



U.S. ATLAS HL-LHC UPGRADE PROJECT BASELINE CHANGE PROPOSAL (BCP)

1) BCP Number: NSF-045		2) BCP Title: COVID-19 Impact May 2021-February 2022	
3) WBS Number: 6.4-6, 6.8		4) WBS Title: All NSF Scope	
5) Date Submitted to Project Office:			
6) Change Designation:	7) BCP WBS Level:	8) Directed Change?	9) Funding Source:
Priority <input type="checkbox"/>	Level 0 <input type="checkbox"/> Level 2 <input type="checkbox"/>	Yes <input type="checkbox"/>	NSF
Routine <input checked="" type="checkbox"/>	Level 1 <input checked="" type="checkbox"/> Level 3 <input checked="" type="checkbox"/>	No <input checked="" type="checkbox"/>	
10) Contact: Penka Novakova Institution: BNL Email: penka@bnl.gov			
11) Change in response to <input checked="" type="checkbox"/> COVID-19 constraints, <input type="checkbox"/> increased or realized risk(s) or <input type="checkbox"/> effect of uncertainties If realized risk(s), list of risk IDs:			
12) Exception to 2-month BCP freeze period			
a) Large procurement updates should be allowed without this restriction <input type="checkbox"/> b) All technical work that depend on the feedback or result from on-going or earlier tasks. <input type="checkbox"/> c) Changes needed in response to collaboration needs. <input type="checkbox"/> d) Changes in response to COVID-19 constraints. <input checked="" type="checkbox"/>			
13) Change Description: The impacts of COVID-19 for the period May 2021-February 2022 are implemented in the RLS, including <ul style="list-style-type: none"> • Delays due to access restrictions or late delivery of components • Resource increases due to reduced work efficiency Only impacts due to COVID-19 are recorded, not impacts due to technical or other difficulties.			
14) Change Justification: This change is needed to keep track of the COVID-19 impacts and to remain able to track the project performance through EVM metrics.			
15) Impact of Non-Approval: Earned value management metrics extracted from schedule status reports will not be useful to track performance.			

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16) Impact on Cost Baseline:		Baseline (AY\$)		Proposed (AY\$)		Change (AY\$)		
		\$50,479,930		\$51,367,316		\$887,385		
17) Impact on Cost Baseline (AY\$):								
Row Labels	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Grand Total
After	2,165,205	6,509,749	8,983,840	11,335,895	7,466,020	13,383,848	1,522,758	51,367,316
6.04 LAr	583,577	1,813,848	3,017,132	3,532,419	3,198,489	6,384,818	1,387,837	19,918,119
6.05 Tile	292,067	1,177,937	1,369,125	1,488,294	377,080	97,767		4,802,270
6.06 Muon	878,657	2,582,990	2,895,666	4,529,142	1,998,942	522,367		13,407,764
6.08 Trigger	410,904	934,974	1,701,917	1,786,040	1,891,510	6,378,897	134,921	13,239,163
Before	2,166,967	7,541,920	12,143,140	7,422,918	8,089,183	12,702,619	413,183	50,479,930
6.04 LAr	583,577	2,007,321	4,937,101	1,529,474	4,153,882	5,962,614	278,262	19,452,231
6.05 Tile	293,829	1,490,712	1,301,603	1,362,384	293,649	22,319		4,764,497
6.06 Muon	878,657	3,049,303	4,364,951	2,736,222	1,832,216	405,458		13,266,808
6.08 Trigger	410,904	994,585	1,539,484	1,794,837	1,809,436	6,312,228	134,921	12,996,395
Diff								
6.04 LAr	0	(193,473)	(1,919,969)	2,002,945	(955,393)	422,204	1,109,575	465,888
6.05 Tile	(1,762)	(312,775)	67,522	125,910	83,431	75,448	-	37,773
6.06 Muon	(0)	(466,313)	(1,469,285)	1,792,920	166,725	116,909	-	140,956
6.08 Trigger	-	(59,611)	162,433	(8,797)	82,074	66,669	-	242,768
Total	(1,762)	(1,032,172)	(3,159,299)	3,912,977	(623,163)	681,230	1,109,575	887,385
18) Explanation of Impact on Cost Baseline:								
There is a \$887,385 cost increase which is due to a combination of reduced work efficiency (72%) and escalation (28%).								
Row Labels	DIRECT	FRINGE	OVERHEAD	ESC	Grand Total			
After	39,451,087	3,271,441	4,544,850	4,099,938	51,367,316			
6.04 LAr	15,917,192	1,283,258	1,003,776	1,713,893	19,918,119			
6.05 Tile	4,135,984	121,253	288,432	256,601	4,802,270			
6.06 Muon	9,771,246	1,105,129	1,563,990	967,399	13,407,764			
6.08 Trigger	9,626,665	761,801	1,688,653	1,162,044	13,239,163			
Before	38,997,027	3,199,421	4,434,227	3,849,255	50,479,930			
6.04 LAr	15,669,597	1,243,867	969,842	1,568,924	19,452,231			
6.05 Tile	4,110,661	121,253	288,432	244,151	4,764,497			
6.06 Muon	9,716,053	1,092,285	1,552,841	905,628	13,266,808			
6.08 Trigger	9,500,716	742,016	1,623,111	1,130,552	12,996,395			
Difference After - Before								
6.04 LAr	247,595	39,390	33,934	144,969	465,888			
6.05 Tile	25,323	0	0	12,450	37,773			
6.06 Muon	55,193	12,843	11,149	61,772	140,956			
6.08 Trigger	125,949	19,785	65,541	31,492	242,768			
Total	454,060	72,019	110,624	250,683	887,385			
19) Impact on Schedule Baseline:								
The delays to the project delivery dates are (in working days):								
<ul style="list-style-type: none">6.4 LAr: FEB2 (6.4.2) 5m, BEE hardware (6.4.3.1) 6.5m, BEE firmware (6.4.3.2) 6.5m6.5 Tile: MB (6.5.1) 33d, ELMB (6.5.3) 0d, LVPS (6.5.4) 115d6.6 Muon: sMDT (6.6.1) 0d, TDC (6.6.3) 80d, CSM (6.6.4) 211d, L0MDT (6.6.5) 36d6.8 Trigger: L0Calo (6.8.1) 0d, HTT (6.8.2) 0d, GEP (6.8.3) 41d on CP (up to 114 on algos), EF Tracking 0d								
20) Explanation of Impact on Schedule Baseline:								
The delays are due to lab access limitations and reduced work efficiency due to COVID-19 constraints.								

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21) Impact on Scope Baseline:			
Item	Baseline	Proposed	Change
22) Explanation of Impact on Scope Baseline: N/A			
23) Risk Analysis for the proposed change: N/A			
24) Explanation of Risk Analysis for the proposed change: The COVID-19 risk is owned by NSF.			
25) Other Impacts: (Health, Safety, Environment, etc.) Safety measures have been put in place everywhere following the locally mandated protocols. The good health of all participating personnel remains our top priority.			
26) Interim or Corrective Actions:			



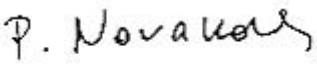

Acknowledged by Control Account Manager

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PROJECT DISPOSITION – LEVEL 3

27) REVIEW	RECOMMENDATIONS:
U.S. ATLAS HL-LHC Upgrade Project Manager J. Kotcher 	Disposition <input checked="" type="checkbox"/> Approve <input type="checkbox"/> Reject DATE: 3/3/22
U.S. ATLAS HL-LHC Upgrade Deputy Project Manager G. Brooijmans 	Disposition <input checked="" type="checkbox"/> Approve <input type="checkbox"/> Reject DATE: 3/3/22
U.S. ATLAS HL-LHC Technical Coordinator H. Evans 	Disposition <input checked="" type="checkbox"/> Approve <input type="checkbox"/> Reject DATE: 3/3/22
U.S. ATLAS HL-LHC NSF Principal Investigator M. Tuts 	Disposition <input checked="" type="checkbox"/> Approve <input type="checkbox"/> Reject DATE: 3/3/22
U.S. ATLAS HL-LHC Project Controls Manager P. Novakova 	Disposition <input checked="" type="checkbox"/> Approve <input type="checkbox"/> Reject DATE: 3/3/22
U.S. ATLAS HL-LHC Risk Manager C. Meyer 	Disposition <input checked="" type="checkbox"/> Approve <input type="checkbox"/> Reject DATE: 3/3/22
U.S. ATLAS HL-LHC L2 Manager Name/Title M. Oreglia 	Disposition <input checked="" type="checkbox"/> Approve <input type="checkbox"/> Reject DATE: 3/3/22
J. Parsons 	Disposition <input type="checkbox"/> Approve <input type="checkbox"/> Reject DATE:
S. Majewski 	Disposition <input type="checkbox"/> Approve <input type="checkbox"/> Reject DATE:
T. Schwarz 	Disposition <input type="checkbox"/> Approve <input type="checkbox"/> Reject DATE:

AGENCY DISPOSITION - LEVEL 1

28) Federal Project Director, BHSO
Robert Caradonna

Disposition ☐ Approve ☐ Reject ☐ Concur

DATE:

DOE Program Manager
Ted Lavine

Disposition ☐ Approve ☐ Reject ☐ Concur

DATE:

DOE Acquisition Executive
J. Stephen Binkley

Disposition ☐ Approve ☐ Reject

DATE:

NSF Program Officer
Mark Coles

Disposition ☐ Approve ☐ Reject

DATE:

NSF Grants and Agreements or Contracts Officer
TBD

Disposition ☐ Approve ☐ Reject

DATE:

29) Explanation (If Action is Approved with Conditions, or Not Concurred Upon)