

The only official copy of this document is the one online in the SharePoint Document Center. Before using a printed copy, verify that it is current by checking the printed document's Revision History log with that of the online version.

Electron-Ion Collider, Brookhaven National Laboratory			
Doc No. EIC-SEG-RSI-009	Author: L. Strange	Effective Date: October 13, 2023	Review Frequency: 1 year
Requirements, Specifications, and Interfaces: Naming Requirements			Revision: 00

Electron-Ion Collider Requirements, Specifications, and Interfaces

# Naming Requirements

October 13, 2023

**Prepared by:**

DocuSigned by:  
*Lauren Strange*  
D2917872E1D24E6...

Date: 10/16/2023

Lauren Strange, Systems Engineer  
Electron-Ion Collider  
Brookhaven National Laboratory

**Reviewed by:**

DocuSigned by:  
*Travis Shrey*  
8AA0277226424C1...

Date: 10/16/2023

Travis Shrey, MCR Deputy Group Leader  
Electron-Ion Collider  
Brookhaven National Laboratory

DocuSigned by:  
*James Jamilkowski*  
A8AE9D8C14D5414...

Date: 10/30/2023

James Jamilkowski, Controls System Group Leader  
Electron-Ion Collider  
Brookhaven National Laboratory


DocuSigned by:  
*Joseph Tuozzolo*  
455BFDC3662F4B3...

Date: 10/27/2023

Joseph Tuozzolo, Technical Division Group Leader  
Electron-Ion Collider  
Brookhaven National Laboratory


The only official copy of this document is the one online in the SharePoint Document Center. Before using a printed copy, verify that it is current by checking the printed document's Revision History log with that of the online version.

Electron-Ion Collider, Brookhaven National Laboratory			
Doc No. EIC-SEG-RSI-009	Author: L. Strange	Effective Date: October 13, 2023	Review Frequency: 1 year
Requirements, Specifications, and Interfaces: Naming Requirements			Revision: 00

DocuSigned by:  
  
38E3FAB95ABA4DD...


Kevin Smith, Deputy Technical Director  
Electron-Ion Collider  
Brookhaven National Laboratory

Date: 10/20/2023

DocuSigned by:  
  
76AC571041E7490...

Thomas Russo, Systems Engineer  
Electron-Ion Collider  
Brookhaven National Laboratory

Date: 10/17/2023

DocuSigned by:  
  
A920E6F3740742A...

Katherine Wilson, Project Engineer for TJNAF  
Electron-Ion Collider  
Thomas Jefferson National Accelerator Facility

Date: 10/20/2023

**Approved by:**

DocuSigned by:  
  
44DC15F43EAA4F7...

Ferdinand Willeke, Deputy Project Director and Technical Director  
Electron-Ion Collider  
Brookhaven National Laboratory

Date: 10/31/2023

The only official copy of this document is the one online in the SharePoint Document Center. Before using a printed copy, verify that it is current by checking the printed document's Revision History log with that of the online version.

<b>Electron-Ion Collider, Brookhaven National Laboratory</b>			
<b>Doc No.</b> EIC-SEG-RSI-009	<b>Author:</b> L. Strange	<b>Effective Date:</b> October 13, 2023	<b>Review Frequency:</b> 1 year
<b>Requirements, Specifications, and Interfaces:</b> Naming Requirements			<b>Revision:</b> 00

### REVISION HISTORY

<b>Revision #</b>	<b>Effective Date</b>	<b>List of Reviewers</b>	<b>Summary of Change</b>
00	10/13/2023	C. Hetzel, R. Srinivasan, D. Bruno, D. Gassner, K. Kulmatycki, J. Jamilkowski, K. Smith, T. Russo, A. Zaltsman, J. Reich, and K. Wilson	Initial release.

The only official copy of this document is the one online in the SharePoint Document Center. Before using a printed copy, verify that it is current by checking the printed document's Revision History log with that of the online version.

<b>Electron-Ion Collider, Brookhaven National Laboratory</b>			
<b>Doc No.</b> EIC-SEG-RSI-009	<b>Author:</b> L. Strange	<b>Effective Date:</b> October 13, 2023	<b>Review Frequency:</b> 1 year
<b>Requirements, Specifications, and Interfaces:</b> Naming Requirements			<b>Revision:</b> 00

### **LIST OF ACRONYMS**

BNL	Brookhaven National Laboratory
EIC	Electron-Ion Collider
EPICS	Experimental Physics and Industrial Control System
ESR	Electron Storage Ring
HSR	Hadron Storage Ring
IP	Interaction Point
RHIC	Relativistic Heavy Ion Collider
SBMS	Standards-Based Management System

The only official copy of this document is the one online in the SharePoint Document Center. Before using a printed copy, verify that it is current by checking the printed document's Revision History log with that of the online version.

<b>Electron-Ion Collider, Brookhaven National Laboratory</b>			
<b>Doc No.</b> EIC-SEG-RSI-009	<b>Author:</b> L. Strange	<b>Effective Date:</b> October 13, 2023	<b>Review Frequency:</b> 1 year
<b>Requirements, Specifications, and Interfaces:</b> Naming Requirements			<b>Revision:</b> 00

## TABLE OF CONTENTS

1. Purpose and Scope.....	6
1.1. Role of the Nomenclature Standard .....	6
1.2. Implementation of the Nomenclature Standard .....	6
2. General Requirements .....	7
2.1. Area .....	7
2.2. Specific Area .....	8
2.3. Device.....	8
2.4. Position.....	8
2.5. Append number .....	9
2.6. Controller / Signal .....	10
2.7. Quantity.....	10
3. Examples .....	10
3.1. Beamline devices.....	10
3.2. Equipment Cabinets .....	11
3.3. Conduit Banks .....	11
3.4. Trays.....	12
3.5. Wall mounted enclosures .....	13
3.6. Rack devices (non-beamline).....	13
4. References .....	14
4.1. SWN Abbreviation Database .....	14

The only official copy of this document is the one online in the SharePoint Document Center. Before using a printed copy, verify that it is current by checking the printed document's Revision History log with that of the online version.

<b>Electron-Ion Collider, Brookhaven National Laboratory</b>			
<b>Doc No.</b> EIC-SEG-RSI-009	<b>Author:</b> L. Strange	<b>Effective Date:</b> October 13, 2023	<b>Review Frequency:</b> 1 year
<b>Requirements, Specifications, and Interfaces:</b> Naming Requirements			<b>Revision:</b> 00

## Naming Requirements

### 1. PURPOSE AND SCOPE

The purpose of this document is to establish the naming conventions for components in the Electron-Ion Collider (EIC) facility. The nomenclature applies to operating devices in the facility that need to have a standard name to support interfaces and controls.

The EIC nomenclature standard defines the syntax and conventions for the naming of components utilized in the facility.

#### 1.1. Role of the Nomenclature Standard

This has been developed based on the principle that it is one of the information domains for devices to be used within the EIC facility. EIC recognizes the importance for “common names” for the development and design of systems and their components.

The role of this nomenclature standard is to provide conventions for the unique naming devices in operation in the facility and to support relation of the information within the other principal information domains for the facility. The syntax has been constructed to work within the rules and limitations of the EPICS (Experimental Physics and Industrial Control System) protocol. With EIC coming online, the control system which actively monitors and controls the devices will utilize EPICS and will follow such syntax.

Being that the Relativistic Heavy Ion Collider (RHIC) did not use EPICS for its duration, many of the systems will not follow this syntax. This nomenclature standard will be the expectation for all devices henceforth.

#### 1.2. Implementation of the Nomenclature Standard

Execution of the standard is delegated to the Group Leaders and their designees who support the daily implementation of the Nomenclature Standard.

The only official copy of this document is the one online in the SharePoint Document Center. Before using a printed copy, verify that it is current by checking the printed document's Revision History log with that of the online version.

Electron-Ion Collider, Brookhaven National Laboratory			
Doc No. EIC-SEG-RSI-009	Author: L. Strange	Effective Date: October 13, 2023	Review Frequency: 1 year
Requirements, Specifications, and Interfaces: Naming Requirements			Revision: 00

## 2. GENERAL REQUIREMENTS

The format for the nomenclature standard is:

Aa\_bb-ddpp\_nn-cc#

Naming Elements	Description	Requirements
aa	area	from naming bank
bb	specific area	
dd	device	from naming bank
pp	position	
nn	appended number	
cc	controller / signal	from naming bank
#	quantity	

### 2.1. Area

Naming element aa is used to describe the area. The area used depends on the element function. If the element is on the beamline or beamline controlling, the area is defined by the machine prefix and sector. For all other elements, the area is defined by the building name. The area is to be referred to by its abbreviation as assigned in the naming bank [4.1].

Examples:

Area Type	AA Abbreviation	Description
Beamline	hs1	Hadron Storage Ring (HSR), sector 1
Beamline	es1	Electron Storage Ring (ESR), sector 1
Building	1002B	1002B 2 O'clock Cryo Service Building
Building	1003A	1003A EIC 3 O'clock Power Supply Building

The only official copy of this document is the one online in the SharePoint Document Center. Before using a printed copy, verify that it is current by checking the printed document's Revision History log with that of the online version.

Electron-Ion Collider, Brookhaven National Laboratory			
Doc No. EIC-SEG-RSI-009	Author: L. Strange	Effective Date: October 13, 2023	Review Frequency: 1 year
Requirements, Specifications, and Interfaces: Naming Requirements			Revision: 00

## 2.2. Specific Area

Naming element bb is used to describe a specific area. This naming element should only be used when additional location information is beneficial within a building.

Examples:

Area Type	BB Abbreviation	Description
Building	NW	Buildings north wall
Building	R1.1	Building rack row 1 rack 1

## 2.3. Device

Naming element dd is used to describe the device. The device is referred to by its abbreviation. All abbreviations must come from the naming bank [4.1]

Examples:

DD Abbreviation	Description
bpm	Beam Position Monitor
cc	Cold Cathode Vacuum Gauge
cab	Equipment cabinet
cnb	Conduit bank

## 2.4. Position

Naming element pp is used to describe the position. The position type used depends on the element function.

### 2.4.1. Beamline

The position for beamline components is defined by the clock coordinate. The clock coordinate for EIC is based on a virtual circle of circumference 3840m that will lie between the rings to act as a reference s-coordinate. The advantage in this setup is that distance is divisible evenly by 12, allowing us to maintain the clock reference which has been utilized in the past.

Starting at the Interaction Point (IP) of STAR (IP6), distances begin from zero and increase clockwise. The sector/distance naming convention will be sector 6 and goes up from the IP



The only official copy of this document is the one online in the SharePoint Document Center. Before using a printed copy, verify that it is current by checking the printed document's Revision History log with that of the online version.

Electron-Ion Collider, Brookhaven National Laboratory			
Doc No. EIC-SEG-RSI-009	Author: L. Strange	Effective Date: October 13, 2023	Review Frequency: 1 year
Requirements, Specifications, and Interfaces: Naming Requirements			Revision: 00

starting at zero meters and increases up to 320 meters. At that point sector 7 begins, with names starting at 320 and counting down to zero at IP8. This will continue around the machine, creating virtual IP points at 10, 12, 02, and 04.

The distance will be the nearest integer meter to the device or in the case of long devices (ie magnets) it will be to the middle of the device.

#### 2.4.2. Tray

The position for trays is defined by the horizontal location. The lowest tray should start at 1. Numbering should increase as trays are stacked on top.

#### 2.4.3. Equipment cabinets

The position for equipment cabinets is defined by the cabinet row number. The cabinet rows are to start at 1 and increase from north to south / east to west. Free standing cabinets are to be 0.

#### 2.4.4. Wall mounted equipment and conduit banks

The position for wall mounted equipment and conduit banks is to start at 1 and increase from north to south / east to west.

#### 2.4.5. Rack mounted equipment

The position for rack mounted equipment should only be used when applicable. When applicable, the position counting should be determined by the system owner.

### 2.5. Append number

The element nn is to be used when more than one device type occupying the same position. This naming element should only be used when appropriate. For beamline elements, the append number should increase by clock coordinate. For other elements, the append number should increase from north to south / east to west.

The only official copy of this document is the one online in the SharePoint Document Center. Before using a printed copy, verify that it is current by checking the printed document's Revision History log with that of the online version.

Electron-Ion Collider, Brookhaven National Laboratory			
Doc No. EIC-SEG-RSI-009	Author: L. Strange	Effective Date: October 13, 2023	Review Frequency: 1 year
Requirements, Specifications, and Interfaces: Naming Requirements			Revision: 00

## 2.6. Controller / Signal

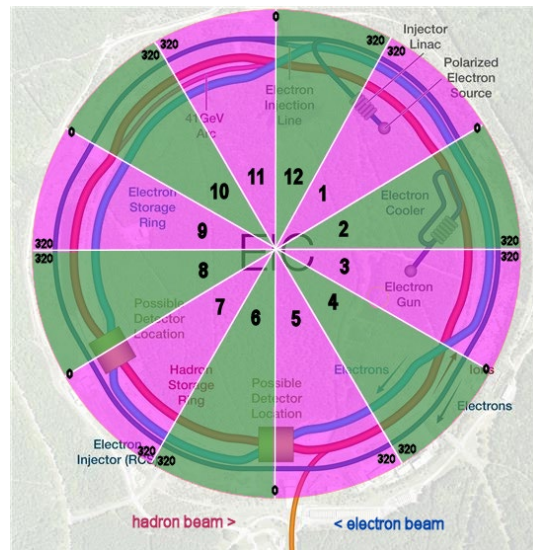
The element cc is to be used when a controller device or signal type needs to be specified. This is to be referred to by its abbreviation as assigned in the naming bank [4.1].

## 2.7. Quantity

The naming element # is used for beamline controllers that control more than one beamline component. The element number is the quantity of components it is controlling.

## 3. EXAMPLES

### 3.1. Beamline devices



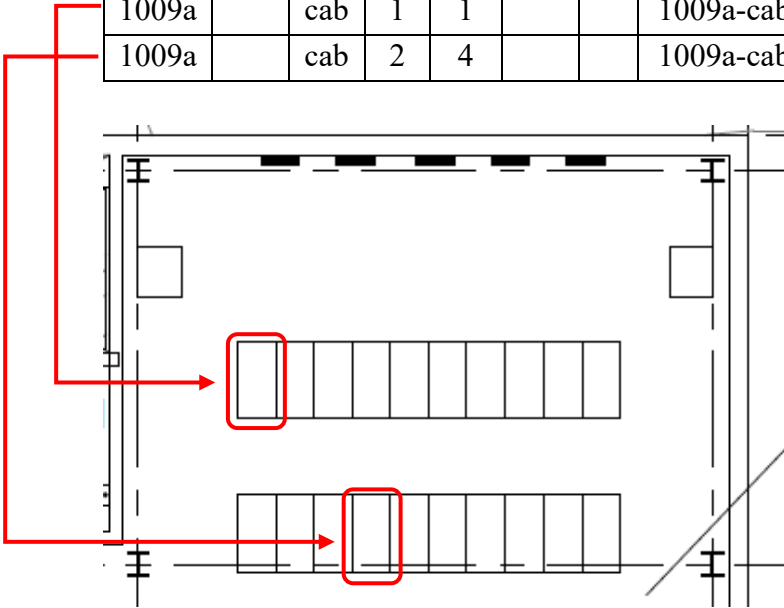
aa	bb	dd	pp	nn	cc	#	Name	Description
hs6		d	40				hs6-d40	HSR dipole 40m before the 6 o'clock IP
hs6		d	40		ps		hs6-d40-ps	HSR dipole power supply 40m before the 6 o'clock IP
es6		qf	130	2			es6-qf130_2	ESR focusing quad 130m before 6 o'clock IP
es6		qf	130	2	ps		es6-qf130_2-ps	ESR focusing quad power supply 130m before 6 o'clock IP
es6		ps	130		dcct		es6-ps130-dcct	dcct for es6-qf130_2-ps

The only official copy of this document is the one online in the SharePoint Document Center. Before using a printed copy, verify that it is current by checking the printed document's Revision History log with that of the online version.

Electron-Ion Collider, Brookhaven National Laboratory			
Doc No. EIC-SEG-RSI-009	Author: L. Strange	Effective Date: October 13, 2023	Review Frequency: 1 year
Requirements, Specifications, and Interfaces: Naming Requirements			Revision: 00

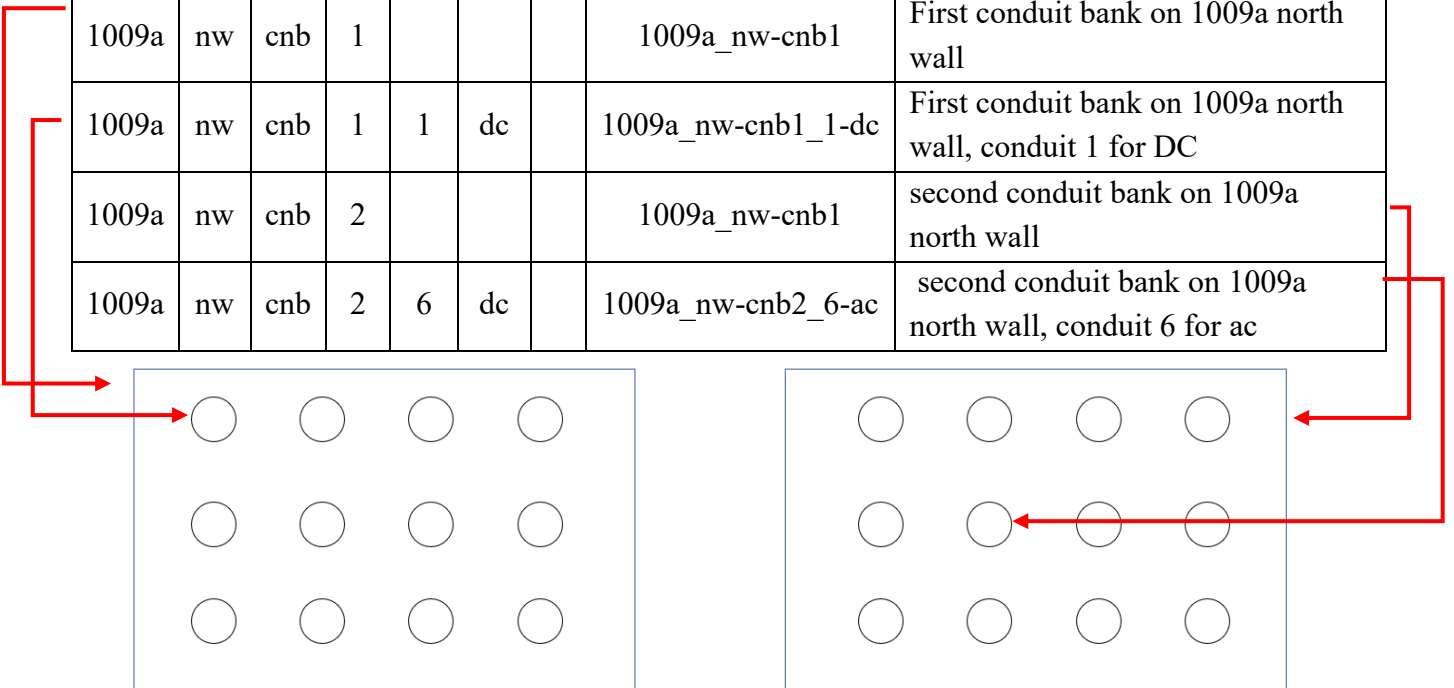
### 3.2. Equipment Cabinets

aa	bb	dd	pp	nn	cc	#	Name	Description
1009a		cab	1	1			1009a-cab1_1	Row 1 rack 1 in building 1009a
1009a		cab	2	4			1009a-cab2_4	Row 2 rack 4 in building 1009a



### 3.3. Conduit Banks

aa	bb	dd	pp	nn	cc	#	Name	Description
1009a	nw	cnb	1				1009a_nw-cnb1	First conduit bank on 1009a north wall
1009a	nw	cnb	1	1	dc		1009a_nw-cnb1_1-dc	First conduit bank on 1009a north wall, conduit 1 for DC
1009a	nw	cnb	2				1009a_nw-cnb1	second conduit bank on 1009a north wall
1009a	nw	cnb	2	6	dc		1009a_nw-cnb2_6-ac	second conduit bank on 1009a north wall, conduit 6 for ac



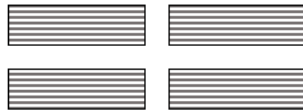
The only official copy of this document is the one online in the SharePoint Document Center. Before using a printed copy, verify that it is current by checking the printed document's Revision History log with that of the online version.

Electron-Ion Collider, Brookhaven National Laboratory			
<b>Doc No.</b> EIC-SEG-RSI-009	<b>Author:</b> L. Strange	<b>Effective Date:</b> October 13, 2023	<b>Review Frequency:</b> 1 year
<b>Requirements, Specifications, and Interfaces:</b> Naming Requirements			<b>Revision:</b> 00

### 3.4. Trays

aa	bb	dd	pp	nn	cc	#	Name	Description
1009a	r1	tra	1	1	dc		1009a_r1-tra1_1-dc	tray in 1009a, above rack row 1, bottom level, west tray, for DC
1009a	r1	tra	1	2	dc		1009a_r1-tra2_1-ac	tray in 1009a, above rack row 1, second level, west tray, for AC
1009a	r1	tra	2	2	dc		1009a_r1-tra2_2-lls	tray in 1009a, above rack row 1, second level, east tray, for low level signals

View looking North



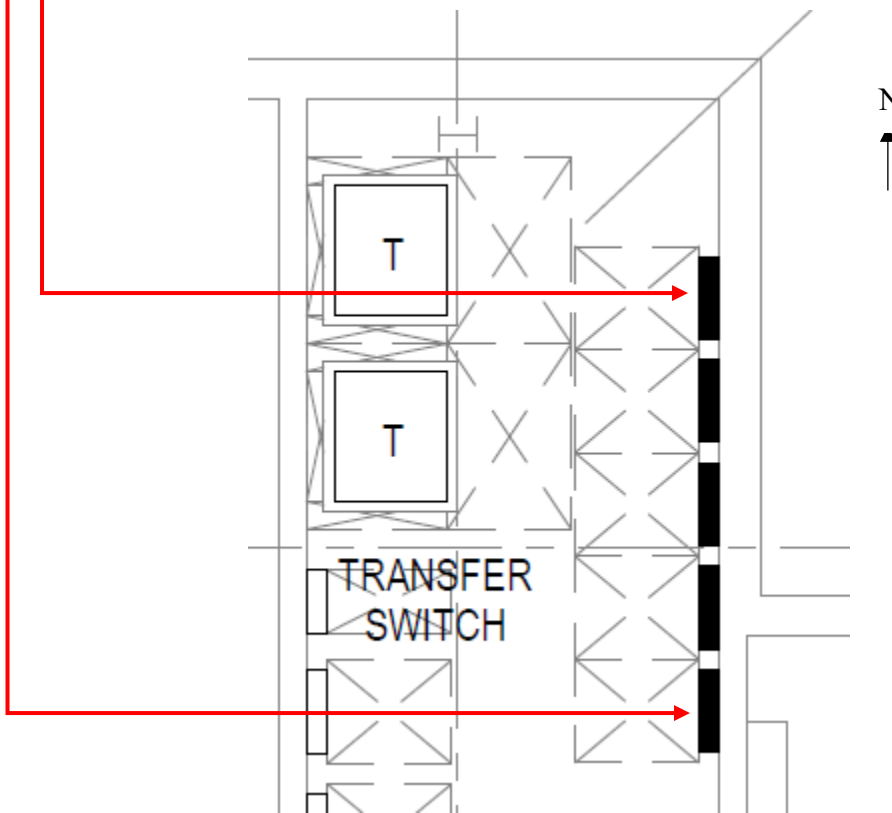
1009a-cab1\_1

The only official copy of this document is the one online in the SharePoint Document Center. Before using a printed copy, verify that it is current by checking the printed document's Revision History log with that of the online version.

Electron-Ion Collider, Brookhaven National Laboratory			
Doc No. EIC-SEG-RSI-009	Author: L. Strange	Effective Date: October 13, 2023	Review Frequency: 1 year
Requirements, Specifications, and Interfaces: Naming Requirements			Revision: 00

### 3.5. Wall mounted enclosures

aa	bb	dd	pp	nn	cc	#	Name	Description
1009a	ew	acp	1				1009a_ew-acp1	ac panel in 1009a, east wall, position one
1009a	ew	acp	5				1009a_ew-acp5	ac panel in 1009a, east wall, position one



### 3.6. Rack devices (non-beamline)

aa	bb	dd	pp	nn	cc	#	Name	Description
1009a	r1.1	blw					1009a_r1.1-blw	1009a rack 1_1 blower
1009a	r2.4	wmf					1009a_r2.4-wmf	1009a rack 2_4 water manifold

The only official copy of this document is the one online in the SharePoint Document Center. Before using a printed copy, verify that it is current by checking the printed document's Revision History log with that of the online version.

<b>Electron-Ion Collider, Brookhaven National Laboratory</b>			
<b>Doc No.</b> EIC-SEG-RSI-009	<b>Author:</b> L. Strange	<b>Effective Date:</b> October 13, 2023	<b>Review Frequency:</b> 1 year
<b>Requirements, Specifications, and Interfaces:</b> Naming Requirements			<b>Revision:</b> 00

## **4. REFERENCES**

### **4.1. [SWN Abbreviation Database](#)**