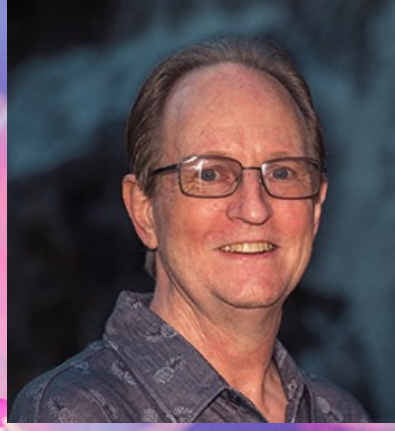


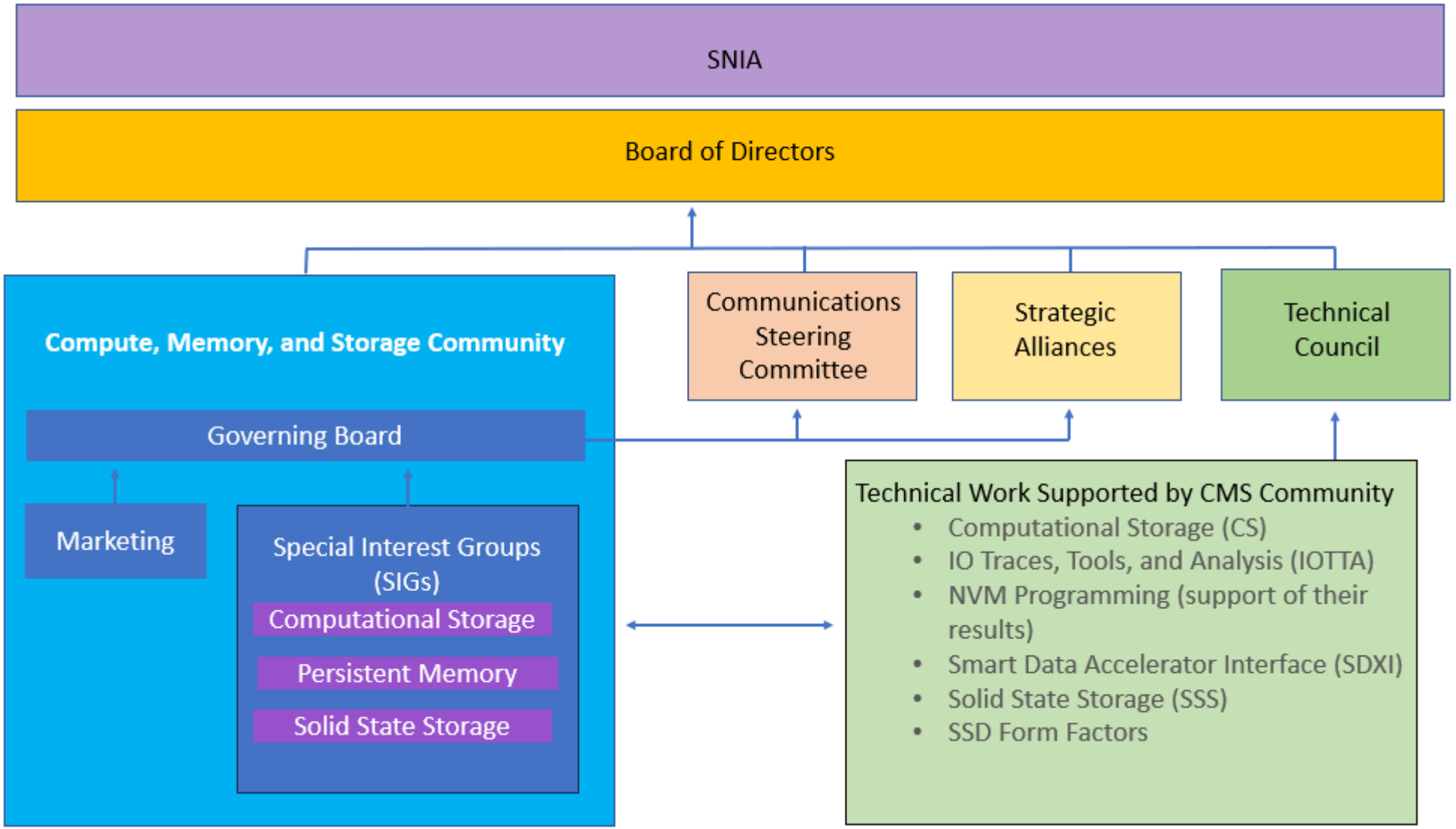
Compute, Memory, and Storage Community

2024 Review and 2025 Plans

Presented by Bill Martin, Chair, CMS Community

cms-chair@snia.org

SNIA and the Compute, Memory, and Storage Community



SNIA

SNIA Compute, Memory, and Storage Community Mission

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

SNIA

2024 Accomplishments

Education

Goal: End users and industry learn about the technology and technical work that is supported.

- Webinars on **Emerging Memory** and **How Are Technology Innovations within CXL and HBM Shaping the Future of Memory and Storage Use and Assembly**
- Produced a **Compute, Memory, and Storage Summit** featuring 31 sessions from 30 speakers with 865 virtual attendees
- Continued Persistent Memory education with updates of the **Persistent Memory Programming Workshop and Hackathon** curriculum with CXL™ exercises and new equipment in the SNIA Innovation Lab to include new technologies
- Expansion of support on **SSD Form Factor** deployments and use cases
- Updates to and new snia.org **webpages**
  - SSD Form Factors
  - NVMe SSD Classification
  - SSD Endurance
  - TCO for SSD and Computational Storage
  - PM Hackathon

Outreach

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

- Sponsored and moderated sessions at MemCon and AI Hardware Summit presenting SNIA overviews
- Communicated SSD and CS **TCO Benefits**
  - Series of presentations at CMS Summit and Future Memory Storage Summit
- **Taught Persistent Memory Programming** at Workshops and Hackathons
  - **Live at five industry events** with 35+ students
- Communicated the benefits of the SNIA **Computational Storage** and **API specifications, SDXI Specification,** and **SFF form factor specifications**
  - Promoted at five Industry Events to 40K plus attendees
  - EDSFF Specifications won **Best of Show** at Future Memory Storage Summit
- Solicited input via a **Computational Storage Survey** at events and from SNIA members to gather perspectives on computational storage technical work, implementations, and future directions
- Leveraged CMS Summit with a series of **videos** which are continually viewed in the SNIA Educational Library (get # of views to date)
  - Over 1,000 views of the Summit playlist post event
- Reached out to **industry experts**
  - Objective Analysis and Coughlin Associates on persistent memory

Enablement

Goal: Making the benefits of SNIA technical work easier to access and use.

- Highlighted **use cases** from member companies and **work from opensource teams at industry events**
  - SDXI multivendor demonstrations
  - Computational Storage use case demonstrations
- Advertised and promoted opensource work – **collaborative efforts with SNIA Alliance and Collaboration Partners**
  - Open Standard Pavilions at Future Memory Storage Summit reaching 3,000+ attendees
    - CXL Consortium
    - Ultra Accelerator Link Consortium
    - UCIe Consortium
  - Open Standard Pavilions at SC24 reaching 17,000+ attendees
    - DMTF
    - OpenFabrics Alliance
    - UCIe Consortium
    - Ultra Ethernet Consortium
    - Ultra Accelerator Link

SNIA

2025 Plans

Education

Goal: Educate end users and industry about the technology and technical work that the CMS Community supports.

- Produce **webinars, podcasts, and blogs** on technology topics from Community member thought leaders. Potential topics include:
  - New Memories
  - Power Optimization/Improving Reliability of SSDs
  - Programming CXL Memory Modules
  - Computational Storage Q&A
  - Near Data Computing
- Develop and publish an update to **Total Cost of Ownership (TCO) Model for Computational Storage and Solid State Drives.**
- Develop and publish paper on **Benchmarking Large SSD Drives**
- Develop and publish **CXL Memory Module Programming Exercises** video and PDF instructions
- Continue 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 demonstrate at events
- Create new and update existing snia.org **webpages**

Outreach

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

- Contribute to **SNIA Developer Conferences**
- Outreach and participate in **industry events** including Future Memory Storage Summit and SC25
- Communicate Solid State Drive and Computational Storage **TCO Benefits at events**
- **Teach Persistent Memory Programming** at Workshops and Hackathons
- Brief **industry experts**
- Contribute to and support **SNIA Alliance Committee** activities

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 Future Memory Storage Summit 2025 and SC25
  - SCSI Trade Association (STA) Forum
  - SFF Technology Affiliate
  - CXL® Consortium
  - JEDEC
  - NVM Express®
  - OpenFabrics Alliance
  - UCIe Consortium
  - Ultra Ethernet Consortium
  - Ultra Accelerator Link Consortium

SNIA

CMS Community Virtual F2F Meeting
Thursday, January 16, 2025
8:00 am – 12:00 pm Pacific time

Virtual at www.snia.org/cmsf2f

All SNIA members and colleagues are invited to join the CMS Community as they kick off 2025 with an agenda featuring:

- Live discussions of CMS objectives and plans
- Presentations from SNIA Groups and Alliance Partners, including
  - CXL Consortium
  - NVM Express
  - STA Forum

Need more details? Email askcms@snia.org

SNIA

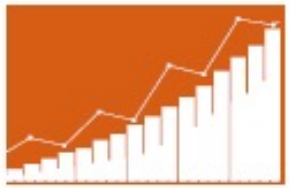
Join Us and Participate in 2025

- Expected industry impact of our 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 and CXL memory applications
- Industry segment relevance of our work
  - Computational Storage industry
  - Memory industry
  - Storage industry
- Why you should join and participate in the community
  - Propel technology adoption
  - Engage and educate the industry on compute, memory, and storage technologies
  - Accelerate standards
- Who to contact for additional information
  - Reach out to our leadership – Bill Martin – CMS-chair@snia.org
  - Website – www.snia.org/CMSC
  - Fact Sheet - https://www.snia.org/sites/default/files/SSSI/2025-0108_CMS_Community_Fact_Sheet.pdf

The industry leading member companies of the SNIA Compute, Memory, and Storage Community 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.

Engage and Educate

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



Accelerate 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

Propel 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 Webinars with Technology Industry Experts
- Videos on the SNIA Video YouTube Channel

SNIA

SNIA Compute, Memory and Storage Community Members

All SNIA Member Companies are able to join a SNIA Community. These companies have members who have joined the CMS Community Causeway roster as of 1/10/25

+ 14 new members since December 1, 2024

SNIA

Who to Contact in the CMS Community

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

