CERN openlab

Edge Computing: Integrating IoT Devices into the LHC Control Systems

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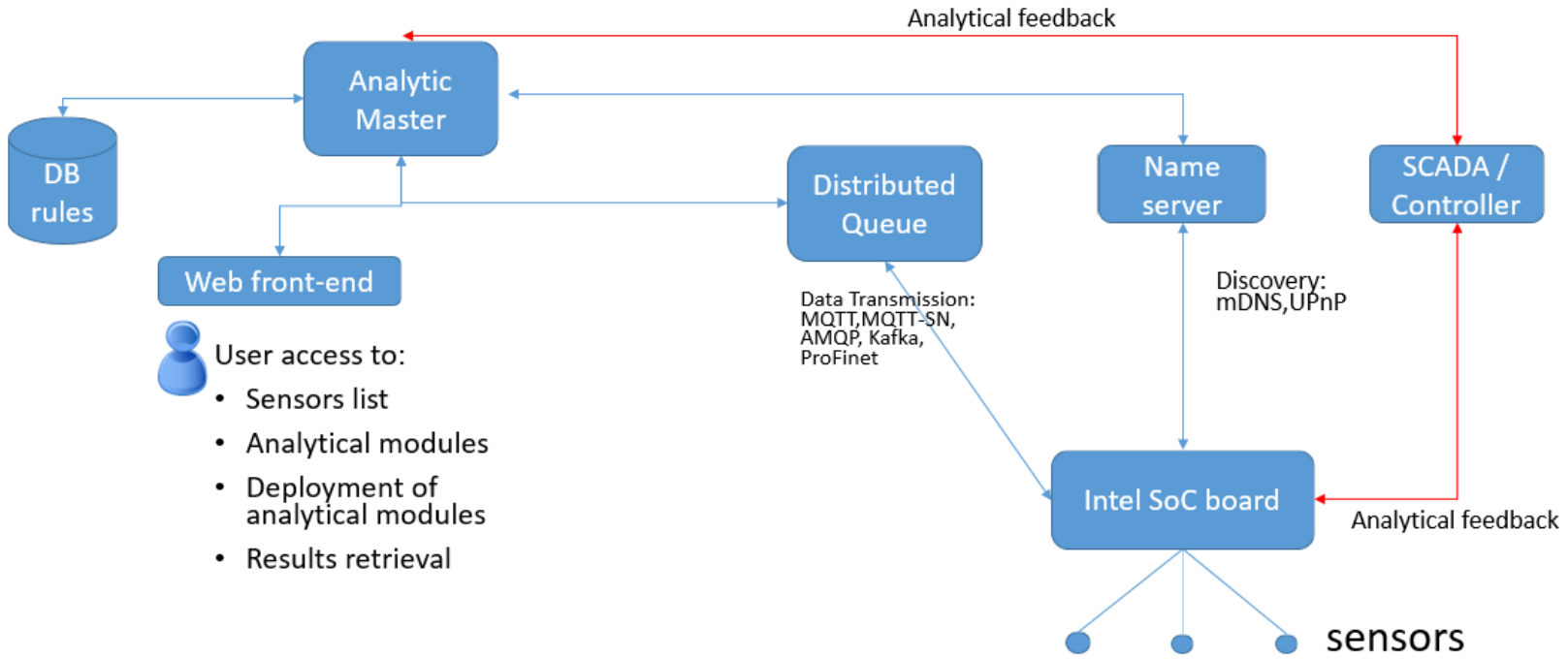
Project Description

- Integrating SoCs as IoT devices into LHC control systems
- Exploiting IoT devices' processing power for part of data analysis
- Reducing network load within the control infrastructure
- Intel Joule board

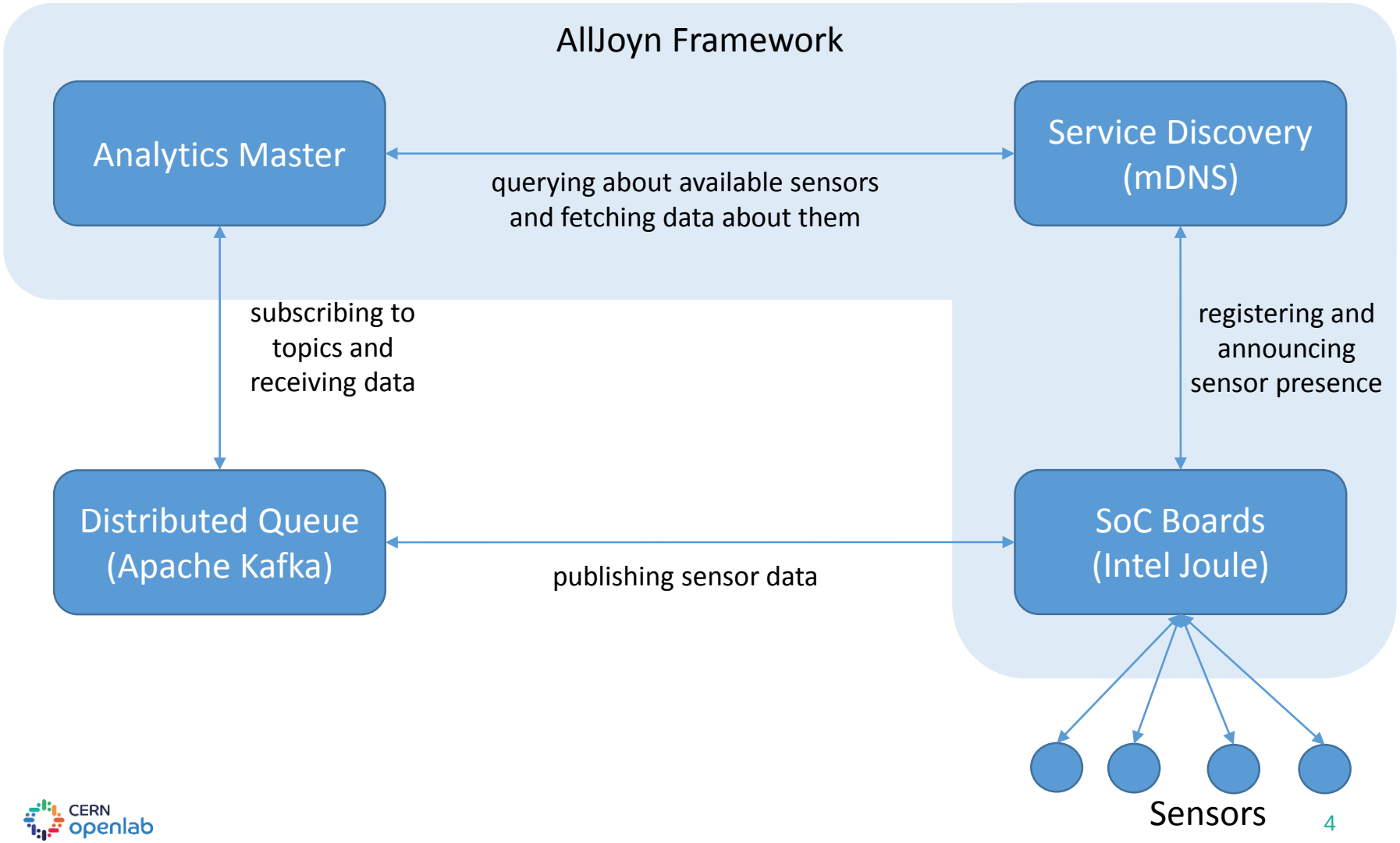
Architecture of Analytics Control System

Integration of IoT devices into LHC control systems



Communication System

Integration of IoT devices into LHC control systems – Communications part



Personal Contribution & Future Work

- Done so far:
  - Comparing frameworks: AllJoyn, OpenSensor, SiteWhere, etc.
  - Enabling communication with Intel Joule board via Apache Kafka
  - Running Alljoyn sample for registering and announcing to mDNS
- To be done in the next two weeks:
  - Registering and announcing to mDNS from Intel Joule
  - Parsing SensorML data into mDNS text field
  - Implementing the analysis of data and testing
- Future work:
  - Migrating our current control system architecture towards IoT
  - Combining Cloud computing with Edge computing

QUESTIONS?

THANK YOU ☺

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