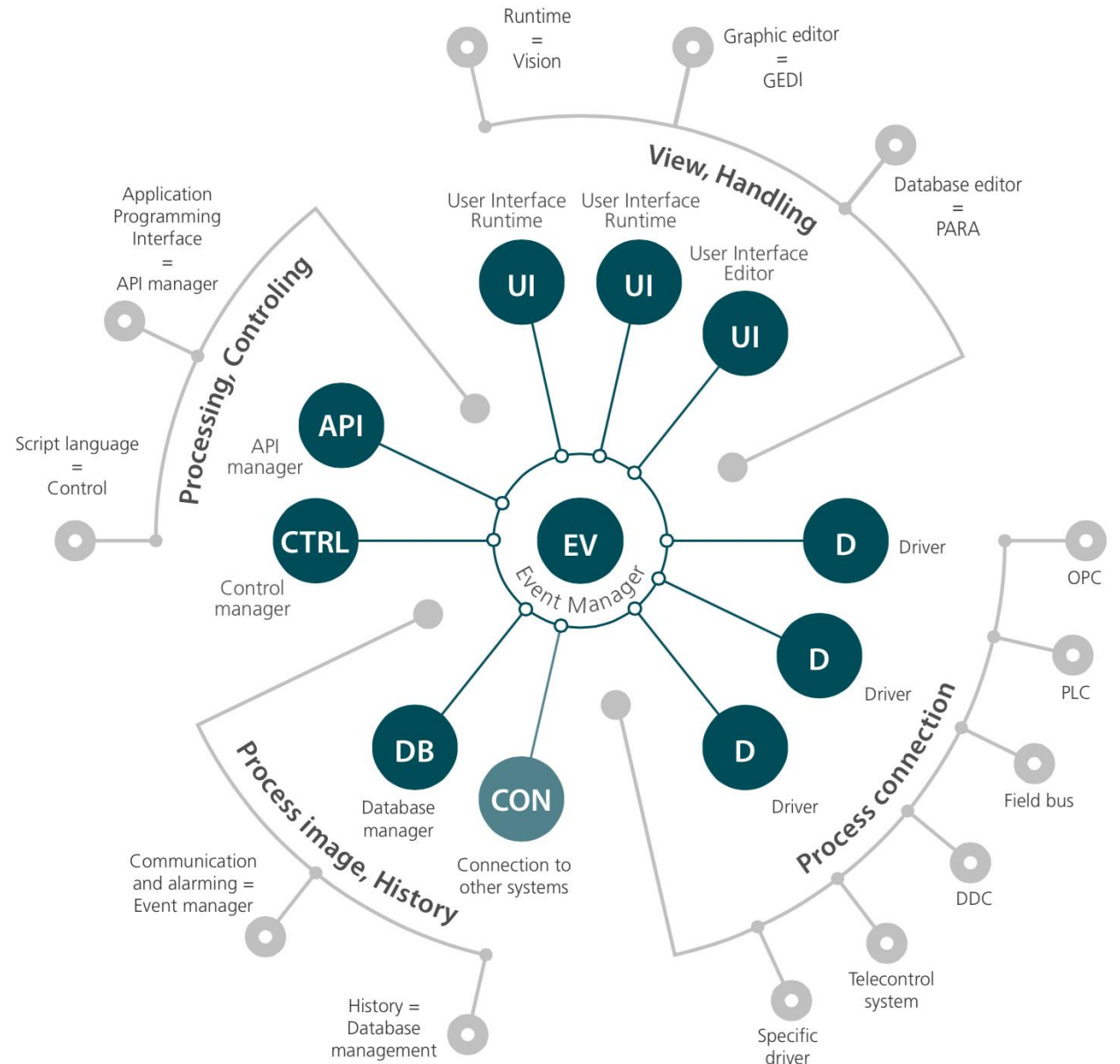# Simplified frontend for data generating and testing purposes in WinCC OA NextGen Archiver

- **Presenter : Urishita Puri**
- **Supervisor: Jakub Guzik**
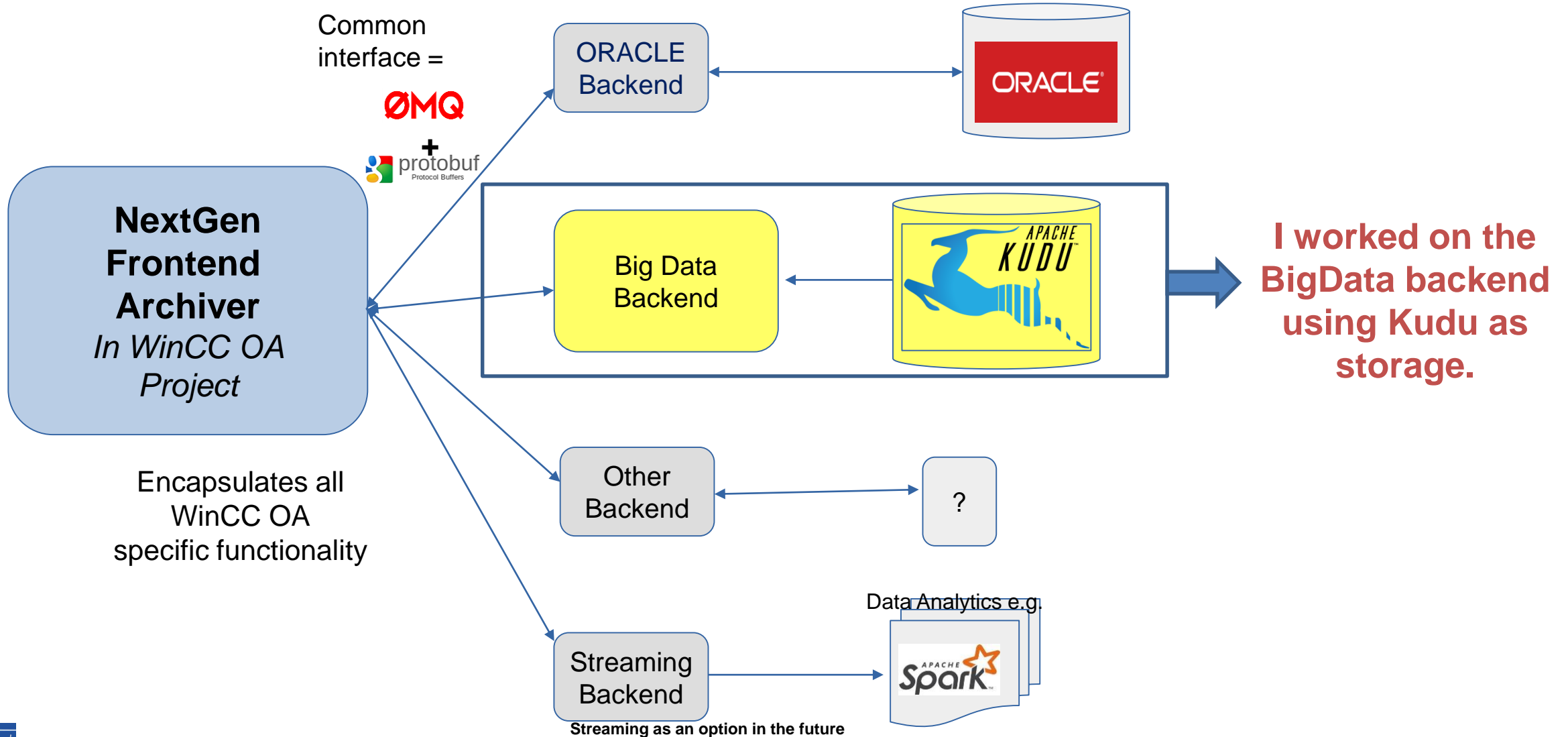   **Rafal Kulaga**

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

Common interface =

ØMQ

+

protobuf
Protocol Buffers

NextGen Frontend Archiver
In WinCC OA Project

Encapsulates all WinCC OA specific functionality

ORACLE Backend

Big Data Backend

Other Backend

?

Streaming Backend

Streaming as an option in the future

Data Analytics e.g.

I worked on the BigData backend using Kudu as storage.

Goals & Architecture

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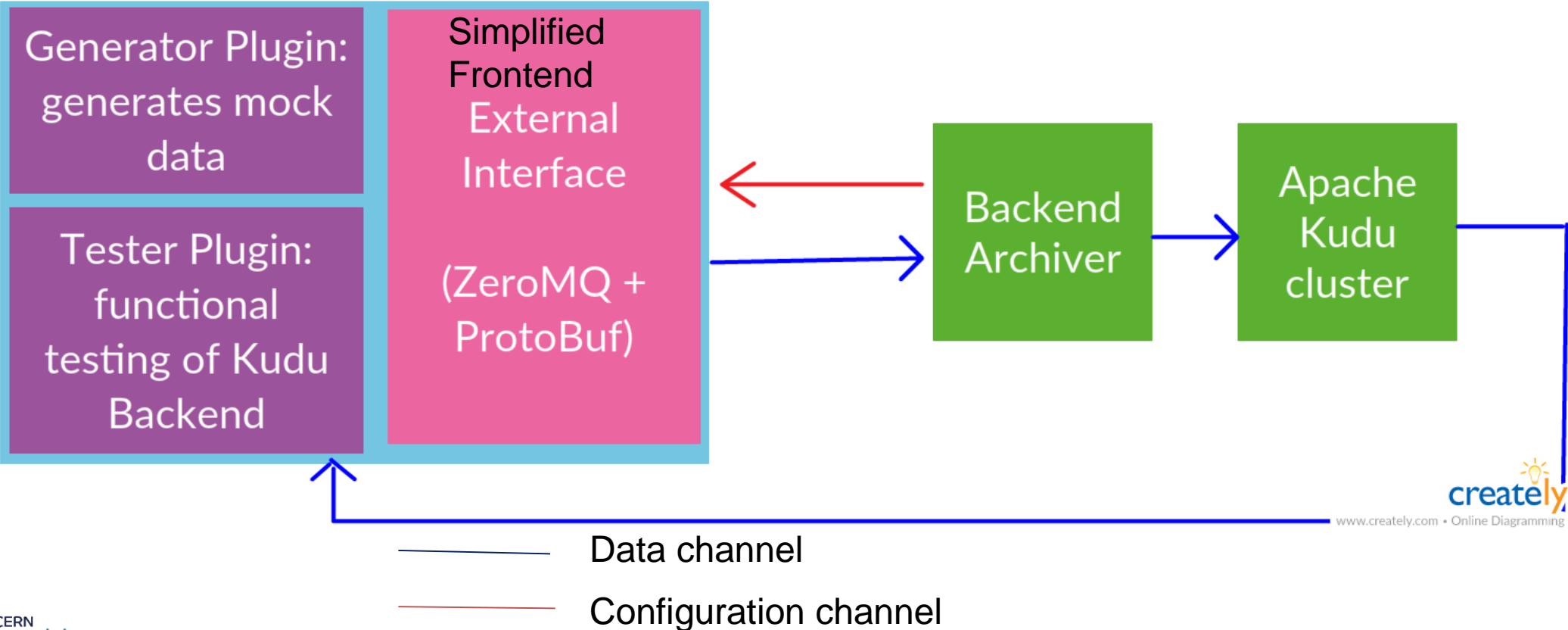
Performance Improvements

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.**

Future Work:

```
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]$
```

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

Thank You