Accelerator Controls Renovation Project "ACCOR"

ATOP Days, March 4-6 2009

Project description with an emphasis on operational aspects for 2009

AGENDA

- Workshop Dec,2008
  - Motivations for controls renovation
  - Scope of work
  - Main outcome
- ACCOR Project organization
  - Work breakdown structure
  - Context and interfaces
- Roadmap for 2009
  - Technology design and validation
  - Operational objectives
- Conclusions

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Workshop Dec, 2008

- Motivations for Controls Renovation
  - From the Organization point of view …
    - The benefits of the co-operative LHC model
    - Time to end the PS Complex legacy situation
    - AD, CTF, REX ISOLDE must be treated
  - From the Technical Stand point …
    - Critical Front-end Hardware and Software situation
    - Application Software rationalisation

Workshop Dec, 2008

- Scope of Work

DOMAIN	Responsibility	Material Budget	Human Resources
Front-End Hardware Platforms and Form Factors	AB/CO	+++	+
Generic Front-End Hardware Modules	AB/CO	++	++
FESA Framework	AB/CO	N/A	++
Front-End software (+ specific Hardware)	ATB, BI, BT, CO, PO, RF,…	+	+++
InCA (LSA, Acq Core, CBCM, …)	AB/CO AB/OP	N/A	++
Specific High Level Applications	AB/OP	N/A	++

Workshop Dec, 2008

- Main Outcome
  - Motivations largely shared by equipment groups and OP
  - Equipment groups provided clear figures in terms of:
    - Equipment inventory
    - Priorities for renovation
    - Available resources
  - AD, CTF, REX-ISOLDE are included
  - Renovation Time scale : 2009-2011
  - Management asks to put in place a Project in order to clarify the operational objectives, provide clear budget estimates and start the renovation

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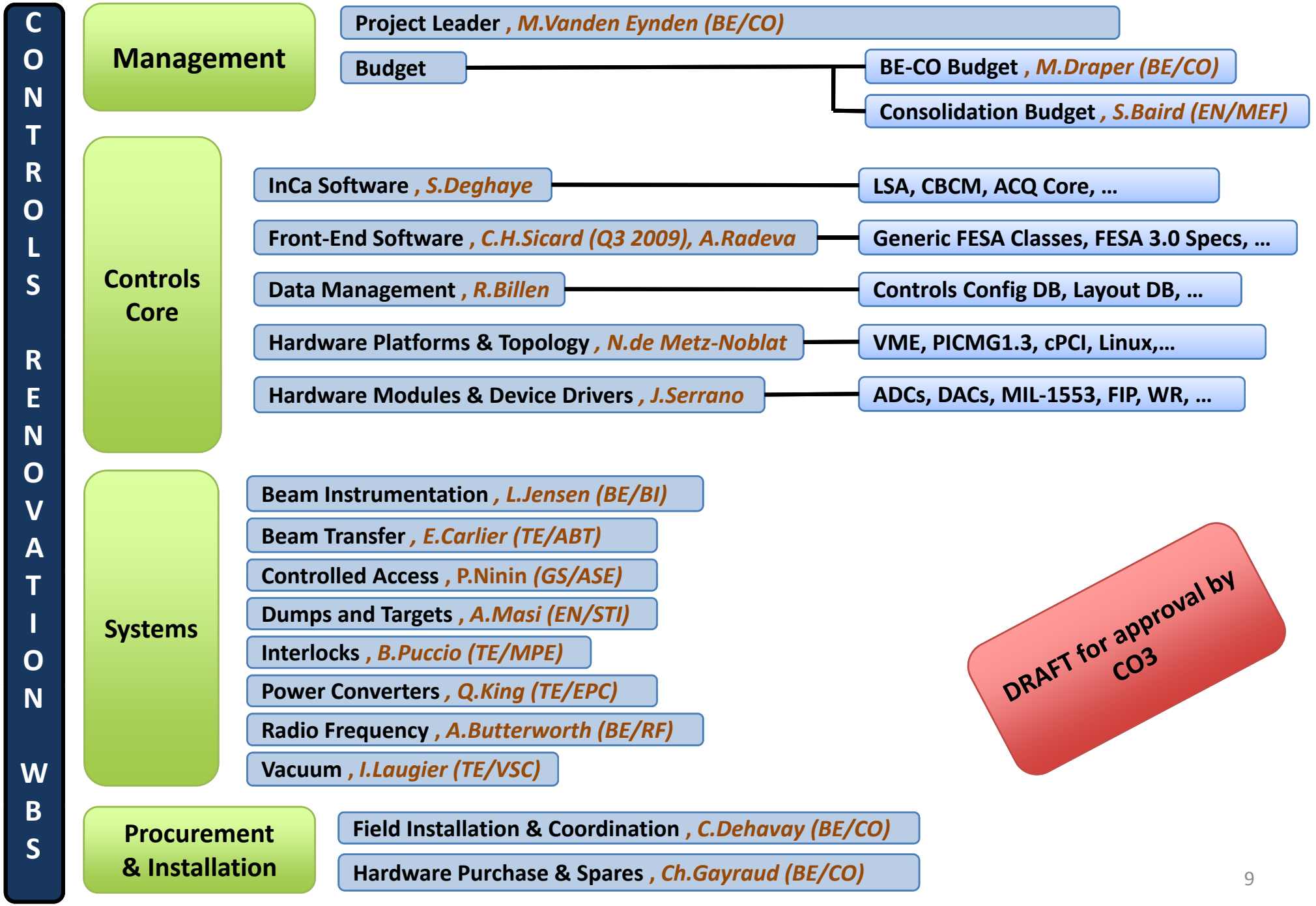
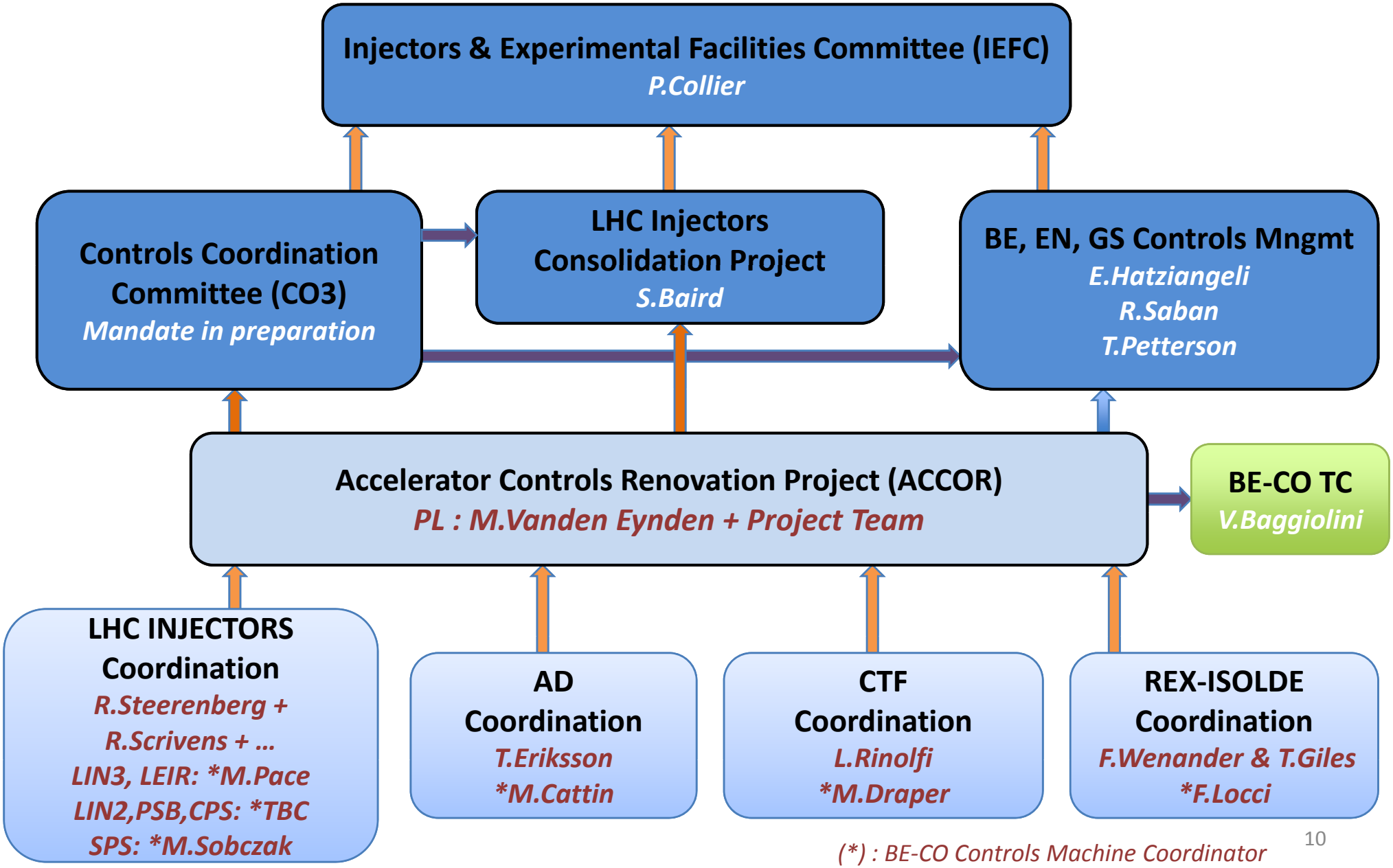
ACCOR Project Organization

- Work Breakdown Structure (WBS)
  - Purpose
    - Decompose project in activity domains
    - Identify work packages (WP) for each domain
    - Define WP responsibility
  - Will govern the strategy for Project tracking
  - Covers Accelerator systems and core controls components


CONTROLS RENOVATION WBS
Management
Project Leader , M.Vanden Eynden (BE/CO)
Budget
BE-CO Budget , M.Draper (BE/CO)
Consolidation Budget , S.Baird (EN/MEF)
Controls Core
InCa Software , S.Deghaye
LSA, CBCM, ACQ Core, …
Front-End Software , C.H.Sicard (Q3 2009), A.Radeva
Generic FESA Classes, FESA 3.0 Specs, …
Data Management , R.Billen
Controls Config DB, Layout DB, …
Hardware Platforms & Topology , N.de Metz-Noblat
VME, PICMG1.3, cPCI, Linux,…
Hardware Modules & Device Drivers , J.Serrano
ADCs, DACs, MIL-1553, FIP, WR, …
Systems
Beam Instrumentation , L.Jensen (BE/BI)
Beam Transfer , E.Carlier (TE/ABT)
Controlled Access , P.Ninin (GS/ASE)
Dumps and Targets , A.Masi (EN/STI)
Interlocks , B.Puccio (TE/MPE)
Power Converters , Q.King (TE/EPC)
Radio Frequency , A.Butterworth (BE/RF)
Vacuum , I.Laugier (TE/VSC)
DRAFT for approval by CO3
Procurement & Installation
Field Installation & Coordination , C.Dehavay (BE/CO)
Hardware Purchase & Spares , Ch.Gayraud (BE/CO)

ACCOR PROJECT – CONTEXT & INTERFACES



(*) : BE-CO Controls Machine Coordinator

Controls Issue Management

Marc Vanden Eynden Filters Log Out

HOME BROWSE PROJECT FIND ISSU

All Projects : ACCELERATOR

Project Lead: Marc Vanden Eynden

- Create a new issue in project ACCELERA
- Administer Project
- Release Notes
- Planning board
- Task board
- Chart board

Select: Open Issues Road Map Chang

Components

- BE-CO FRONT-END FESA CLASSES
  This component provides a summary of the vario
- BE-CO HARDWARE MODULES AND
  Component providing a view of all BE-CO "standa
- DATA MANAGEMENT Lead: Ronny
  Component covering the objectives and evolution
- FIELD COORDINATION Lead: Clau
  Component providing a view of the agreed "proto
- HARDWARE LAYOUT Lead: Nicola
  This component summarises all hardware layout
- HARDWARE PLATFORMS & LAYOU
  Component providing a view of the evolution of th
- HARDWARE PROCUREMENT Le
  Component providing a view of all hardware proc
- INCA SOFTWARE Lead: Stephane
  Component providing a summary of the objective
- MANAGEMENT Lead: Marc Vanden
  Component containing the management decisions
- SYSTEM - BEAM INSTRUMENTATIO
  This Components summarises all renovation obje
- SYSTEM - BEAM TRANSFER Lea
  This component summarises all renovation object

Home

http://wikis.cernch/display/ACCOR/Home

1 Added by vanden eynden marc, last edited by vanden eynden marc on Feb 19, 2009 (view change)

Menu

- Home
- News
- Project Management
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- Project Planning
  - Next 4 Weeks
  - Planning for Accelerators
  - Planning for Components
- Technical Documentation
  - Application Software
  - Front-End Software
  - Hardware
  - Timing System

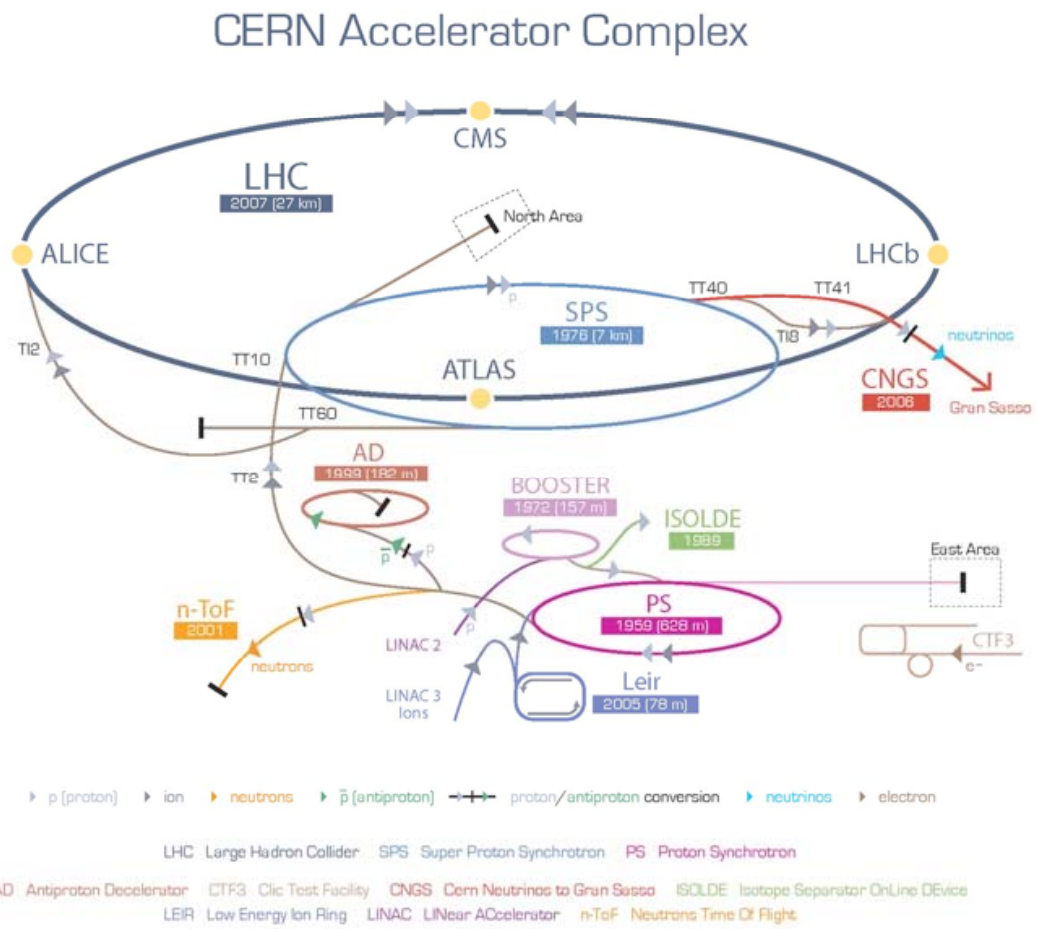
All Pages

- Project Planning
- Project Management
- Technical Documentation

Admin

edit menu
admin tabs

CERN Accelerator Control System Renovation Project



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Roadmap for 2009

- Organization
  - Q1 2009 : Get CO3 Committee in place
    - balance, with all parties involved, the output of the Dec,2008 workshop with the new LHC planning
    - Define a first roadmap
      - System level view (BI, RF, BT, CO, …)
      - Accelerator view (LINAC2,3, LEIR, …)
    - Build agreement on budget lines
      - BE-CO operational budget for LHC injectors (via consolidation)
      - Case by case agreement for non-LHC injectors (work started for AD)

Roadmap for 2009

- Technology Development
  - Until Q4 2009 : Continue the design and validation of the new generic hardware and software controls solutions:
  - Front-End Level
    - New hardware reference platforms for VME and PCI (Linux)
    - New hardware modules (MIL-1553, Function generators, …)
    - Generic FESA classes (Generic I/O, Function generators, etc …)
  - Inca software
    - For 09, keep the periodic MD approach
    - 2-day MD in week 16 to validate the shutdown work
    - 6-hour MD every 2 months (June, August...) to asses the development status
    - 1st operational version after summer

Roadmap for 2009

- Validation and integration with Equipment Groups
  - Q1-Q2 2009 : Provide new technology and dedicated test facilities
  - Start first specific FESA application prototypes
- Operational objectives
  - Strong involvement of BE-CO representatives and BE-CO controls coordinators
  - Front-End Level
    - Define a first set of realistic operational deployment objectives, taking into account system criticality, field impact and operational planning
  - Inca Level
    - Test version of YASP (Steering) → start-up
    - WireScanner application → start-up
    - 1st version of the FunctionEditor → mid-09
    - Infrastructure for newly developed applications e.g. New MPS editor → ongoing

Conclusions

- Motivations are shared amongst all parties
- ACCOR Organization almost in place and subject to approval at CO3 level
- Budget aspects must be finalized asap
- 2009 will be used to validate the new technology in partnership with the equipment groups
- New LHC schedule has clearly an impact on the operational objectives of the ACCOR project and alternative strategies will be discussed asap with OP representatives
  - Continuous LHC software support will be required
  - Longer support for existing hardware systems will be required, as field modifications will be limited
  - Use non LHC-filling periods to test Inca
  - Use non-LHC injectors for first Front-end hardware validations?
- Few operational deployments must take place in 2009 in order to validate the solutions

Useful Links

- Accelerator Controls Renovation Workshop
  - http://indico.cern.ch/conferenceDisplay.py?confId=45392
- ACCOR Project Information Page
  - http://wikis.cern.ch/display/ACCOR/Home
- Accor Project Planning
  - http://issues.cern.ch/browse/ACCOR
- Inca Information Page
  - http://wikis.cern.ch/display/InCA/Home