

CERN Machine Advisory Committee, 12th

Monday, 17 October 2016 - Wednesday, 19 October 2016

CERN Programme

Monday 17 October 2016

Plenary Session - 30-7-018 - Kjell Johnsen Auditorium (08:30-14:00)

-Conveners: Frederick Bordry

time [id] title

09:00	[2] Welcome and Introduction <i>Presenter: BORDRY, Frédéric</i> LHC status and last results LIU-HL-LHC from the 1st Cost & Schedule review (March 2015) HL-LHC formal approval by CERN Council (June 2016) Recall of the CERN planning, budgeting and controlling rules Operation budget and consolidation project Charge of the review Review sessions
09:40	[3] Status of LIU Project <i>Presenter: MEDDAHI, Malika</i> General overview of the LHC injectors upgrade project for the proton and ion accelerator chains Changes since March 2015 in: Organisation of the project, Work packages breakdown, overall cost-to-completion, overall resources (budget, manpower), overall planning, critical path Beam parameters: status in March 2015 and path since then to the Sept. 2016 updated baseline beam parameters Baseline project activities: any changes since March 2015? Additional baseline changes to be proposed? List of mitigations.
10:20	Coffee break
10:50	[4] Status of HL-LHC Project <i>Presenter: ROSSI, Lucio</i>
11:30	[5] Status of HL-LHC Technical Infrastructure <i>Presenter: TAVIAN, Laurent Jean</i>
12:10	[6] HL-LHC Collaboration Status <i>Presenter: BRUNING, Oliver</i>
12:40	Lunch break

Session 1: LIU Project - 60-6-015 - Room Georges Charpak (Room F) (14:00-18:30)**Reviewers: M. Bai, W. Fischer, K. Oide****Outcomes of the 2015 Cost and Schedule review; Baseline beam parameters (changes since 2015); Machine layout; Status of work progress; Mandatory CONSolidation items; Risks and mitigation; Budget, manpower, EVM; Schedule****-Conveners: Malika Meddahi**

time [id] title

14:00	[7] Linac4 status and outlook <i>Presenter: LOMBARDI, Alessandra</i>
14:45	Questions
15:00	[9] LIU-PSB <i>Presenter: HANKE, Klaus</i>
15:45	Questions
16:00	Coffee break
16:30	[20] LIU-IONS PS injectors (source, Linac3, LEIR) <i>Presenter: SCRIVENS, Richard</i>
17:15	Questions
17:30	[10] General discussion

Session 2: HL-LHC Magnets, Powering and Cryogenic Systems - 30-7-018 - Kjell Johnsen Auditorium (14:00-18:30)**Reviewers: S. Gourlay, P. Vadrine****-Conveners: Jose Miguel Jimenez**

time [id] title

14:00	[21] Overview IR magnet system and budget <i>Presenter: TODESCO, Ezio</i>
14:45	[22] Nb3Sn IT quads Q2a/Q2B <i>Presenter: FERRACIN, Paolo</i> Nb3Sn technology Low-beta quadrupole magnets
15:15	[23] Nb3Sn IT quads Q1/Q3 <i>Presenter: Dr. AMBROSIO, Giorgio</i> Nb3Sn technology, low-beta quadrupole magnets
15:45	[24] Beam separation dipole (D1) <i>Presenter: NAKAMOTO, Tatsushi</i> Beam separation dipole, first 2m long model magnet, heat exchanger hole
16:05	Coffee break
16:30	[25] INFN contribution: D2 <i>Presenter: FABBRICATORE, Pasquale</i> Separation/recombination dipole D2 Engineering design Short model construction Full length prototype
16:50	[26] WP3 - Status of MQYY <i>Presenter: FELICE, Helene</i> NbTi quadrupole, short model, QUACO PCP
17:10	[27] CIEMAT contribution: MCBX <i>Presenter: TORAL, Fernando</i>
17:30	[28] INFN contribution: High order correctors. Status and perspective <i>Presenter: SORBI, Massimo</i> Corrector magnets
17:50	[29] Magnet circuits & protection <i>Presenter: RODRIGUEZ MATEOS, Felix</i>

Session 3: HL-LHC Superconducting RF and other Accelerator Systems - 180-1-N51 (14:00-18:30)**Reviewers: N. Holtkamp, C. Neumeyer, T. Watson****-Conveners: Paul Collier**

time [id] title

14:00	[40] Overview of Crab Cavities (CC) systems <i>Presenter: CALAGA, Rama</i> HL-LHC crab cavities, compact deflecting cavities, Piwinski angle, luminosity levelling
14:30	[68] CC RF systems <i>Presenter: MONTESINOS, Eric</i>
15:00	[41] SPS CC tests and validation <i>Presenter: VANDONI, Giovanna</i>
15:30	[42] CC construction plan at CERN <i>Presenter: CAPATINA, Ofelia</i>
16:00	Coffee break
16:30	[43] U.S. Contribution for Crab Cavities: Status of prototypes and plans for production <i>Presenter: CARCAGNO, Ruben Horacio</i> Crab cavities, RFD crab cavities, dressed RFD cavities, US contribution
17:00	[67] Machine protection and availability <i>Presenter: WOLLMANN, Daniel</i>
17:30	[44] Collimation <i>Presenter: REDAELLI, Stefano</i>
18:00	[45] Vacuum & beam screen <i>Presenter: BAGLIN, Vincent</i>

Session 4: HL-LHC - Technical infrastructures, integration and (de)installation - 30-7-010 (14:00-18:30)**Reviewers: N. Holtkamp, C. Neumeyer, T. Watson****-Conveners: Laurent Jean Tavian**

time [id] title

14:00	[50] Integration <i>Presenter: FESSIA, Paolo</i>
14:40	[51] Civil engineering <i>Presenter: MATTELAER, Pieter Alexander</i> Civil engineering, underground structures, surface structures
15:20	[52] Electrical distribution <i>Presenter: BERTOLASI, Stefano</i>
16:00	Coffee break
16:30	[53] Cost and schedule review of the HL-LHC technical infrastructure - Sub-WP17.3 <i>Presenter: BATTISTIN, Michele</i> Cooling ventilation LHC
17:10	[54] Access & alarms (WP 17.4); Technical monitoring (WP 17.5) <i>Presenter: HAKULINEN, Timo</i> For WP17.4: personnel safety system, access control system, alarm system, automatic protection system, fire detection, ODH detection, radiation monitoring, emergency evacuation. For WP 17.5: Technical monitoring, network infrastructure

Full Committee Executive Session: Preparation of questions to project - 30-7-018 - Kjell Johnsen Auditorium
(18:30-19:00)

Tuesday 18 October 2016

Session 3: HL-LHC Superconducting RF and other Accelerator Systems - 180-1-N51 (08:30-12:00)

Reviewers: N. Holtkamp, C. Neumeyer, T. Watson

-Conveners: Paul Collier

time [id] title

08:30	[46] BI for HL <i>Presenter: JONES, Rhodri</i>
09:15	[47] Beam transfer <i>Presenter: BRACCO, Chiara</i>
09:45	[48] Collider-experiment interface <i>Presenter: SANCHEZ GALAN, Francisco</i>
10:30	Coffee break
11:00	[49] Options to the LHC baseline (common talk to session 2 and 3) <i>Presenter: BRUNING, Oliver</i> Q4 Full CC system Sub-harmonic RF system Higher-harmonic RF system LRBB compensation Hollow e-lens Other options (BT & BI)

Session 1: LIU Project - 60-6-015 - Room Georges Charpak (Room F) (08:30-11:30)**Reviewers: M. Bai, W. Fischer, K. Oide****Outcomes of the 2015 Cost and Schedule review; Baseline beam parameters (changes since 2015); Machine layout; Status of work progress; Mandatory CONSolidation items; Risks and mitigation; Budget, manpower, EVM; Schedule****-Conveners: Malika Meddahi**

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08:30	[11] LIU-PS <i>Presenter: DAMERAU, Heiko</i>
09:15	[65] Questions
09:30	[13] LIU-SPS <i>Presenter: GODDARD, Brennan</i>
10:15	[66] Questions
10:30	Coffee break
11:00	[14] General discussion

Session 2: HL-LHC Magnets, Powering and Cryogenic Systems - 30-7-018 - Kjell Johnsen Auditorium (08:30-12:00)**Reviewers: S. Gourlay, P. Vadrine****-Conveners: Jose Miguel Jimenez**

time [id] title

08:30	[30] Cold powering of the HL-LHC magnets <i>Presenter: BALLARINO, Amalia</i> Current leads, superconducting links, superconductor, superconducting circuit, MgB2, HTS
09:15	[31] Power converters for HL-LHC <i>Presenter: BURNET, Jean-Paul</i> Power converters for superconducting magnets, magnet power supplies, high-precision current control
09:45	[32] HL-LHC cryogenics <i>Presenter: CLAUDET, Serge</i>
10:30	Coffee break
11:00	[33] Options to the LHC baseline (common talk to session 2 and 3) <i>Presenter: BRUNING, Oliver</i> Q4 Full CC system Sub-harmonic RF system Higher-harmonic RF system LRBB compensation Hollow e-lens Other options (BT & BI)

Session 4: HL-LHC - Technical infrastructures, integration and (de)installation - 30-7-010 (08:30-12:00)**Reviewers: N. Holtkamp, C. Neumeyer, T. Watson****-Conveners: Laurent Jean Tavian**

time [id] title

08:30	[55] Transport <i>Presenter: FERAL, Bruno</i>
09:10	[56] Logistics and storage <i>Presenter: MUFFAT, Patrick</i>
09:40	[57] Operational safety <i>Presenter: FORAZ, Katy</i>
10:10	Coffee break
10:40	[58] Installation <i>Presenter: FESSIA, Paolo</i>
11:20	[59] Alignment and internal metrology <i>Presenter: MAINAUD DURAND, Helene</i> Internal metrology, alignment, adjustment, fiducialisation, monitoring

Session 2: HL-LHC Magnets, Powering and Cryogenic Systems - 180-1-N51 (13:30-18:30)**Reviewers: S. Gourlay, P. Vadrine**

time [id] title

13:30	[34] Magnet cryostats <i>Presenter: DUARTE RAMOS, Delio</i> Concerns all cryostats for magnets under the scope of work packages 3 and 11 as well as bypass cryostats and connection cryostats
14:00	[35] Magnet test plan <i>Presenter: BAJKO, Marta</i>
14:30	[36] 11 T dipole for LS2 <i>Presenter: SAVARY, Frederic</i>
15:15	[37] Upgrade and consolidation of the superconducting test facility in SM18 <i>Presenter: MERTENS, Volker</i> RF, magnets, tests, cryogenics, infrastructures, upgrade, consolidation
15:45	Coffee break
16:15	[38] IT string overview <i>Presenter: BAJKO, Marta</i>
16:45	[39] Production scenario - Magnets, superconductors and cryostats <i>Presenter: BOTTURA, Luca</i> Review material to be produced, quantity and schedule (dashboards) Recall LHC maintenance works and parallel R&D Baseline production scenario, required infrastructure and logistics (in-house work, collaboration work, industry work) Conclusions

Session 5: HL-LHC/LIU: Cost, Schedule and Change Management Methods - 30-7-018 - Kjell Johnsen Auditorium**(14:00-18:40)****-Conveners: Lucio Rossi; Malika Meddahi**

time [id] title

14:00	[16] Overall cost summary (material, manpower), EVM and CET <i>Presenter: PRODON, Sylvie</i> Overall LIU Earned Value Management data (incl. Cost Performance Index and Schedule Performance Index); LIU data from CERN Expenditure Tracking application; Manpower (CERN and Associates); Material to Personnel; Parameters impacting the LIU-Cost to Completion (CVI, exchange rate...); Outlook wrt Mid-Term-Planning
14:30	[17] Planning, layout and installation organization and updates <i>Presenter: COUPARD, Julie</i> Organisation of the LIU Planning, Layout and Installation activities Space Reservation Requests, Engineering Change Requests, drawings, layout, integration status Work planning for (Extended)Year End Technical Stops and Long Shutdown 2 Concerns
15:00	[18] Safety aspects and documentation <i>Presenter: FUNKEN, Anne</i> Safety organisation of the LIU project Status of the documentation Waste (radiological and not) handling Next steps towards shutdown installation and beam permit
15:30	[19] Overall risk analysis, mitigation, change management methods <i>Presenters: MEDDAHI, Malika, RUMOLO, Giovanni</i> Compilation of the major risks (equipment, schedule) Budget with risk level class Manpower concerns Mitigations Change management practices
16:00	Coffee break
16:30	[60] HL-LHC project cost summary, EVM, manpower and costing uncertainty <i>Presenter: DELILLE, Benoit</i> HL-LHC costing methods Comparison with 2015 cost&schedule review 2016 Re-baselining, impact on cost Integration in CERN Activity Planning Tool (APT) and Earned Value Management (EVM) systems Manpower distribution Costing uncertainty
17:10	[61] From LARP to HL-LHC AUP in US <i>Presenter: APOLLINARI, Giorgio</i> LARP, HL-LHC Accelerator Upgrade Project (HL-LHC AUP), US deliverables, Critical Decision (CD) Process in DOE, Funding profile, Schedule for US deliverables, Risk management
17:40	[62] HL global planning <i>Presenter: TAVIAN, Laurent Jean</i>
18:00	[63] TDR, ECR, QA and Documentation <i>Presenter: BEJAR ALONSO, Isabel</i>
18:20	[64] Safety and conformity for HL-LHC <i>Presenter: OTTO, Thomas</i> Fire safety, evacuation, pressure vessels, safety studies, safety file, radiation

Reconvene with full group - 30-7-018 - Kjell Johnsen Auditorium (18:40-19:10)

Wednesday 19 October 2016

Report writing and preparation of close-out - 60-5-012 (09:00-13:30)

time	[id]	title
10:00		Coffee break
12:00		Working lunch

Fact check-subcommittee with Project Team - 61-1-017 - Room D (09:00-12:30)

time	[id]	title
10:00		Coffee break

Close-out - 60-6-015 - Room Georges Charpak (Room F) (13:30-14:30)