

Overview of Release Validation

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Credit: Talk by Anup

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PPD: Physics Performance & Datasets

- Work with Phyisics to develop physics code
- Responsible for the validation of the physics performance of the code
- Sign-offs of the CMSSW production releases

Goals: Validate the CMSSW

- CMSSW(CMS SoftWare) is a complex software that consist of many parts
- Every update will cause a lot of changes in many parts
- Ensure all the changes are expected before release

Efforts: Verify every changes

- Using samples(Data, FullSim and FastSim) to check whether update causes any change
- Verify every changes and give feed back if there is unexpected performance
- Sign off the release if everything is OK





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Main Validation Campaigns

- CMSSW pre-release
 - There will be many pre versions in the development of a main release
 - **D** Every pre-release need to be validated
- CMSSW main release
 - No new features allowed except for customizations needed for production
 - Physics performance stays unchanged up to RECO level





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Validation Tools

RunTheMatrix framework

- Submit workflow by running a command "<u>runTheMatrix</u>"
- Approve the workflow through Reqmgr2 page

runTheMatrix.py --what upgrade -l
11640.0,11634.0,11646.0,11650.0,11692.0,11652.0,11643.0,11661.0,11687.0,11719.0,11607.0,11608.0,11609.0
-t 8 -b 'fullsim_noPU_2021_14TeV' -i all --noCaf --wm force

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Validation Tools

RunTheMatrix framework

- Submit workflow by running a command "runTheMatrix"
- Approve the workflow through <u>Reqmgr2</u> page

	Request	Days Since Approval	Comp status	McM status	Unified status	Priority	#Primary	#ACDCs	#Clones	CPU-days	Requested	Produced	Completion
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Validation Tools

RelVal DQM GUI

- DQM plots are produced in the RelVal samples production
- Check the DQM plots and perform sample-tosample comparison





Validation Tools

ValDB

A web site gathering reports from all validation campaigns

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Validation Tools

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	<u>//SSW_11_2_0_pre7_c</u>	data2018D-00001	data2018D	CMSSW 11.2.0.pre7	8	standard	13500 MB	12 workflows: 136.885,	136.886, 136.887, 136.888, 136.889	89, 136.89, 136.891, 136.892, 136.893, 136.894, 136.895, 136.8	
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Validation Tools

Relmon Report Page

RelMonReports Link to the Online DOM GUI RelMon Global Report: FullSimReport main... Link to the Offline DQM GUI Link to the RelVal DQM GUI Link to the Data RelVal files Link to the MC RelVal files Summary Releases: RelMon na 1130792 COMPARISONS: CMSSW 11 2 0 pre5 SUCCESS: 89.9% CMSSW 11 2 0 pre6 (1016420)• NULL: 0.6% (7109) Statistical Test (Pvalue threshold): CMSSW_11_2_0_pre6_Phase2_vs • FAIL: 9.5% (107263) CHI2 (1E-05) Created: 2020-09-22 12:23 To the DQM GUI... Size: 166.72 MB

Campaigns in 2020

- 11_1_X: for HLT TDR ReReco campaign (finished)
- 11_2_X: for migration to DD4HEP (ongoing)
- 10_6_X: Pythia bug fix for UL17 (finished)
- 11_3_X: for GPU-CPU validation (to be continued)
- 12_X_X: for RunIII physics exercise and preparation (to be continued)

Summary & Outlook

- Overview of release validation work
- Another fruitful year for release validation campaigns
 - □ Phase2 HLT TDR
 - **D** UL campaign with Pythia bug fix
 - □ Migration plan pf DD4HEP
 - Continuation of RunIII and Phase2 development
- Ongoing work and next plan



THANKS