

# Software and Computing WG (CompSW)



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## Meetings Wednesdays @ 11am EDT

- Next meeting is **May 25, 2022**
- <https://indico.bnl.gov/event/15530/>

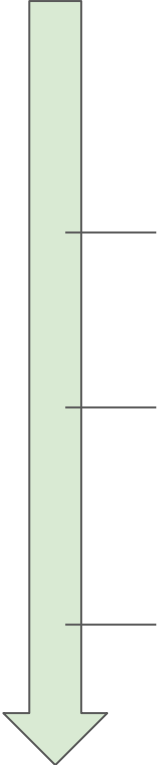
## Mailing list

- [eic-projdet-comp-sw-l@lists.bnl.gov](mailto:eic-projdet-comp-sw-l@lists.bnl.gov)
- <https://lists.bnl.gov/mailman/listinfo/eic-projdet-comp-sw-l>



# A Critical Path for EIC Software

## *Towards a unified software approach for the EIC*

- 
1. Assessment on the software solutions (pro & con list) together with the SimQA and DAQ working groups, guided by the EIC Software Statement of Principles.
  2. Propose conclusion and recommendation to collaboration management and Project **by the Summer EICUG meeting.**
  3. Software choice treated as any other technology choice? Optional independent review in the Summer.
  4. Once decision is made, all new development should go in the official framework.
  5. **Aim to have fully transitioned to the official software by October.**

# Procedure to Travel the Critical Path

1. Publicize schedule of topics with dates of discussion and decision
2. Assign chair for each topic. Chair will be POC for the topic. Responsibilities are:
  - a. Organize discussion session agenda
  - b. Publish draft list of requirements for the software being discussed at least 1 week in advance.
  - c. Form list with at least one choice for the software to adopt to address the topic
  - d. Collect suggestions for modifications to the requirements list and/or the software choices list
  - e. Lead discussion on topic, starting with requirements list and the list of options
3. Presentations may be made regarding a specific decision topic, but should be communicated to discussion lead in advance for purposes of scheduling.
4. Use guiding principles from the [EIC Software Statement of Principles](#)
5. Discussion is required for all topics (formal presentations only as necessary).
6. **Based on the meeting, the joint CompSW and SimQA WG conveners will propose a single option, which will be open for comments and endorsement for one week.**

# Strawman Critical Path

		Discussion topic(s)	Decision topic(s)
May	4	A/WG	
	11	Transition Period	Present procedure. Decide on list and order of decision topics
	18		<i>No meeting (Streaming Readout X Workshop)</i>
	25	Repository Geometry	Repository: - Location (GitHub, GitLab+Host) - Admins - Access
Jun	1	Geometry Documentation	Documentation: - Location of User documentation (wiki, repository,...) - Who will set up skeleton with list of topics (e.g. "Getting Started") Geometry: - Package (e.g. DD4HEP)
	8	Data Format	Data format - Generated events - Simulated data - Processed data (e.g. ROOT w/ specific tree format)
	15	Reconstruction Framework	
	22	Reconstruction Framework	Reconstruction Framework - Package
	29	Containerization Official buids	Containerization - platform (Singularity, Docker, multi, ...) - Supported OSES - Location of images (e.g. cvmfs) Official builds - Location (e.g. cvmfs, container image, ...)
Jul	6	Calibration DB Conditions DB	Calibration / Conditions DBs - Package - Server/Host - Access
	13	Continuous Integration	Continuous Integration
	20		
	27	Data preservation	Data Preservation - What is preserved (simulated, DSTs, ...) - Location(s) - Access (S3, xrootd, rucio, ...)
Aug	3		
	10	Distributed Campaign Workflow	Distributed Campaign Workflow - Package (DIRAC, PanDA, STAR(?), ...)

Exact topics and order are being discussed by both software WGs.

Most stringent timeline for the Critical Path is preparation for TDR, this will inform the order we will take in our meetings.

# Towards Full Coverage of All WG Meetings

## *A commitment from CompSW and SimQA*

		Detector Working Groups							Physics Working Groups					
		Tracking	Calo	FForward	FBackward	DAQ	Cerenkov	TOF	GD/I	Inclusive	Semi-Inclusive	Exclusive	Jets/HF	BSM/EW
WG	Name	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SimQA	Bill	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Joe	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Kong	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CompSW	Wouter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Andrea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Cristiano	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	David	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Sylvester	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		4	2	2	1	2	2	1	2	1	2	3	2	1

Draft WG coverage assignment. Work-in-progress, as not all WG meetings have final timeslots yet.

# Joint CompSW & SimQA Office Hours

- **DD4hep-based software stack:**  
Monday, Friday 2pm EDT  
Wednesday alternating 2pm and 8pm EDT  
*First evening meeting on 5/25.*
- **Fun4all-based software stack:**  
Tuesday alternating 3pm and 8pm EDT

Links will be distributed to through indico.

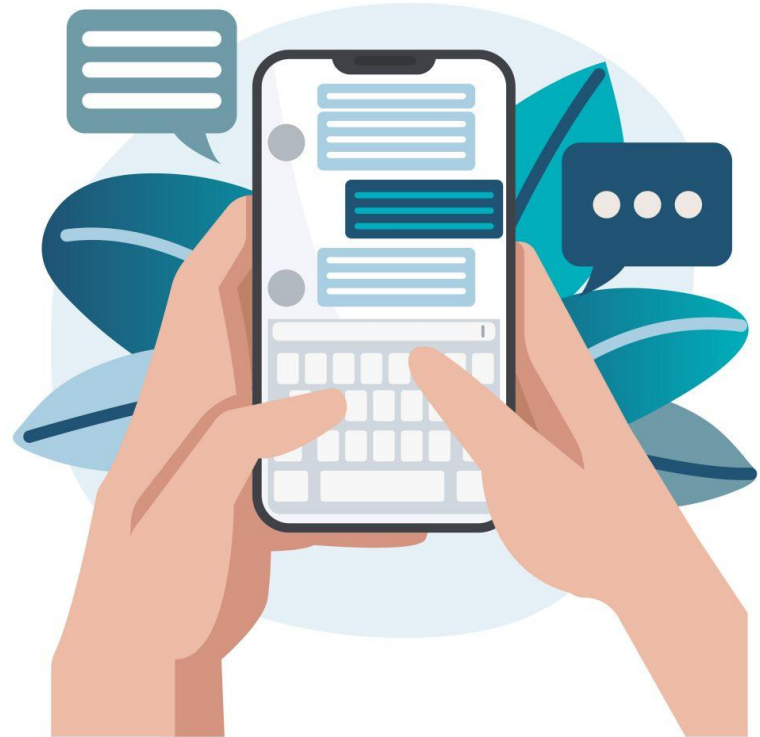


## And a request to the WGs

- CompSW and SimQA request a liaison to be appointed from each of the DWGs and PWGs.
- This is critical to ensure effective two-way collaboration.
- The Liaison ensures that someone from the WGs attends the CompSW and SimQA meetings.
- The Liaison does not have to be a WG convener (but of course could be a convener)
- **Request to have Liaisons identified by the next bi-weekly meeting.**

# Urgent need for communication tool

- CompSW and SimQA drafted a list of requirements for communication tools:  
<https://docs.google.com/document/d/17veqYyAFsaRY2D37rLyVZYA7ERR-x5AVLdl0yMrjZno/edit?usp=sharing>
- We are working together with the SC to come to a final decision, and hope we can announce this (urgently needed) tool soon.



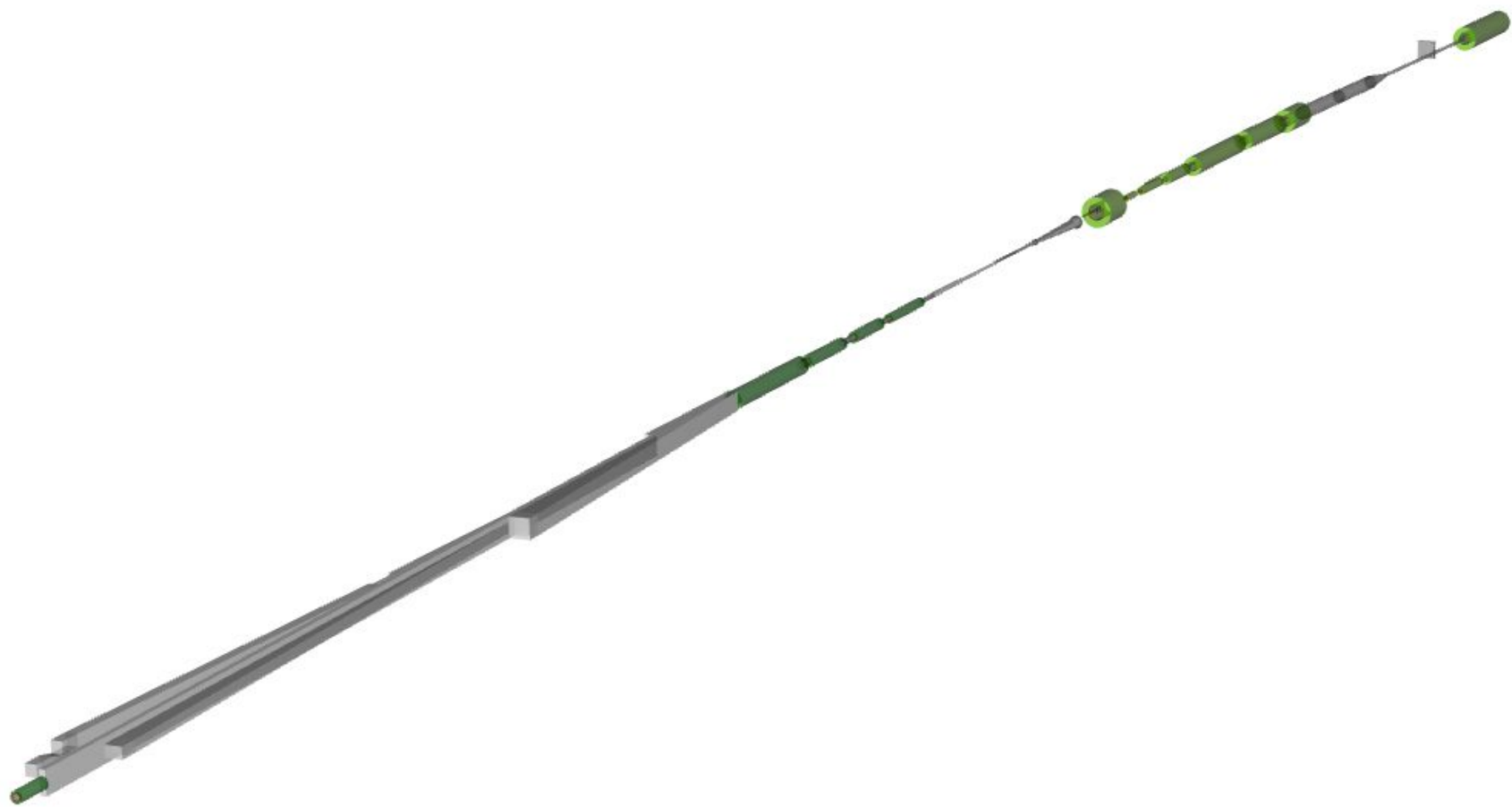


# Simulation availability

## *More info at SimQA meeting*

- Ongoing survey of available geometry implementations will help guide short-term implementation efforts, mostly driven by SimQA.
- Central detector
  - fun4All:
    - Full reference ECCE design
    - Some work ongoing to implement ATHENA forward calorimetry.
  - DD4hep (geometry and full reconstruction):
    - Detectors from ATHENA proposal (including some overlap with the reference ECCE design).
    - New reference design implementation advanced, tentatively ready by end-of-month (including reconstruction). Current status: Magnet, bECal geometry done, tracker detector and support almost done.
- FF/FB implementation
  - Available in DD4hep right now (and standalone GEANT4)





# Questions?



# CompSW Charge (draft)

- Develop and curate a single **software** stack that will serve all aspects of the detector design and implementation regarding simulation, reconstruction, analysis, and the scientific program.
- Identify **computing** resource requirements to support the EIC program through detector development, construction, and production.
- **Foster** the development of new approaches to software and computing.
- **Support** all software and computing needs of the collaboration.



Detailed draft available here:

[https://docs.google.com/presentation/d/1aim32XWy6TpDpfIK\\_YWnQhMklg\\_bIQv2Bh86k7278MM/edit?usp=sharing](https://docs.google.com/presentation/d/1aim32XWy6TpDpfIK_YWnQhMklg_bIQv2Bh86k7278MM/edit?usp=sharing)

# Software and Computing Group Web Resources

**Software and Computing Working Group wiki (*this is the one to bookmark!*):**

<https://wiki.bnl.gov/eic-project-detector/index.php/SC>

Indico site for Software & Computing Working Group:

<https://indico.bnl.gov/category/410/>

Mailing list for Software and Computing Working Group (detector):

[eic-projdet-compsw-l@lists.bnl.gov](mailto:eic-projdet-compsw-l@lists.bnl.gov)

<https://lists.bnl.gov/mailman/listinfo/eic-projdet-compsw-l>

EICUG Software Working Group mailing list:

[eicug-software@eicug.org](mailto:eicug-software@eicug.org)

<https://groups.google.com/a/eicug.org/g/eicug-software>