



Status of MPE-MI Systems

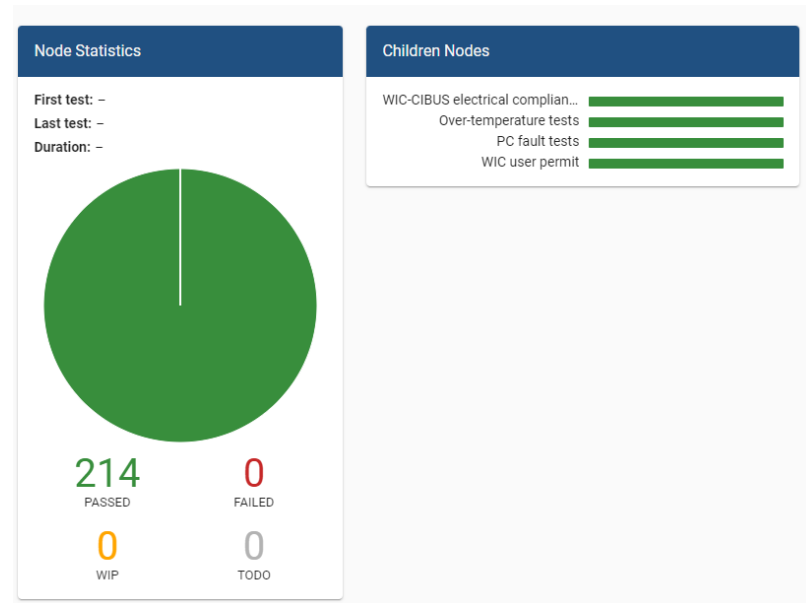
Machine Checkout Tests and Commissioning

223rd Machine Protection Panel Meeting


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on behalf of TE-MPE-MI

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- All Machine Checkout tests **completed in 2021** ✓
- **No other tests required**




- All tests have been carried out successfully ✓



	MPP/PIC - IST2 - AUG	MPP/PIC - IST3 - UPS	MPP/PIC - IST4 - CRYO dump request	MPP/PIC - IST1 - PIC-CIBU Electrical compliance
LHC Point 1				
LHC Point 2				
LHC Point 3				
LHC Point 4				
LHC Point 5				
LHC Point 6				
LHC Point 7				
LHC Point 8				

RSS Bypass tests + PP60A and SIS access conditions:

- Tests were done after LS2, all passed. ✓
- **No changes** from EPC side during the YETS, the tests were **not repeated**.

	RSS (EE bypassed) ⓘ	PP60A	MPP/PIC - IST5 - SIS access conditions
S12			
S23			
S34			
S45			
S56			
S67			
S78			
S81			

- All **SPS transfer line** FMCMs tests have been carried out successfully. ✓
- No more issue with **RD1s**, which generated correctly a BIS event ✓
- All **LHC FMCMs tests** have been carried out successfully, **except the RMSIs**
 - **RMSI.R8B2**: there was no PM Data. However, the test is fine (experienced the same issue after LS2).
 - **RMSI.L2B1**: the test in the past was not successful, the test procedure was not triggering the BIS. However, **the test was successful after LS2**, nothing was changed.
- **RMSI tests to be repeated** or redefined before taking trains of 12 bunches. ⌚


	FGC_STATE trigger
RQ4.LR3	
RQ5.LR3	
RD34.LR3	
RQ4.LR7	
RQ5.LR7	
RD34.LR7	
RD1.LR1	
RD1.LR5	
RMSI.L2	
RMSI.R8	
RMSD.B1	
RMSD.B2	
RBXWTV.L2	
RBXWTV.R2	
FMCM Circuit Summary	


- **SMP-SPS: All tests completed** ✓
- **SMP-LHC:**
 - **Pre-op check passed** ✓
 - **Communication tests and Machine Checkout:** ✓
 - Connection to DCCT sources **completed** ✓
 - All tests related to SIS and Sequencer **not to be repeated** ✓
 - A bug was observed on the GMT. It was **solved** ✓
 - Verification of the **energy values after latest access** ✓
- **Beam Tests to be performed** ⌚


IP	Status
MPP/SMP - LHC MC1 - LHC machine energy	
MPP/SMP - LHC MC2 - LHC setup beam flag	
MPP/SMP - LHC MC3 - Squeezing factors	
MPP/SMP - LHC MC4 - Moveable devices and stable beams	

IP	Status
MPP/SMP - LHC L1 - Slow BCT connections to LHC SMPC	
MPP/SMP - LHC L2 - LHC energy connections to LHC SMPC	
MPP/SMP - LHC L3 - Beam position monitor connections to LHC SMPC	
MPP/SMP - LHC L4 - Sequencer connection to LHC SMPC	
MPP/SMP - LHC L5 - SIS connection to LHC SMPC	
MPP/SMP - LHC L6 - Connection between LHC SMPC and LHC GMT	
MPP/SMP - LHC L7 - LHC Beam presence flags direct transmission	
MPP/SMP - LHC L8 - LHC Setup beam flags direct transmission	
MPP/SMP - LHC L9 - LHC Cross checker user permit	
MPP/SMP - LHC L10 - LHC SMP broadcast	
MPP/SMP - LHC L11 - LHC SBF reception in BIS	
MPP/SMP - LHC L12 - LHC Cross check	

- All BIS Input Channels **Jumpers** restored at their nominal configuration ✓
 - **IST tests completed** (validated each local permit) ✓
 - **Pre-Op check passed** ✓
 - **2x** redundant **CIBU Power Supplies down** on LHC Injection BIS (SR8.INJ2, Rack MYIGP01, UA87)
 - Completed **Commissioning** (SBF, LBDS, SIS...)
 - **BIS IPOC** → to be done ⌚
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- User Input “LHCb movable” of BIC UA87.R8 was forced to TRUE during a test, **status to be verified**.
 - **User Link connections** → to be filled on the checklist

	Status
MPP/BIS - BIS internal pre-operational check	
MPP/BIS - BIS IPOC	

	Status
MPP/BIS - Links from SIS to BIS	
MPP/BIS - Setup Beam Flag transmission through the GMT	
MPP/BIS - Links from BIS to LBDS	
MPP/BIS - Links from BIS to injection interlock	

	Status
MPP/BIS - IST-BIS-I (standalone)	
MPP/BIS - IST-BIS-II (user interface)	
MPP/BIS - IST-BIS-III (beam permit loop)	

