



Time Synchronization and Timestamping for the ESS Neutron Instruments

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European Spallation Source ERIC

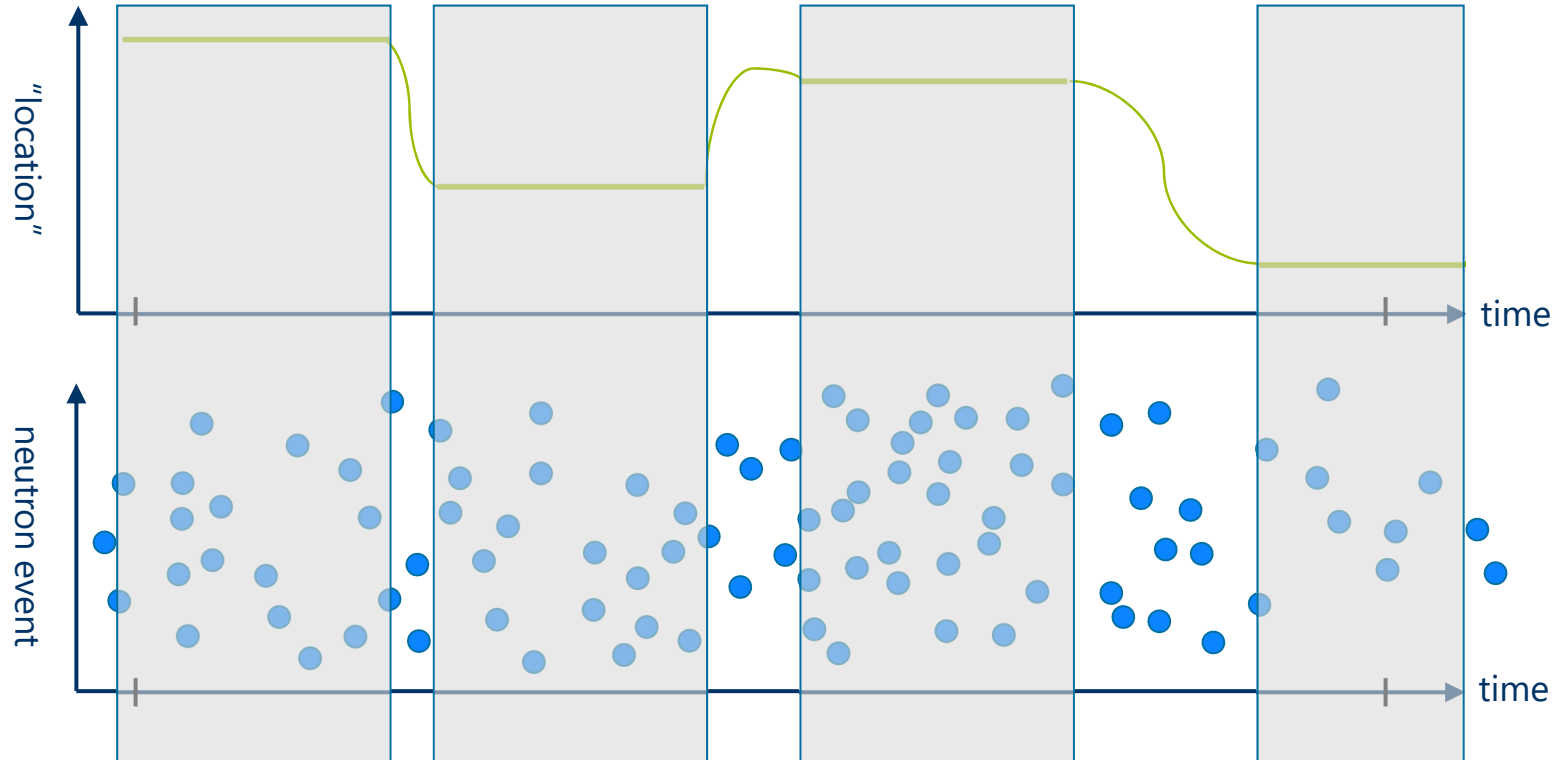
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Event Mode Data Acquisition at ESS

Synchronised Clocks – No Triggering – Post Processing



Three Main Synchronisation Options

Because one size does not fit all



Network Time Protocol (NTP)

- Good enough for software timestamping in an EPICS IOC
- Runs out of the box, but needs validation and monitoring



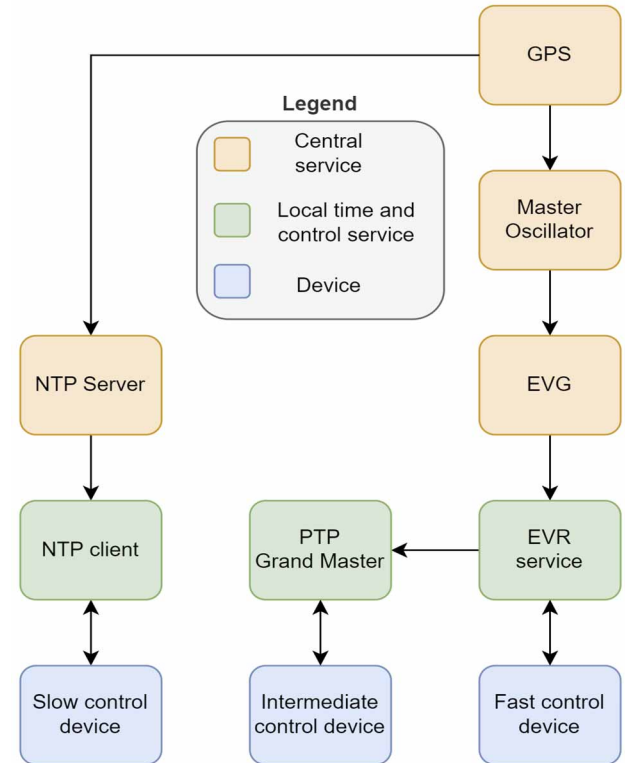
Precision Time Protocol (PTP)

- Benefits from special infrastructure and hardware
- Industry standard – option available for some COTS hardware



Event Receivers (EVR)

- High effort to integrate, either
 - Bespoke hardware and firmware development
 - Triggering and software effort for COTS devices



See **THMBCMO24** for details on the implementation and verification for a number of different device types.

Since you are here:
Also checkout poster **THPDP052**
by Jonas Petersson specifically on
motion control timing

