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TS REQUIREMENTS FOR CONTROL SYSTEMS

Georges Burdet, Mario Batz, Rui Nunes, Peter Sollander, Tono Riesco

Abstract

The Technical Support Department provides and supports the operation of the technical infrastructure of CERN as well as services related to the site operation and maintenance. The operational support concerns electrical engineering, cooling, ventilation, engineering, controls and safety systems including access control, fire and gas protection. The presentation gives an overview of the TS operations and the support expected from AB/CO.

1 INTRODUCTION

For a long time now, AB/CO was giving an excellent support to hardware and software equipments related with controls handled on a best effort basis. Now is time to formalise this support and agree together in a service level that fulfil the requirements of our clients.

We would like to thanks the professionalism and the good service that TS always got from AB/CO (previously SL/CO) members.

2 DESCRIPTION OF TS SYSTEMS.

2.1 CV Applications

- **CV SCADA**
- **CV VMware**

2.2 CSE Applications

- **ZORA.** Radiation Zone. Access System for undergrounds and radioactive zones.
- **SUSI.** Surface Site. Access System for all the rest. Site, buildings, LHC points.
- **TIM.** Technical Infrastructure Monitoring. System to transmit alarms and commands from/to the Control Room to/from equipment.

2.3 EL Applications

- **MICENE.** Microprocessor Controller Electrical Network. Communication MIL1553. OS Front-end.
- **ENS.** Electrical Network Supervisor.
- **GATED.** Gateway to External Devices. Gateway between FE and ENS.

3 AB SYSTEMS WITH HARD DEPENDENCIES ON TS EQUIPMENTS.

- **LASER**
 - **ANS**
- **TIMBER**
- **XCLUC**
- **SL-EQUIP**
- **DIP Publications**

4 SUPPORT SCOPE

4.1 Hardware

- **18** Foreseen: **30** ProLiant's HP (TIM and CV SCADA).
- **60** Foreseen: **70** PC's (Access SPS Primary, SUSI, CSA, CCC, CV Consoles).
- **2** PowerPC's Servers (Access PS Primary).
- **10** Workstations (Access PS Primary).
- **6** HP's Servers (SPS North Secondary Zone, AD, PS, TIM and elsrv1).
- **10** Foreseen: **0** HP's Xterminals (Electrical Operators Interface).

- **17 VME LynxOS Front Ends Computers (CERN Front End: CFE).**

4.2 Field Bus

- **Mil1553b** to connect CFE to remaining MICENE:
 - In Meyrin sites (connected to CFE elmtcr)
 - In SPS and North Area (connected to CFE elmtcr)
 - In BE area (ellse9)
 - In LHC area (connected to ellsex where x is the LHC point number)

4.3 Software, Applications and OS.

- **SonicMQ** Used by: TIM, LASER
- **FactoryLink** Used by: SPS Primary
- **OC4J** (Oracle for Java) Used by: TIM
- **LabView** Used by: SPS Ventilation System
- **Linux RHES3** Used by: TIM
- **Linux SLC3** Used by: SPS Primary, CV SCADA Applications and General Operations.
- **HPUX** Used by: TIM, PS Primary, SPS Secondary, Applications and X servers
- **LynxOS** Used by: VME crates used as Front End computer for:
 - Local Mil1553b field buses driver for remaining MICENE
 - IED (Intelligent Electrical Equipment) scanner where EFACEC URT500 not yet installed or protocol not yet ported.
 - Runs the GATED software to interface to ENS
 - Runs Local Alarms Service to send FS to CAS (LASER)
 - MICENE log and survey processes
 - PS Primary
- **Windows XP** Used by: CCC and general operational consoles, ANS, CV SCADA interfaces.
- **PVSS UNICOS** (to be confirmed) Used by: CV Operation
- **VMWare** Used by: CV SCADA and Operation

5 SUPPORT REQUIREMENTS

5.1 Hardware

- Diagnostic and repairing.
- Hardware purchases, contract and follow-up.
- Upgrades and spare parts.

5.2 Software (OS and Applications)

- Upgrades and patches.
- Backups and recovering systems.
- Configuration and tuning.

- Security configurations. Firewalls.
- System administration. Logs, alarms etc.
- Development tools for CFE code generation
- CFE reboot (OS and applications download via bootp)
- NODAL with SL_Equip access
- SL_Equip servers with associated Name Server
- Remote Reboot facility to reboot CFE's via XCluc

5.3 Interventions

5.3.1 *Systems Requiring 24h/7d Support*

- **TIM**
- **CV SCADA** ProLiant, Applications such as VMware.
- **SUSI** (When laboratory is opened)
- **ZORA** (In beam running periods)
- **MICENE** Communication.
- **HP** Server. ENS Interfaces.

5.3.2 *Support Line:*

TS should have only one entry point for asking support (email and phone). That could be organised by TI if they have the on-call phones and persons to contact in case of problems and the support mail/phone in CERN working hours.

5.3.3 *Performances:*

- When notifying the ABCO support of a critical situation, the total time for diagnostic the problem and information to the operators **should not exceed**:
 - 2 hours maximum in CERN working hours.
- When notifying the ABCO support of a critical situation, the total time for repairing the system **should not exceed**:
 - 4 hours maximum in CERN working hours.
 - 8 hours maximum out of the CERN working hours.