



AT Equ. Groups / AB-CO Control responsibility Sharing



AT-Control Forum

- ◆ **Early 2007 the AT Control forum has been created as an alter Ego of the CO³ to cover the following topics :**
 - ◆ **Identify current and future activities in the AT Department which will involve significant controls effort in AB-CO.**
 - ◆ **Identify resource both in AT groups & AB-CO for new projects including controls.**
 - ◆ PS renovation, SM18 evolution
 - ◆ **Coordinate the controls part of these activities to maximize effectiveness and avoid conflicts due to deployment of new hardware, software or tools.**
 - ◆ Conflict hardware commissioning /usual shutdown activities
 - ◆ **Promote the control solutions developed by AB-CO for the AT activities to avoid the multiplication of concurrent solutions and development efforts.**
 - ◆ LSA, FESA, UNICOS,...
 - ◆ PLC, VME, Industrial PC,...
 - ◆ **Identify new control requirements relatives to specific AT activities.**
 - ◆ **Identify the major priorities in the services requested from the CO group, and verify that CO can deliver what is required.**
- ◆ **Members: AB-CO, MEL, MTM, MAS,ACR, ECR, VAC.**



Outcome of AT-CF

- ◆ After few meetings it appears that unlike The CO³ the control needs for AB Equ. Groups were completely inhomogeneous in term of technology, planning & AB-CO implication.
 - ◆ We did not organize more plenary meetings which would have been a waste of time.
 - ◆ De facto replaced by existing bilateral discussions at Project level with frequency and subjects adapted to the needs.



Limit of the presentation

- ◆ **At the END of 2007 AT has been restructured.**
- ◆ **A control Review is under way with an outcome foreseen for April**
- ◆ **I 'll present the end of 2007 snapshot of the responsibility sharing with the open issues that have to be reassessed.**



MEL > MEI

- ◆ **No control section, expertise for FIP agent**
- ◆ **Ongoing control projects**
 - ◆ **Quench Protection System Project (Deployment, maintenance)**
 - ◆ Coordinator (AB-CO)
 - ◆ Specifications (MEL)
 - ◆ FESA application in Gateway (IS)
 - ◆ FIP networks and FEC installation & maintenance (FE)
 - ◆ PVSS UNICOS support (IS)
 - ◆ DB support (DM)
 - ◆ FIP agent development (MEL)
 - ◆ **Hardware Commissioning Post mortem**
 - ◆ coordination AB-CO (MI)
 - ◆ Specification (MEL)
 - ◆ Development and maintenance (MA,IN,AP)
- ◆ **Future projects involving control**
 - ◆ **FIP Agent evolution after in sourcing in 2009 (FE, HT, MEL)**
- ◆ **No open issue**



MTM > MEI

- ◆ **no control section, 1 PLC expert**
- ◆ **Ongoing projects**
 - ◆ **SM 18 Test bench (maintenance) & Bloc 4 (maintenance)**
 - ◆ specification (MTM)
 - ◆ PLC support not UNICOS (IS, MTM at bloc 4)
 - ◆ PCVUE support (IS+ One staff from AB-OP at SM18)
 - ◆ DB support (DM)
 - ◆ Fast acquisition labview (MA)
 - ◆ Magnetic and electric measurements labview (MA)
- ◆ **Future projects**
 - ◆ **Bloc 4 move in SM18 or renovation 2008/2009 (to be decided by AT management)**
 - ◆ PLC+SCADA evolution to UNICOS standard (IS, MTM)
 - ◆ Magnetic and electric measurements labview (MA)
 - ◆ Renovation Fast acquisition labview (MA)
 - ◆ **SM18 MAR Magnet Rescue Factory**
 - ◆ Magnetic electric and miscellaneous measurements labview (MA)
 - ◆ DB storage in MTF (DM)
 - ◆ PLC magnet interlock (IS or MI)
 - ◆ **Renovation of B Train in PS complex**
 - ◆ standard CO solutions (CO)
- ◆ **Open Issue :**
 - ◆ **New PXI instrumentation board have been introduced recently with a dedicated framework developed by an external partner for AB-CO this is a development platform and cannot be supported in the present form.**
 - ◆ **Planning**



MAS > MCS

- ◆ **No control section**
- ◆ **On going projects**
 - ◆ **Bloc 163 supra wires test bench (maintenance) (IS + MA)**
 - ◆ Specification (MCS)
 - ◆ PLC not unicos (IS)
 - ◆ PCVUE (IS)
 - ◆ Fast acquisition labview (MA)
 - ◆ **Geometric measurement on production sites and SMA18**
 - ◆ Specification (MCS)
 - ◆ Measurement system in labview (MA)
- ◆ **New projects**
 - ◆ **163 future to be defined**
 - ◆ **Geometric measurement system evolution for Magnet Rescue Factory (MAR)**
 - ◆ Specification (MCS)
 - ◆ Measurement system in labview (MA)
- ◆ **Open Issue :**
 - ◆ **Control for press, oven and collaring machine to be reinstalled at CERN: These systems are dedicated and stand alone therefore AB-CO propose to MSC to outsource the development and the support to the equipment suppliers or a specialized company.**
 - ◆ **Planning**



ACR (1) Refrigerators Control > CRG

- ◆ **No Control section , instrumentation is Under ACR responsibility**
- ◆ **Ongoing projects**
 - ◆ **Refrigerator controls**
 - ◆ Project coordination (CO)
 - ◆ Specifications (ACR)
 - ◆ PLC UNICOS HW + SW (IS)
 - ◆ PVSS UNICOS HW+ SW (IS,IN)
 - ◆ Safety PLC not UNICOS (ACR)
 - ◆ Profibus Network (ACR)
- ◆ **New projects using UNICOS**
 - ◆ Cryogenics for NEW SM18 (IS, CRG)
 - ◆ Cryogenic upgrade for LHC (2012)



ACR (2) Sector Control > CRG

- ◆ **Existing Control & Instrumentation section (ACR-IN) (1PLC expert, FIP agent expert, polish team for HC)**
- ◆ **Ongoing projects**
 - ◆ **LHC Sector controls & RF cavities cryogenic process**
 - ◆ Project coordination (CO,ACR)
 - ◆ PLC Specification (ACR)
 - ◆ PLC UNICOS TOOLS (IS)
 - ◆ Logic implementation (ACR-IN polish team)
 - ◆ PVSS UNICOS framework + server configuration (IS)
 - ◆ Panel design (ACR-IN polish team)
 - ◆ Profibus network & cryogenic instrumentation (ACR)
 - ◆ **LHC Sector controls & RF cavities Cryogenic Instrument Expert Tool (CIET)**
 - ◆ Project coordination (CO)
 - ◆ CIET specification (ACR)
 - ◆ FESA application in Gateway (IS)
 - ◆ PVSS UNICOS framework & widgets for CIET (IS)
 - ◆ FEC hardware , FIP network (FE)
 - ◆ FIP agent (ACR IN)
 - ◆ **Hardware commissioning Post mortem**
 - ◆ specification (ACR)
 - ◆ PM application (MA)
- ◆ **Future projects**
 - ◆ **Cryogenic upgrade for LHC (2012)**
 - ◆ **FIP Agent evolution after in sourcing (FE, HT, ACR)**



ECR > CRG

- ◆ Existing control section 3 PLC expert , 1 supervision, temporary resources (Fell, PJAS...)
- ◆ Ongoing projects
 - ◆ LHC Experience Refrigerator and proximity cryogenics , NA 48/62 Control
 - ◆ Project coordination (ECR)
 - ◆ PLC Specification (ECR)
 - ◆ PLC hardware (ECR)
 - ◆ PLC UNICOS TOOLS (IS)
 - ◆ PLC Unicos Logic implementation (ECR)
 - ◆ PVSS UNICOS framework + server configuration (IS)
 - ◆ Panel design (ECR)
 - ◆ Profibus network & cryogenic instrumentation (ECR)
 - ◆ Mobile test benches at Cryolab
 - ◆ PLC Specification (ECR)
 - ◆ Measurements systems (MA)
- ◆ New project
 - ◆ NA + central Liquefier + WA renovation (ECR)



CRG

◆ Open Issue :

- ◆ The group has been restructured for a short time and we keep the status-quo till mid 2008.
- ◆ Then we will have to reassess the responsibilities to improve the efficiency and to face the departure of temporary resources
- ◆ A new PM responsible should be nominated



VAC

- ◆ **Existing control section**
 - ◆ 2/3 PLC experts, Russian collaboration for supervision
- ◆ **Ongoing projects**
 - ◆ **LHC/SPS/LEIR CONTROL**
 - ◆ Configuration database (VAC)
 - ◆ Specification (VAC)
 - ◆ PLC development (VAC)
 - ◆ PVSS dedicated user interface (VAC with Russian team)
 - ◆ Client of classical AB support
 - ◆ Present Vacuum Control for PS uses DCS (FE)
 - ◆ Logging (DM), Laser (AP), Diamon (IN)
 - ◆ PLC support GUAPI type (IS)
 - ◆ PVSS UNICOS framework (IS)
 - ◆ HP Proliant (IN)
- ◆ **Future project :**
 - ◆ **PS renovation using LHC/SPS solutions and responsibility sharing**
 - ◆ Planned for 2008/2009 (already started for Linac 2&3)
 - ◆ Same type of support requested
- ◆ **Open issue :**
 - ◆ **AT-VAC should be integrated to CO3 for all matters related to PS renovation (planning, budget,...)**



CO general support

- ◆ In addition the following services given to the AB group are available and Used by AT groups without specific additional requirements:
 - ◆ Logging (DM),
 - ◆ LASER (AP),
 - ◆ DIAMON (IN)
 - ◆ PLC support GUAPI type (IS)
 - ◆ PVSS UNICOS framework (IS)
 - ◆ FESA (FE)
 - ◆ HP Proliant, Operator consoles (IN)



Conclusions

- ◆ Responsibility sharing between AB-CO and AT are inhomogeneous and depend of projects history.
 - ◆ Coordination has been done at the project level.
 - ◆ A coordination body on the model of CO3 is not useful.
- ◆ Nevertheless CO must have the knowledge of allongoing and future projects to avoid technical and HR decisions that can affect the present and the future AT projects.
 - ◆ A CO representative from the IS or MA section (the most involved in AT activities) or the GL in MARIC could be a strategy.
- ◆ The projects related to LHC (QPS, CRYO, VAC) are in good shape, but due to Permanent or Temporary staff departure and the possible control restructuring we will have to reassess the responsibility sharing mid 2008.
- ◆ VAC has to be associated to CO3 for the PS renovation matters.
- ◆ The Future control & Acquisition system project for SM18 need to be defined by a joint working groups Involving CO, CGR, MEI.