



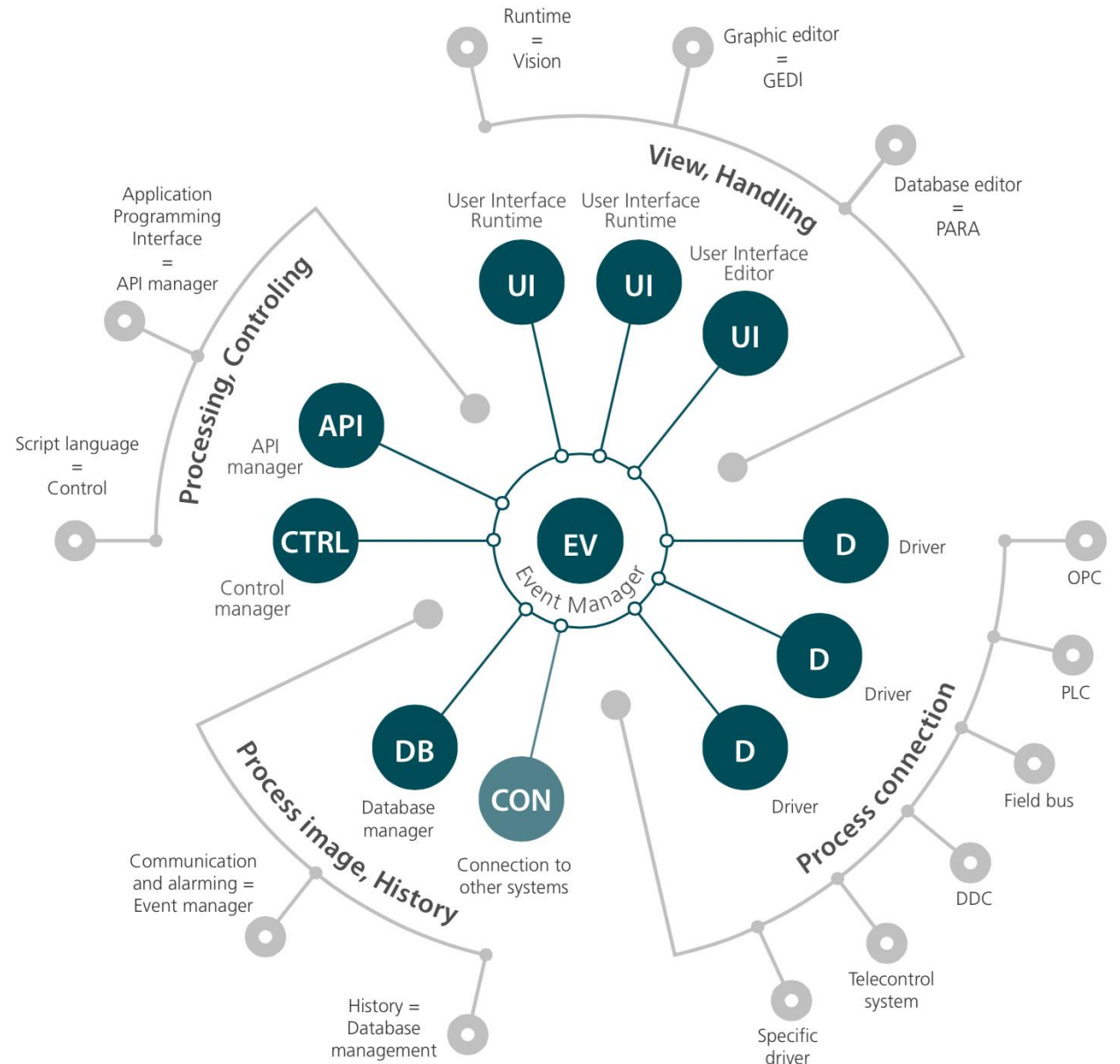
Simplified frontend for data generating and testing purposes in WinCC OA NextGen Archiver

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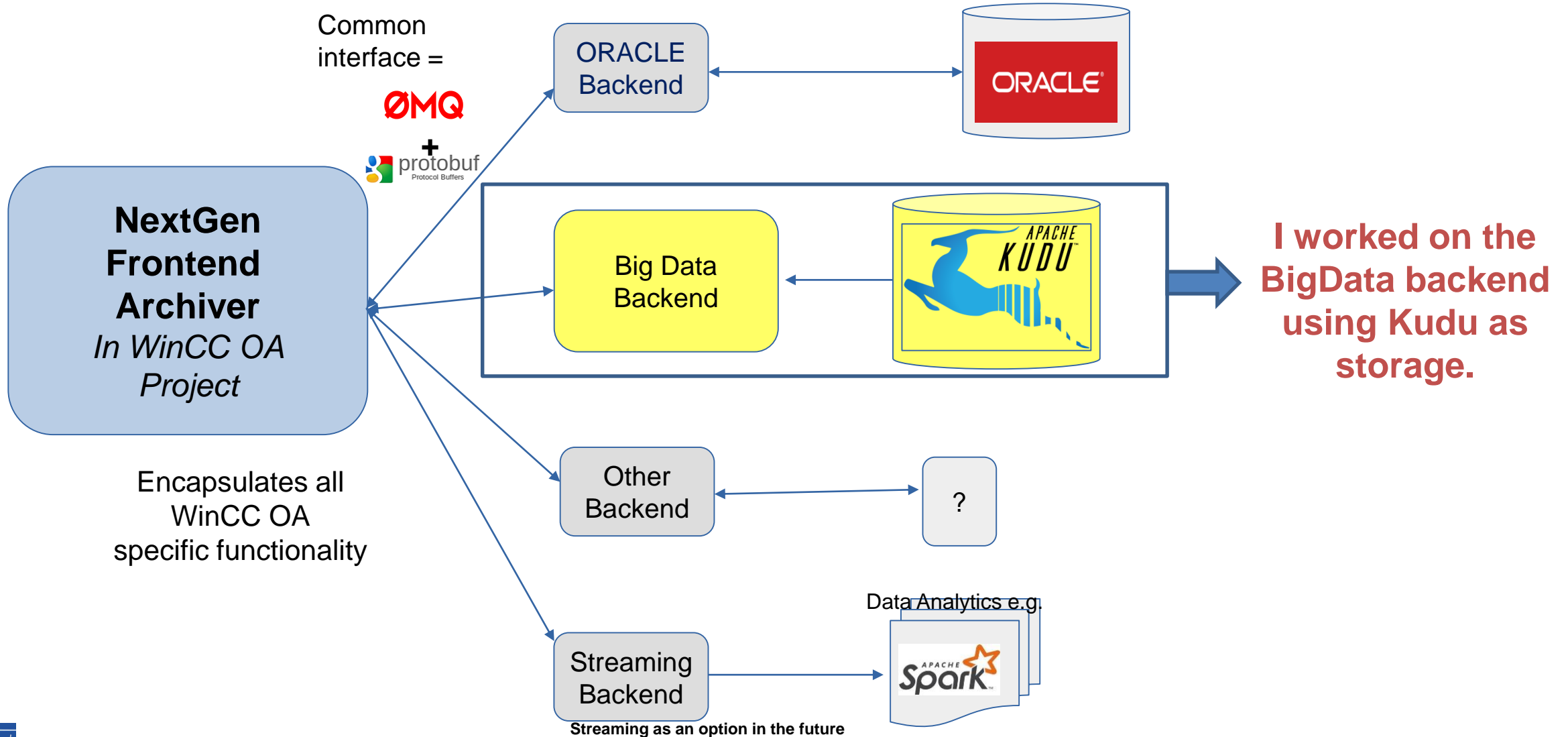
WinCC Open Architecture

Supervisory Control and Data Acquisition (SCADA) system developed by ETM subsidiary of Siemens.

Used by all 4 major experiments at CERN (400 applications) and the BE/ICS group (210 applications).

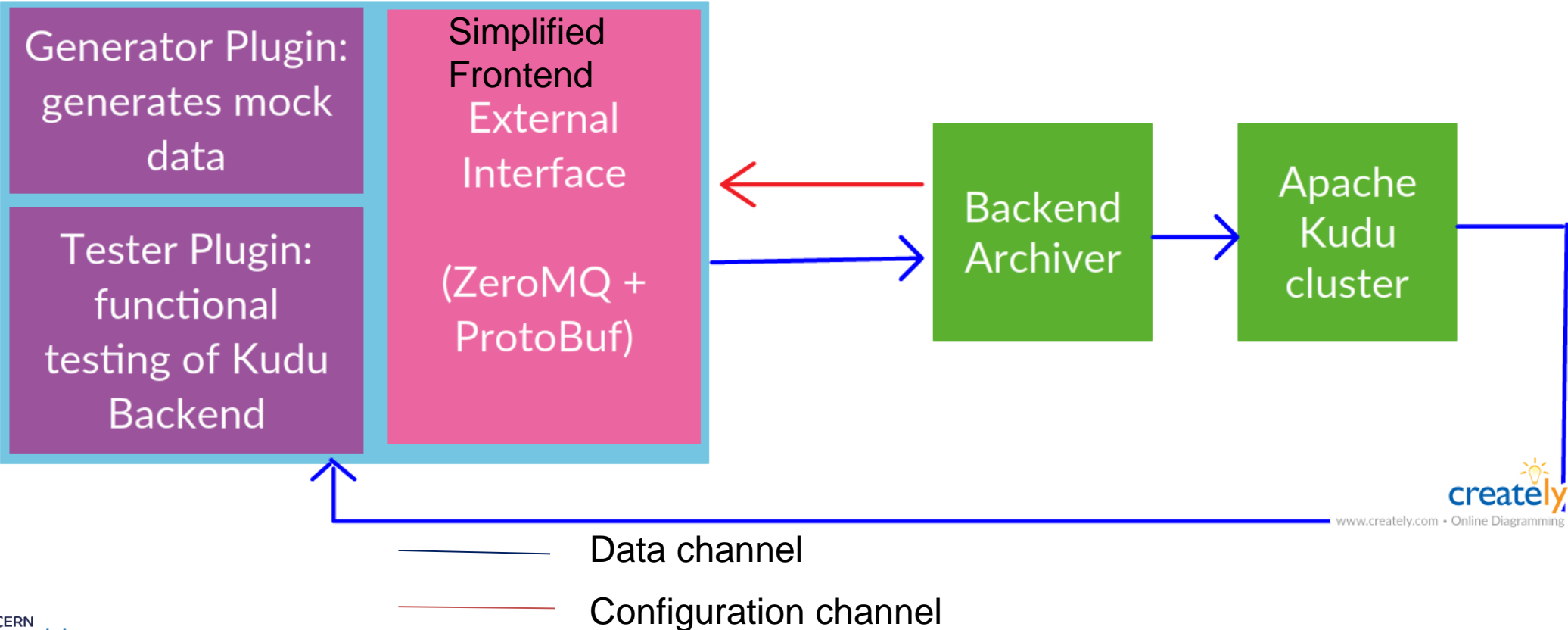


Future “NextGen” archiver architecture



Goals & Architecture

- **Functional testing of Kudu backend**
- **Generation of data for non functional/performance testing**



Performance Improvements

Naive Approach:

At each instant check frequency of generation of each data point and send the data point to backend.

Efficient Approach:



Sort



Accumulate

Results:

- **Generate data changes at an average of 5,000,000 entries for a simulated time duration of a second.**
- **Functional testing of backend was successfully completed.**

```
Sent 10000 entries to eventhistory_generator table.  
Sent 10000 entries to eventhistory_generator table.  
Sent 10000 entries to eventhistory_generator table.  
Sent 10000 entries to eventhistory_generator table.  
Sent 10000 entries to eventhistory_generator table.  
Sent 10000 entries to eventhistory_generator table.  
Sent 10000 entries to eventhistory_generator table.  
Sent 10000 entries to eventhistory_generator table.  
Sent 10000 entries to eventhistory_generator table.  
Sent 3960 entries to eventhistory_generator table.  
Total entries generated: 4633960  
[upuri@pcbe13381 FakeFrontend]$
```

Future Work:

- **Simulate changes in metadata.**
- **Test generated data for the required use cases.**

ØMQ



protobuf
Protocol Buffers



The Qt
Company



Thank You

