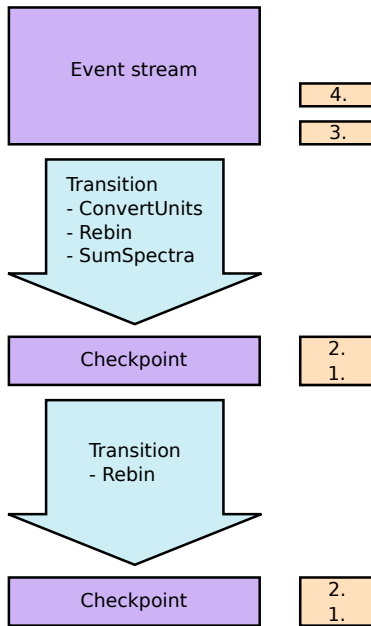


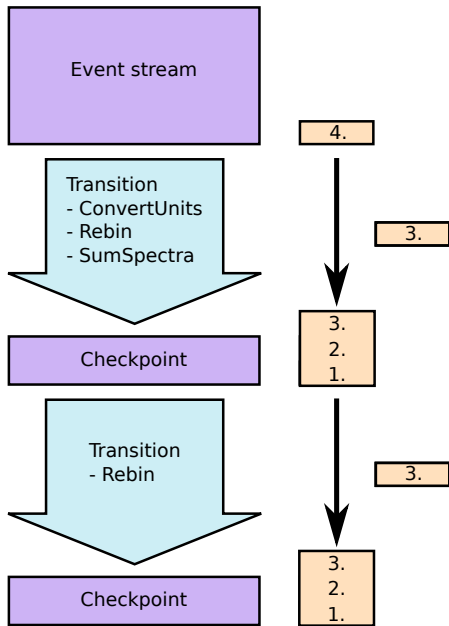


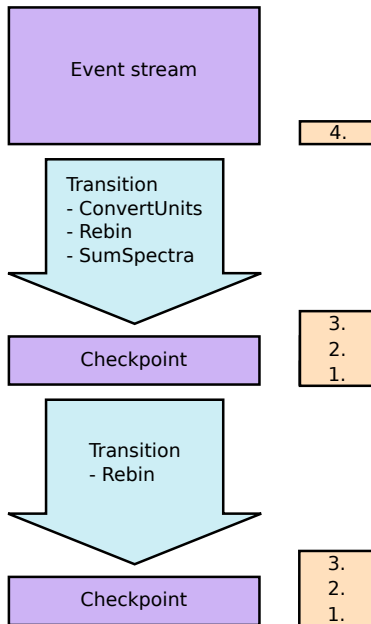




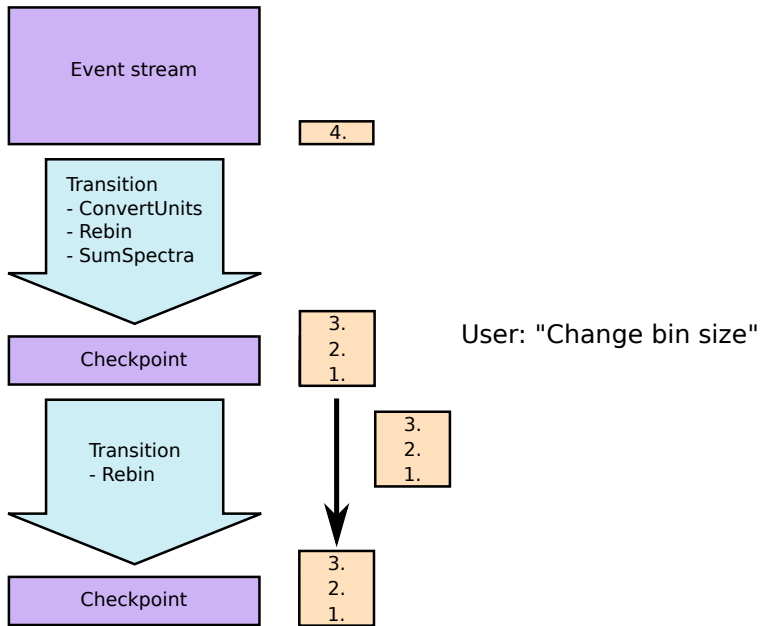








User: "Change bin size"



- Early stage, many feature missing, not yet designed for robustness
- Semi-interactive live reduction with Mantid MPI back end with feasible effort
- We will have a way to demonstrate live event mode to instrument scientists
- Need some fixes in Mantid Python interface

## Interested?

- We are happy about any input!
- Want to get involved?  
<https://github.com/DMSC-Instrument-Data/live-data-prototype>