

LHC-CP Controls Project Definition Workshop

*Summary of April 13th Afternoon Plenary Session
“Project Wide Issues”*

Chair : S.Myers

M.Lamont, M.Vanden Eynden on behalf of the LHC-CP Project Team

Preferred Subjects (1/2)

- What are the interfaces with other major CERN controls projects : LTI, SPS-2001, CNGS, SPS-EA, ISOLDE, ... ?
 - JCOP ?
 - String2 ? Controls Objectives ?
 - LHC LDIWG, TIMWG, CIWG ?
- Should Interlocks be part of the LHC control system ?
 - What interlocks are we talking about ?
- LHC Sector Test : How to prepare it ? What are the objectives ?
 - Who is responsible ?
 - Do we need Real Time for it ?
 - Where will the LHC software be tested ?
 - SPS-2001, LTI, String2 ?
 - TI2/8 testbed for the final system ?

Preferred Subjects (2/2)

- What are the major risks and how to manage them ?
Good and bad experiences with past control systems ?
- Databases
- Project Definition and Organization
 - How to integrate LHC division in LHC-CP ?
 - How will LHC-CP “compel” users and developers to follow the proposals ?
- What does the LHC-CP want from me ?
 - Reference magnets and multipole factory
- “Use Case” activity : How to continue ?

More Subjects ...

- Are contracts with equipment groups not more important than Middleware ?
- INB rules and reuse of controls equipment ?
- Standards Vs Flexibility ?
- Controls needed for LHC equipment installation ?
- Access to control system ? Equipment reservation ?
Trace back of actions ?
- Naming conventions
- Collaboration between groups
 - reuse of systems
 - responsibility ? Maintenance ?
- Is this workshop an annual affair ?

Top 5 Subjects Discussed (14:00-16:00)

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- LHC Sector Test : How to prepare it ? What are the objectives ?
- What are the major risks and how to manage them ?
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What are the interfaces with other major CERN controls projects : LTI, SPS-2001, CNGS, SPS-EA, ISOLDE, ... ?

- ❑ **First priority** for LHC-CP is to define the **scope** of the project, interfaces obviously exist and will be looked at ASAP
- ❑ **LHC WGs**
 - ❑ seen as very useful for studying problems and producing recommendations
 - ❑ LHC-CP seen as responsible for delivering the final system
 - ❑ Relations between these WGs and LHC-CP have to be discussed with LHC project management
- ❑ **JCOP** : not clarified at this stage

What are the interfaces with other major CERN controls projects : LTI, SPS-2001, CNGS, SPS-EA, ISOLDE, ... ?

❑ String2

- ❑ considered as a unique opportunity to **test**, to the best possible extent, several **LHC controls prototypes**
- ❑ SL/PO is considering this as **very important**
- ❑ String2 has Controls Objectives as well as Sector Test
 - **Who is responsible ?**

❑ LTI

- ❑ not clear if the **control** of the T12/8 transfer lines is considered as part of LHC ?

❑ PS Projects

- ❑ interest to discuss/adopt new LHC technologies for Power Converters controls and Front Ends architecture

What are the interfaces with other major CERN controls projects : LTI, SPS-2001, CNGS, SPS-EA, ISOLDE, ... ?

- ❑ Obviously lot of work needed to define what the LHC-CP **milestones** are vis-a-vis SPS-2001, String2, Sector Test, LTI, ...
 - ❑ Who is **Master and Slave** ?
- ❑ A lot of Projects but ...
 - ❑ few people to work on all these software issues
 - ❑ in fact the same people
 - ❑ obvious need to look for common components :
 - middleware ? Contracts with equipment groups ?

What are the major risks and how to manage them ? Good and bad experiences with past control systems ?

- Risks can't be eliminated
- Important to :
 - Identify potential technical and non-technical risks
 - Determine their individual impact (risk assessment)
 - Determine how to reduce their impact
 - Develop and implement a plan for controlling the risks and achieving the reductions

What are the major risks and how to manage them ? Good and bad experiences with past control systems ?

☐ Techniques for Identifying Risks :

- ☐ By using past CERN **experience** in building control systems for ISR, SPS, LEP, etc.
- ☐ By **decomposing** the work
 - shows risk inherent to interdependency of work (18 Groups !)
- ☐ By group **brainstorming**
 - uniqueness of projects

What are the major risks and how to manage them ? Good and bad experiences with past control systems ?

- ❑ Technical Risks
 - ❑ equipment **damage**
 - ❑ Poor Operational **efficiency**
 - ❑ **Incoherent** control system and lack of seamless data exchange
- ❑ Non Technical Risks
 - ❑ lack of **commitment** towards the objectives and strategy
 - ❑ Poor or **unclear interfaces** with other controls projects
 - ❑ **Unclear responsibilities** between the CERN groups, the LHC-CP project and its sub-projects
 - ❑ **project** management Vs **line** management confusion
 - ☞ **LHC-CP Steering Committee**
 - ❑ No rigorous procedures for **tracking** and solving problems
 - ☞ **Formal techniques for Milestone planning and reporting**

Databases

- “Data” management is vital**
- Issues to consider :**
 - Standardization
 - Centralization
 - Implementation
- Machine Layout DB**
 - effort to analyze “Controls Data” between PS/SL/LHC but ...
 - still a divergence for LHC
- Logging DB**
 - No initiative launched yet