

IV JCOP Summary

F. Varela

on behalf of the JCOP Coordination Board

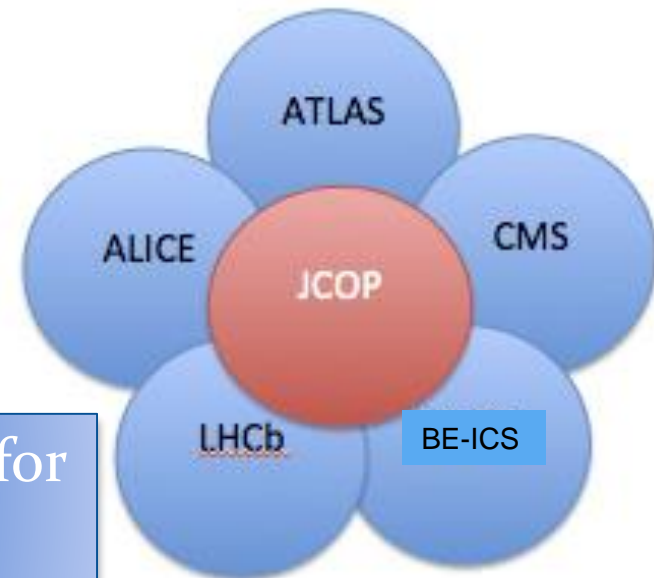
II DAQ@LHC Workshop – Chateau de Bossey

14th April 2016

Joint Controls Project (JCOP)

The DCS of the four LHC Experiments is done in common in the frame of the JCOP

- Started in 1998
- Collaboration between the Experiments and BE-ICS (formerly IT-CO, later EN-ICE and now BE-ICS)
- Major subprojects:
 - PVSS/WinCC OA Framework
 - Experiments' Gas Control Systems
 - Detector Safety Systems



Coordinates all the work done by BE-ICS for the LHC Experiments

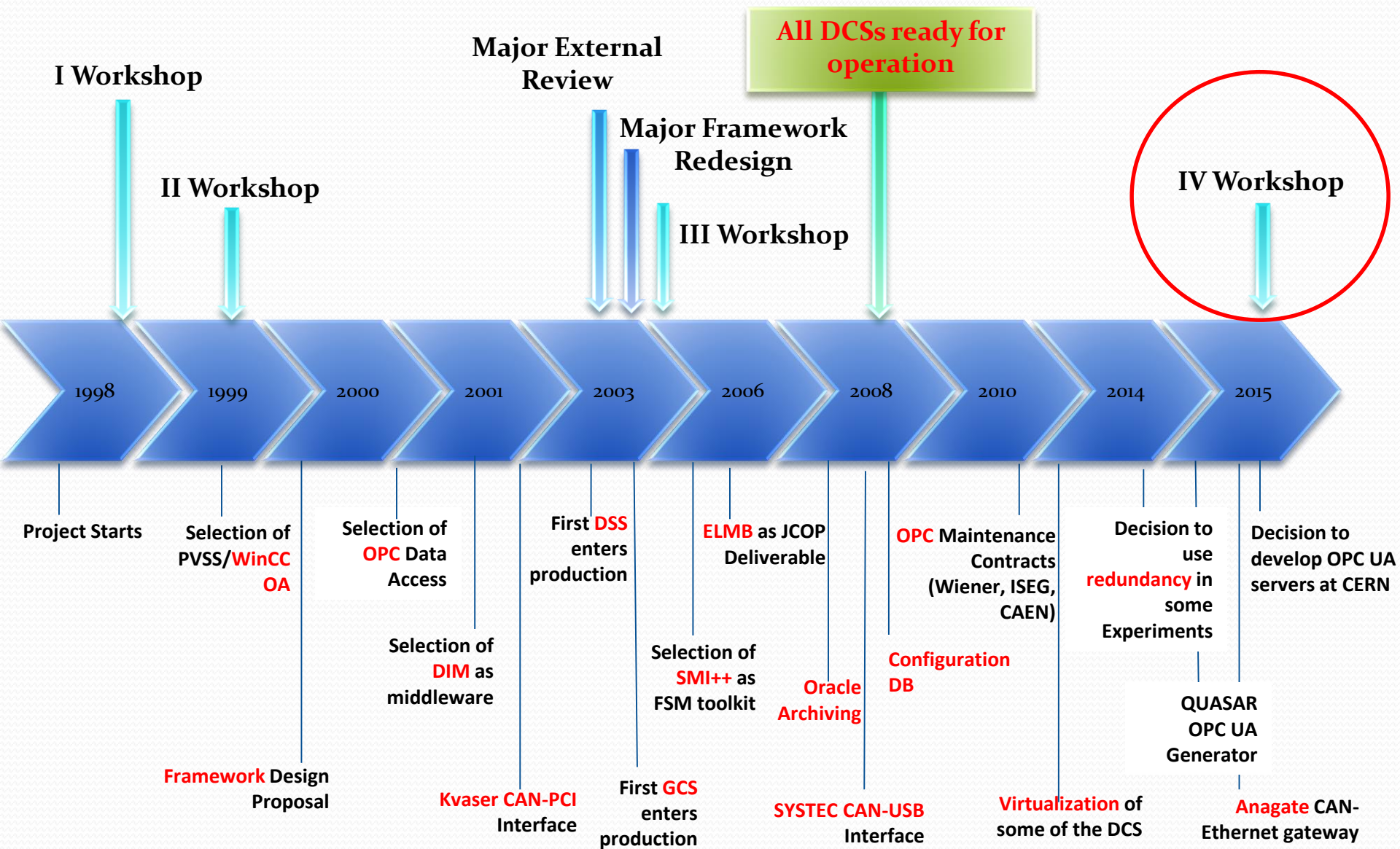
JCOP Achievements

Design, development, implementation of the controls systems in common, which led to:

- Large coherence of the DCSs within and across the Experiments
 - Despite of the large:
 - heterogeneity in the community of developers
 - turn-over of people
- Ease of maintenance
 - Extremely important due to the lack of resources in the experiments
 - Main motivation of the developers typically is not controls
 - Strong dependency on EN-ICE
- Saving of manpower, money and time

The best evidence of the success of JCOP is the low profile of the DCS in the Experiments!!

JCOP Highlights



4-5 November 2015

Château de Bossey (Switzerland, 20 km from CERN)

Europe/Zurich timezone

Search

Overview

Draft timetable

Registration

How to get to the Château
- Transport

Accommodation

Practical information

Support

✉ [en-dep.workshops@cer...](mailto:en-dep.workshops@cern.ch)

The aim of this workshop is define the mid and long term plans for *The Joint Controls Project (JCOP)* in view of the LS2 and LS3 upgrades.

Topics that will be covered include:

- Operational experience
- Upgrade plans
- Front-end and middleware solutions
- Supervision
- Data-driven configuration
- Data-analytics

Organising Committee:

- Andre Augustinus (ALICE)
- Clara Gaspar (LHCb)
- Philippe Gayet (EN-ICE)
- Frank Glege (CMS)
- Manuel Gonzalez Berges (EN-ICE)
- Stefan Schlenker (ATLAS)
- Fernando Varela (EN-ICE), Chairman

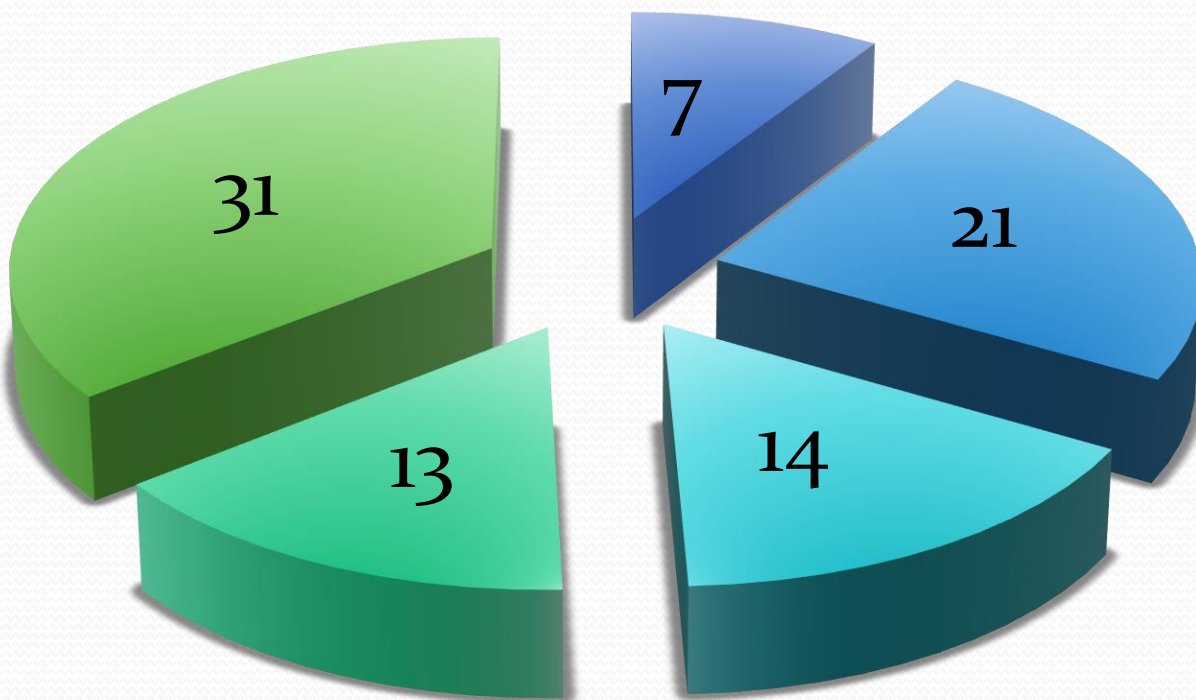
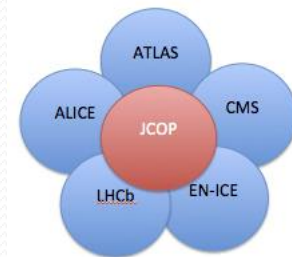


Château de Bossey (maps and directions)

Define the mid/long term plan for JCOP in view of the LS2 and LS3 upgrades

Participation

87 Participants in Total -> Certainly exceeded our best expectations



■ ALICE

■ ATLAS

■ CMS

■ LHCb

■ EN-ICE, PH-DT, PH-ESE, BE-CO, EN-STI

Workshop Summary

- A lot of interesting talks
 - Covering a very broad spectrum of central services and support groups
 - IT, BE-CO, PH-ESE, PH-DT, EN-ICE
- Exchange with these groups will be reinforced!
- And, of course, the Experiments/Subdetectors
- Very interesting mini-workshops
 - Continuation of the discussions to be organized, e.g. Data Analytics, Alarms, etc.

Survey Post-Workshop

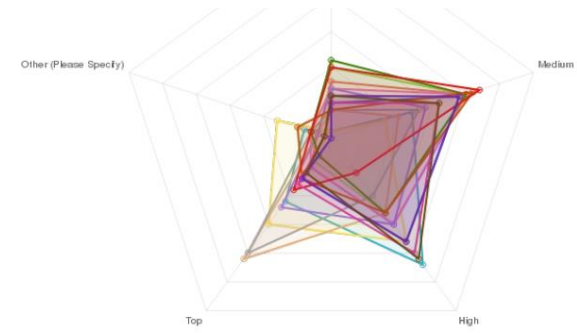
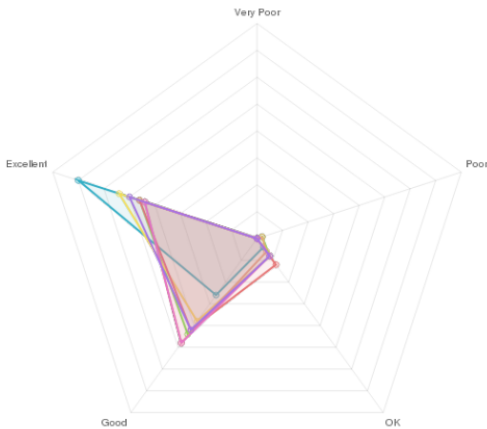
Feedback on the event + User feeling on priorities

How would you rate the following aspects of the workshop?

	Very Poor	Poor	OK	Good	Excellent	Standard Deviation	Responses	Weighted Average
Organization	0 (0%)	0 (0%)	2 (4%)	13 (26%)	35 (70%)	13.4	50	4.66 / 5
Duration of the event	0 (0%)	1 (2%)	4 (8%)	22 (44%)	23 (46%)	10.3	50	4.34 / 5
Venue	0 (0%)	0 (0%)	4 (8%)	19 (38%)	27 (54%)	11.01	50	4.46 / 5
Relevance of the session on Operation Experience	0 (0%)	1 (2%)	3 (6%)	24 (48%)	22 (44%)	10.68	50	4.34 / 5
Relevance of the talks by the central support groups	0 (0%)	0 (0%)	6 (12%)	21 (42%)	23 (46%)	10.06	50	4.34 / 5
Relevance of the talks by the Experiments	0 (0%)	0 (0%)	4 (8%)	24 (48%)	22 (44%)	10.73	50	4.36 / 5
Relevance of the mini-workshops	0 (0%)	0 (0%)	4 (8%)	21 (42%)	25 (50%)	10.79	50	4.42 / 5
								4.42 / 5

Please, define your priority for the following points to be addressed by JCOP in the short/mid term

	Low	Medium	High	Top	Other (Please Specify)	Standard Deviation	Responses	Weighted Average
Alarms (including alarm hierarchies and alarm screen)	1 (2%)	12 (24%)	22 (44%)	11 (22%)	4 (8%)	7.29	50	2.93 / 4
Web access	10 (20%)	20 (40%)	13 (26%)	4 (8%)	3 (6%)	6.23	50	2.23 / 4
FSM Improvements	1 (2%)	8 (16%)	18 (36%)	15 (30%)	8 (16%)	5.97	50	3.12 / 4
Framework documentation in general	4 (8%)	10 (20%)	13 (26%)	21 (42%)	2 (4%)	6.78	50	3.06 / 4
WinCC OA run-time performance	8 (16%)	20 (40%)	15 (30%)	5 (10%)	2 (4%)	6.6	50	2.35 / 4
WinCC OA performance in large distributed systems	7 (14%)	20 (40%)	15 (30%)	5 (10%)	3 (6%)	6.45	50	2.38 / 4
Improvements to the development tools (e.g. Eclipse-based CTRL editor)	7 (14%)	14 (28%)	15 (30%)	12 (24%)	2 (4%)	4.86	50	2.67 / 4
Improvements to the WinCC OA debugger	4 (8%)	13 (26%)	10 (20%)	20 (40%)	3 (6%)	6.23	50	2.98 / 4
Quality Assurance	5 (10%)	19 (38%)	18 (36%)	7 (14%)	1 (2%)	7.21	50	2.55 / 4



- Organization
- Duration of the event
- Venue
- Relevance of the session on Operation Experience
- Relevance of the talks by the central support groups
- Relevance of the talks by the Experiments
- Relevance of the mini-workshops

- Alarms (including alarm hierarchies and alarm screen)
- Web access
- FSM Improvements
- Framework documentation in general
- WinCC OA run-time performance
- WinCC OA performance in large distributed systems
- Improvements to the development tools (e.g. Eclipse-based CTRL editor)
- Improvements to the WinCC OA debugger
- Quality Assurance
- Improvements to Redundancy
- Visualization tools (e.g. ATLAS DDD)
- Integration of Analysis tool (e.g. ROOT)
- Monitoring and diagnostics tools for DIP (e.g. to show the status of the publications or the DNS activity)
- DIP repository (offering a clear view of the publications exchanged between servers and clients)
- Review the Framework with the aim of removing unnecessary functionality and simplify maintenance

JCOP Roadmap (1/2)

Workshop feedback included in Plan of Work

- Ongoing
 - Migration to WinCC OA v3.14 during Christmas shutdown 2016
 - In-house development of new OPC Unified Architecture Servers in collaboration with the companies
 - Improve the situation with DIP
 - Workflows to establish contracts between clients and servers
 - Tools to monitor the quality of the set of publications agreed
- Medium-term
 - Web Access
 - Enhancements to JCOP tools
 - Various Working groups spawned: FSM, DIP, Framework Doc, Alarms, Development tools, Repository for non-JCOP components (subdetector developments)
 - New Developments
 - xTCA interface, OPC UA servers for GBT-SCA, ELMB++

Target: LS2 Upgrades

JCOP Roadmap (2/2)

- Longer-term
 - Data Analytics for Controls
 - See next Presentation
 - Data driven configuration of the DCS
 - Ethernet-based fieldbuses
 - Web/Mobile access
 - Integration of Analysis tools in WinCC OA (?)
 - ...

Conclusions

- Very fruitful event...that we will definitively repeat
 - Very good participation
 - Real workshop and not a conference-like event
 - A unique opportunity for subdetector users to raise their voice
- Better understanding now of
 - The DCS plans and the needs from JCOP
 - The user concerns w.r.t. the JCOP tools
 - The user expectations for the things to come in the mid/long run
- Very positive feedback from the user community