



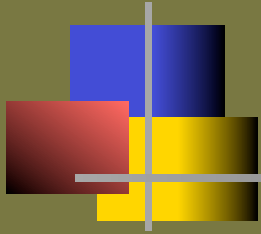
# Asynchronous Driver

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**Beijing EPICS Seminar**

**Tuesday, 03/02 2010**

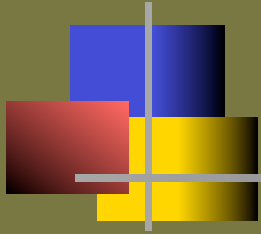
**J. Odagiri**



# The Points

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- Why do we need asynchronous drivers?
- An example of `asynDriver`-based implementation
- Why do I hate asynchronous drivers?



# Overview

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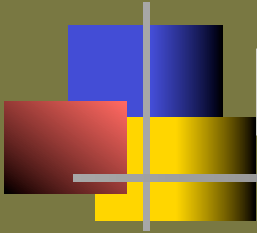
## Run-time Database

**Record Support**

**Device Support**

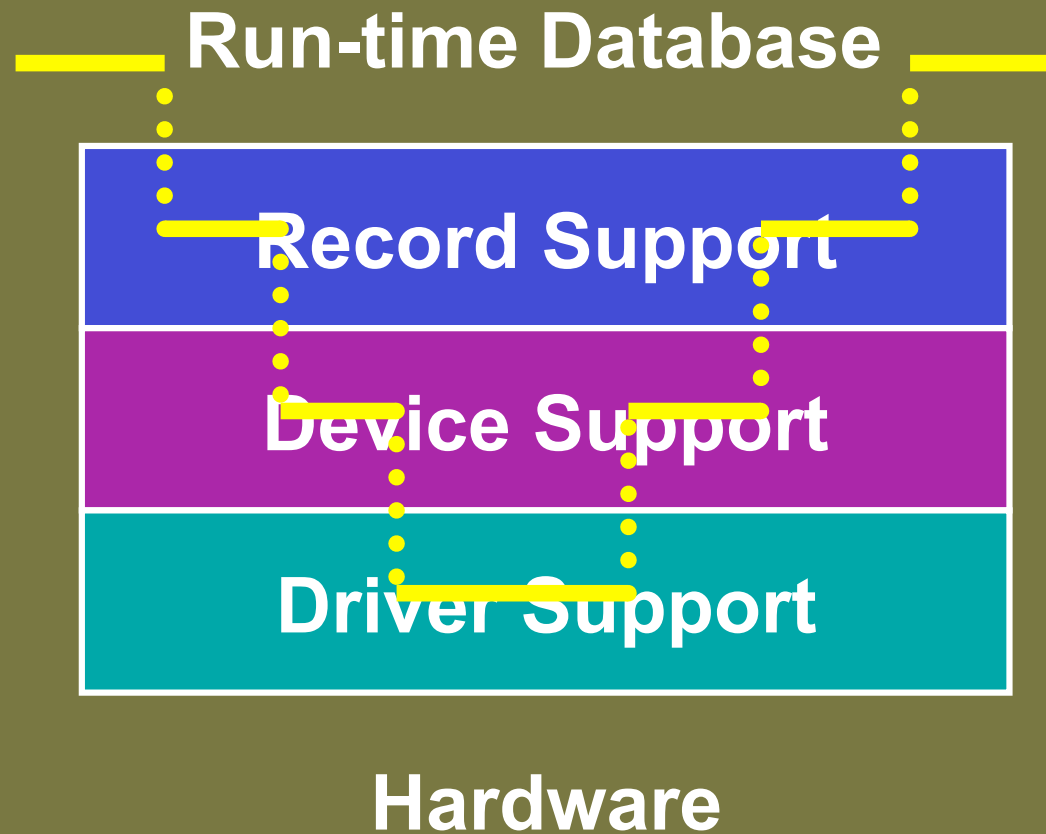
**Driver Support**

**Hardware**



# How synchronous I/O works

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# What if synchronous I/O was used for slow devices?

## Run-time Database



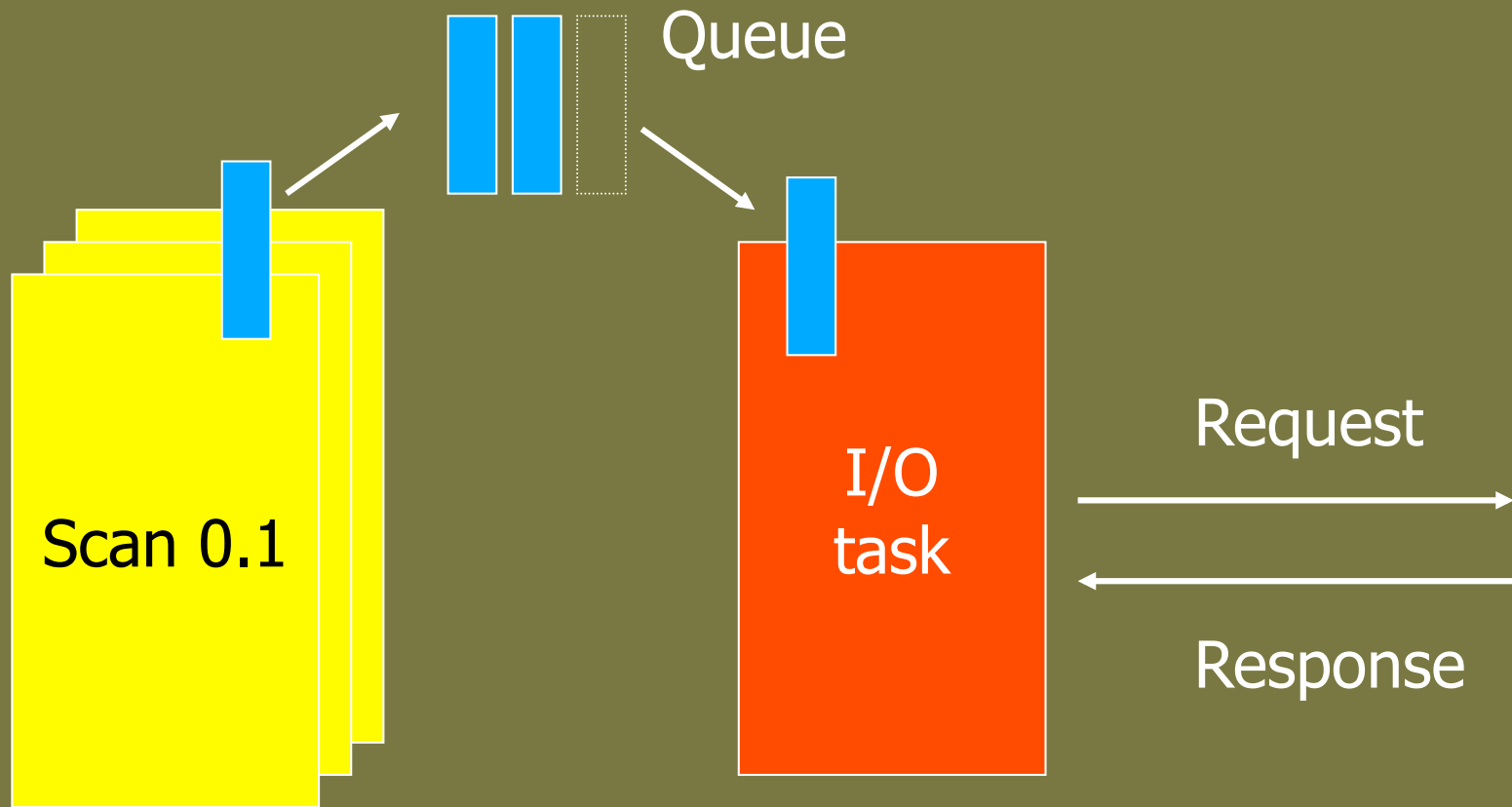
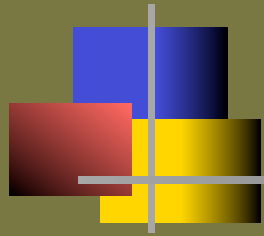


# Slow devices require asynchronous I/O

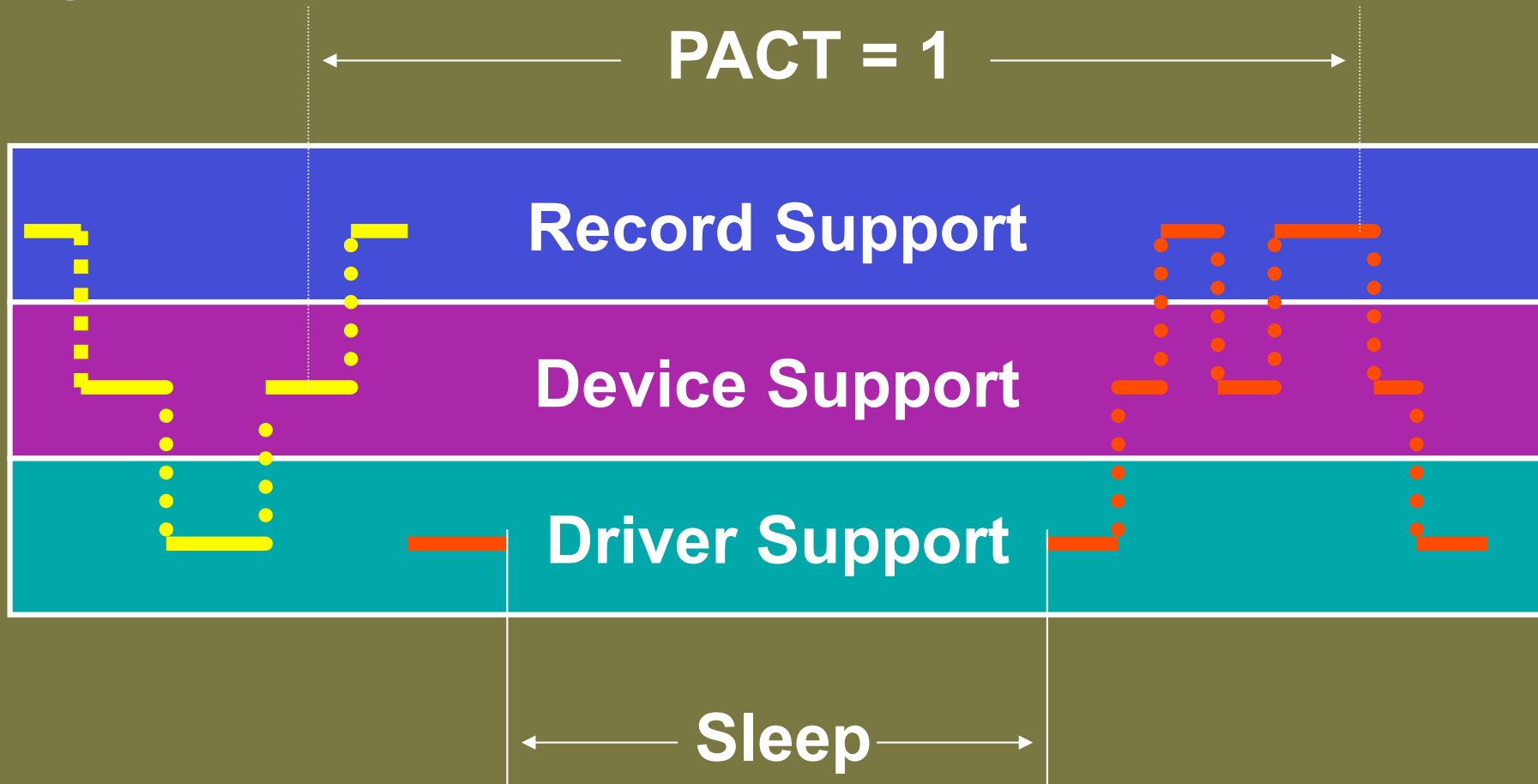
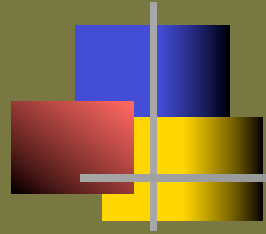
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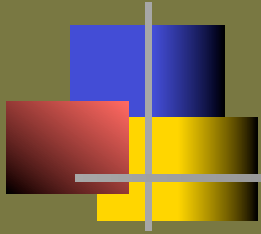
- Scan tasks, for instance, should NOT wait for a transaction to complete if it takes long time
  - A **scan task** may have lots of record instances to process
- After the scan task initiate the I/O, it must go ahead to process the next record
  - **Another task** should take care of the callback when the I/O completes

# How asynchronous I/O works



# Asynchronous I/O and PACT field





# Overview, again

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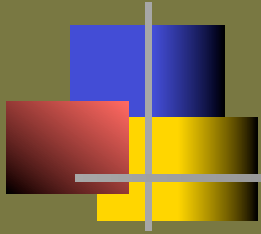
## Run-time Database

**Record Support**

**Device Support**

**Driver Support**

**Hardware**



# asynDriver (by M. Kraimer)

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Run-time Database

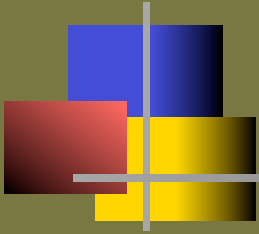
Record Support

Device Support

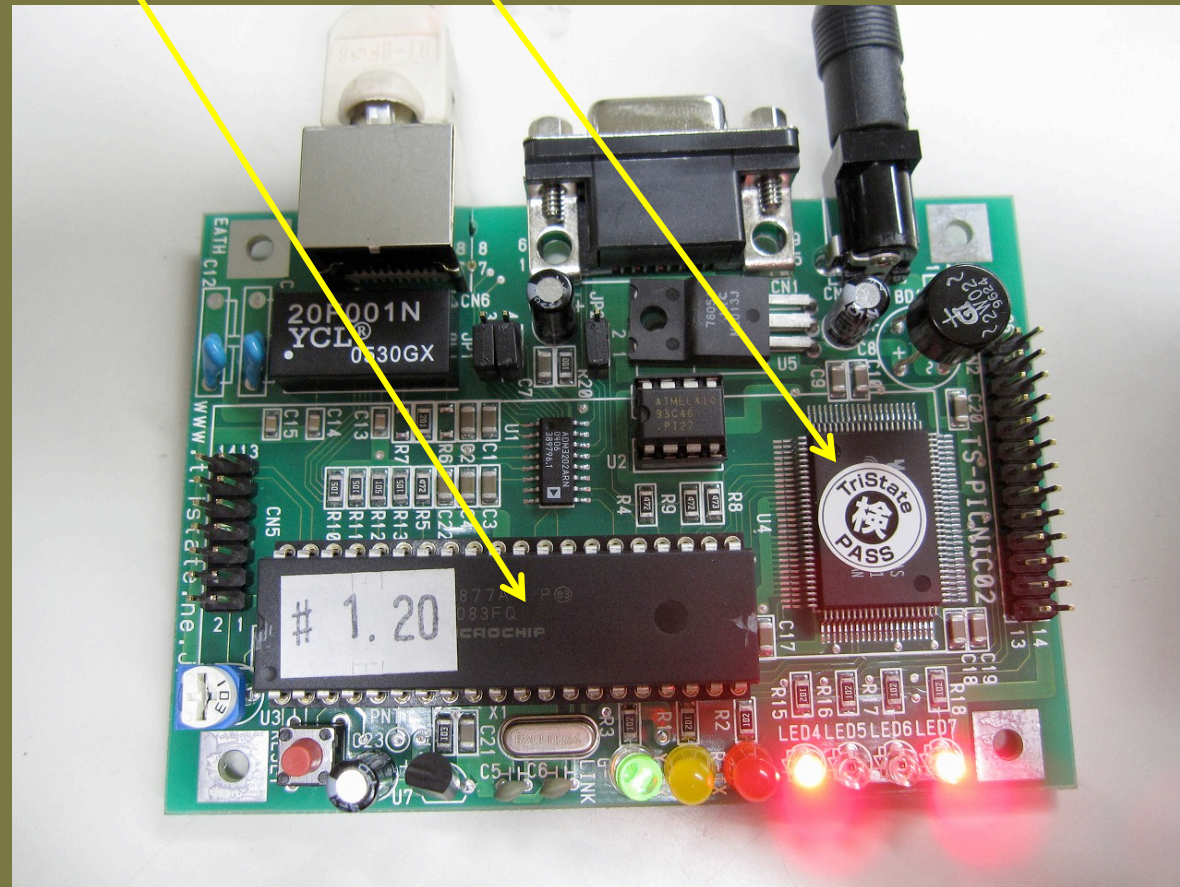
**asynManager**

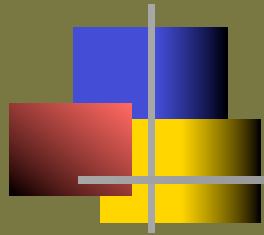
Low Level Driver

Hardware



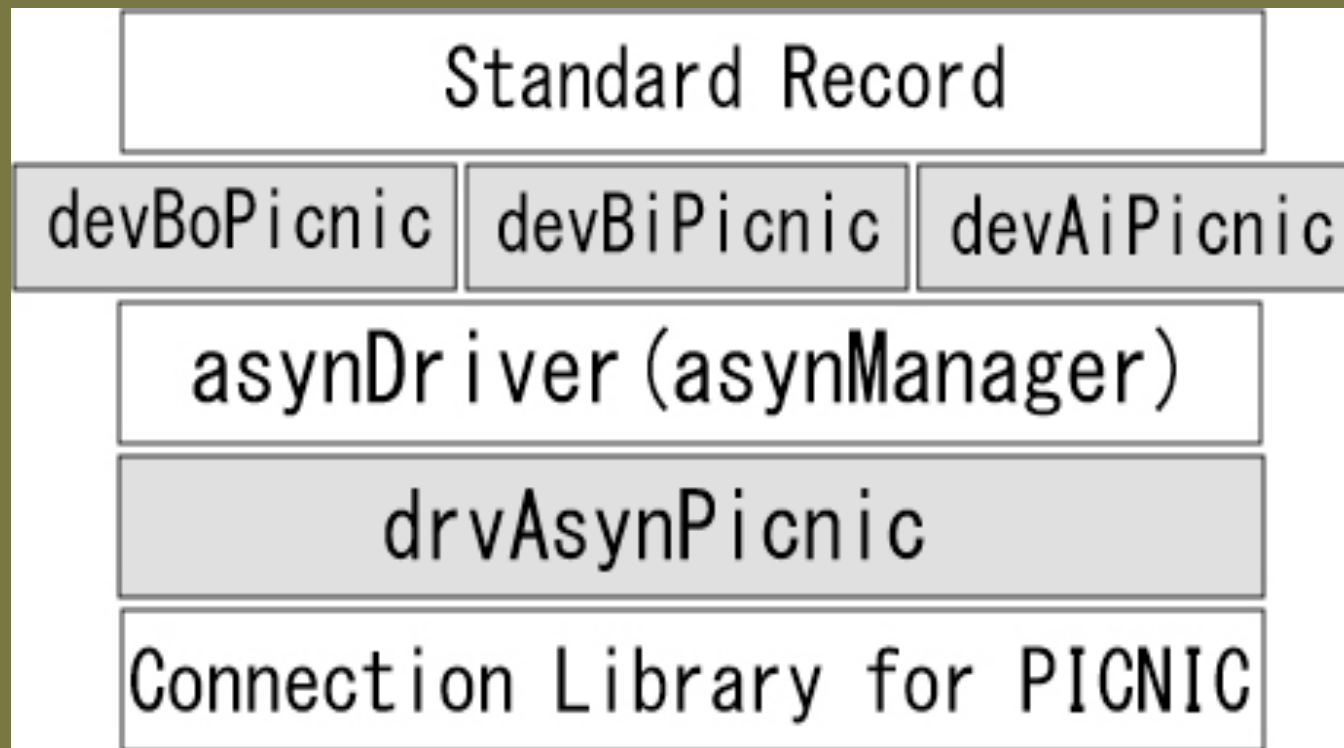
# PIC + NIC = PICNIC

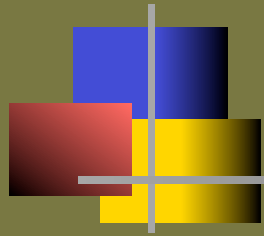




# PICNIC support

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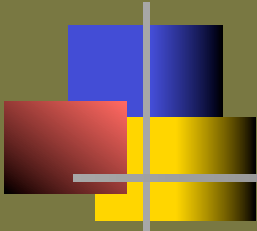
# The developer

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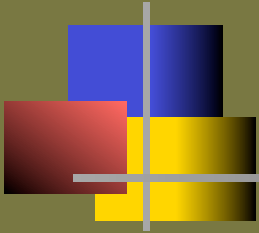
**Super Saiyan**

**A. Uchiyama**

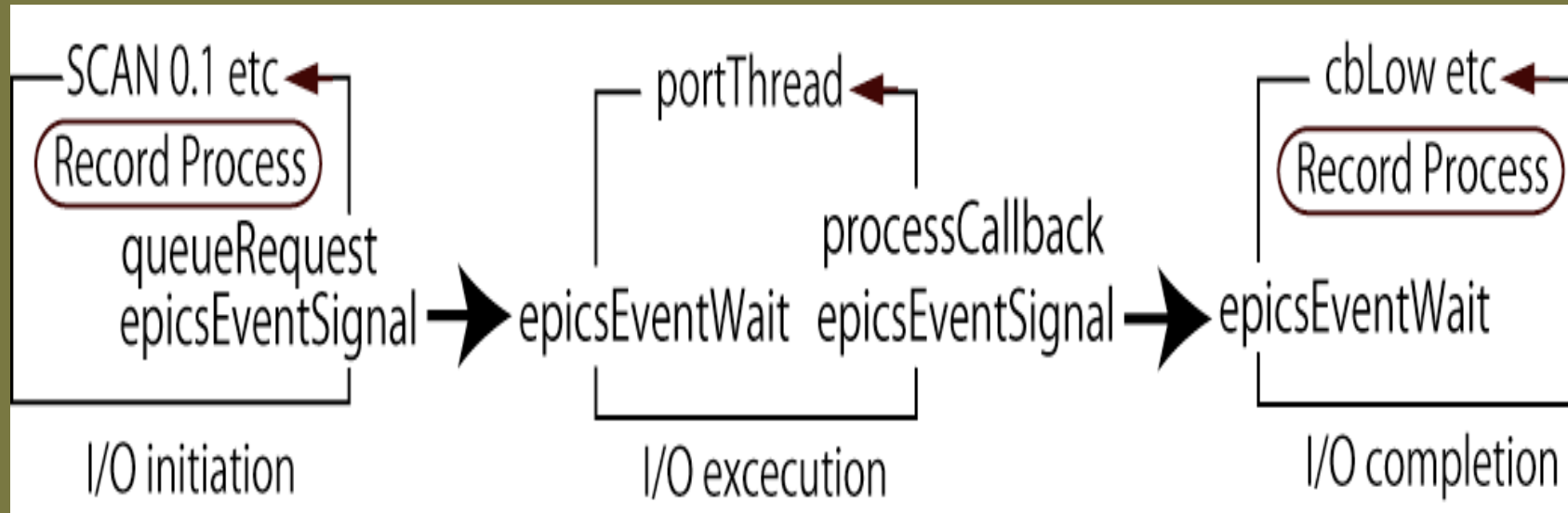


# 中央線 demonstration



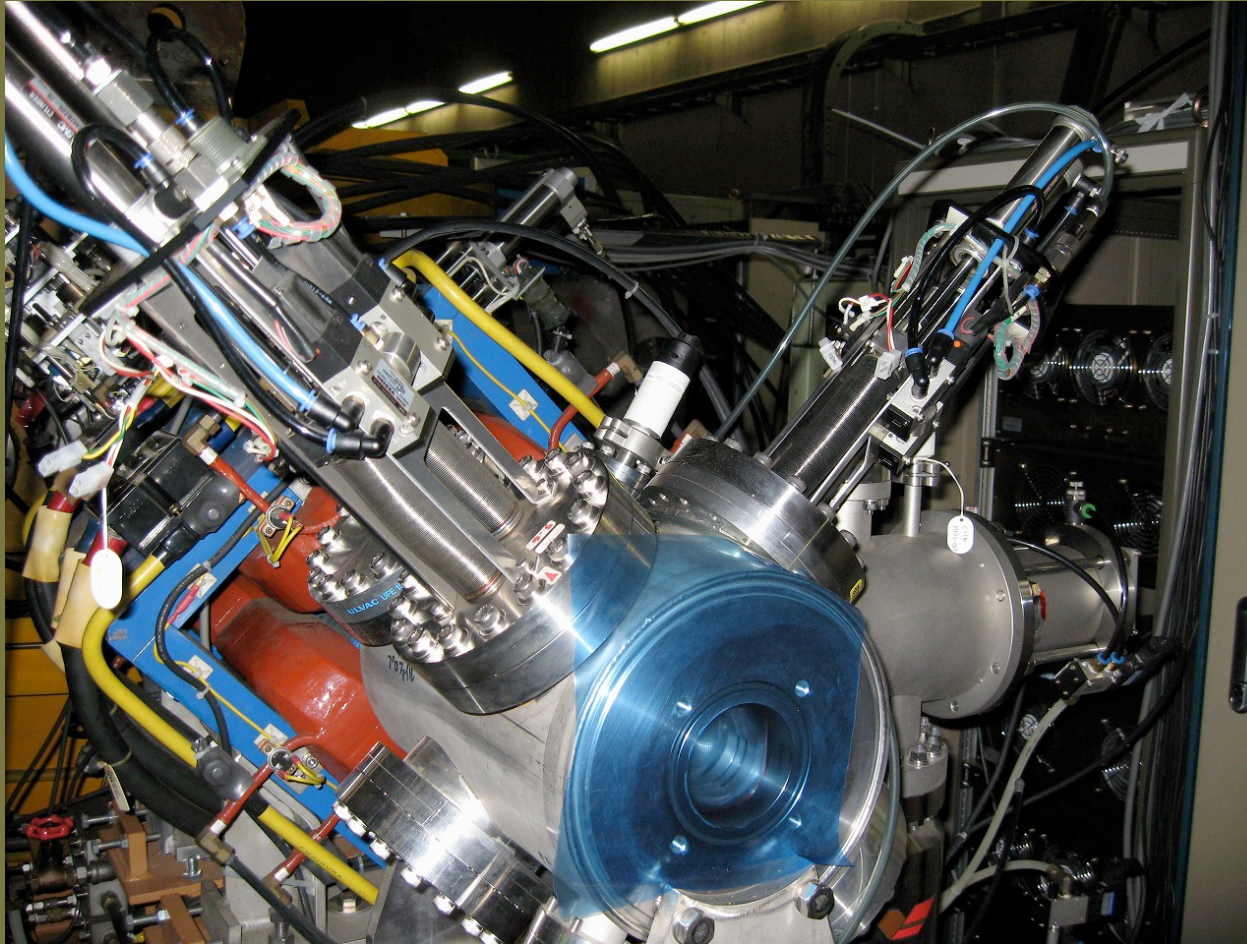


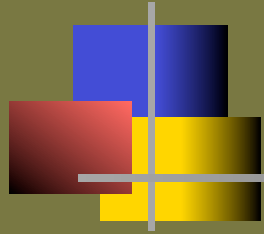
# To be more precisely





# Application in RIKEN





# My question

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- **Why don't you place an F3RP61 where the signal comes in?**
- **Let CA take care of communication over the network**
- **It's much easier to develop and maintain**

# 新的方式完全解决了这些问题！

