

# Detector Team Update

16 August 2021

# Detector Team Progress

- Finalized ECCE detector configuration for **2nd Simulation Campaign**:
  - Wednesday, 11 August 2021, Detector Simulation Readiness Meeting:
  - <https://indico.bnl.gov/event/12704/>
  - **Status:** [https://docs.google.com/spreadsheets/d/e/2PACX-1vSHiMqzqiY5ZY8uvdvtVbMp\\_5ErvG9AKvkBUBKO-5JLQAIYkuZ6SYQtN8KJ8e4cJyNhIfkGtRDUyYfk/pubhtml](https://docs.google.com/spreadsheets/d/e/2PACX-1vSHiMqzqiY5ZY8uvdvtVbMp_5ErvG9AKvkBUBKO-5JLQAIYkuZ6SYQtN8KJ8e4cJyNhIfkGtRDUyYfk/pubhtml)
- Continuing to collect cost, schedule, and risk information from the Detector Working Group co-conveners.
  - See following slides and **upcoming highlight** presentation at next ECCE biweekly meeting.
- DAQ DWG continuing to collect input from the co-conveners and develop streaming readout plans. (Detector Team **highlight presentation today.**)

# Continued Detector Refinements

- ECCE detector system well defined for the 2nd simulation campaign, though work continues.
- Moving forward, some detectors still being refined / improved:
  - Tracking System still being further refined with AI Optimization.
  - Reviewing need for AC-LGAD detectors: checking physics requirements for timing resolution and lower cost alternatives.
  - Reviewing details of backward HCal (electron-going direction) where current design doesn't appear optimized for momentum of hadrons in that direction.
- Details of framing, cabling, services continue to be refined.

# Cost, Schedule, & Risks

- Experienced team meeting weekly with DWG co-conveners on a (mostly) weekly basis.
- Second round of inputs (i.e. refined after feedback) from DWGs coming in and nominally due this past Friday.
- First round of input spreadsheets collected and being assembled.
  - WBS ID, WBS name, Activity Description, Costs, Basis of Estimate, Duration, ... (see example below)
- ECCE Risk Log developing with the collected input from DWGs.

# Cost, Schedule, & Risks: Weekly Schedule

| <b>ECE06.10</b> | <b>EIC Detector</b>                  | <b>Ken Read/Doug Higinbotham</b>       | <b>Frequency/Meeting Day/Time</b> | <b>Teams Meeting Link</b>                      |
|-----------------|--------------------------------------|--|-----------------------------------|--|
| ECE06.10.03     | Tracking                             | Xuan Li/Nilanga Liyanage               | Weekly/Friday/3:00-4:00 EST       | <a href="#">Click here to join the meeting</a> |
| ECE06.10.04     | PID                                  | Greg Kalicy/Xiaochun He                | Weekly/Wednesday/3:00-3:30 EST    | <a href="#">Click here to join the meeting</a> |
| ECE06.10.05     | Electromagnetic Calorimetry          | Friederike Bock/Yongsun Kim/Tanja Horn | Bi-Weekly/Thursday/2:00-3:00 EST  | <a href="#">Click here to join the meeting</a> |
| ECE06.10.06     | Hadronic Calorimetry                 | Friederike Bock/Yongsun Kim            |                                   |  |
| ECE06.10.07     | Magnets                              | Paul Brindza/Renuka Rajput-Ghoshal     | Weekly/Thursday/1:30-2:00 EST     | <a href="#">Click here to join the meeting</a> |
| ECE06.10.08     | Electronics                          | Chris Cuevas/Martin Purschke           | Weekly/Thursday/3:00-3:30 EST     | <a href="#">Click here to join the meeting</a> |
| ECE06.10.09     | DAQ / Computing                      | Chris Cuevas/Martin Purschke           |                                   |  |
| ECE06.10.10     | Detector Infrastructure              | John Haggerty                          | Weekly/Wednesday/2:30-3:00 EST    | <a href="#">Click here to join the meeting</a> |
| ECE06.10.11     | IR Integration & Auxiliary Detectors | Michael Murray/Igor Korover/Yuji Togo  | Weekly/Friday/12:00-12:30 EST     |  |
| ECE06.10.14     | Polarimetry and Luminosity           |  | TBD                               |  |


# Cost, Schedule, & Risks: Input WBS Spreadsheet Headings

| A      | B        | C  | D                         | E     | F            | G   |
|--------|----------|--|---------------------------|-------|--------------|---|
| WBS ID | WBS Name | Activity Description (Separate between conceptual design, preliminary design, final design, long lead procurements etc.) | Activity Type (Pull Down) | Units | Unit Pricing | Basis of Estimate for costing (Pull Down) |

| H           | I                         | J                          | K                    | L                | M   | N                                     | O  | P                                      | Q                          | R                                     |
|-------------|---------------------------|----------------------------|----------------------|------------------|---|---------------------------------------|--|--|----------------------------|---------------------------------------|
| Labor Hours | Resource Name (Pull Down) | Funding Source (Pull Down) | % of cost to Project | % of cost Inkind | Direct Materials Total<br>\$\$ (Calculated) | Total Labor cost \$\$<br>(Calculated) | Total Cost to project<br>\$\$ (Calculated) | Total Inkind Cost \$\$<br>(Calculated) | Duration<br>(Working Days) | # of working<br>years<br>(Calculated) |

| S                    | T                                    | U   | V   | W   | X                          | Y                                    | Z     |
|----------------------|--------------------------------------|---|---|---|----------------------------|--------------------------------------|-------|
| Projected Start Date | Projected Start Date<br>(Calculated) | Projected Finish Date excluding<br>Weekends and<br>Holidays<br>(Calculated) | Projected Finish Date excluding<br>Holidays<br>(Calculated) | Projected Finish Date including<br>Weekends &<br>Holidays<br>(Calculated) | Cost Total<br>(Calculated) | Escalated Cost<br>Total (Calculated) | Notes |

# Cost, Schedule, & Risks: Input Risk Spreadsheet Headings

| A  | B                         | C                    | D                          | E                  |
|--|---------------------------|----------------------|----------------------------|--------------------|
|  <span style="float: right;"><b>ECCE EIC Dete</b></span> |                           |                      |                            |                    |
| <u>Risk ID</u>   | <u>Detector Subsystem</u> | <u>Risk Category</u> | <u>Risk Title</u>          | <u>Description</u> |
| F  | G                         | H                    | I                          | J                  |
| <b>Detector Preliminary Project Risk Log</b>   |                           |                      |                            |                    |
| <u>Risk Trigger</u>  | <u>Impacts</u>            | <u>Likelihood</u>    | <u>Proposed Mitigation</u> | <u>Notes</u>       |

# BACKUP