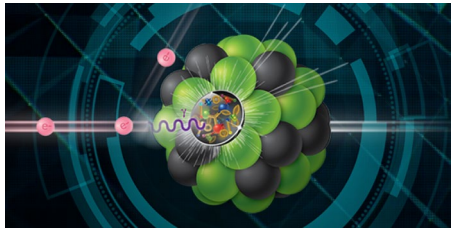


Consortia, Geometry and Detector-1 Integration

DETECTOR-1 COLLABORATION MEETING 26 July 2022

Silvia dalla Torre, Or Hen, Tanja Horn, John Lajoie, Bernd Surrow

EIC Detector Consortia

- Background: there are several EIC Detector Consortia that were formed around one or several subsystems and/or detector technologies
  - Expertise and knowledge
  - International
  - Background in EIC Detector R&D

- Detector-1 study: Reached out to Consortia with the following major questions:
  - Is anything missing in the overall approach for Detector-1?
  - Plans for the next year including the transition from R&D to design and construction
  - Relation with working groups and collaboration formation

- Note Consortia of institutions within a specific country and any agreements fall under the auspices of the EIC Project and are not included in this study

Meetings with the EIC Detector Consortia

- Meetings with the EIC Detector Consortia (so far)
  - 13 May 2022: hpDIRC
  - 16 May 2022: dRICH
  - 19 May 2022: EEEMCAL
  - 9 June 2022: EICSC
  - 23 June 2022: AC-LGAD

- Note that the Consortia have different characteristics and needs
  - very different nature and size of the consortia with some exclusively dedicated to EIC and others opened to wider communities
  - different perspectives regarding future workforce and financial support
  - Synergies with other subsystems
  - Documentation of technical specifications

Meetings with the Detector Consortia

- Overall the *Consortia approaches are well formulated and can play a positive role in the process of Detector-1 consolidation and baseline definition*

- Plans for the next year
  - Work with the WGs to understand the geometry constraints of detector-1 and evaluate the impact of the different constraints on the performance
  - Generate technical specifications document in phase with the guidelines on the EIC project timeline
  - Reach out to possible new collaborators to further enlarge the consortium and base for design and construction
  - Identify and take advantage of synergies between subsystems

- Relation to the Working Groups and Collaboration formation
  - very active in detector-1 working groups
  - *activities in the consortium envisioned to always be fully linked with the Detector-1 WGs*
  - added value: *consortium internal expertise benefits the entire community*

Examples of Detector Consortia Action Items

hpDIRC

- ❑ Continue the transition from R&D towards identify resources and funding resources for the planned tasks towards design and construction

dRICH

- ❑ Clarify the agreements for engineering help with the national labs
- ❑ Reach out to possible new collaborators to further enlarge the consortium and base for design and construction. This includes connections overall and specific connections for, e.g., the mirrors
- ❑ Work on the technical specifications document within the EIC project timeline
- ❑ Identify and take advantage of synergies between forward and backward RICH detectors

EEEMCAL

- ❑ Work closely with EIC PM to secure off-project funding
- ❑ Reach out to possible new collaborators to further enlarge the consortium and base for design and construction.
- ❑ Work on the technical specifications within the EIC project timeline
- ❑ Identify and take advantage of synergies between EEEMCAL and other subsystems using homogeneous radiator materials, e.g., far forward/backward detectors

EIC Global Geometry Database

Adapted from 20 May Detector-1 WG Convener meeting

to provide consistency of detector envelopes between:

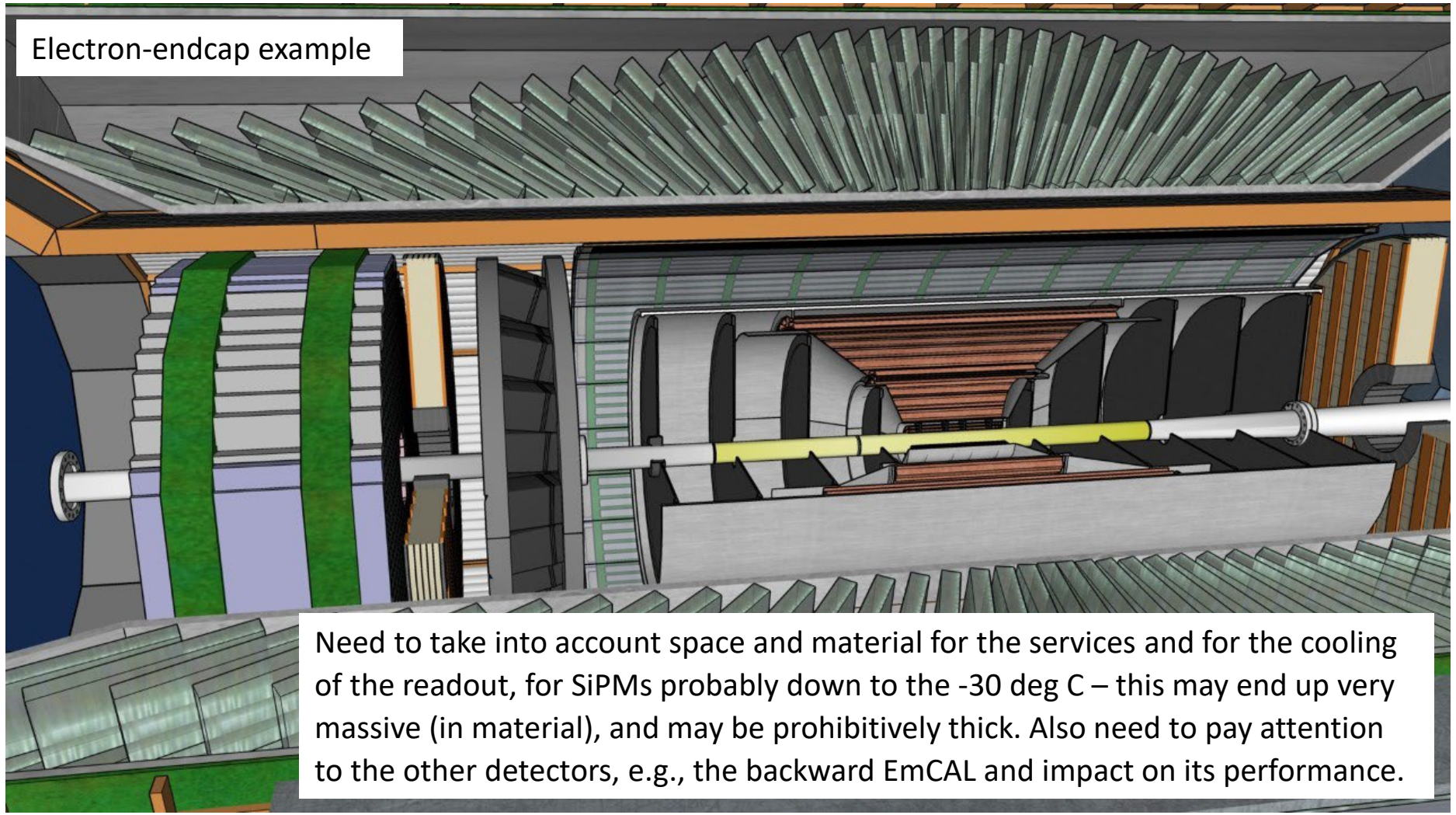
- **Sketchup**: Integration and assembly, installation, and maintenance.
- **CAD**: Detailed engineering information for construction.
- **Simulation**: Physics and detector studies using detailed GEANT-based detector simulations.
- **Analysis:** Reconstruction in simulation and physics analysis

(From discussion with EIC PM on 17 May 2022)

- **Gatekeeper**: Tanja Horn (for Detecfor-1 contacts; work together with system engineer Walt Akers for global changes and improvements)
  - Keep some info on changes and why
- **Legs of input:**
  - Global Detector/Integration Group:
    - Collects all information from working groups
    - Balances detector technology needs versus each other
  - Detector-1 Sim/QA Working Group:
    - Collects all trade-offs of material budget versus science performance
    - Implements version control for simulations
  - EIC Project Detector Leads:
    - Collect input from E&D process (Space needs for frames and supports, Space needs for service/cooling, Requirements of accelerator and vacuum integration)
    - Fold keep-in volumes into requirements/interface control document

Geometry Database – https://eic.jlab.org/Geometry/Detector/

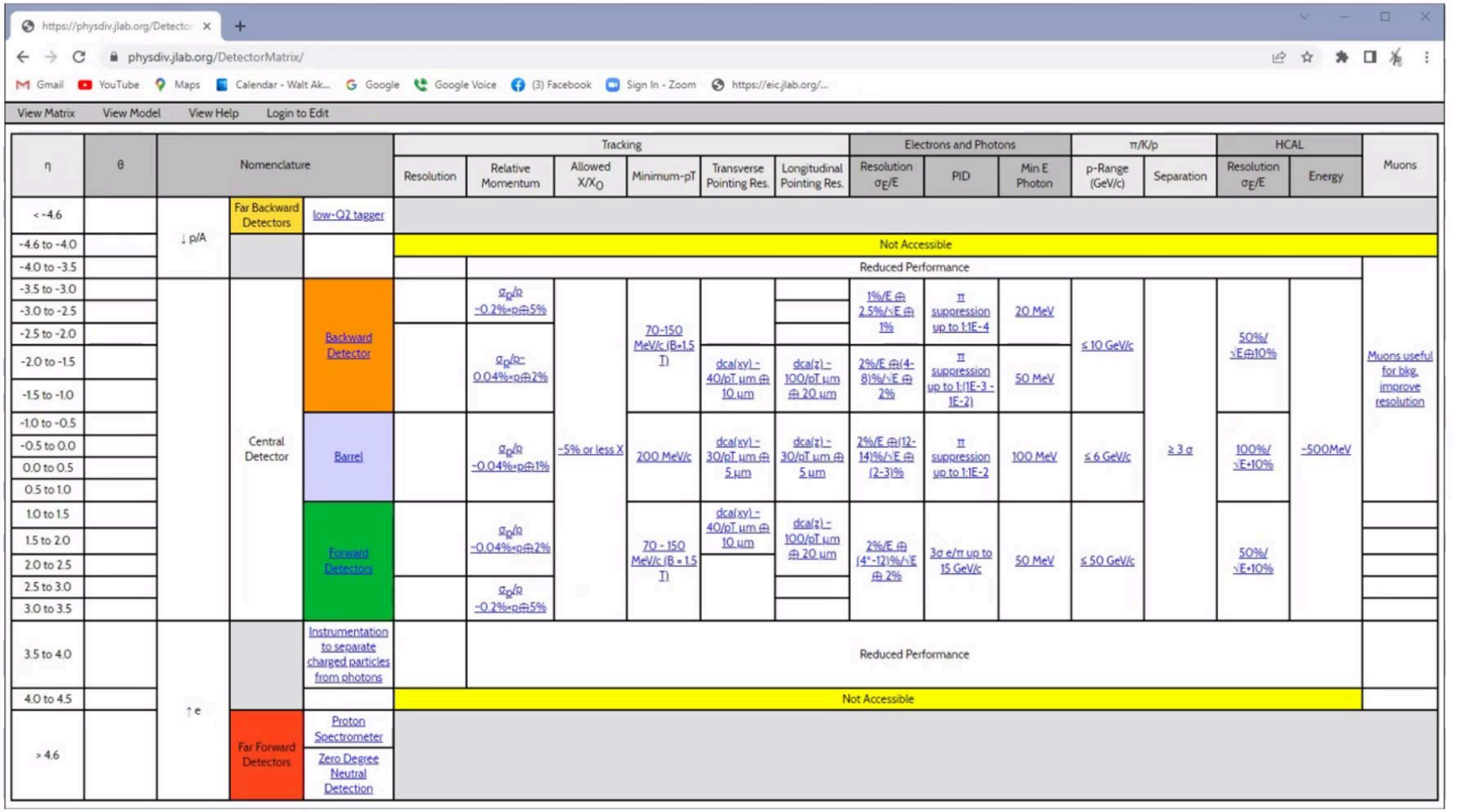
- The geometry database should capture space and material of detector **and** service needs.
- Also crucial to take a fully system-integrated approach and detector developers work with electronics/DAQ and engineering teams.



Overview – Geometry Database

- Roots of the Project
  - The Detector Matrix and the detector conceptual design
- Current Interface
  - MS Excel based data collection
  - Web-based upload tool
  - Web-based information matrix with integrated version control
- Demonstration
  - Version-controlled matrices of configuration information
  - Embedded links to references and diagrams
  - Dated commentary on changes that have been introduced over time
  - Automatic notification of registered users whenever a change occurs

Roots of the Project



https://physdiv.jlab.org/Detector

physdiv.jlab.org/DetectorMatrix/

Gmail YouTube Maps Calendar - Walt Ak... Google Google Voice (3) Facebook Sign In - Zoom https://eic.jlab.org/...

View Matrix View Model View Help Login to Edit

η	θ	Nomenclature			Tracking						Electrons and Photons			π/K/p		HCAL		Muons
					Resolution	Relative Momentum	Allowed X/X_0	Minimum-pT	Transverse Pointing Res.	Longitudinal Pointing Res.	Resolution σ_E/E	PID	Min E Photon	p-Range (GeV/c)	Separation	Resolution σ_E/E	Energy	
< -4.6		↓ p/A	Far Backward Detectors	low-Q2 tagger														
-4.6 to -4.0						Not Accessible												
-4.0 to -3.5						Reduced Performance												
-3.5 to -3.0			Central Detector	Backward Detector		σ_p/p ~0.2%×p⊕5%	~5% or less X	70-150 MeV/c (B=1.5 T)			1%/E ⊕ 2.5%/√E ⊕ 1%	π suppression up to 1:1E-4	20 MeV	≤ 10 GeV/c	≥ 3 σ	50%/√E⊕10%	~500MeV	Muons useful for bkg. improve resolution
-3.0 to -2.5																		
-2.5 to -2.0						σ_p/p= 0.04%×p⊕2%			dca(xy) = 40/pT μm ⊕ 10 μm	dca(z) = 100/pT μm ⊕ 20 μm	2%/E ⊕(4-8)%/√E ⊕ 2%	π suppression up to 1:(1E-3 - 1E-2)	50 MeV					
-2.0 to -1.5																		
-1.5 to -1.0																		
-1.0 to -0.5				Barrel		σ_p/p ~0.04%×p⊕1%		200 MeV/c	dca(xy) = 30/pT μm ⊕ 5 μm	dca(z) = 30/pT μm ⊕ 5 μm	2%/E ⊕(12-14)%/√E ⊕ (2-3)%	π suppression up to 1:1E-2	100 MeV	≤ 6 GeV/c		100%/√E+10%		
-0.5 to 0.0																		
0.0 to 0.5																		
0.5 to 1.0																		
1.0 to 1.5				Forward Detectors		σ_p/p ~0.04%×p⊕2%		70 - 150 MeV/c (B = 1.5 T)	dca(xy) = 40/pT μm ⊕ 10 μm	dca(z) = 100/pT μm ⊕ 20 μm	2%/E ⊕ (4°-12)%/√E ⊕ 2%	3σ e/π up to 15 GeV/c	50 MeV	≤ 50 GeV/c		50%/√E+10%		
1.5 to 2.0																		
2.0 to 2.5																		
2.5 to 3.0																		
3.0 to 3.5						σ_p/p ~0.2%×p⊕5%												
3.5 to 4.0		↑ e		Instrumentation to separate charged particles from photons		Reduced Performance												
4.0 to 4.5						Not Accessible												
> 4.6			Far Forward Detectors	Proton Spectrometer														
				Zero Degree Neutral Detection														

- The detector matrix was an interactive tool that was originally developed to collect design data during pre-conceptual design
- The matrix had a fixed structure which could only be altered by a system administrator
- The tool provided an internal interface what allowed authorized users to make update to its content
- This tool did not provide any version control
- Once a proto-detector design was selected, a similar solution was developed for tracking design parameters

Current Interface – Input Spreadsheet

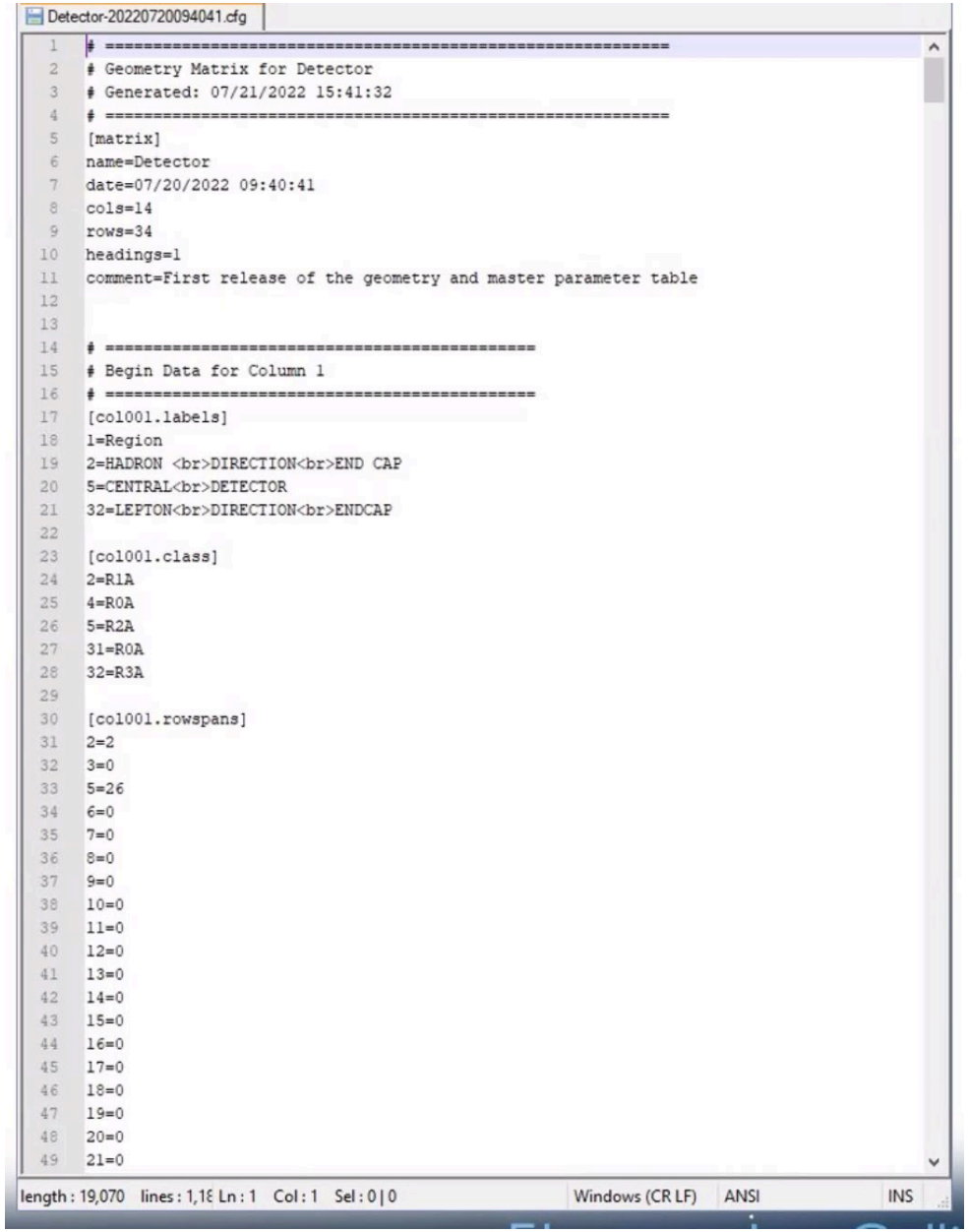
EIC DETECTOR GEOMETRY — FRI, 24 JUN 2022 10:25:07

Region	Component	Sub-Component	WBS	Length (cm)	Inner Radius (cm)	Outer Radius (cm)	Offset from Center (cm)	Physical Start (cm)	Physical End (cm)	Volume (m^3)	Weight (kg)	Technology	Notes
HADRON DIRECTION END CAP	Hadron Calorimeter		6.10.06	171	30	267	328	499	328	33.61	215,210	FeSc, WSc last segment	Tower size: 5cm x 5cm x 140cm, 20cm readout Offset: measured from face nearest to interaction point Volume: calculated as cylindrical volume minus the volume of the embedded ECAL
	Electromagr												
	Ser												
CENTRAL DETECTOR	Barrel Hadr												
	Du												
	Solen												
	EMCal O												
	EMCal C												
	EMCal												
	Barr												
	EMCal I												
	DIRC												
	Integrated DIR												
	Barrel Time												
	HD Time o												
	Silicc												
	Mod												
	LD Time o												
	LD												
	Service Gap			10			-320	-320	-330	0.00			Offset: measured from location nearest to interaction point
LEPTON DIRECTION ENDCAP	Backward Field Return		6.10.06	20.32			-330	-330	-350.32	5.18	40,649	Iron	Offset: measured from face nearest to interaction point Weight: calculated as 100% iron.
		Return Cylinder		*20.32*	*20*	*270*	*-330*	*-330*	*-350.32*	*4.63*			
		Support Panel		*7.62*	*454*	*664*	*-336.35*	*-336.35*	*-343.97*	*0.55*			*Height: specified in outer radius* *Width: specified in inner radius*

- ❑ The Geometry Matrix is produced from a configuration file that is generated by MS Excel using VB
- ❑ The structure of the matrix is unrestricted and it can have any number of columns or rows
- ❑ Each cell can have a user-defined link that points to references or supporting documents
- ❑ The data in the workbook is organized using Named Ranges that include
  - Matrix Table: list of matrix names contained in the workbook
  - Comment Table: a list of dated comments
  - Reference Table: contains a table of references with links and descriptive text
  - Contact Table: contains the list of contacts associated with the matrix
  - CSS Table: contains special cascading style sheet info for the web page
  - Field Table: contains list of application specific fields
  - Notification Table: contains a list of individuals that will be contacted when a matrix changes

Current Interface – Configuration File

- The output configuration file is generated by running the Write Geometry macro from the Excel Workbook
- The text based data structure is uploaded to the server and contains all of the details needed for the web page to be generated
- Any embedded scripting commands are removed when the configuration file is produced to prevent script or html injection
- The script check is repeated on the server side to ensure that no additional scripting, links, or improper material has been added to the text file
- The server side application validates the configuration file upon receipt and immediately reports any errors that were found
- Finally, the server side application allows the caller to preview the web page before it is posted


Detector-20220720094041.cfg

```
# ============================================================
# Geometry Matrix for Detector
# Generated: 07/21/2022 15:41:32
# ============================================================
[matrix]
name=Detector
date=07/20/2022 09:40:41
cols=14
rows=34
headings=1
comment=First release of the geometry and master parameter table


# ============================================
# Begin Data for Column 1
# ============================================
[col001.labels]
1=Region
2=HADRON <br>DIRECTION<br>END CAP
5=CENTRAL<br>DETECTOR
32=LEPTON<br>DIRECTION<br>ENDCAP

[col001.class]
2=R1A
4=R0A
5=R2A
31=R0A
32=R3A

[col001.rowspans]
2=2
3=0
5=26
6=0
7=0
8=0
9=0
10=0
11=0
12=0
13=0
14=0
15=0
16=0
17=0
18=0
19=0
20=0
21=0
```

length : 19,070 lines : 1,18 Ln : 1 Col : 1 Sel : 0 | 0 Windows (CR LF) ANSI INS

Current Interface – Detector Matrix

EIC DETECTOR GEOMETRY **FRI, 24 JUN 2022 10:25:07**

Region	Component	Sub-Component	WBS	Length (cm)	Inner Radius (cm)	Outer Radius (cm)	Offset from Center (cm)	Physical Start (cm)	Physical End (cm)	Volume (m^3)	Weight (kg)	Technology	Notes
HADRON DIRECTION END CAP	Hadron Calorimeter		6.10.06	171	30	267	328	499	328	33.61	215,210	FeSc, WSc last segment	Tower size: 5cm x 5cm x 140cm, 20cm readout Offset: measured from face nearest to interaction point Volume: calculated as cylindrical volume minus the volume of the embedded ECAL Weight: estimated as 79% iron and 21% plastic
	Electromagnetic Calorimeter		6.10.05	38	30	190	328	366	328	4.20	27,165	Pb/Sc	Tower size: 1cm (1.65cm) x 1cm(1.65cm) x 37.5cm, 5cm readout Offset: measured from face nearest to interaction point
	Service Gap			8			320	328	320				
CENTRAL DETECTOR	Barrel Hadron Calorimeter		6.10.06	640		267	0	320	-320	72.60			
		HD Section		*170*	*194*	*267*	*150*	*320*	*150*	*17.97*			
		Central Section		*300*	*180*	*267*	*0*	*150*	*-150*	*36.65*			*Offset: measured from center of detector*
		LD Section		*170*	*194*	*267*	*-150*	*-150*	*-320*	*17.97*			*Offset: measured from face nearest to interaction point*
	Dual RICH		6.10.04	100	10		180	280	180	10.29	1,911	Aerogel/Gas	Offset: measured from face nearest to interaction point Volume: calculated as sum of the sub-sections Weight: based on parametric estimate from CLAS LTCC
	Service Gap			10			-320	-320	-330	0.00			Offset: measured from location nearest to interaction point
LEPTON DIRECTION ENDCAP	Backward Field Return		6.10.06	20.32			-330	-330	-350.32	5.18	40,649	Iron	Offset: measured from face nearest to interaction point Weight: calculated as 100% iron.
		Return Cylinder		*20.32*	*20*	*270*	*-330*	*-330*	*-350.32*	*4.63*			
		Support Panel		*7.62*	*454*	*664*	*-336.35*	*-336.35*	*-343.97*	*0.55*			*Height: specified in outer radius* *Width: specified in inner radius*

The resulting web page contains the complete matrix along with all comments, references, and contact information

Comments, References and Contact Information

The information provided on this page is generated directly from the originating spreadsheet. The data in this section should provide insights into the design choices that have been made over time, along with references to documentation regarding the changes. To request clarification or changes to this information (or to information in the geometry matrix), please reach out to the individuals listed in the Contacts section.

Comments

Author	Date	Comment
Tanja Horn	April 13, 2022	Initial Detector-1 DB posted
Tanja Horn	May 19, 2022	Fixed inconsistencies in DIRC frame, hpDIRC and MPGD: Iterated hpDIRC position as balance between phi-coverage and frame engineering strength need; added 2-cm space for MPGD tracker (muRWell or MM) on top of DIRC bar boxes --> now 5cm slot for both together; added slots for service needs in frame
Walt Akers	June 20, 2022	Finalizing the design of the detector portion of the EIC Geometry Management System.

References

Title	Date	Description
Detector Menagerie		A complete collection of Sketchup models that can be used to construct detector systems from parts. Each of the sub-components is independently configurable.
Experimental Equipment Sharepoint Repository		This is the BNL Sharepoint root directory for Experimental Equipment documents. Key sub-directories are listed in the expanded list below. These links require authenticated access.

Contacts

Contact information: Tanja Horn, Walt Akers

Name	Email	Notes
Tanja Horn	hornt@cua.edu	Primary contact for information that is stored in the Geometry Matrix.
Walt Akers	akers@jlab.org	Technical contact for online data, features and accessibility.

EIC DETECTOR GEOMETRY THU, 23 JUN 2022 17:29:41

EIC DETECTOR GEOMETRY

INTERACTION POINT 6

A navigation menu is included at the top that allows the reader to navigate through all registered versions of the matrix

Region	Component	Sub-Component	WBS	Length (cm)	Inner Radius (cm)	Outer Radius (cm)	Offset from Center (cm)	Physical Start (cm)	Physical End (cm)	Volume (m^3)	Weight (kg)	Technology	Notes
HADRON DIRECTION END CAP	Hadron Calorimeter		6.10.06	171	30	267	328	499	328	33.61	215,210	FeSc, WSc last segment	Tower size: 5cm x 5cm x 140cm, 20cm readout Offset: measured from face nearest to interaction point Volume: calculated as cylindrical volume minus the volume of the embedded ECAL Weight: estimated as 79% iron and 21% plastic
	Electromagnetic Calorimeter		6.10.05	38	30	190	328	366	328	4.20	27,165	Pb/Sc	Tower size: 1cm (1.65cm) x 1cm(1.65cm) x 37.5cm, 5cm readout Offset: measured from face nearest to interaction point Weight: estimated as 85% lead glass and 15% steel
	Service Gap			8			320	328	320				Offset: measured from location nearest to interaction point
CENTRAL DETECTOR	Barrel Hadron Calorimeter		6.10.06	640		267	0	320	-320	72.60	464,834	FeSc	Offset: measured from center of detector Volume: calculated as sum of the sub-sections Weight: estimated as 79% iron and 21% plastic
		HD Section		*170*	*194*	*267*	*150*	*320*	*150*	*17.97*			*Offset: measured from face nearest to interaction point*
		Central Section		*300*	*180*	*267*	*0*	*150*	*-150*	*36.65*			*Offset: measured from center of detector*
		LD Section		*170*	*194*	*267*	*-150*	*-150*	*-320*	*17.97*			*Offset: measured from face nearest to interaction point*
	Dual RICH		6.10.04	100	10		180	280	180	10.29	1,911	Aerogel/Gas	Offset: measured from face nearest to interaction point Volume: calculated as sum of the sub-sections Weight: based on parametric estimate from CLAS LTCC
		Detector Section		*80*	*10*	*195*	*200*	*280*	*200*	*9.53*			*Offset: measured from face nearest to interaction point*
		Aerogel Section		*20*	*10*	*110*	*180*	*200*	*180*	*0.75*			*Offset: measured from face nearest to interaction point*
LEPTON DIRECTION ENDCAP	Backward Field Return	*Return Cylinder*		*20.32*	*20*	*270*	*-330*	*-330*	*-350.32*	*4.63*			
		Support Panel		*7.62*	*454*	*664*	*-336.35*	*-336.35*	*-343.97*	*0.55*			*Height: specified in outer radius* *Width: specified in inner radius*

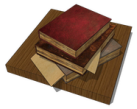
https://eic.jlab.org/Geometry/Detector/

EIC DETECTOR GEOMETRY

EIC DETECTOR GEOMETRY

INTERACTION POINT 6

An overview page is also generated that shows all the iterations of the matrix on a single page, along with their release comments



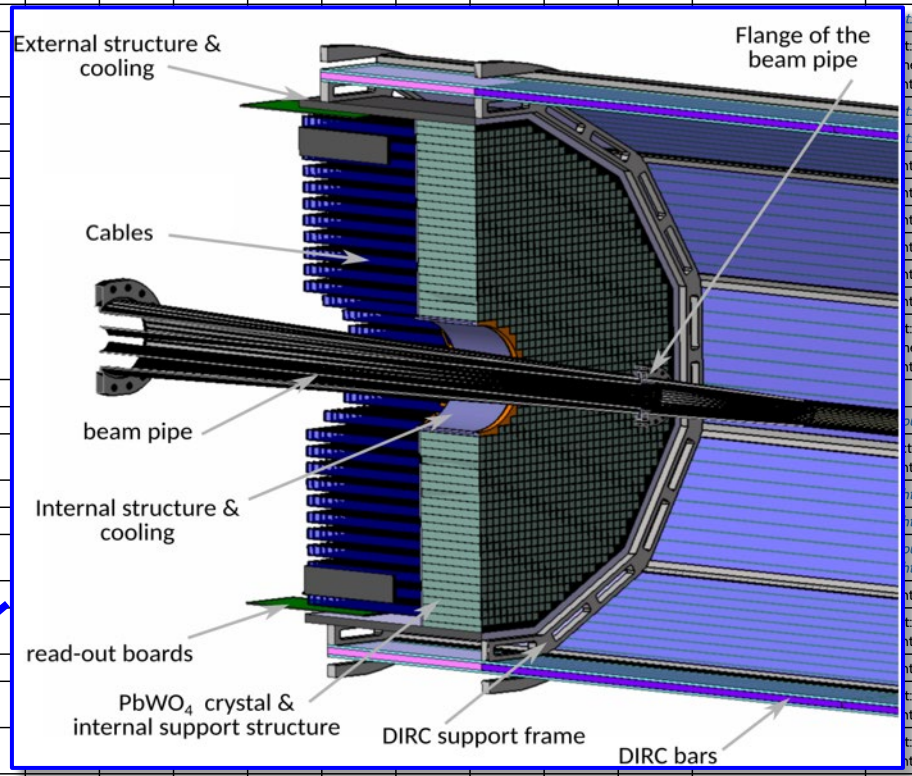
Detector Geometry Matrices - IP 6

The following is a date-oriented table of matrices that contain the configuration parameters for the EIC detector at interaction point 6. The current matrix provides a description of the volumetric envelope for all of the sub-detectors, a description of their technology, their estimated weights, and additional configuration notes. Requests for revisions or updates to these matrices should be sent to Tanja Horn.

Name	Author	Date	Description
Detector-20220624102507	Tanja Horn	06/24/2022 10:25:07	Fixed inconsistencies in DIRC frame, hpDIRC and MPGD: Iterated hpDIRC position as balance between phi-coverage and frame engineering strength need; added 2-cm space for MPGD tracker (muRWell or MM) on top of DIRC bar boxes --> now 5cm slot for both together; added slots for service needs in frame.
Detector-20220623172941	Tanja Horn	06/23/2022 17:29:41	Initial Detector-1 database posted in the EIC geometry management system.

Region	Component	Sub-Component	WBS	Length (cm)	Inner Radius (cm)	Outer Radius (cm)	Offset from Center (cm)	Physical Start (cm)	Physical End (cm)	Volume (m^3)	Weight (kg)	Technology	Notes
HADRON DIRECTION END CAP	Hadron Calorimeter		6.10.06	171	30	267	328	499	328	33.61	215,210	FeSc, WSc last segment	Tower size: 5cm x 5cm x 140cm, 20cm readout Offset: measured from face nearest to interaction point Volume: calculated as cylindrical volume minus the volume of the embedded ECAL Weight: estimated as 79% iron and 21% plastic
	Electromagnetic Calorimeter		6.10.05	38	30	190	328	366	328	4.20	27,165	Pb/Sc	Tower size: 1cm (1.65cm) x 1cm(1.65cm) x 37.5cm, 5cm readout Offset: measured from face nearest to interaction point Weight: estimated as 85% lead glass and 15% steel
	Service Gap			8			320	328	320				
CENTRAL DETECTOR	Barrel Hadron Calorimeter		6.10.06	640		267	0	320	-320	72.60	464,834		
		HD Section		*170*	*194*	*267*	*150*	*320*	*150*	*17.97*			*Offset: measured from face nearest to interaction point*
		Central Section		*300*	*180*	*267*	*0*	*150*	*-150*	*36.65*			*Offset: measured from center of detector*
		LD Section											*t: measured from face nearest to interaction point*
	Dual RICH												t: measured from face nearest to interaction point ne: calculated as sum of the sub-sections nt: based on parametric estimate from CLAS LTCC
		Detector Section											*t: measured from face nearest to interaction point*
		Aerogel Section											*t: measured from face nearest to interaction point*
	Solenoid Magnet												nt: based on parametric estimate from CLEO II
	EMCal Outer Support												nt: calculated as 20% of total volume as steel (balance is air)
	EMCal Outer Surface												nt: calculated as 100% Aluminum
	EMCal Electronics												nt: calculated as 25% silicon (balance is air)
	Barrel EMCal												nt: based on parametric estimate from CMS EMCal
	EMCal Inner Surface												nt: calculated as 100% Aluminum
	DIRC Support												t: measured from point where DIRC bar connects to the readout ne: calculated as sum of sub-sections nt: estimated as 5% of total volume as steel (balance is air & detector)
		Bar Support											
		Readout Support											*out support is triangular frame, therefore volume is halved.*
	Integrated DIRC/MPGD Detector												tor is totally enclosed by DIRC Support. nt: calculated as sum of sub-components
		MPGD Tracker											*nt: based on parametric estimate from SBS Gem*
		DIRC Bar Box											*nt: calculated as 30% quartz (balance is air & support system)*
		DIRC Readout											*out is triangular, therefore volume is halved.* *nt: Calculated as 30% silicon(balance is air & support system)*
	Barrel Time of Flight/Tracker												nt: based on parametric estimate from SBS Gem
	HD Time of Flight/Tracker												t: measured from face nearest to interaction point nt: based on parametric estimate from SBS Gem
	Silicon Tracker												nt: calculated as 3% aluminum and 3% silicon (balance is air)
	Modular RICH												t: measured from face nearest to interaction point nt: based on parametric estimate from CLAS LTCC
	LD Time of Flight/Tracker												t: measured from face nearest to interaction point nt: based on parametric estimate from SBS Gem
	LD EMCal		6.10.05	60	9	63	-175	-175	-235	0.73	4,738	PbWO4	Offset: measured from face nearest to interaction point Weight: estimated as 85% lead glass and 15% steel
	Service Gap			10			-320	-320	-330	0.00			Offset: measured from location nearest to interaction point
LEPTON DIRECTION ENDCAP	Backward Field Return		6.10.06	20.32			-330	-330	-350.32	5.18	40,649	Iron	Offset: measured from face nearest to interaction point Weight: calculated as 100% iron.
		Return Cylinder		*20.32*	*20*	*270*	*-330*	*-330*	*-350.32*	*4.63*			
		Support Panel		*7.62*	*454*	*664*	*-336.35*	*-336.35*	*-343.97*	*0.55*			*Height: specified in outer radius* *Width: specified in inner radius*

Embedded links to references and diagrams



Ongoing Work

- ❑ Continued Integration of Data
  - Populated initial versions of the Detector Matrix and the Far Forward and Far Backward Interaction Region
  - Plan to add tables containing system parameters and other critical information that will be required by scientists and engineers
- ❑ Requirements and Interface Documents
  - May use this platform to make requirements documents and interfaces available to users. This will allow them to see a documented trail of how the design develops over time, along with descriptive text that tellw why decisions were made

Region	Component	Sub-Component	WBS	Length (cm)	Inner Radius (cm)	Outer Radius (cm)	Offset from Center (cm)	Physical Start (cm)	Physical End (cm)	Volume (m^3)	Weight (kg)	Technology	Notes
HADRON DIRECTION END CAP	Hadron Calorimeter		6.10.06	171	30	267	328	499	328	33.61	215,210	FeSc, WSc last segment	Tower size: 5cm x 5cm x 140cm, 20cm readout Offset: measured from face nearest to interaction point
CENTRAL DETECTO													
LEPTON DIRECTION ENDCAP	Backward Field Return	Return Cylinder		20.32	20	270	-330	-330	-350.32	4.63			
		Support Panel		7.62	454	664	-336.35	-336.35	-343.97	0.55			Height: specified in outer radius Width: specified in inner radius

Weight: calculated as 100% iron.

EIC GEOMETRY MANAGEMENT SYSTEM

EIC GEOMETRY MANAGEMENT SYSTEM

GEOMETRY AND MASTER PARAMETER TABLES FOR THE ELECTRON-ION COLLIDER

Overview and General Documents

This section contains instructions and general documentation associated with the EIC Geometry Management System.

Name	Date	Description
Documents and Specifications		
TBD 1	April 28, 2022	Text here included for example purposes only.
TBD 2	April 28, 2022	Text here included for example purposes only.
TBD 3	April 28, 2022	Text here included for example purposes only.
Instructional Videos		
TBD 1	April 28, 2022	Text here included for example purposes only.
TBD 2	April 28, 2022	Text here included for example purposes only.
TBD 3	April 28, 2022	Text here included for example purposes only.

Detector and Interaction Region

This section contains references to the Detector Geometry Matrix and the individual parameter tables for the Forward and Backward Interaction Regions.

Name	Date	Description
Detector Matrices		
Detector Matrix for Interaction Point 6		This links contains a date-oriented table of matrices that contain the configuration parameters for the EIC detector at interaction point 6. The current matrix provides a description of the volumetric envelope for all of the sub-detectors, a description of their technology, their estimated weights, and additional configuration notes. Requests for revisions or updates to these matrices should be sent to Tanja Horn.