Status and Plans for InCA

S. Deghaye

IEFC Workshop 2010

Agenda

- What is InCA?
- What happened in 2009?
  - MDs' results
  - Deployment in LEIR
- What will happen in 2010?
  - PS deployment: Setup & planning
  - Preparation (MD, OP applications)
  - Support Organisation
  - Advantages (e.g. increase number of contexts)

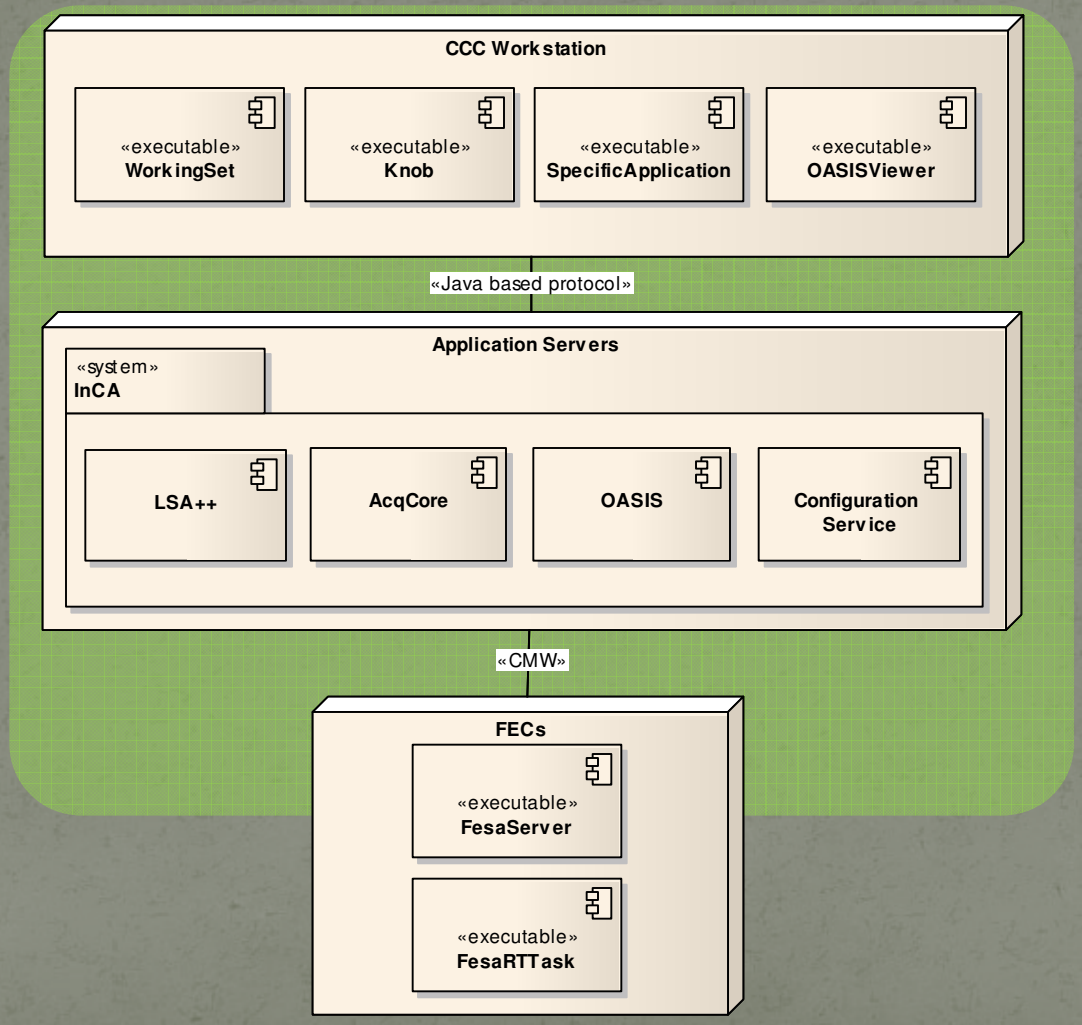
Agenda

- What is InCA?
- What happened in 2009?
  - MDs' results
  - Deployment in LEIR
- What will happen in 2010?
  - PS deployment: Setup & planning
  - Preparation (MD, OP applications)
  - Support Organisation
  - Advantages (e.g. increase number of contexts)

What is InCA?

- InCA: Injector Controls Architecture
- Presented in details at the *ATC/ABOC Days'08*
- Renovation of the high-level controls aiming at:
  - Reduce effort duplication
  - Reduce maintenance cost (XMotif)
  - Improve control system performance

What is InCA?


CCC Workstation
«executable»
WorkingSet
«executable»
Knob
«executable»
SpecificApplication
«executable»
OASISViewer
«Java based protocol»
Application Servers
«system»
InCA
LSA++
AcqCore
OASIS
Configuration
Service
«CMW»
FECs
«executable»
FesaServer
«executable»
FesaRTTask

Agenda

- What is InCA?
- What happened in 2009?
  - MDs' results
  - Deployment in LEIR
- What will happen in 2010?
  - PS deployment: Setup & planning
  - Preparation (MD, OP applications)
  - Support Organisation
  - Advantages (e.g. increase number of contexts)

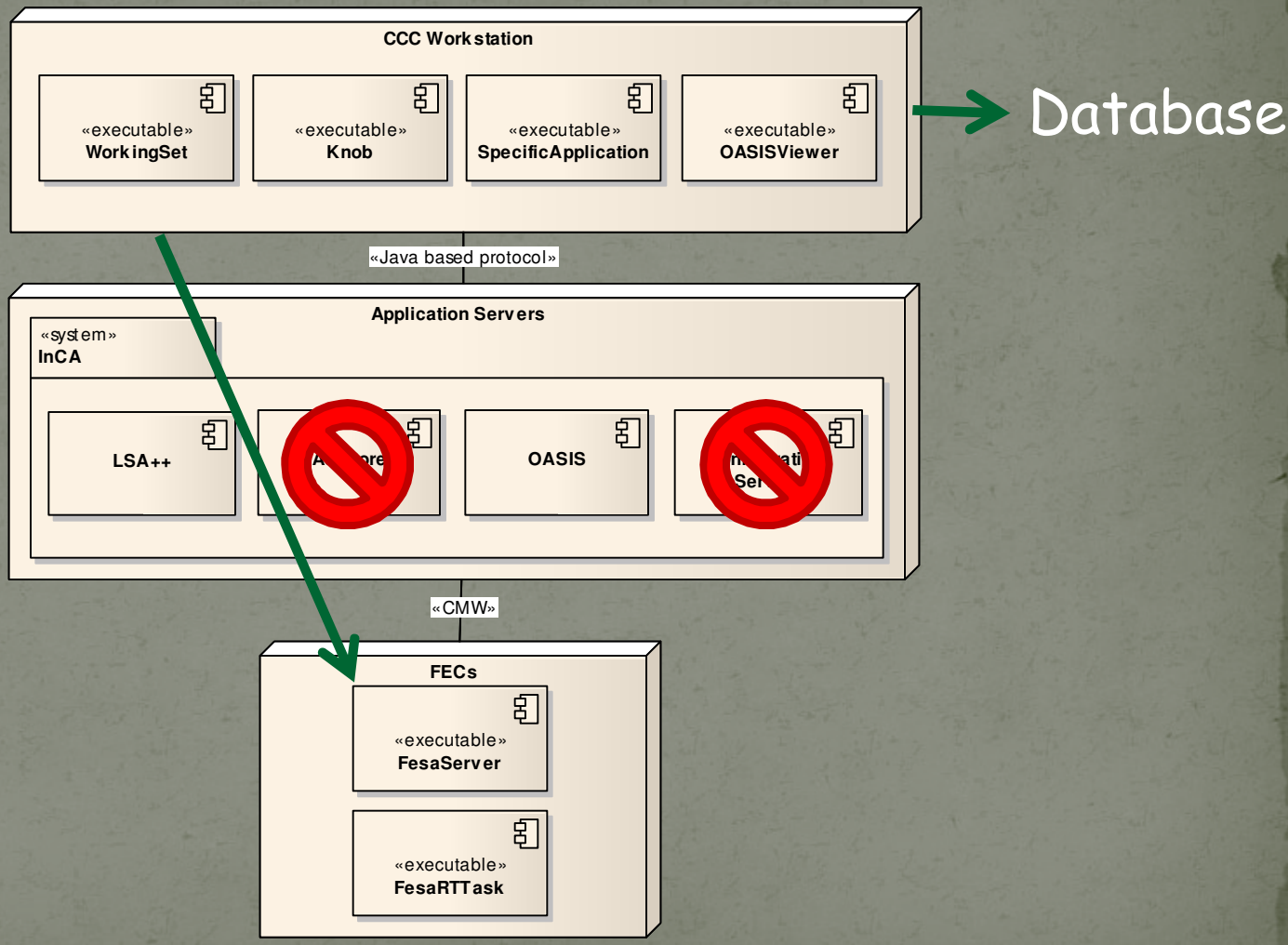
MDs' results

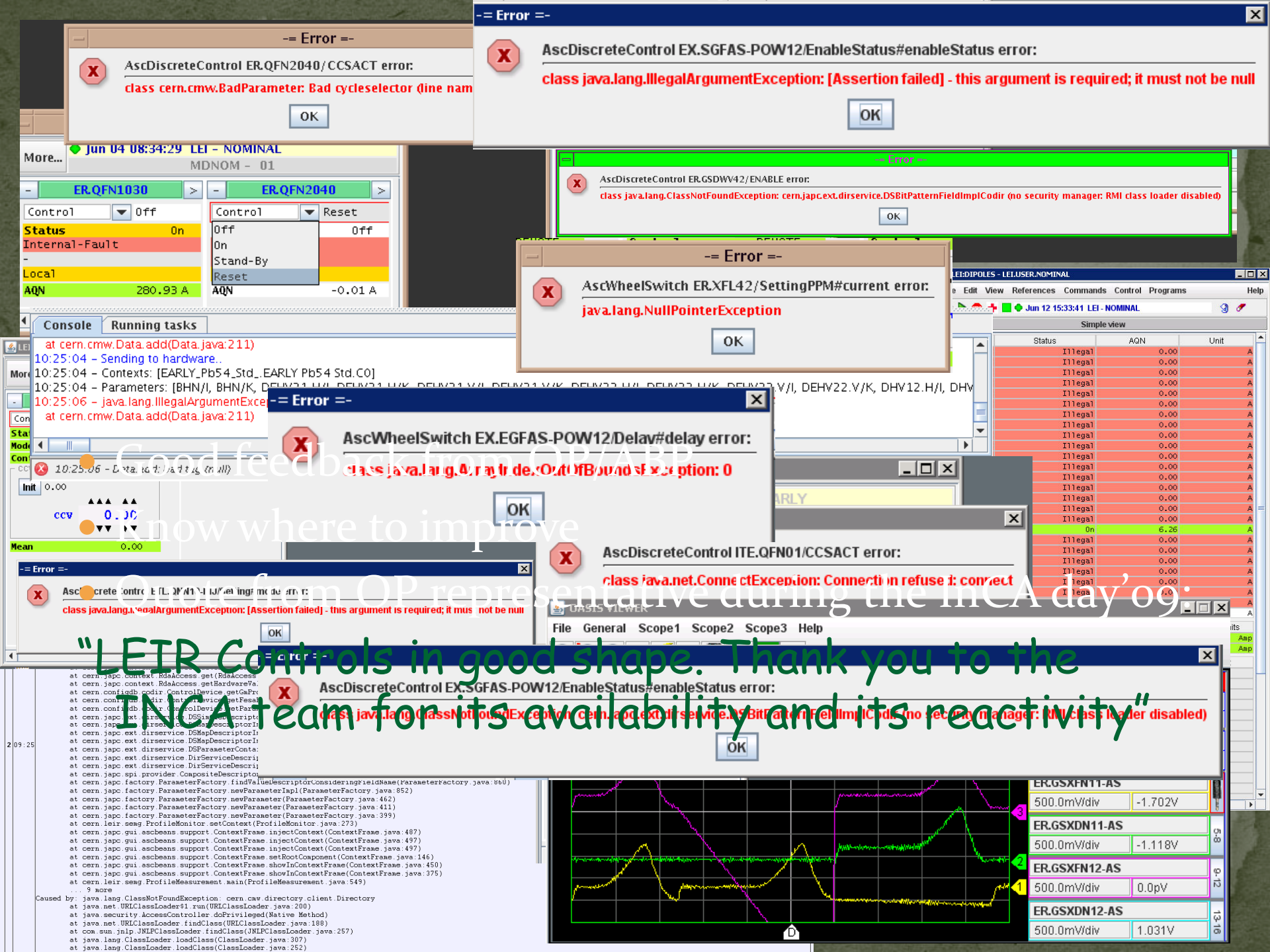
- Original planning approach with regular MD sessions
- 2009 InCA MD Program:
  - 2-day MD after Easter,
  - Many parasitic MDs for the beam steering (YASP),
  - Few smaller MDs during parallel MD sessions (6 hours).
- Very fruitful → We want more!!
  - Feedback on performance & scalability → bottlenecks found & removed
  - User feedback on new tools (FunctionEditor)
  - Main corrections on the PS validated → YASP@PS ready!
  - Need for an InCA test stand identified (2000 devices avail.)

Deployment in LEIR – Why?

- OP/ABP point of view:
  - LEIR control system was hybrid → more difficult to operate (e.g. Archive incomplete & not coherent)
  - InCA could bring a homogenous view of the machine
  - Favourite operational tools would remain unchanged
  - Old XMotif generic tools would be replaced
- CO point of view:
  - Opportunity to have a first partial deployment
  - Proof of concept on a longer period
  - Gather experience

Deployment in LEIR – What?





Good feedback from OP/ABP

now where to improve

Quote from OP representative during the InCA day '09:

"LEIR Controls in good shape. Thank you to the INCA team for its availability and its reactivity"

Agenda

- What is InCA?
- What happened in 2009?
  - MDs' results
  - Deployment in LEIR
- What will happen in 2010?
  - PS deployment
    - Setup & planning
    - Preparation (MD, OP applications)
    - Support Organisation
    - Advantages (e.g. increase number of contexts)

PS deployment: Setup & Planning

- Same setup as in LEIR + YASP for beam steering
  - Acquisitions done in 2-tier
  - Old status algorithm used on the workstation
  - Direct DB access
- Three tentative dates (LHC technical stop):
  - Week 26 (28-06-2010)
  - Week 30 (26-07-2010)
  - Week 35 (30-08-2010)
- 2-day MD (week 17) to assess the readiness and decide on the release date

PS deployment - Preparation

- Before the MD in April:
  - DB preparation (cycles, parameters) - 90% to be done
  - Solution for XMotif applications in place
  - InCAification of the Java applications - 80% to be done
- Before the release date:
  - OP Training to the new concepts (YASP, resident cycles, Settings DB…)
  - Support team operational
  - Expert/OP training in InCA troubleshooting
  - InCAified environment i.e. InCA applications in CCM…
  - Monitoring infrastructure (DIAMON)

PS deployment - Support

- Very important topic.
- 3-step response:
  - Troubleshooting guide for OP
  - Expert support team reachable 24/7 on a fix phone no
  - Fall-back solution ready in case of big troubles
- Presence in the CCC during working hours for the 1st weeks

PS deployment - Advantages

- Immediately:
  - Quite transparent as seen in LEIR
  - Settings history
  - Much faster archiving
  - YASP for beam steering + optics for other applications
  - New FunctionEditor
  - More contexts than users
- Later:
  - Less load on the FECs, the CCC workstations and the DB
  - Quicker start-up for popular working sets
  - Virtual parameters in control & acquisition
  - …

Limitation of the number of users

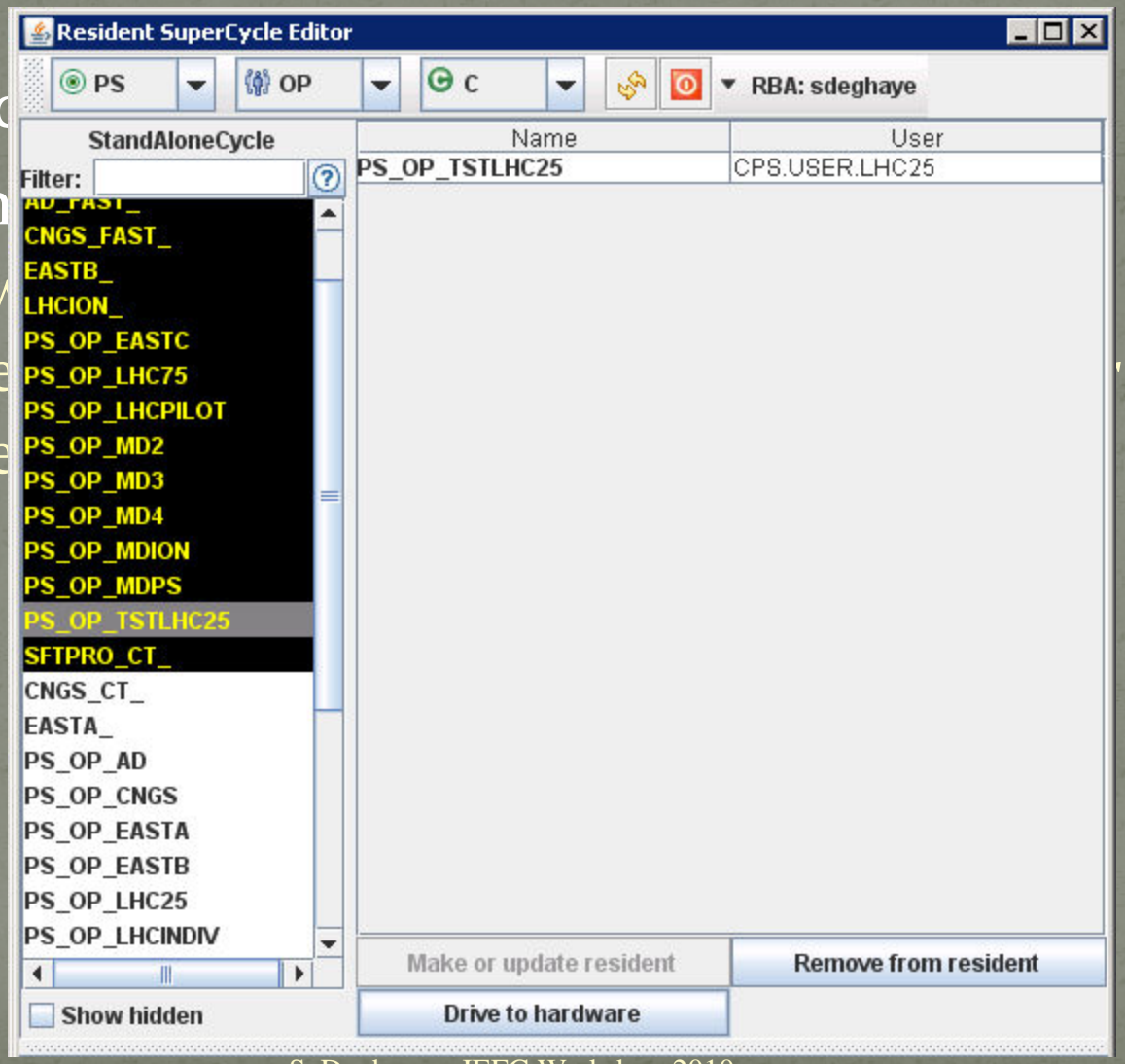
- Limited number of users – 24 in the PS Complex
- More is needed as more beams are produced on a regular basis
- At a given moment, there are never 24 users programmed in the central timing sequences
- Two solutions:
  - Increase the number of users in the FECs
    - ➔Not realistic in the short term.
  - InCA solution
    - ➔ Available in the PS in 2010, in the PSB in 2011

Solution at low-level – Why not?

- Some pieces of hardware have the 24 in hard
  - Need to renovate the installations → need a long shutdown.
- GM classes: Difficult to asses how tight to 24 they are
  - Effort with little future as GM is replaced by FESA
- XMotif applications: how many times 24 has been hard-coded?
  - Effort with little future as XMotif is replaced by Java
- For both cases, tricky to find all the occurrences → High risk of failure (always at the wrong time)

InCA Solution

- Introduc
- The Con
  - are alv
  - can be
  - can be



Conclusions

- 2009 = Very good year for InCA:
  - Fruitful MDs
  - Successful deployment in LEIR
- 2010 = Challenging year for InCA:
  - Decisive MD in April
  - First PS deployment in June (or July/August)

Questions ?!?

Thank you for your attention!