# CPU Accounting Distribution Plan

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# Main considerations

- R-GMA transport mechanism to be replaced with Apache ActiveMQ
- Architecture allowing regionalisation
- Regions to decide whether to regionalise
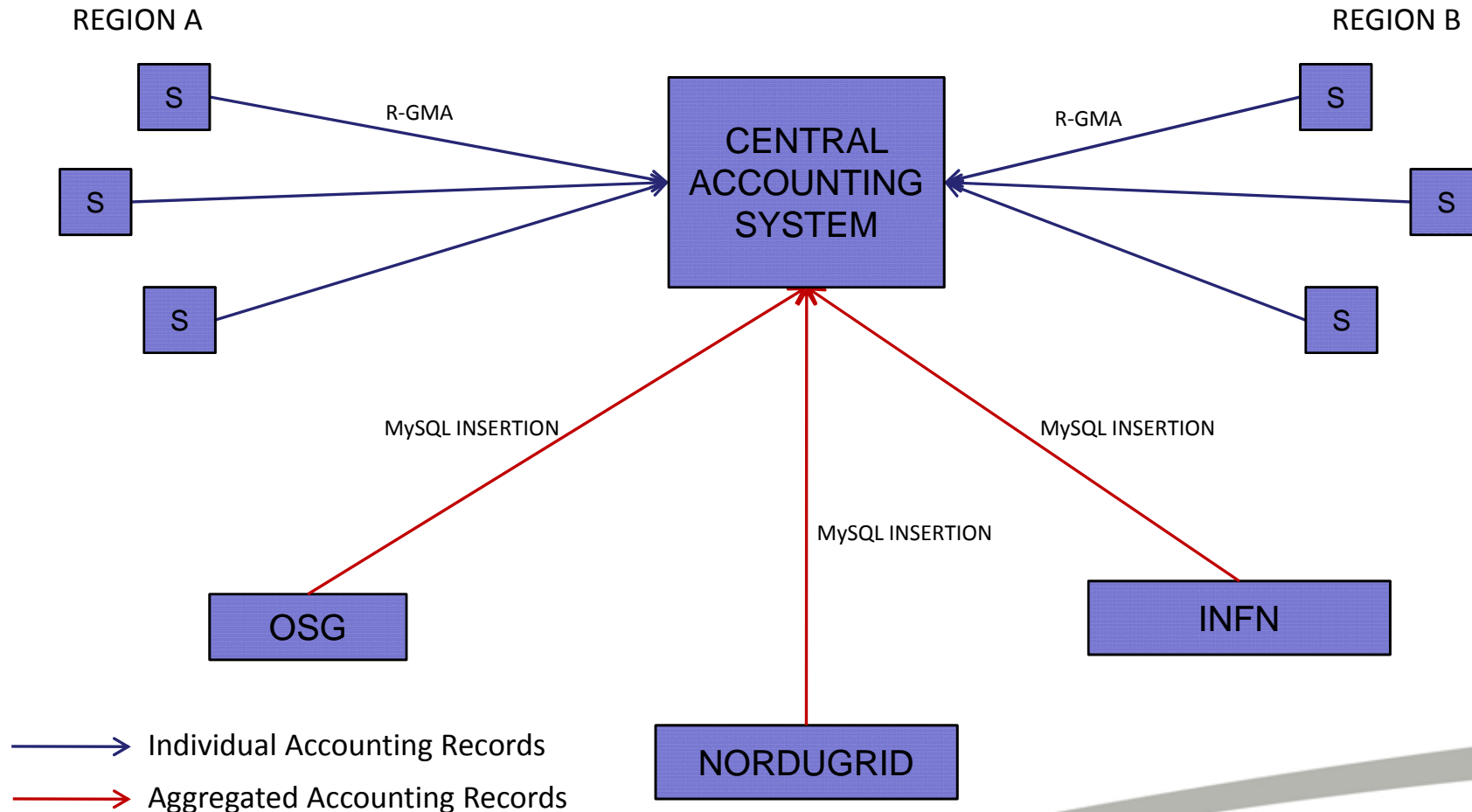- Standard accounting publisher – sensor independent

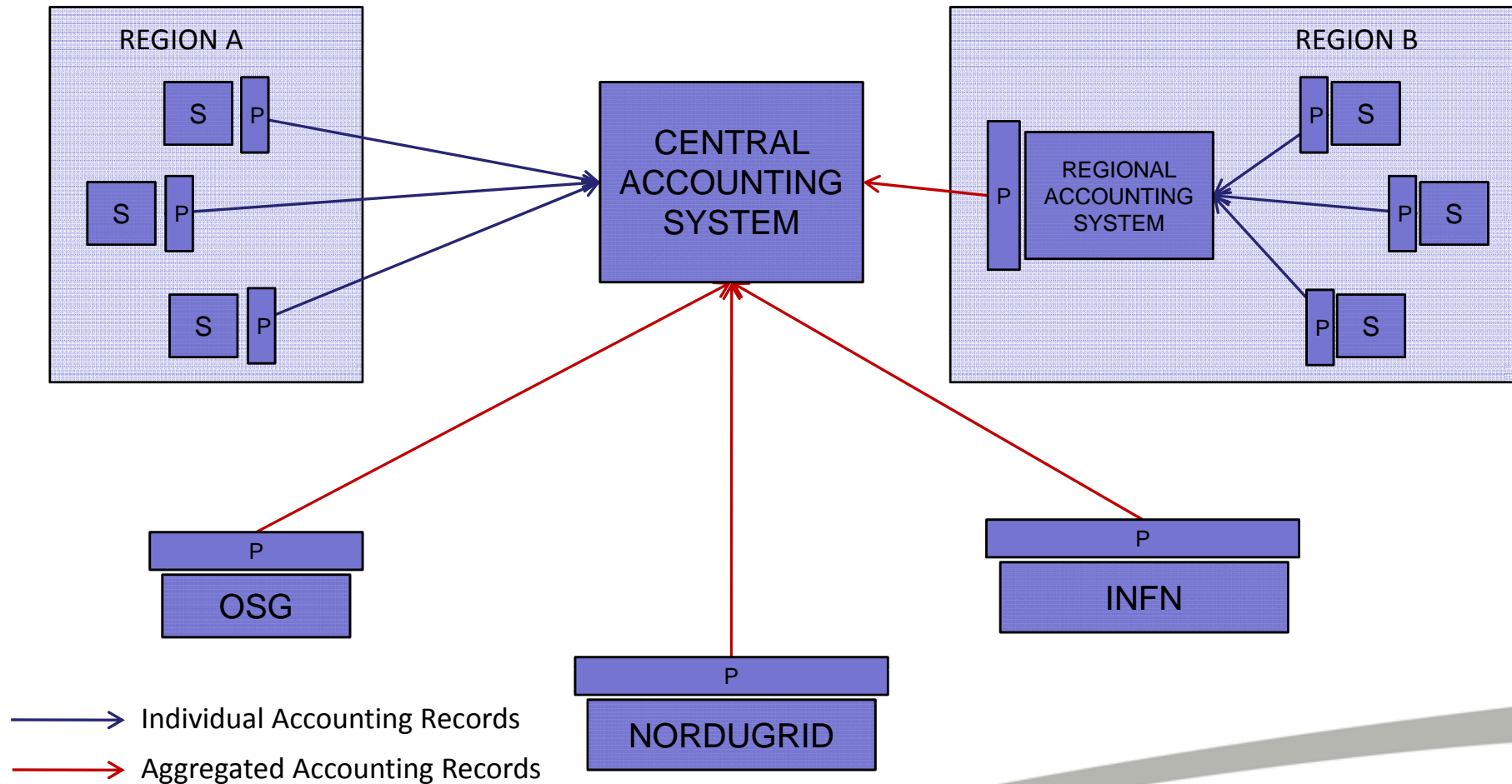Science & Technology Facilities Council

# Use cases

- Region A: APEL sensor – non regionalised
- Region B: APEL sensor – regionalised
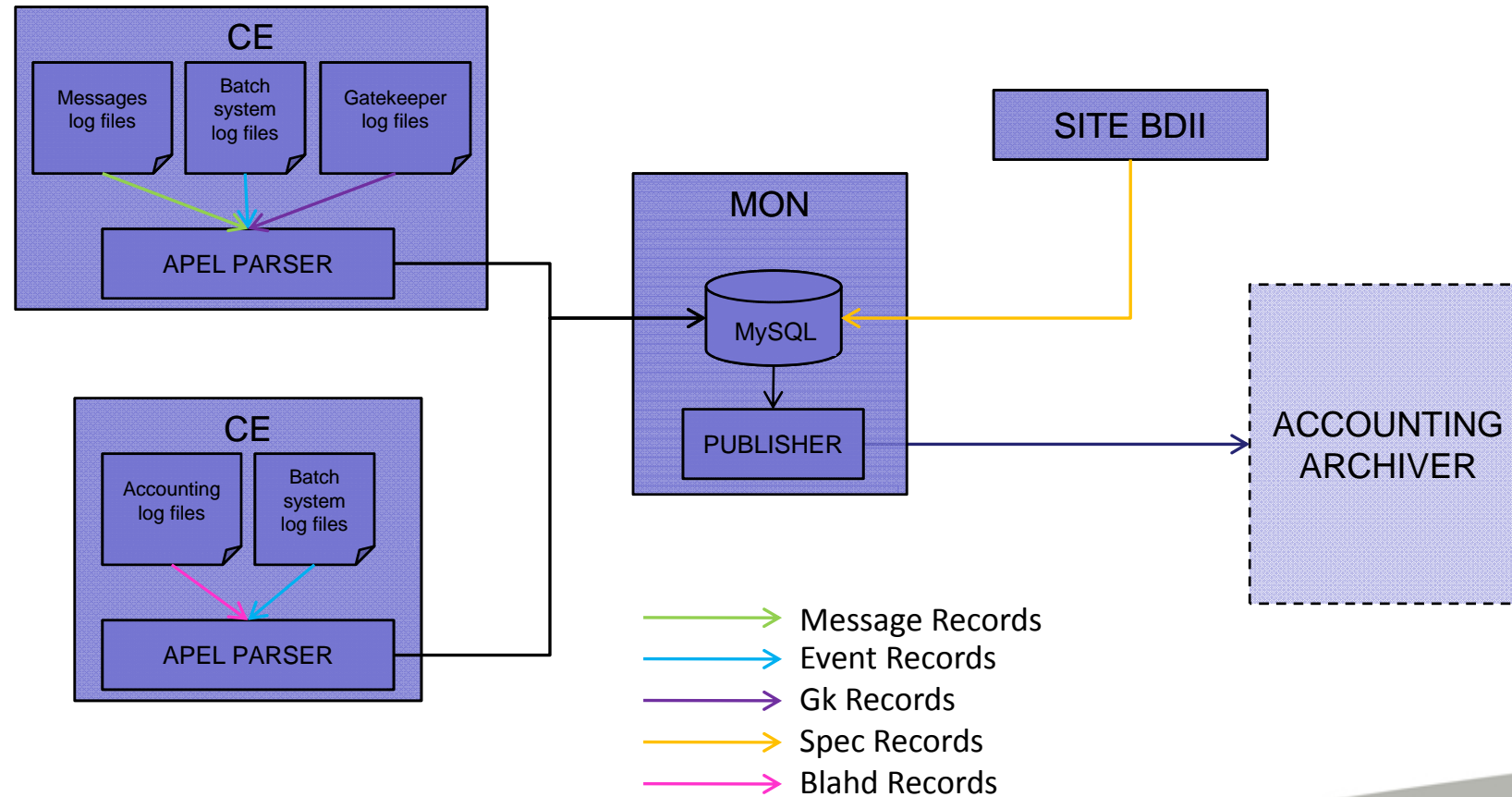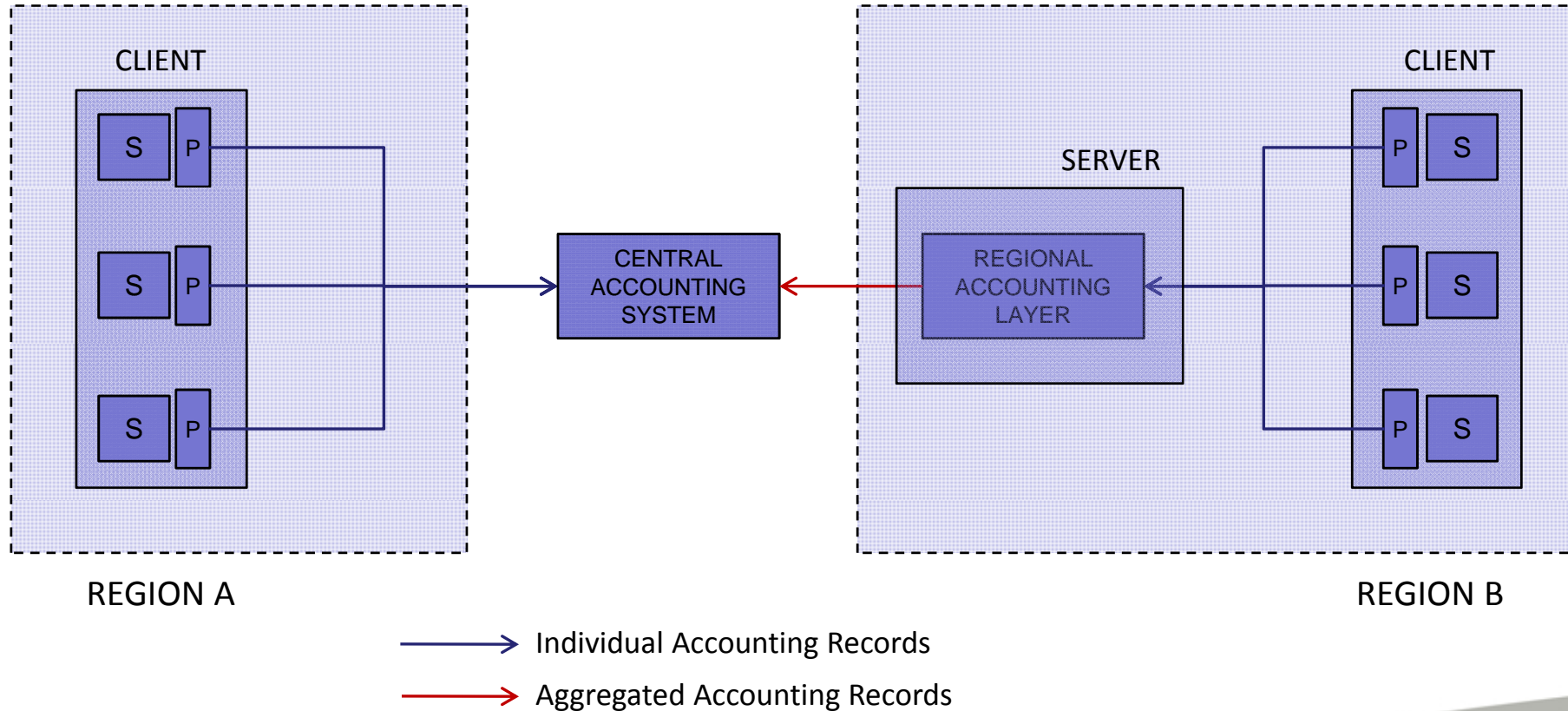- Region C: other sensor – own accounting system

# Current architecture

# New architecture: overview



Individual Accounting Records

Aggregated Accounting Records

# APEL Client

# Regions A and B: overview

# Region B: detail
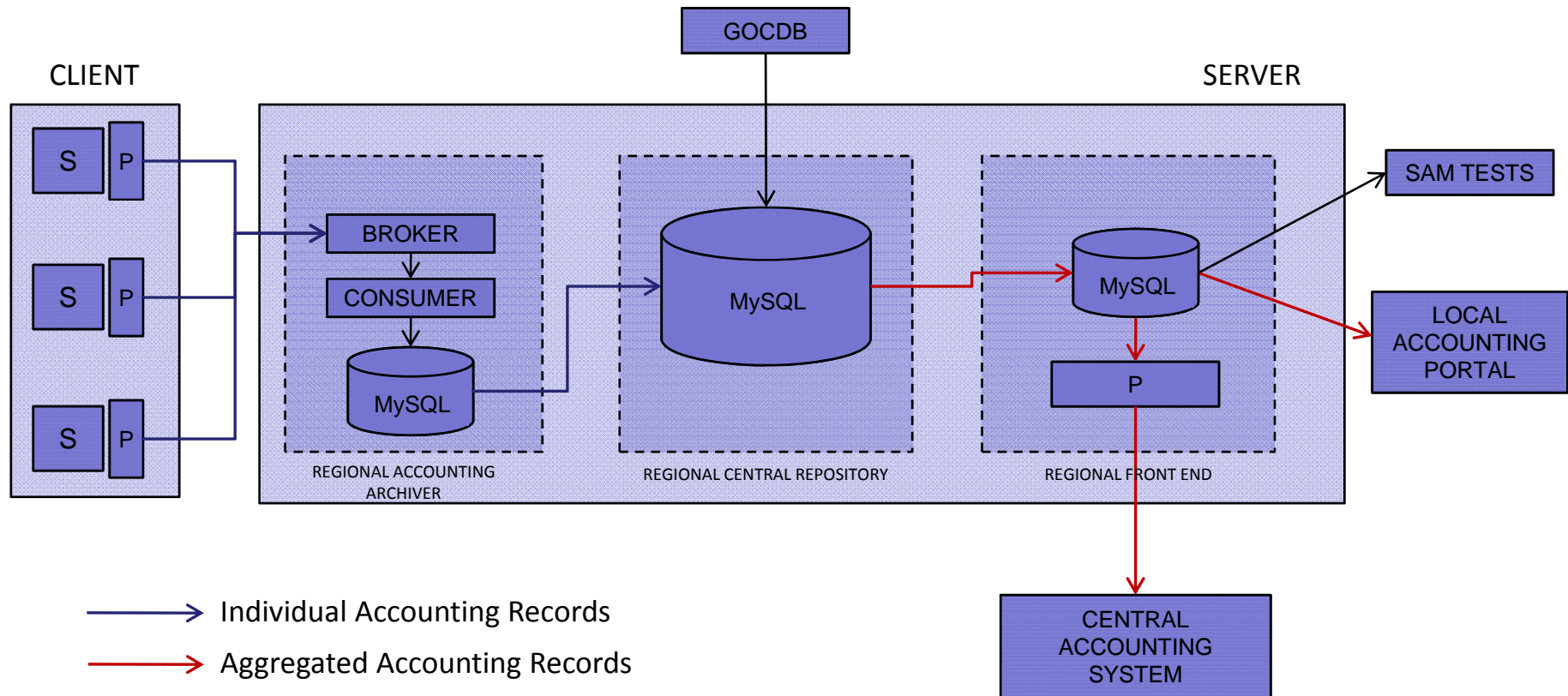
# Central Accounting System



REGION B    REGION A    GOCDB

BROKER

SAM TESTS

CONSUMER    MySQL    MySQL    MySQL    ACCOUNTING PORTAL

CENTRAL ACCOUNTING ARCHIVER    CENTRAL REPOSITORY    CENTRAL FRONT END

→ Individual Accounting Records

→ Aggregated Accounting Records

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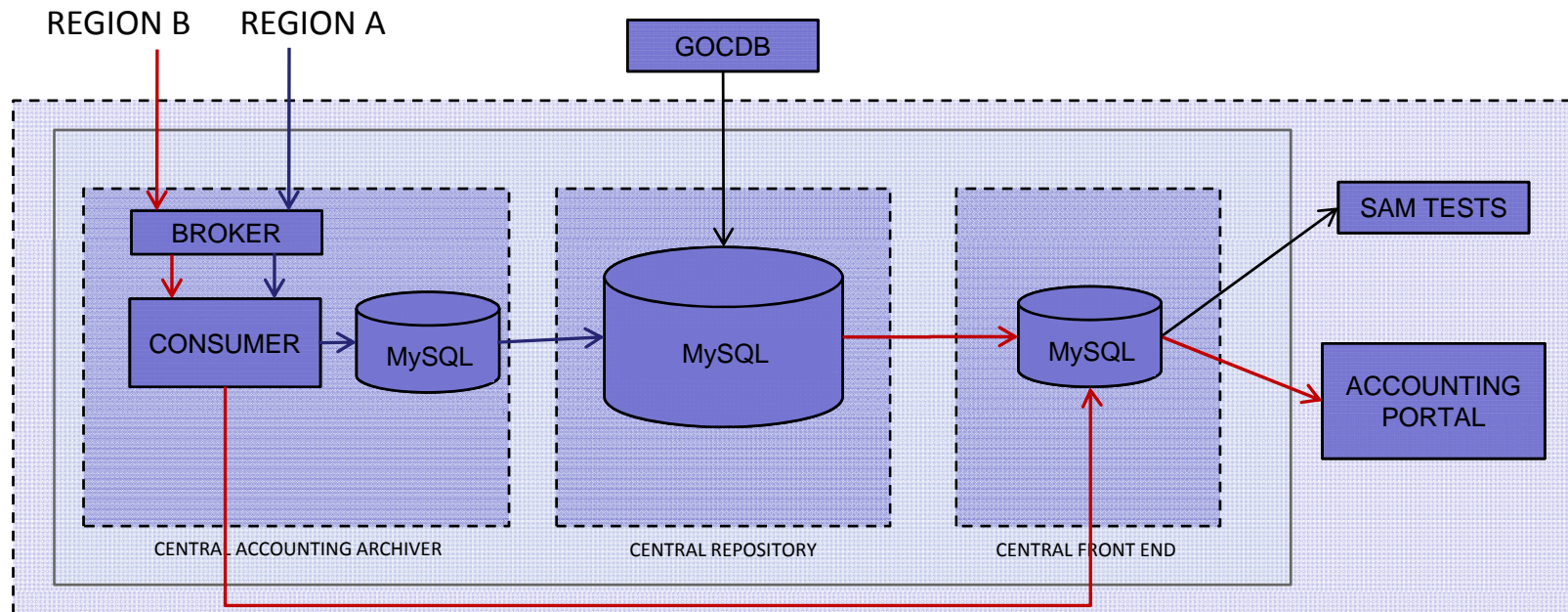
# Components: Client

- APEL parser
  - Already implemented
  - Support for PBS, LSF, SGE and Condor

- APEL publisher
  - Uses Apache ActiveMQ as the transport mechanism
  - Can publish individual or aggregated records
  - It's configurable to allow for different schemas
  - Uses X509 certificates for client-server authentication
  - Can be distributed as a standalone application

# Components: Server (1)

- Accounting Archiver
  - Broker:
    - Apache ActiveMQ implementation, no modifications needed
    - Can be on a separate machine
  - Consumer:
    - Configurable to collect/store records from different database schemas into a MySQL database
  - MySQL database containing recent published records (~3 days)
  - Scripts to:
    - Export data to the Central Repository
    - Delete old data from Archiver

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# Components: Server (2)

- Central Repository
  - MySQL database containing all individual records
  - Scripts to:
    - Decrypt UserDN
    - Process FQAN
    - Create aggregated data
    - Create tree structure for Accounting Portal
    - Read data from GOCDB

# Components: Server (3)

- Front End
  - MySQL database containing:
    - Aggregated accounting summaries
    - Tree structure for Accounting Portal
    - SAM test results
  - Scripts to:
    - Publish SAM tests
    - Create RSS feeds
  - APEL Publisher

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# Plan (1)

By the end of August 2009

1. Replace R-GMA with Apache ActiveMQ

   1.1. Create Central infrastructure for ActiveMQ (end of March 2009)

   - 1.1.1. Install a message broker
   - 1.1.2. Install an Accounting Archiver (consumer)

   1.2. Distribute an APEL publisher that uses ActiveMQ as the transport mechanism (end of July 2009)

   - 1.2.1. Implement the APEL publisher (middle of April 2009)
   - 1.2.2. Create new APEL package (end of April 2009)
   - 1.2.3. Test version in different sites in parallel with R-GMA (end of June 2009)
   - 1.2.4. Submit patch for g-Lite certification (end of June 2009)

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# Plan (2)

By the end of December 2009

2. Implement a standard APEL publisher configurable for different regions/sensors

- 2.1. Gather requirements/information from existing interfaces (OSG, NDGF and DGAS) (end of June 2009)
- 2.2. Implement APEL publisher (end of July 2009)
- 2.3. Implement consumer (end of August 2009)
- 2.4. Package publisher for distribution (end of October 2009)
- 2.5. Test publisher with other regions (end of December 2009)

# Plan (3)

By the end of April 2010

3. Create a package for the regionalised Accounting Servers ready for distribution

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Feedback…
Questions…