Controls' Aspects for LHC Hardware Commissioning:

CRYO

Minutes of Meeting on 15 Aug. 2003
(& various subsequent discussions)
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General Considerations

- A prerequisite for the commissioning of the CRYO HW is that the CRYO production and distribution must be available up to and including the QRL.
- Safety-PLC: are responsible for the refrigerator's safety and installed in power racks of the refrigerator by company that supplies the refrigerator.
- Approx. 40000 I/O in total, of which a large number will be logged

Where

- Unit commissioning:
  - o Underground (8-7): US85, UJ84, RE82, UJ76, RE78,
  - o Underground (2-3): US25, UJ26, UJ32, RE28, RE32
  - o Surface Pt 8: SHM8, SH8, SD8, SDH8
  - o Surface Pt 2: SH2, SD2
  - o VDSL must be available at Underground locations (Action: IT/CS)
- Local control room must be equipped for the HW commissioning: Oct 2003 (Action: CO/IS)
- Commissioning of CRYO system must include operation from BCR: 30 Apr 2005
- L.Serio requested the possibility to monitor the CRYO from the office; control actions however should be restricted to the control rooms (QCR or BCR).

Major milestones:

- Request for cabling in tunnel for Sectors 7-8, and 2-3: was done (P.Gomes)
- Define PLC architecture (e.g. type of PLC, Premium, Quantum): 31 March 2004 (Action: CO/IS)
  - o The decision to install or not PLC in the alcoves must be taken now, (RADWG)
- EtherFIP must be operational by 1 Sept 2004 (Not to forget: powering of Gateway racks) (Action: CO/IN)
- Upgrade of supervision applications
  - o for CRYO production in view of HW commissioning: 31 Jan 2004 (Action: CO/IS)
  - o integration of new Schneider platforms: deployment for Pt. 8 & 2 from 1 Jan 2004, and ready for 7-8 & 2-3: 30 Sept 2004 (Action: CO/IS)
- Time synchronisation (NTP) of PLC: 1 July 2004 (Action: CO/IS)
- Automated configuration of Gateways and PLC: 1 Sept 2004 (Action: CO/DM & CO/IS)
- Organise MP5 support for CO group: 1 July 2003 (Action: R.Lauckner)
- Remote reboot of PLC in Pt 2 & 8 from Local Control Room: 1 Sept 2004 (Action: AB/IN)
- Compatibility of PVSS with console managers: 15 Dec 2003 (Action: CO/IS & CO/AP)
- Test Alarm interface to PVSS: 1 Sept 2004 (Action: AB/IS)

- Define the implementation of CRYO into GTPM ("pannes majeures"): 30 Jun 2004 (Action: AB/AP, AB/IS, ST/MA)
- Support for PVSS workstation & Data Servers in PCR & QCR: from 1 July 2003 (Action: CO/IN)
- Monitoring of entire control chain (PLC, network, servers, …) from PCR, BCR: 1 Sept 2004 (Action: CO/IN)
- Generation of PLC tables and programs and supervision database from the ORACLE: 1 Sept. 2004 (Action: CO/IS)
- First line support for PLC, SCADA, FIP, …: Jan 2005 (Action: CO/IN)
- Decide on a solution for power converters Feed forward control: 31 July 2004 (Action: CO/IS)
- Local control room equipped: 1 Oct 2003 (Action: CO/IS).

Miscellaneous

- UPS: needed to ensure monitoring the temperature in case of power fail; UPS takes over during 10 mins, next, diesel takes over.

Appendix

Summary of Milestones in chronological sequence

	Milestones for CRYO Commissioning		
	What	**WHO**	**WHEN**
1	Request for cabling in tunnel for Sectors 7-8, and 2-3	P.Gomes	O.K.
2	Organise MP5 support for CO group	R.Lauckner	01/07/2003
3	Support for PVSS workstation & Data Servers in PCR & QCR: start	CO/IN	
4	Decide to install or not PLC in the alcoves (in viewof PLC architecture)	RADWG	01/09/2003
5	Local control room equipped	CO/IS	01/10/2003
6	PVSS made compatibility with console managers	CO/IS, CO/AP	15/12/2003
7	Upgrade supervision applications for integration of new Schneider platforms: start		01/01/2004
8	Upgrade supervision applications for CRYO production in view of HW commissioning	CO/IS	31/01/2004
9	Define PLC architecture (e.g. type of PLC, Premium, Quantum):	CO/IS	31/03/2004
10	Define the implementation of CRYO into GTPM ("pannes majeures)	AB/AP, AB/IS, ST/MA	30/06/2004
11	Time synchronisation (NTP) of PLC available	CO/IS	01/07/2004
12	Decide on a solution for power converters Feed forward control		31/07/2004
13	EtherFIP operational	CO/IN	
14	Automated configuration of Gateways and PLC: available	CO/DM, CO/IS	
15	Remote reboot of PLC in Pt 2 & 8 from Local Control Room: available	AB/IN	
16	Test Alarm interface to PVSS	AB/IS	01/09/2004
17	Monitoring of entire control chain (PLC, network, servers, …) from PCR, BCR	CO/IN	
18	Generation of PLC tables and programs and supervision database from ORACLE	CO/IS	
19	Upgrade supervision applications for integration of new Schneider platforms: start deployment for Pt. 8 & 2	CO/IS	30/09/2004
20	First line support for PLC, SCADA, FIP, …: available	CO/IN	01/01/2005