Tracking COVID Impacts

Jon Kotcher, Gustaaf Brooijmans, Hal Evans, Penka Novakova, Mike Tuts

U.S. ATLAS HL-LHC Upgrade Project

Introduction

- Time to implement the first COVID BCP, first for DOE scope (no NSF guidance yet)
  - We will do all L2s, but implement a single BCP, for administrative reasons
    - Guidance in the next few slides
- Extracting COVID period efficiencies from the CPR
  - Now have three months of data

COVID-19 BCP

- Goal is to reflect what happened so far + some things we **know** about the future
  - Reflect **COVID-driven** changes between March 1 and July 31
    - Schedule delays (shifting or extending/splitting tasks, removing travel)
      - Change in each deliverable completion date to be listed explicitly in BCP form
      - If not done yet, also change "needed at" date to match LS3 delay (avoid negative float)
    - Effort changes
    - Vendor cost increases
    - → Use the CPRs and status sheets
  - For the period August 1 to end CY2020, implement **COVID-driven** delays and vendor cost increases that are already known
    - Presumably mostly due to external factors, eg possibility to conduct irradiations, deliveries by vendors or international collaborators, …
      - Vendor cost increases due to COVID expenses should be estimated
      - Reviews that have shifted and for which a new (tentative) date is set

COVID-19 BCP

- NOT in this BCP:
  - Extending future tasks based on guesstimated work efficiencies
    - This is in Hal's simulation; the purpose of the BCP is to record actuals, and only add known delays for the future
  - Delays due to technical issues ("increased complexity" etc)
    - If a delay was 60% COVID and 40% technical, only put in 60%
      - There can be remaining schedule and/or cost variances after the BCP to reflect the technical challenges/changes in costs faced
      - Clearly, a judgment call is needed
        - » Guidance: for work that was already behind schedule before COVID happened, don't reduce schedule variance below February value
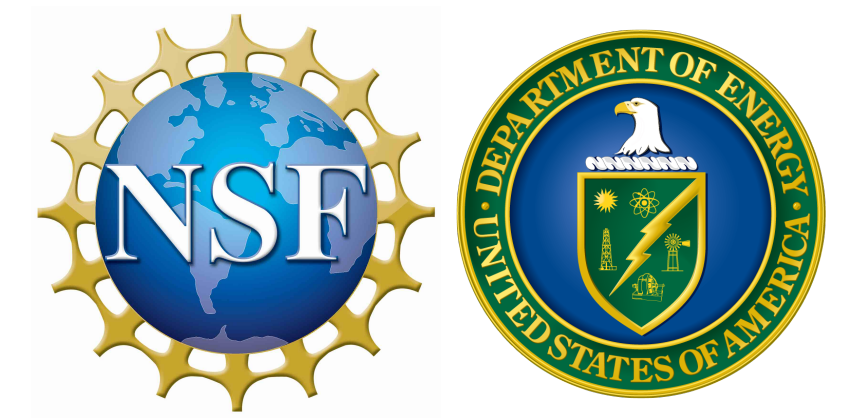
- We have been extracting work efficiencies from the CPRs
  - Record BCWS and BCWP for lab- and office-based tasks separately (and remove material, travel, LOE)
  - From ACWP, subtract material, travel, LOE BCWP
    - We don't record ACWP separately for labor/material/travel for all institutions, so this is best compromise

System	BCWS-L	BCWS-O	BCWP-L	BCWP-O	ACWP*		L fraction	O fraction		BCWP (L+O)/ACWP
6.1 Pixels	452,443	160,743	11,206	77,494	307,717		0.02	0.48		0.29
6.2 Strips	494,976	45,587	117,408	99,015	802,480		0.24	2.17		0.27
6.3 GM	111,416	201,908	0	80,917	536,705		0.00	0.40		0.15
6.4 LAr	315,751	257,629	125,707	231,026	533,899		0.40	0.90		0.67
6.5 Tile	47,034	30,535	652	3,867	102,053		0.01	0.13		0.04
6.6 Muon	200,059	259,772	61,186	184,025	240,799		0.31	0.71		1.02
6.7 DAQ	107,331	186,450	32,404	287,856	246,754		0.30	1.54		1.30
6.8 Trigger	9,784	233,544	3,191	265,714	313,242		0.33	1.14		0.86
Systems Total	1,738,794	1,376,168	351,754	1,229,914	3,083,649		0.20	0.89		0.51

- "Lab task" work efficiency was ~20% for each month, office work efficiency varied more; cost factor fairly stable around 0.5 month-to-month
  - Some labs operated remotely, and tasks labeled as lab often also involve a certain amount of office work