

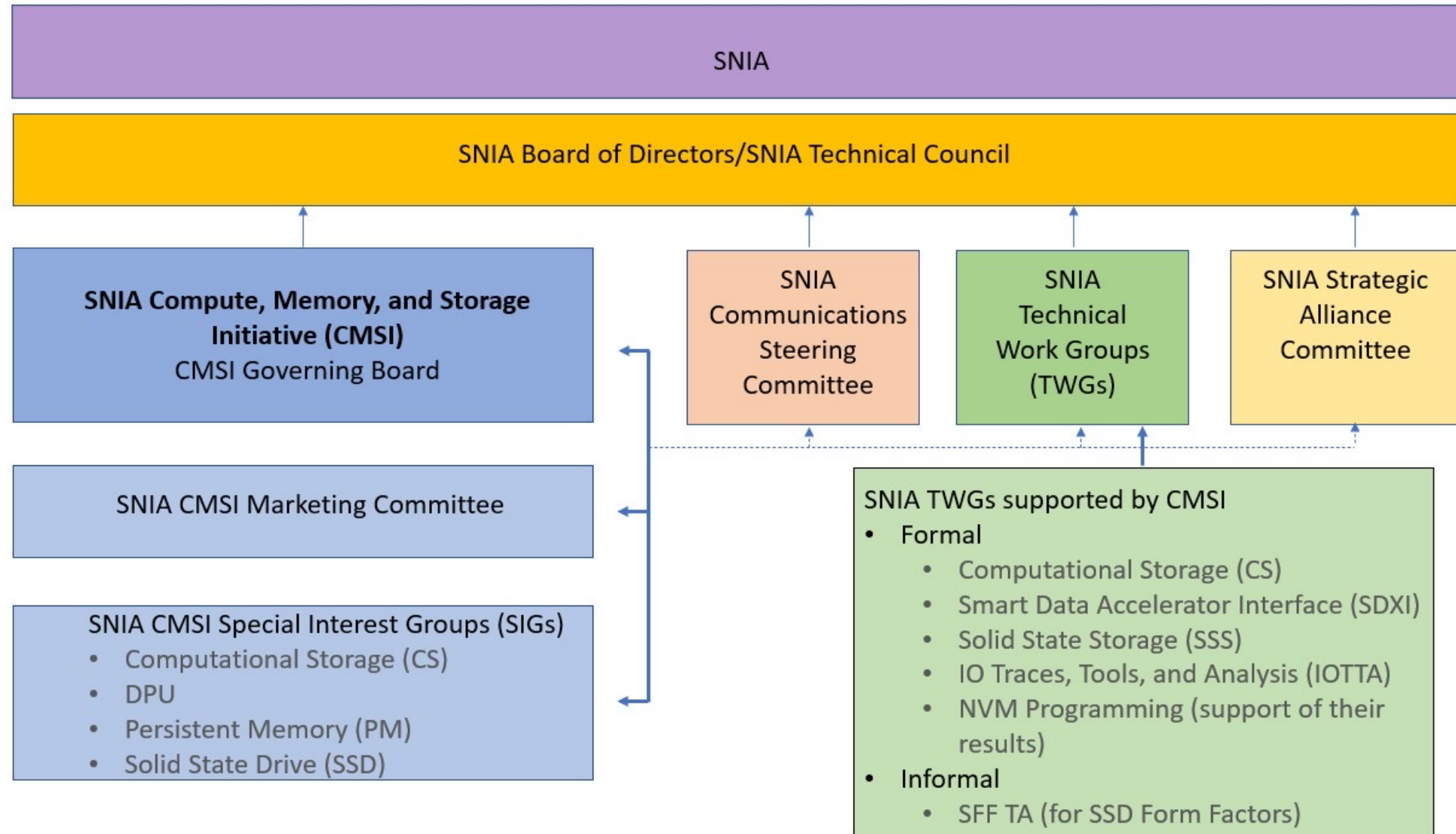
# Compute, Memory, and Storage Initiative (CMSI)

2023 Review and 2024 Plans

Presented by Bill Martin, Chair, CMSI

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# SNIA and the Compute, Memory, and Storage Initiative





# SNIA CMSI Mission

The SNIA CMSI is dedicated to fostering the growth and success of the market for solid state storage, computational storage, persistent memory, and other advanced storage technologies in both commercial and consumer environments.



# CMSI 2023 Accomplishments

## Education

*Goal: Educate end users and industry about the technology and technical work that CMSI supports.*

- Developed and published a **Total Cost of Ownership (TCO) Model for Computational Storage**
- Prepared **launch plans** for the Smart Data Accelerator Interface 1.0 Specification and the Computational Storage API Specification
- Produced a **Compute+Memory+Storage Summit** which featured 37 sessions, 50 speakers, and 500+ virtual attendees
- Continued **Persistent Memory education** with revision of the Persistent Memory Programming Workshop and Hackathon curriculum to include new technologies like CXL™
- Education on **New Memory** types
- Expansion of support on **Form Factor** deployments and use cases
- Created new and updated existing snia.org **webpages** on
  - SSD Form Factors
  - NVMe SSD Classification
  - SSD Endurance
  - TCO for SSD and Computational Storage
  - “What Is?” pages on SSDs, Computational Storage and Persistent Memory
- **11 Presentations, two whitepapers, and two webinars** on CMSI supported topics

## Outreach

*Goal: Communicate the benefits of SNIA supported technologies and technical work.*

- Communicated SSD and CS **TCO Benefits**
  - Series of presentations at Compute+Memory+Storage Summit and Flash Memory Summit
- **Taught Persistent Memory Programming** at Workshops and Hackathons
  - Live at four industry events with 25+ attendees
- Communicated the benefits of SNIA **Computational Storage API and SDXI Specifications**
  - Promoted at six SNIA and Industry events with 40K plus attendees
  - Both Specifications won **Best of Show** at Flash Memory Summit 2023
- Leveraged Compute+Memory+Storage Summit content with a series of **videos** which are continually viewed in the SNIA Educational Library
- **Briefed** industry experts on **SDXI**
  - Digitalisation World
  - Gestalt IT

## Enablement

*Goal: Make SNIA technical work easier to access and use.*

- Encouraged and promoted **use cases** from member companies and **work from open source teams**
  - Computational Storage use case demonstrations featuring five vendors at four industry events
- Advertised and promoted open source work – **collaborative efforts with SNIA Alliance and Collaboration Partners**
  - Open Standard Pavilions at Flash Memory Summit reaching 3,000+ attendees
    - CXL Consortium
    - PCI-SIG
    - UCle™ Consortium
  - Open Standard Pavilions at SC23 reaching 12,000+ attendees
    - DMTF
    - OpenFabrics Alliance
    - UCle Consortium
    - Ultra Ethernet Consortium

# CMSI 2024 Plans

## Education

*Goal: Educate end users and industry about the technology and technical work that CMSI supports.*

- Produce **Compute+Memory+Storage Summit** (May 14-15, 2024)
- Produce **webinars, podcasts, and blogs** on technology topics from Initiative member thought leaders
- Develop and publish an update to **Total Cost of Ownership (TCO) Model for Computational Storage and Solid State Drives**.
- Continued research and documentation of **use cases**
  - Computational Storage
  - Persistent Memory
  - SSD Form Factors
- Create education on **New Memory Types**
- Expand **Persistent Memory Programming Workshop** and **Hackathon** content and events
- Create new and update existing snia.org **webpages**

## Outreach

*Goal: Communicate the benefits of SNIA supported technologies and technical work.*

- Support **SNIA SDC events** (US, India)
- Outreach and participate in **industry events** including MemCon 2024, Flash Memory Summit, OCP Global Summit, and SC24
- Communicate Solid State Drive and Computational Storage **TCO Benefits**
  - Series of presentations at Compute+Memory+Storage Summit and Flash Memory Summit
- **Teach Persistent Memory Programming** at Workshops and Hackathons
- Leverage **Compute+Memory+Storage Summit content** in the SNIA Educational Library
- Brief **industry experts**

## Enablement

*Goal: Make SNIA technical work easier to access and use.*

- Evangelize and outreach on **SNIA Technical Work Group activities** at company and industry events
  - Computational Storage
  - SDXI
  - Solid State Storage
- Support **Joint Marketing Activities** of SNIA Groups and SNIA Alliance/Collaboration Partners at Flash Memory Summit 2024 and SC24
  - SCSI Trade Association (STA) Forum
  - SFF Technology Affiliate
  - CXL Consortium
  - JEDEC
  - NVM Express®
  - OpenFabrics Alliance
  - UCIe Consortium



# **CMSI F2F Meeting**

## **Thursday, January 18, 2024**

### **9:00 am – 11:00 am Pacific time**

**Virtual at [www.snia.org/zoom/solidstate](http://www.snia.org/zoom/solidstate)**

**All SNIA members and colleagues are invited to join CMSI as they kick off 2024 with an agenda featuring:**

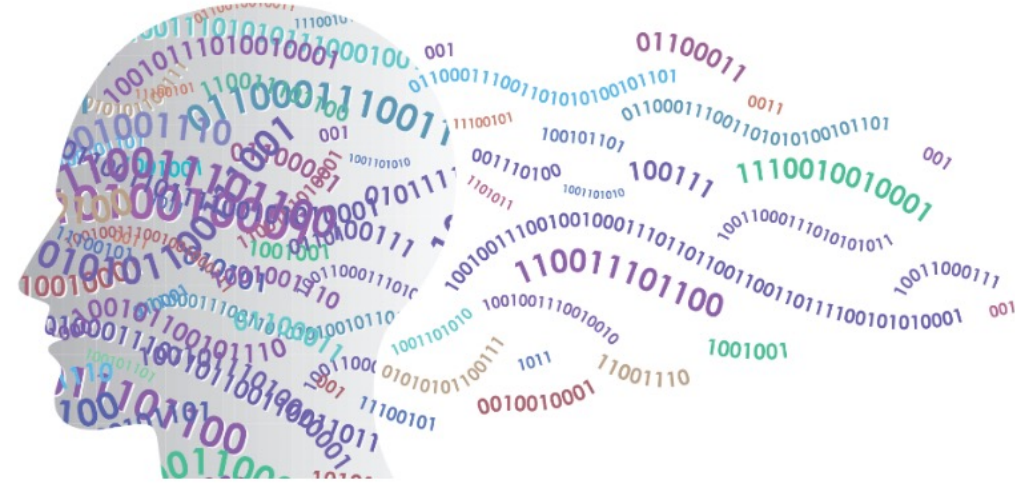
- Live discussions of CMSI objectives and plans
- Presentations from SNIA Groups and Alliance Partners, including
  - [CXL Consortium](#)
  - [NVM Express](#)
  - [OpenFabrics Alliance](#)
  - [STA Forum](#)

***Need more details? Email [askcmsi@snia.org](mailto:askcmsi@snia.org)***

# Compute+Memory+Storage Summit

*Save the Date – May 14-15, 2024*

- The Compute+Memory+Storage Summit returns as a virtual event with
  - Two half-days of live keynotes and panel sessions
  - Pre-recorded breakout sessions released concurrently with the event
- Virtual demonstration opportunities
- Topics to include
  - Future memory trends
  - Computational storage
  - Computational memory
  - CXL connectivity and impact on memory/computational storage
  - Compute, memory, and storage use cases and applications
  - Generative AI
  - Security
  - Market and analyst updates
  - Developer-friendly programming frameworks
  - The latest on the SNIA technical work in compute, memory, and storage
- Look for the call for presentations and sponsorship information – coming very soon!





# Participate in SNIA CMSI in 2024

- Expected industry impact of CMSI work
  - Significant education deliverables contributing to expanded knowledge of computational storage and smart data acceleration interface technology
  - The place to go for information on SSD form factors, NVMe classification, and Total Cost of Ownership (TCO) information
  - Expanded reach to end users
  - Implementation knowledge of the NVM Programming Model benefits and application to persistent memory applications
- Industry segment relevance of CMSI work
  - Computational Storage industry
  - Memory industry
  - Storage industry
- Why you should join and participate in the CMSI
  - Engage and educate the industry on compute, memory, and storage technologies
  - Accelerate standards
  - Propel technology adoption
- Who to contact for additional information
  - Reach out to our leadership – Bill Martin – [cmsi-chair@snia.org](mailto:cmsi-chair@snia.org)
  - Website – [www.snia.org/cmsi](http://www.snia.org/cmsi)
  - CMSI fact sheet - [https://www.snia.org/sites/default/files/SSSI/CMSI\\_2024\\_fact\\_sheet.pdf](https://www.snia.org/sites/default/files/SSSI/CMSI_2024_fact_sheet.pdf)



The leading member companies of the SNIA Compute, Memory, and Storage Initiative (CMSI) support the industry drive to combine processing with memory and storage, and to create new compute architectures and software to analyze and exploit the explosion of data creation over the next decade.



## CMSI Engages and Educates

- ✓ Computational Storage
- ✓ Persistent Memory
- ✓ PM and SSD Performance
- ✓ Smart Data Accelerator
- ✓ DPU
- ✓ Solid State Drives
- ✓ Solid State Systems
- ✓ SSD Form Factors



## CMSI Accelerates Standards

- ✓ Computational Storage Architecture & Programming Model
- ✓ Computational Storage API
- ✓ NVM Programming Model
- ✓ Smart Data Accelerator Interface
- ✓ Solid State Storage Performance Test Specifications
- ✓ SSD Form Factor Specifications



## CMSI Propels Technology Adoption

- ✓ Persistent Memory Programming Workshops
- ✓ SSD Form Factors Explained
- ✓ Computational Storage, Memory, and Solid State Drive Demonstrations at live and online technology events
- ✓ Interactive Webcasts with Technology Industry Experts
- ✓ Videos on the SNIA Video YouTube Channel



# SNIA Compute, Memory and Storage Initiative Membership\*

CMSI Strategic Membership, Voting - \$5,000/year; CMSI Membership, Non-Voting \$3,000/year (company revenue >\$5M);\$1,000/year (company revenue <\$5M)



Individual Members
Tom Coughlin (Coughlin Associates)
Dave Eggleston (Intuitive Cognition Consulting)
Jonmichael Hands (Individual Member)
Jim Handy (Objective Analysis Semiconductor Market Research)
Scott Miller (DreamWorks)
Tom West (HyperIO)

29 company members and 6 individual members as of January 2024

+ New members in FY2023: \* Strategic Membership, Voting members

# Who to Contact at CMSI

- [CMSI Chair](#)
  - Bill Martin (Samsung)
- [CMSI Vice Chair](#)
  - Leah Schoeb (AMD)
- [CMSI Treasurer](#)
  - Willie Nelson (Intel)
- [CMSI Marketing Committee Co-Chairs](#)
  - David McIntyre (Samsung); Willie Nelson (Intel)
- [CMSI Computational Storage SIG Chair](#)
  - David McIntyre (Samsung)
- [CMSI Persistent Memory SIG Co-Chairs](#)
  - Arthur Sainio (SMART Modular); Raghu Kulkarni (Intel)
- [CMSI Solid State Storage Drive SIG Co-Chairs](#)
  - Cameron Brett (KIOXIA); Jonmichael Hands (individual member)