

# RCP in the Energy Industry

## Network Central Recorder

### Nuclear Power Station from Tricastin (France)

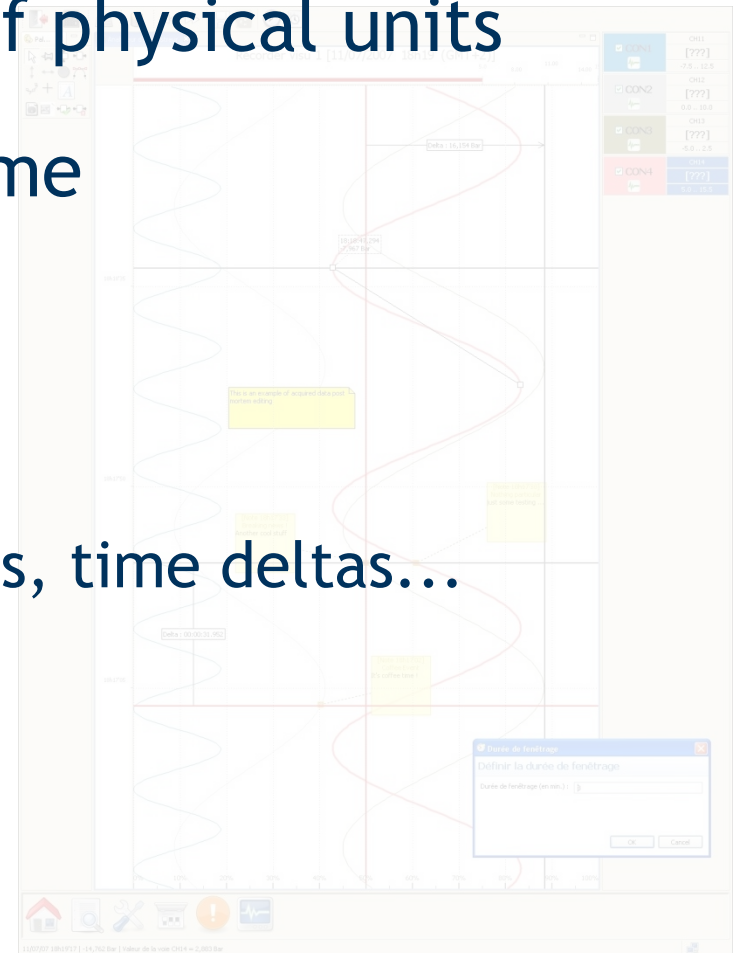


David Sciamma

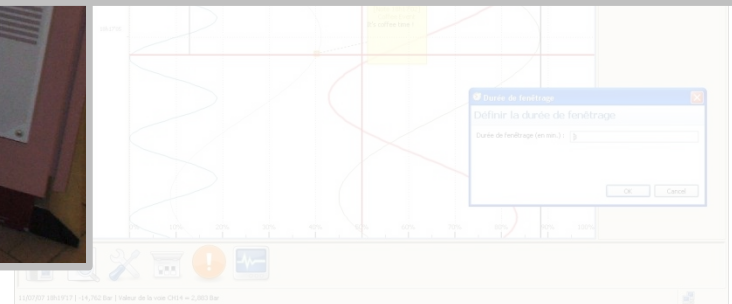
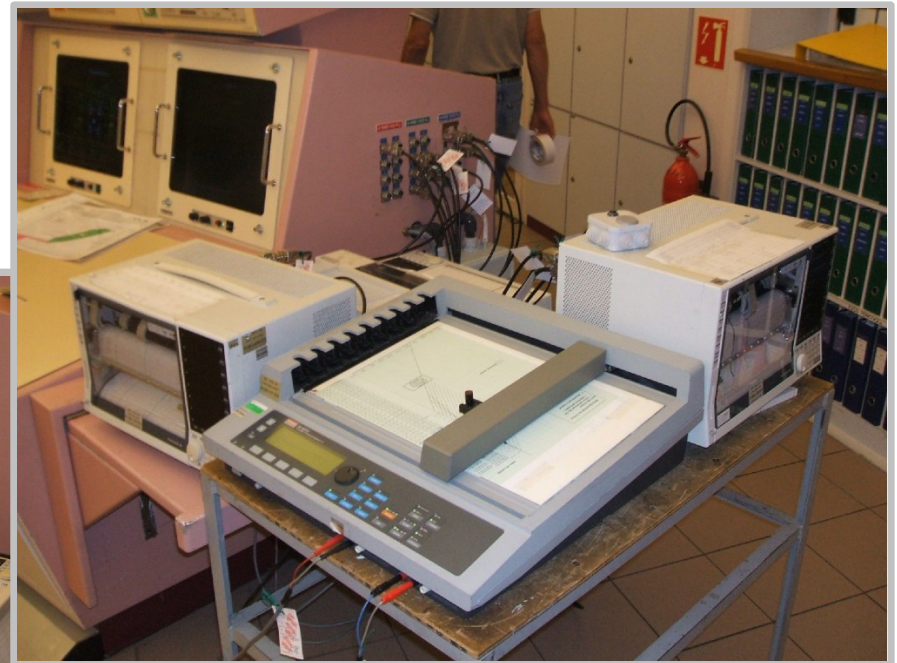


# Requirements

- 1 Record different kinds of physical units
- 2 Render curves in real-time
- 3 Multi-users application
- 4 Analyze the data :
  - ▶ Calculus of slopes, tangents, time deltas...



# Current recorders



## Current context

Obsolescence

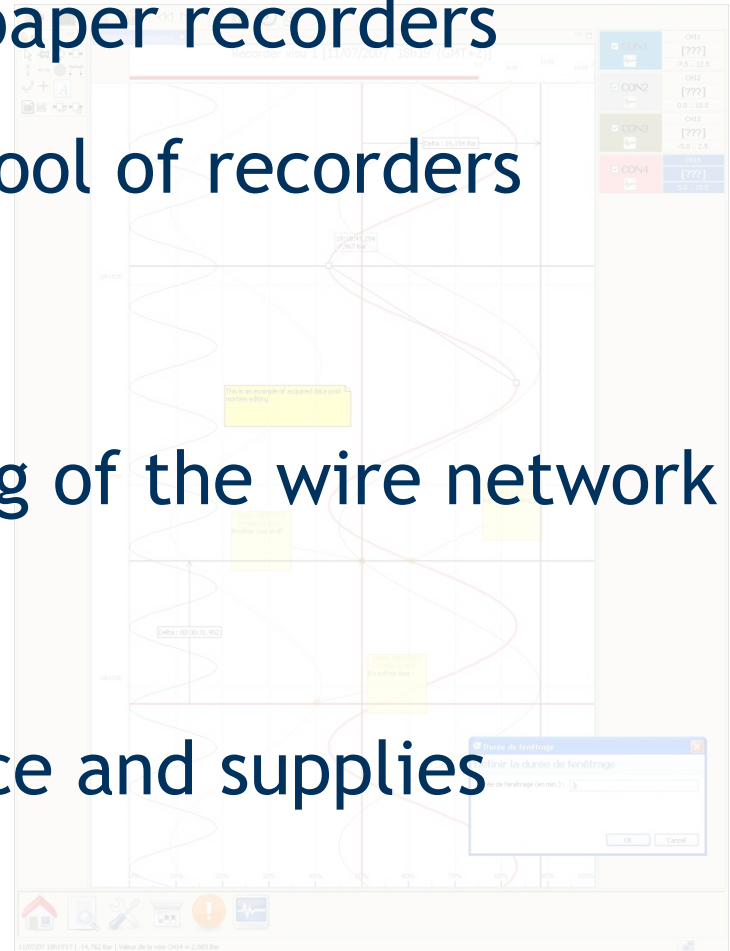
- Outdated paper recorders
- Obsolete pool of recorders

Overloading

- Overloading of the wire network

Expensive

- Maintenance and supplies



## Current context

Complexity

Time consuming

Restricted

- Human Machine Interface
- Implementation is time consuming
- Restricted number of recorded channels



# Objectives

Functional

- Standardization
- Ergonomy
- Space saving
- More channels available

Domain

- Increase reactivity



# Objectives

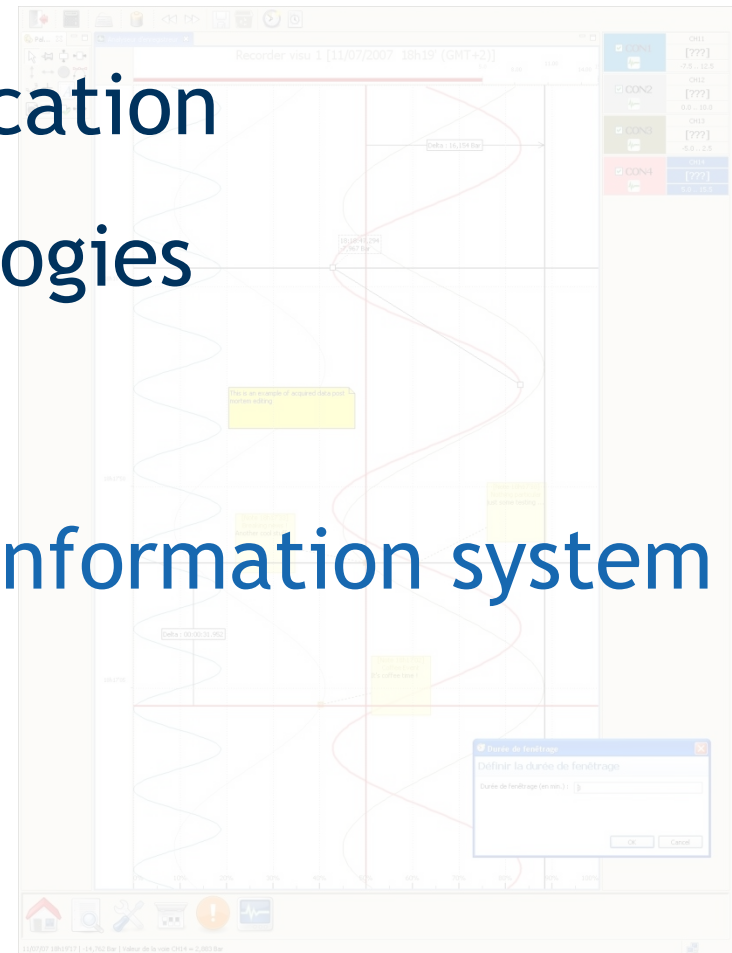
## Technology

- Sustainable and scalable
- Transition to new technologies



## Technical requirements

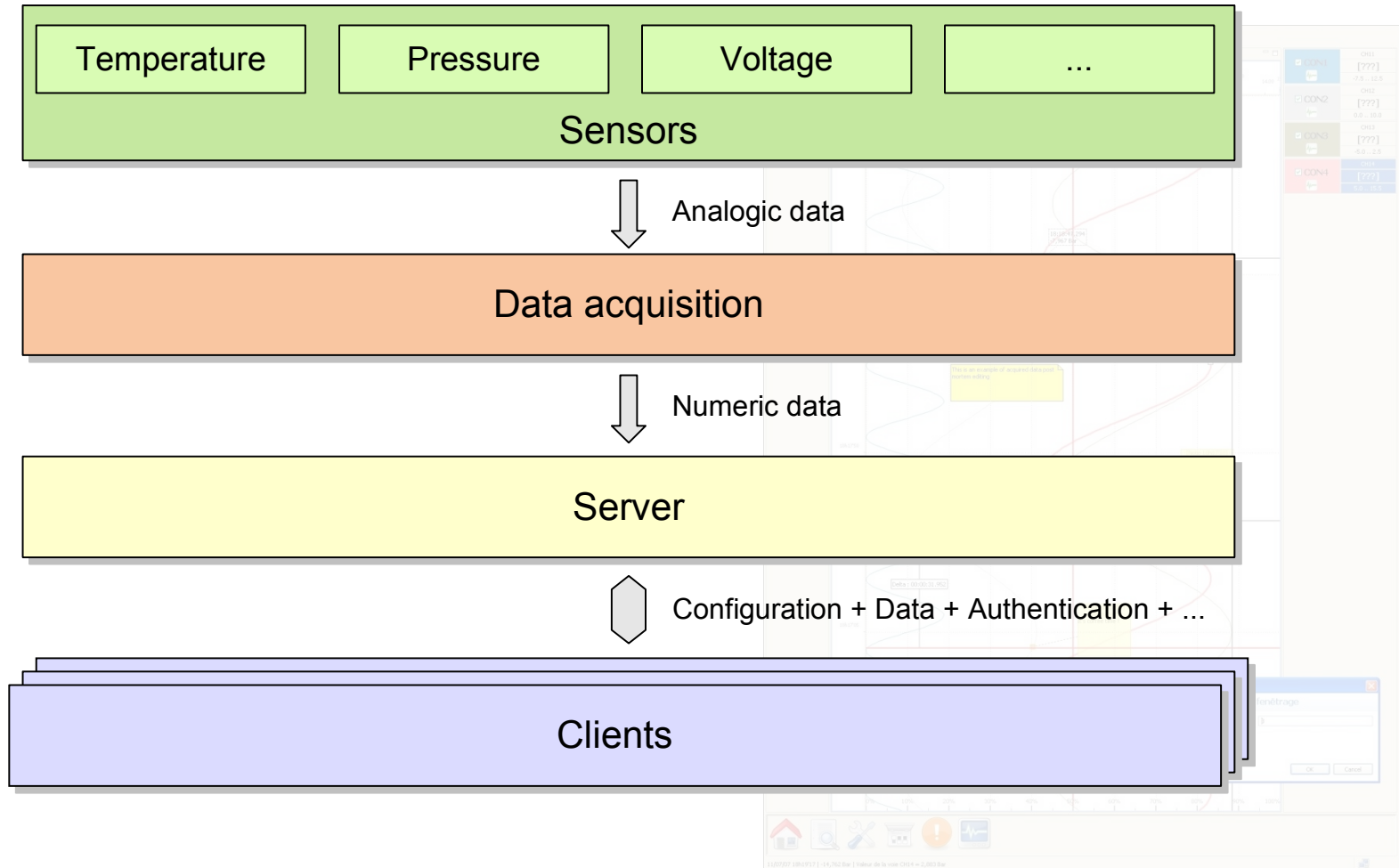
- 1 Easy to deploy application
- 2 Open source technologies
- 3 Data centralization
- 4 Compliant with the information system master plan



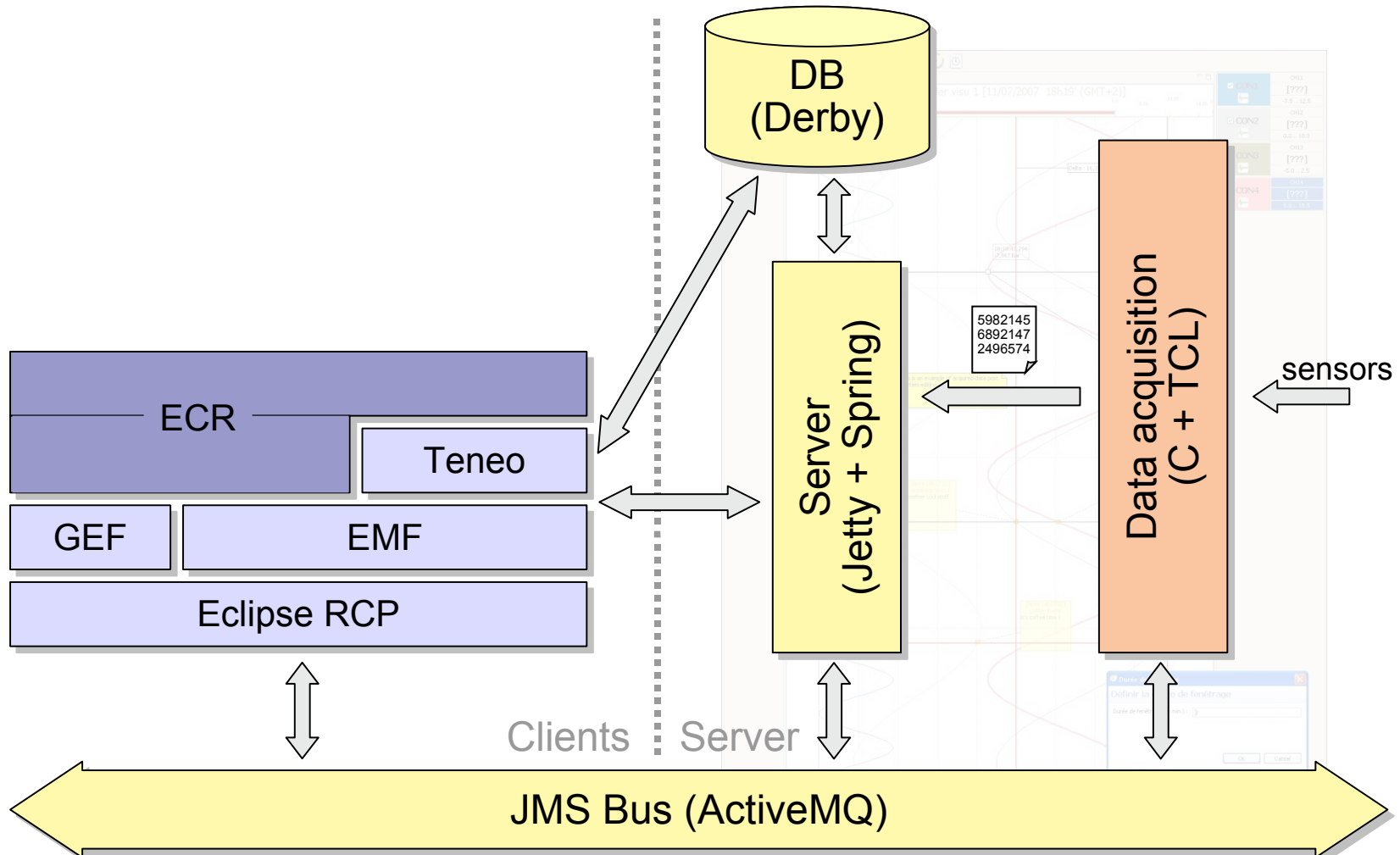


# Technical solution

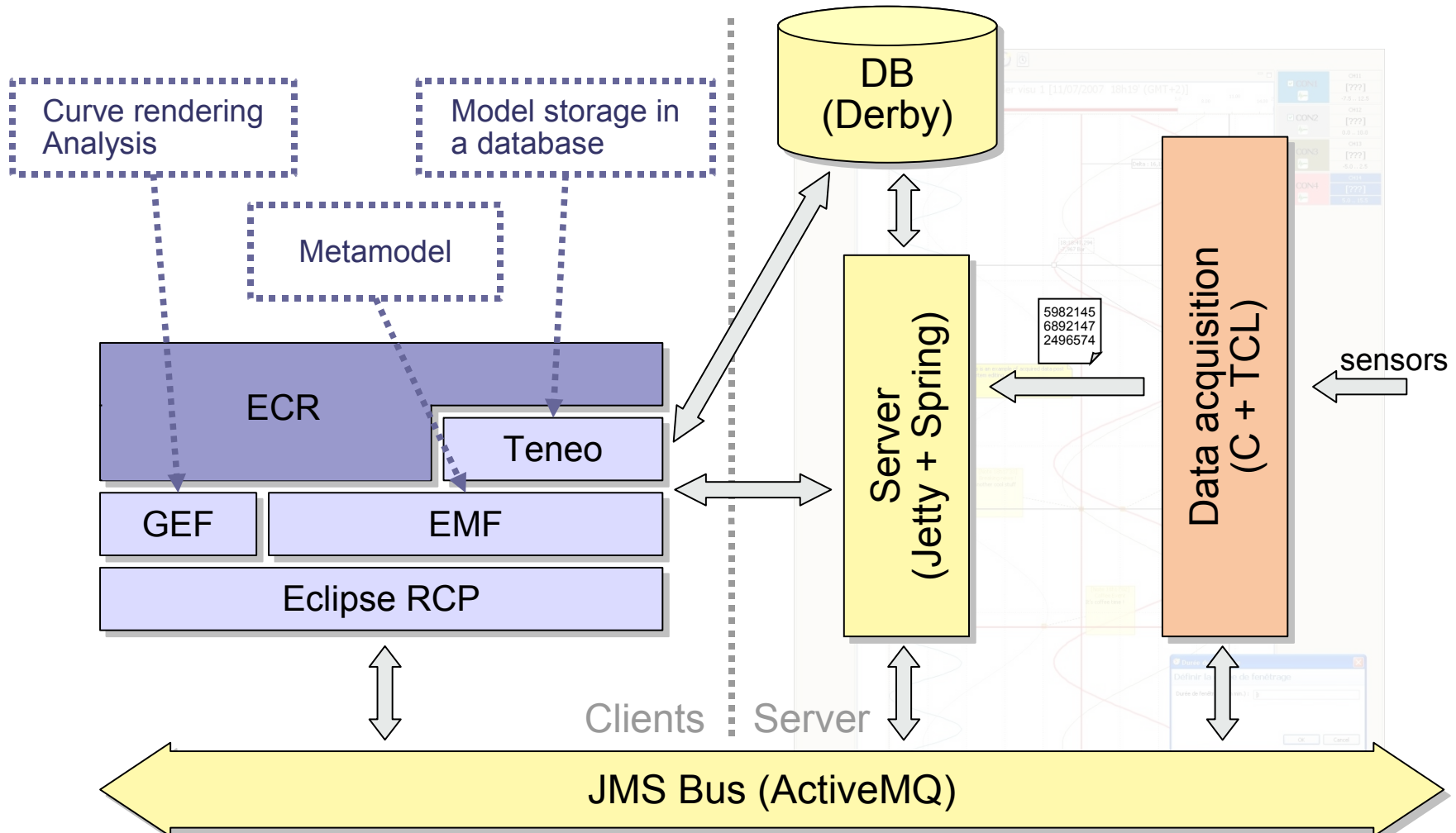
# Big Picture



# ECR Architecture



# ECR Architecture



# Issues

# Deployment

## Need

- Be able to use the software without any setup

## Solution

*Pre requisite*

- Java WebStart
  - ▶ Java 1.5
  - ▶ Eclipse 3.3



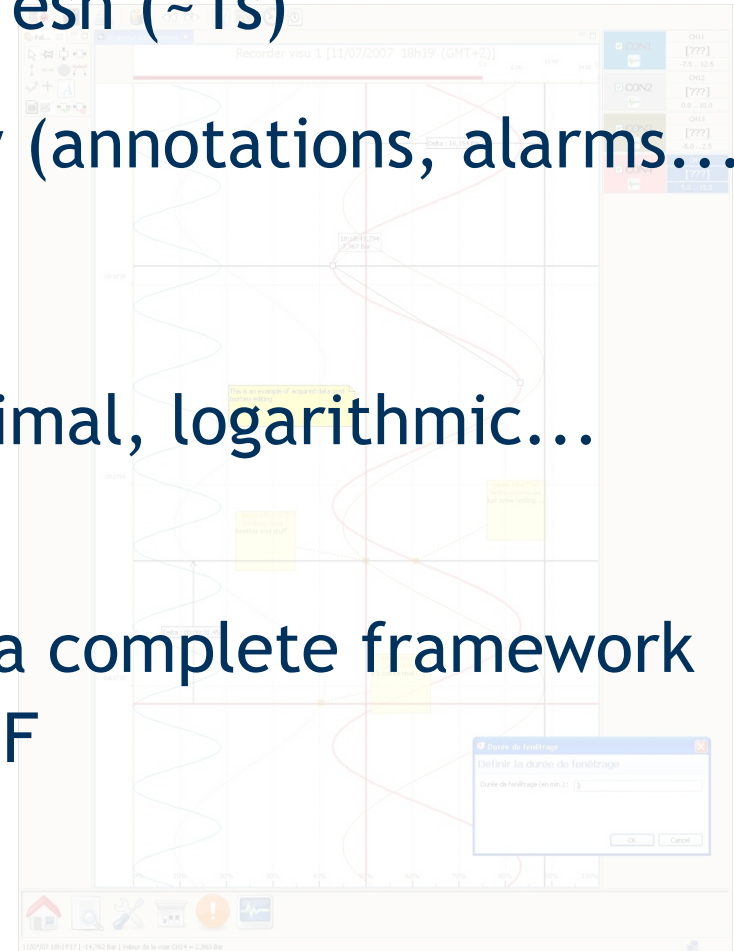
## Curve rendering (1/3)

### Needs

- Periodic refresh (~1s)
- Interactivity (annotations, alarms...)
- Analysis
- Scales : decimal, logarithmic...

### Solution

- Creation of a complete framework based on GEF



## Curve rendering (2/3)

### Pros

- Completely customizable
- Easy to handle interactivity

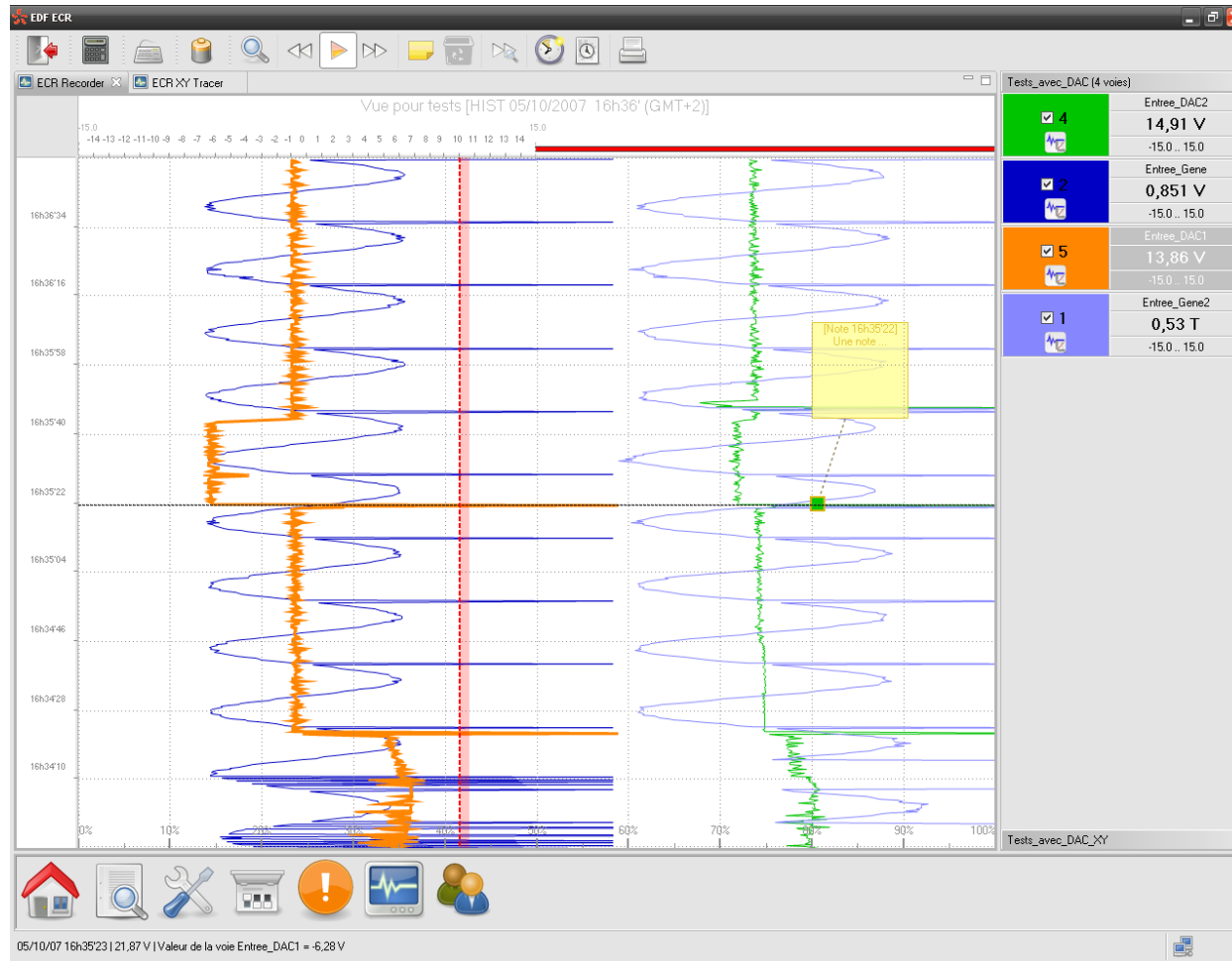
### Cons

- Performances : GEF needs to be optimized
- No existing framework



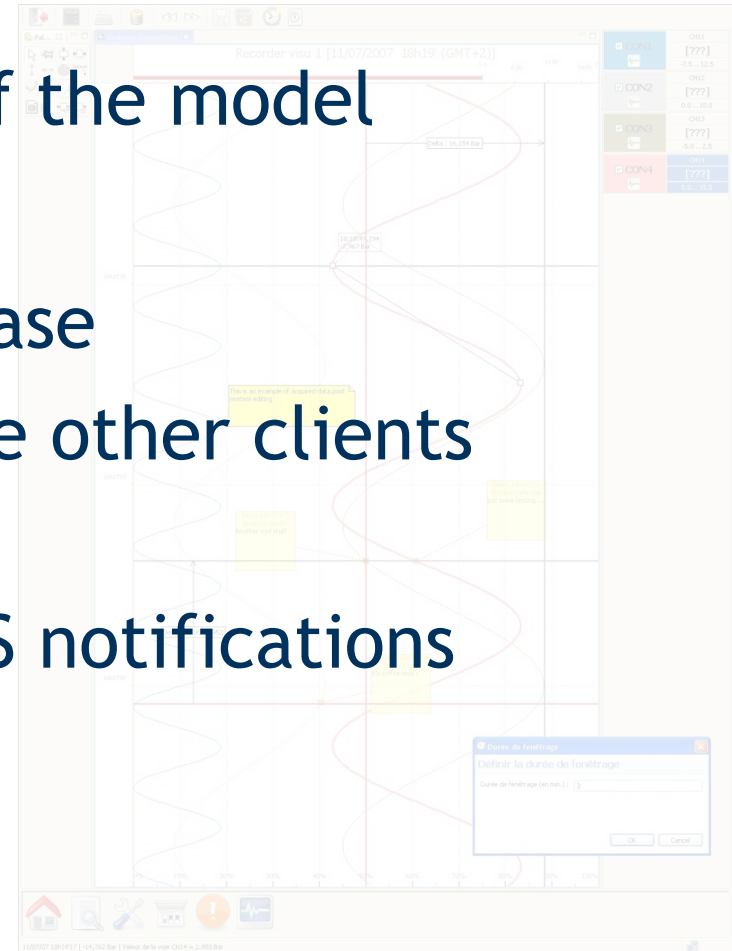


# Curve rendering (3/3)

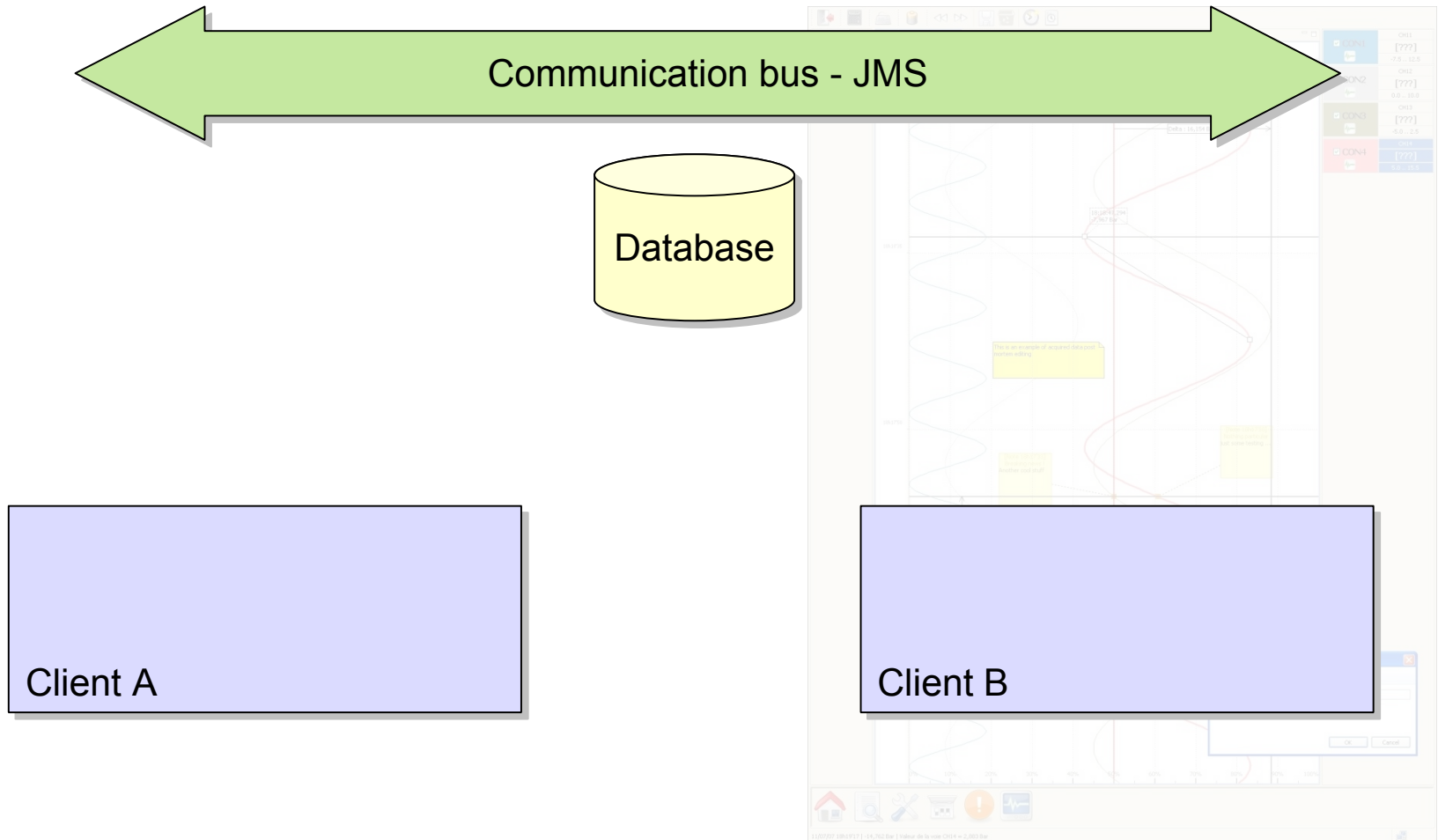


# Synchronization

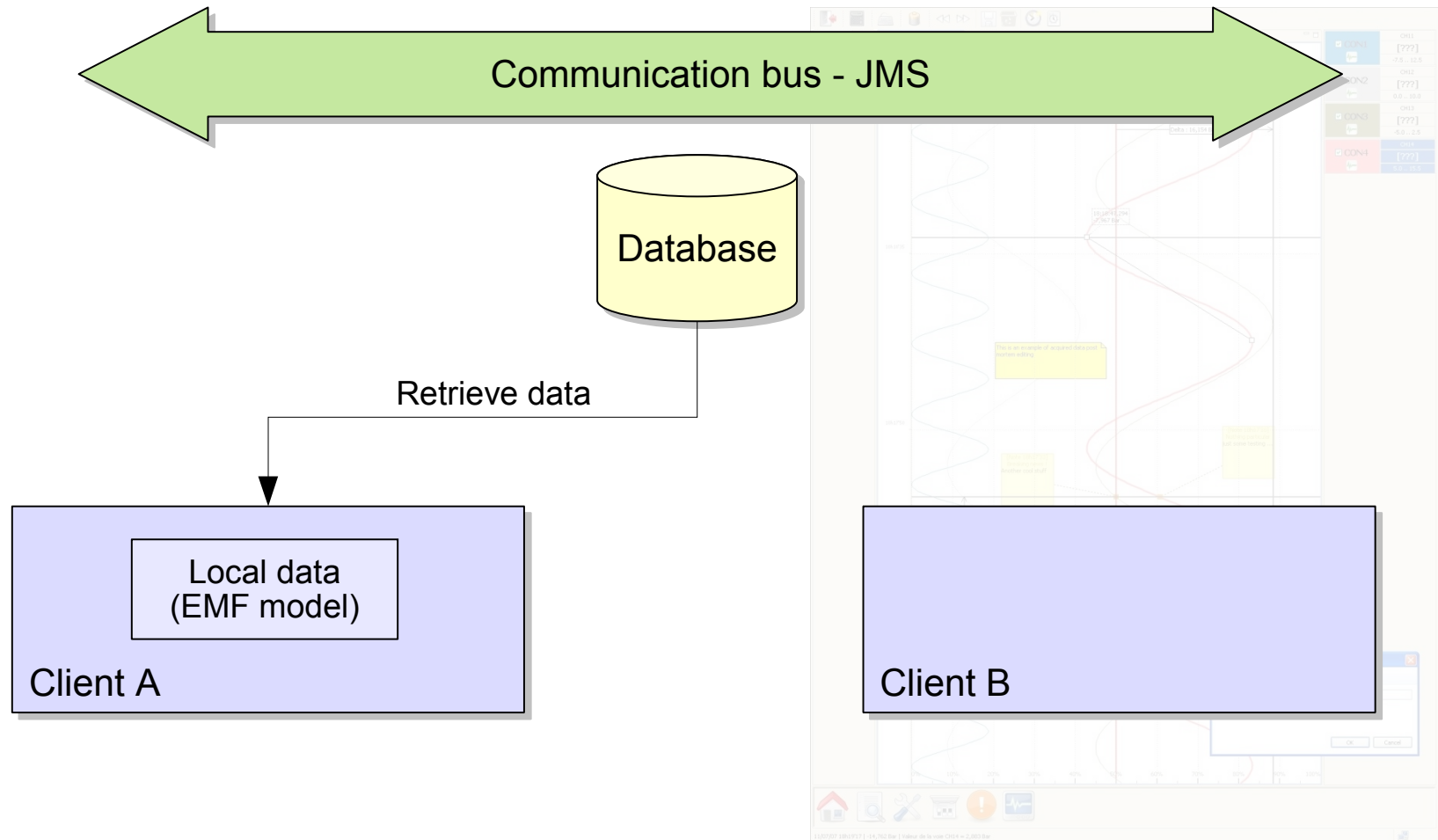
- Each client has a copy of the model
  - ▶ Local modification
  - ▶ Model saved in database
  - ▶ Need to resynchronize other clients
  - ▶ Solution based on JMS notifications



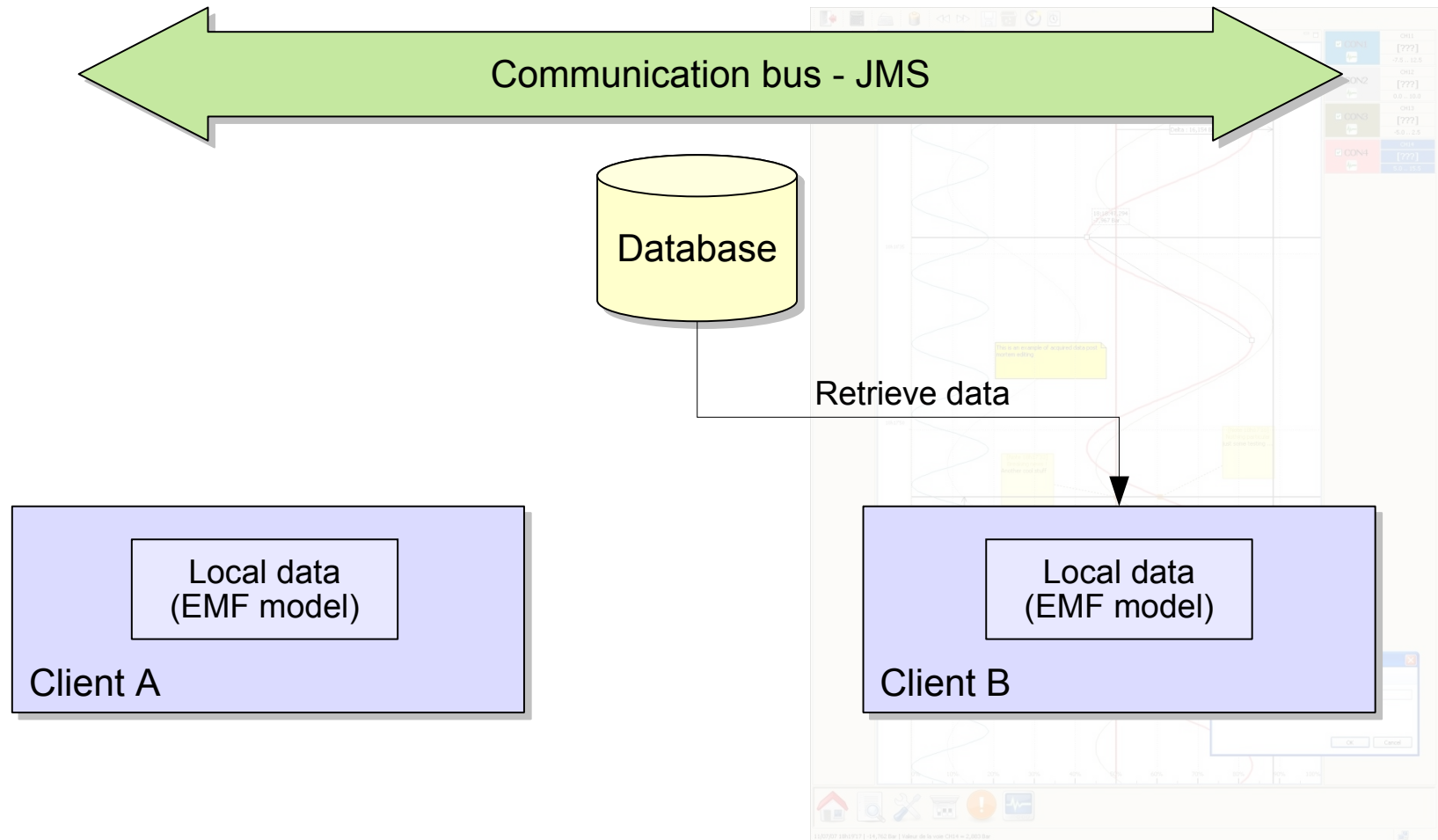
# Synchronization



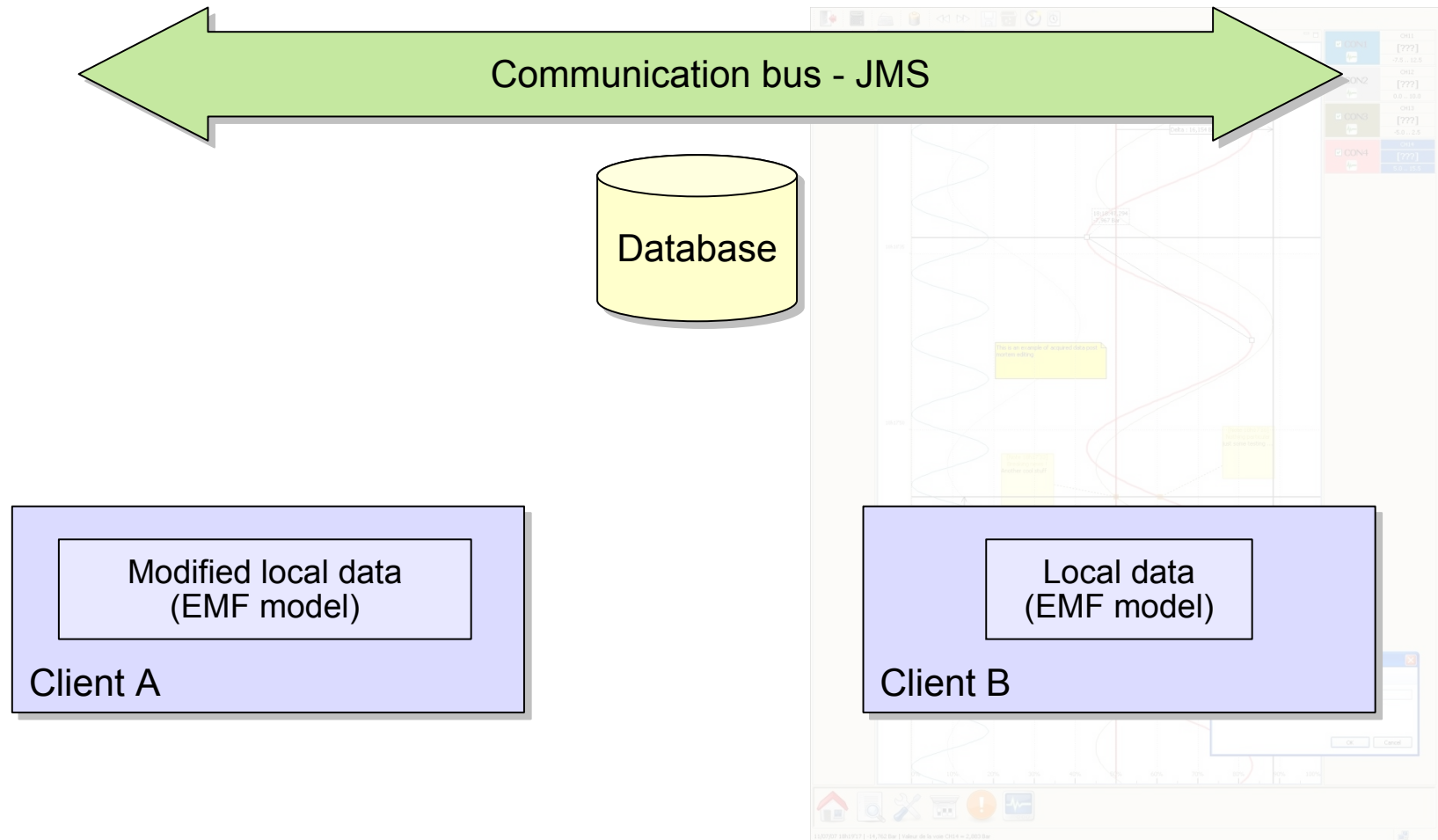
# Synchronization



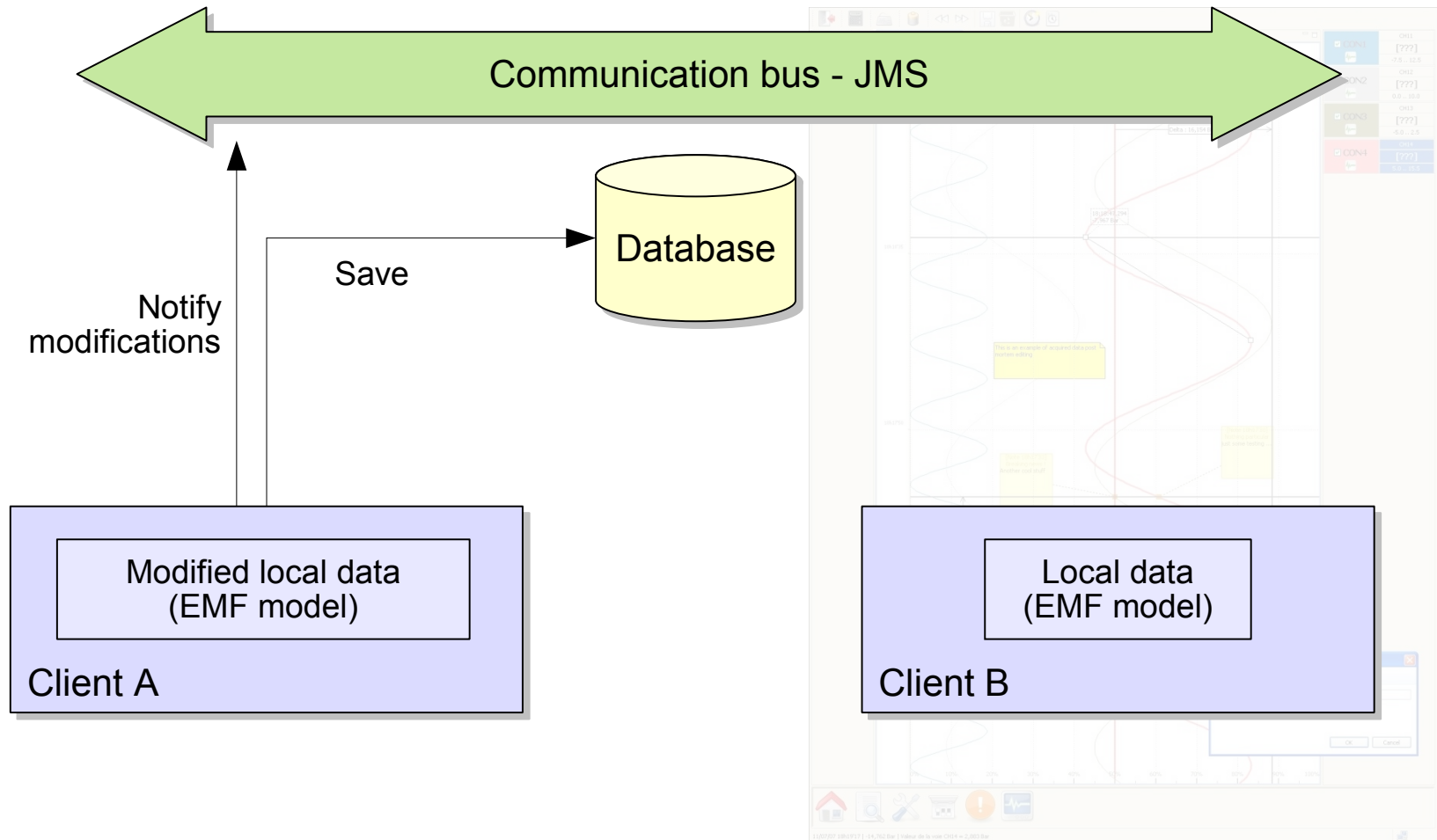
# Synchronization



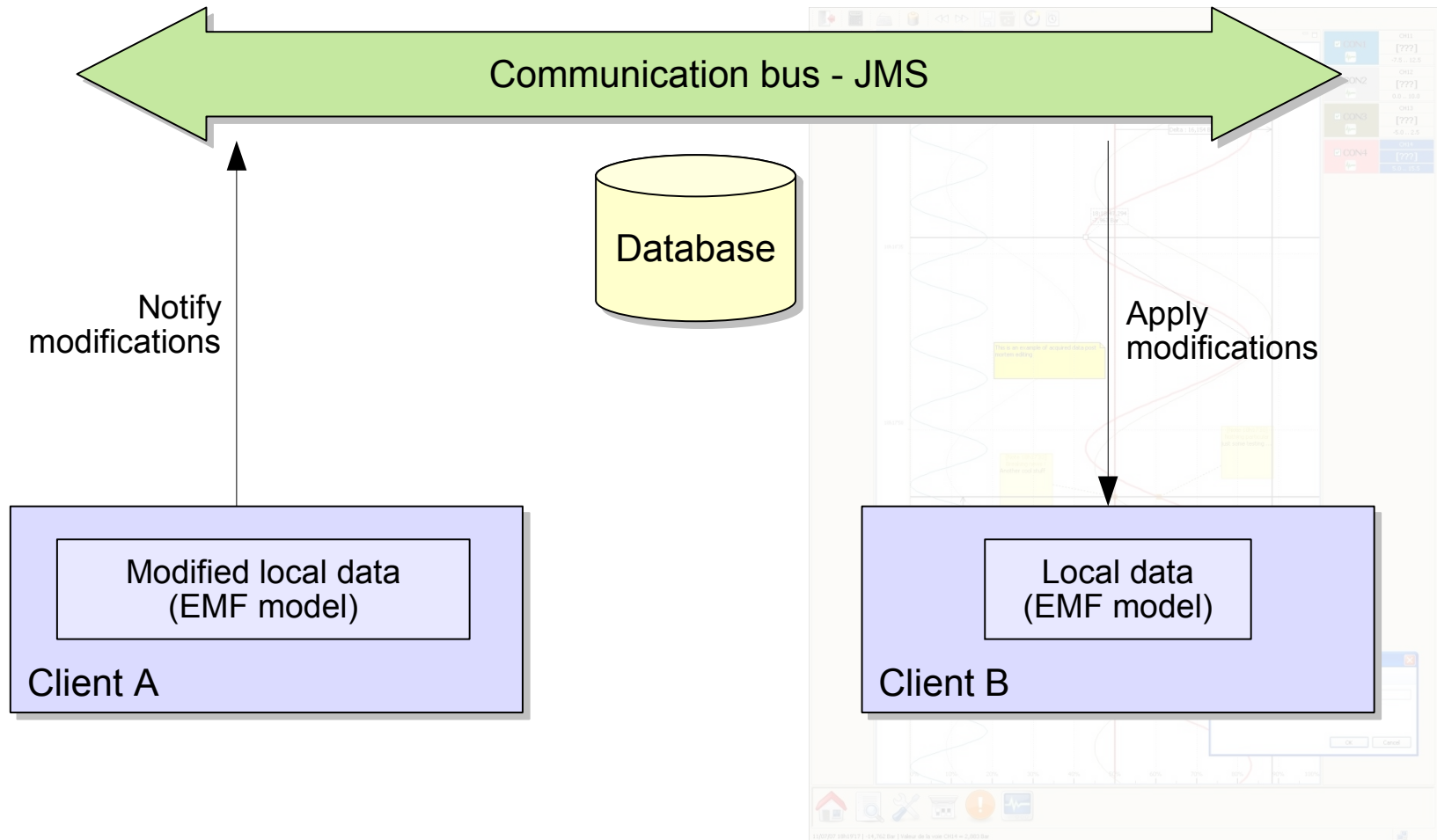
# Synchronization



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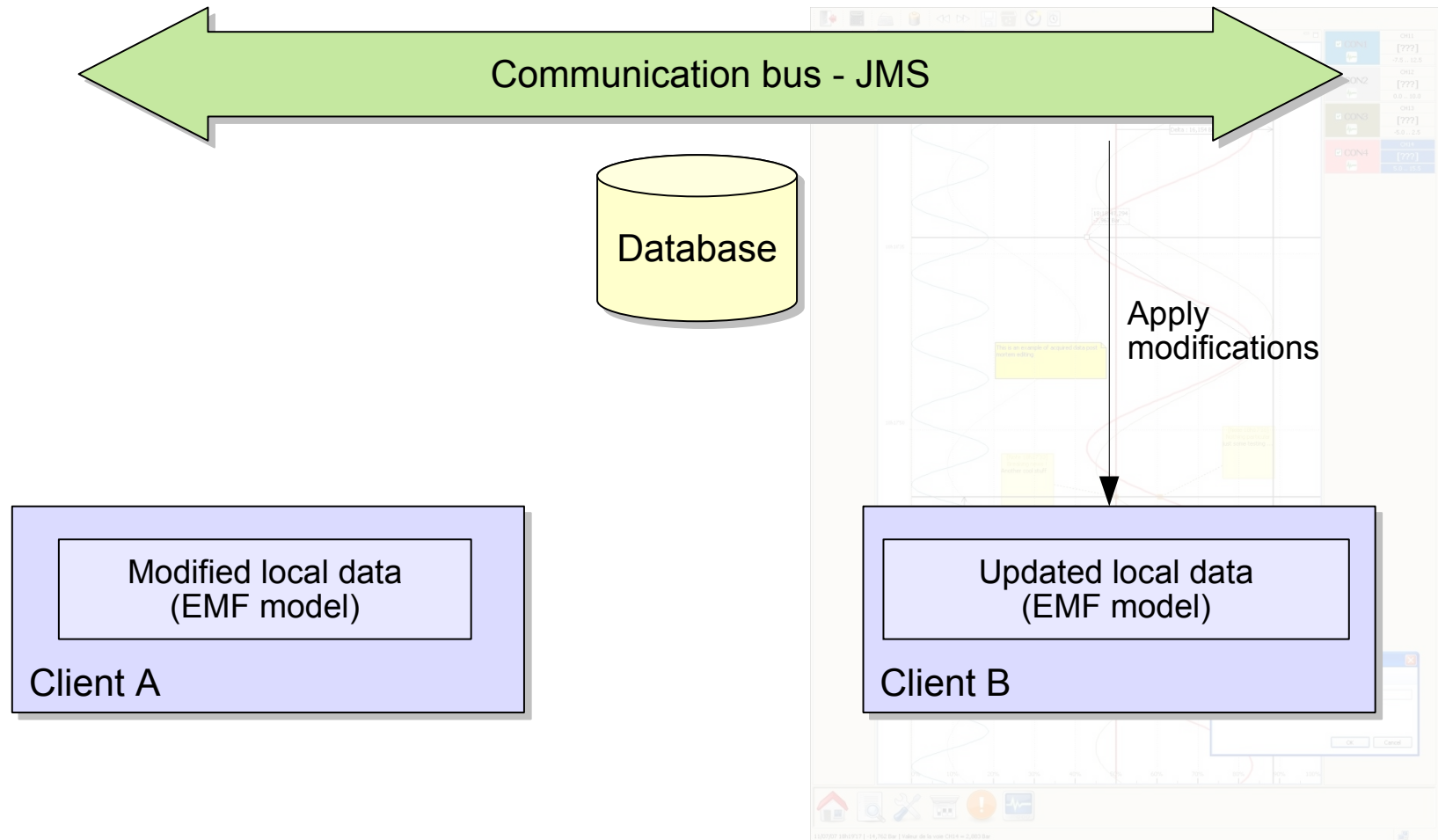


# Synchronization

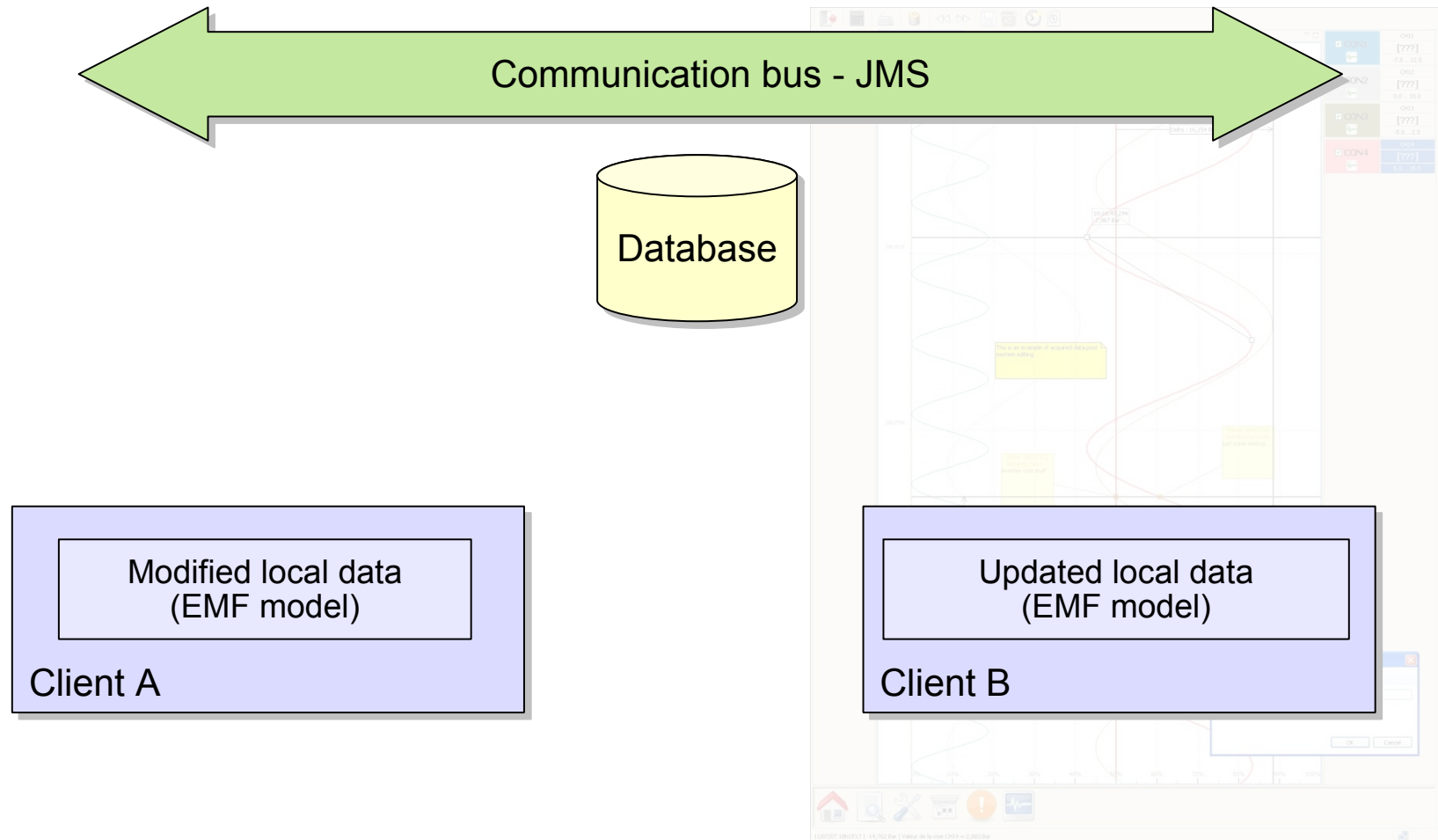




# Synchronization



# Synchronization



Demo

## Bilan

### GUI

- Interactivity and simplification, Improvement of usability

### Cost

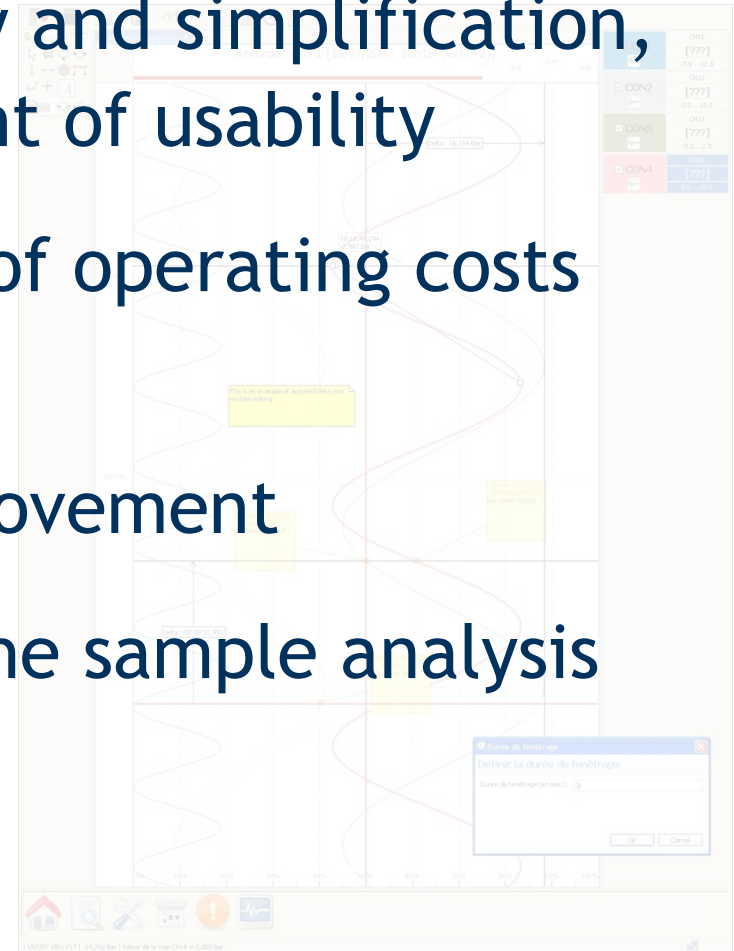
- Diminution of operating costs

### Productivity

- Global improvement

### Domain

- Quality of the sample analysis



# Questions

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