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Data-Acquisition as a Service

A new data processing paradigm

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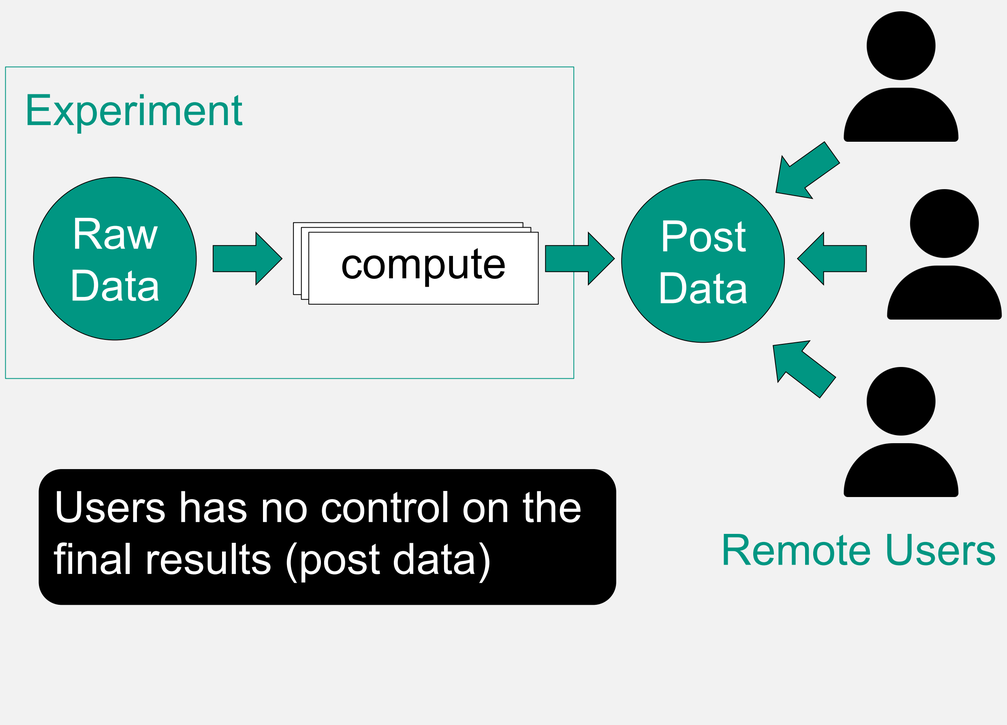
Background

- Lots of commercial and scientific equipment produces data at a rate of between 1-10 GB/s range
- Camera arrays available in small lab can easily generate 100 GB/s
- Medium-size infrastructure produces data rates in TB/s region

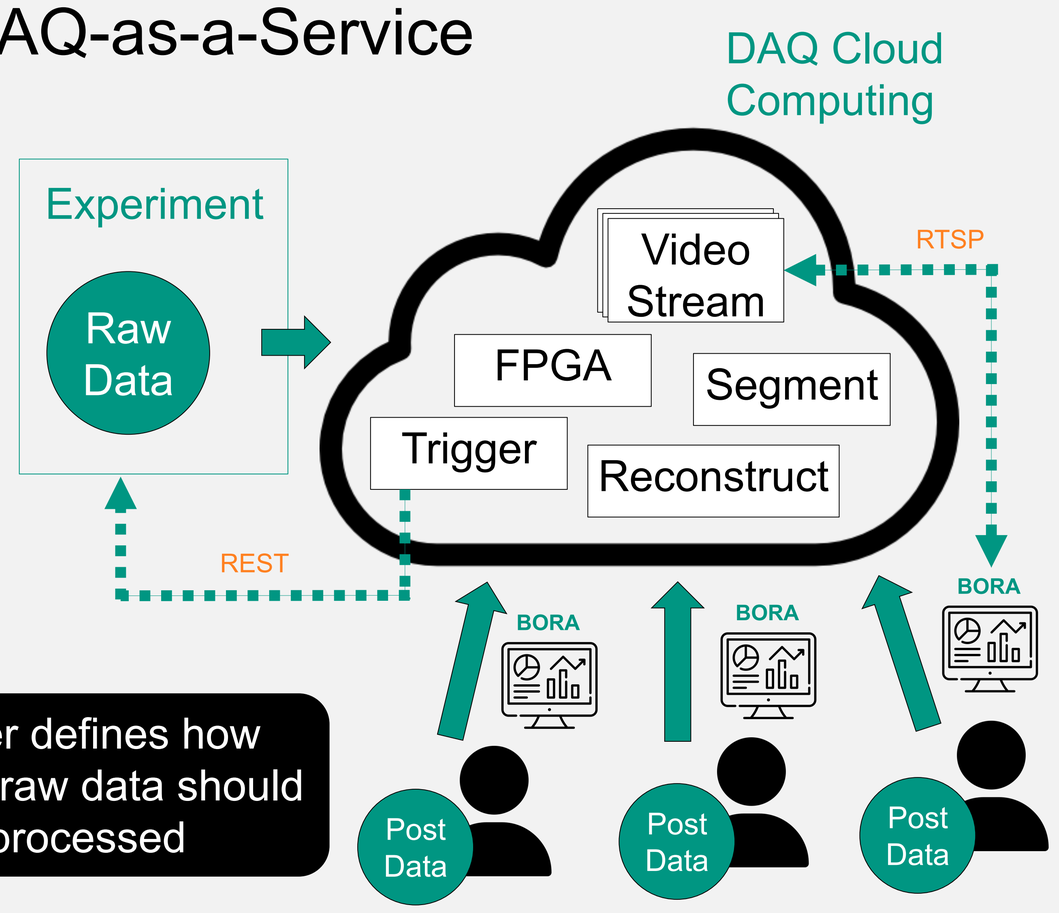
Challenges

- Scientists are perplexed on how to cope with the data stream
- Existing storage systems are either too expensive or not fast enough to sustain streaming at this rates
- Long-term storage is even more challenging due to the sheer amount of data

Traditional DAQ Approach



DAQ-as-a-Service



Our Competences

- Cloud-based DAQ pipelines
- Low-latency networking
- Heterogeneous and hardware-aware computing for online data processing
- Online visualization, monitoring and control

BORA: User Defined Data Monitoring Displays

- Customizable display that is adaptable to any reader formats
- Using well-defined communication interfaces such as REST and RTSP streaming protocol.
- Capable of general multiple video-streams in the DAQ Cloud and can link this video-streams to the Bora interface.
- Enable interaction with parameters and video-streams and pass back information on these interactions to adjust how processing is performed.

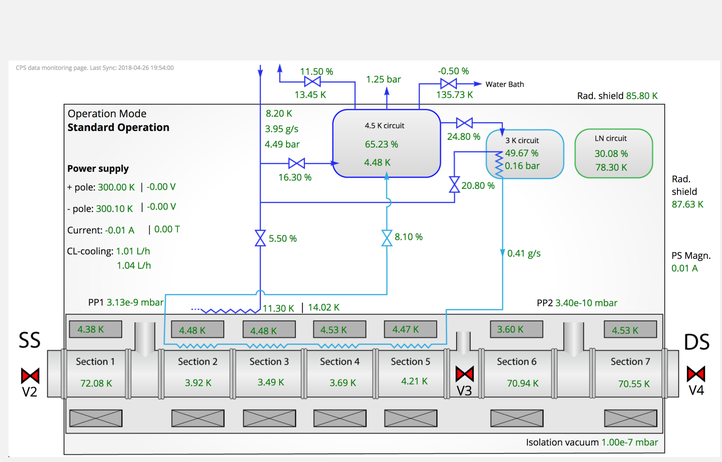
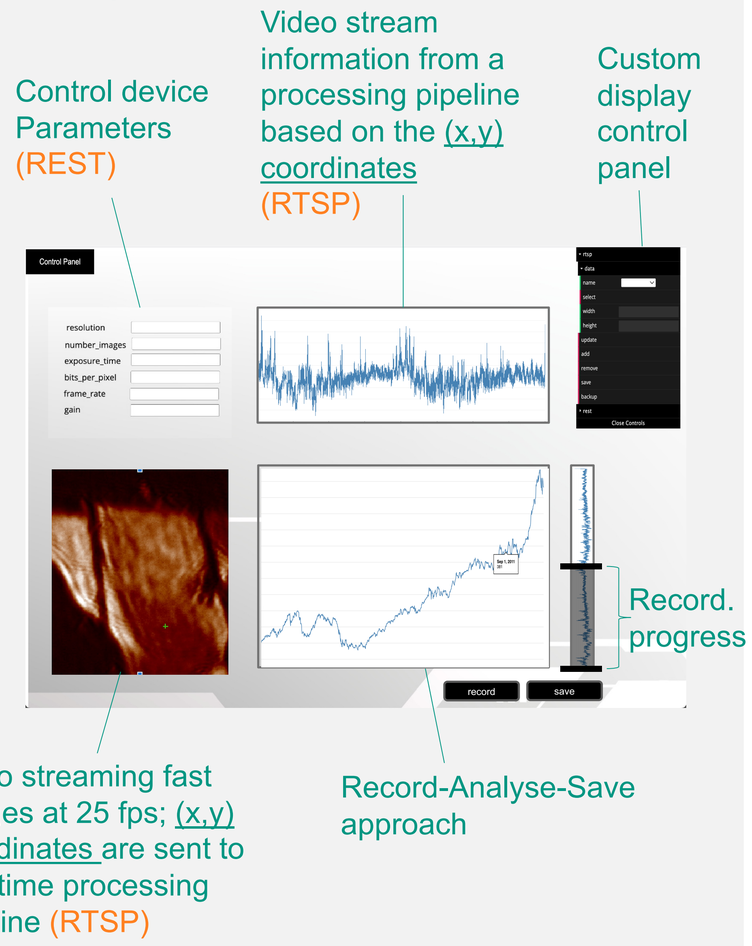


Figure 1: A BORA display from the CPS group that shows the data monitoring values in a logical data flow layout.



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