2022 ANNUAL MEMBERS MEETING

October 27, 2022

8AM Pacific / 11AM Eastern – Teleconference
(See Next Page for Dial-in and Zoom Instructions)

Conference Call Dial-in and Zoom Info

https://www.snia.org/annualmeeting

Link will start Zoom meeting – afterwards, redirects to copy of the presentation materials

Teleconference/Zoom coordinates:

Zoom Meeting ID: 815 0001 9386 Passcode: 102722

https://snia.org/annualmeeting

One tap mobile

+17207072699,,81500019386#,,,,*102722# US (Denver)

+13462487799,,81500019386#,,,,*102722# US (Houston)

Find your local number: https://us06web.zoom.us/u/kbapOmgYlo

Zoom Format – Attendee Guidance

- Enter Name (Company) on your Zoom Login/Attendee Info

- Everyone will be on Mute, except the Moderator/Speaker

- You can <u>unmute yourself if you would like to say something</u>

  - Voting Member Company Primary/Alternate representatives, please identify yourself when joining

- <u>Remain on Mute</u> when not speaking

- Use the <u>Chat Icon</u> to text message the group or a particular person

- Use <u>Raised Hand</u> function under "Reactions" icon
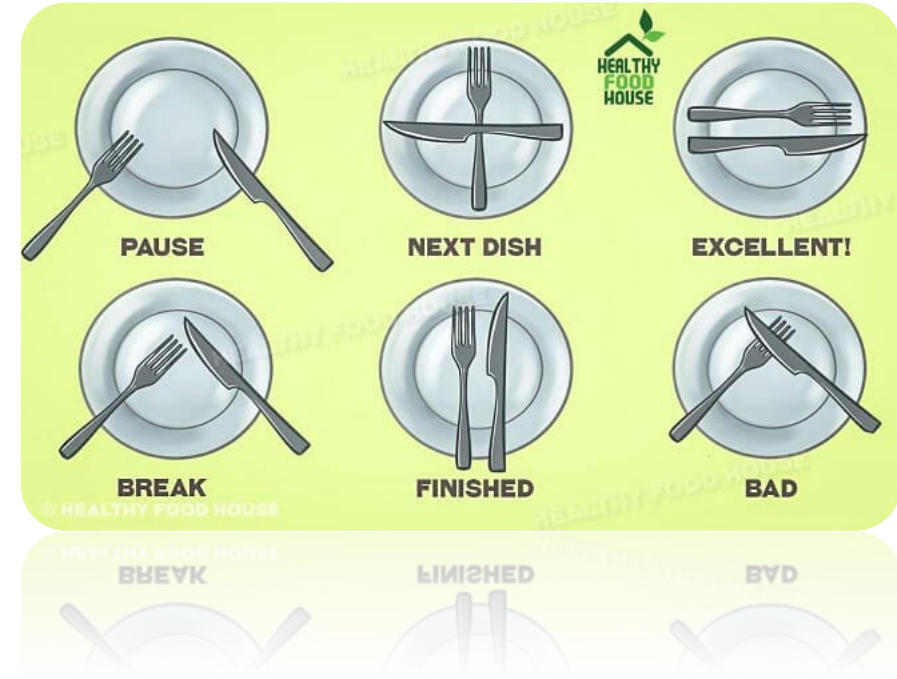
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2022 Annual Members Meeting Agenda

- Greetings and Roll Call – Michael Oros, Executive Director
- FY2021: Annual Report published
  - Motion to Approve 2021 Meeting Minutes – Chris Lionetti, SNIA Secretary
  - Fiscal Report (2021 Annual Report) – Sue Amarin, SNIA Treasurer
- FY2022: SNIA update and achievements to date – Michael Oros, Executive Director
- FY2023: What's ahead for SNIA – J Metz, Ph.D, SNIA Chair
- Discussion and Q&A – Members and SNIA Board Members
- Announcement of the 2022 Board and Technical Council Election Results – Michael Oros, Executive Director
- Adjourn

Roll Call 2022 and Approval of 2021 Minutes

- Roll Call of Voting Member Companies

- Primary Representatives of Voting Member Companies

  - Please identify yourselves during Roll Call

- If you work for a Voting Member Company and do not hear your primary representative, please identify yourself during roll call

  - Proxy representation is Accepted at Annual Members Meeting

- Vote to approve 2021 Meeting Minutes will take place upon quorum being met

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Roll Call 2022:
Roster of Voting Companies and Primary/Voting Representatives

- Leah Schoeb, AMD
- Alexandre Romana, ARM
- Steve Wilson, Broadcom
- Dan Hanson, Shalom Shefa, Cisco
- Bill Elliott, Dell Inc.
- Stephen Bates, Eideticom
- Makoto Sasaki, Fujitsu Limited
- Victor Cao, Futurewei*
- Chris Lionetti, Curtis Ballard, HPE
- Tim Lofink, Hitachi Vantara
- Yolanda Fang, Huawei Technologies*
- Roger Hathorn, IBM
- Artanis Wang, Inspur
- Richelle Ahlvers, Intel Corporation

- Mark Carlson, Kioxia Corporation
- Wang Zhenhao, MacroSAN
- John Maroney, Micron
- Chris Lueth, NetApp
- Vahab Alemzade, NGD Systems
- Martin Peterson, Oracle Corporation
- Rob (Barkz) Barker, Pure Storage
- Bill Martin, Samsung
- Bill Bailey, Seagate
- Xuemei Qiu, Sichuan Huafeng Enterprise Group Co. Ltd.
- Myron Loewen, Solidigm
- Daniel Chadash, Twist Bioscience
- Eric Betts, VMware
- Dave Landsman, Western Digital
- Ivan Tchoub, YADRO
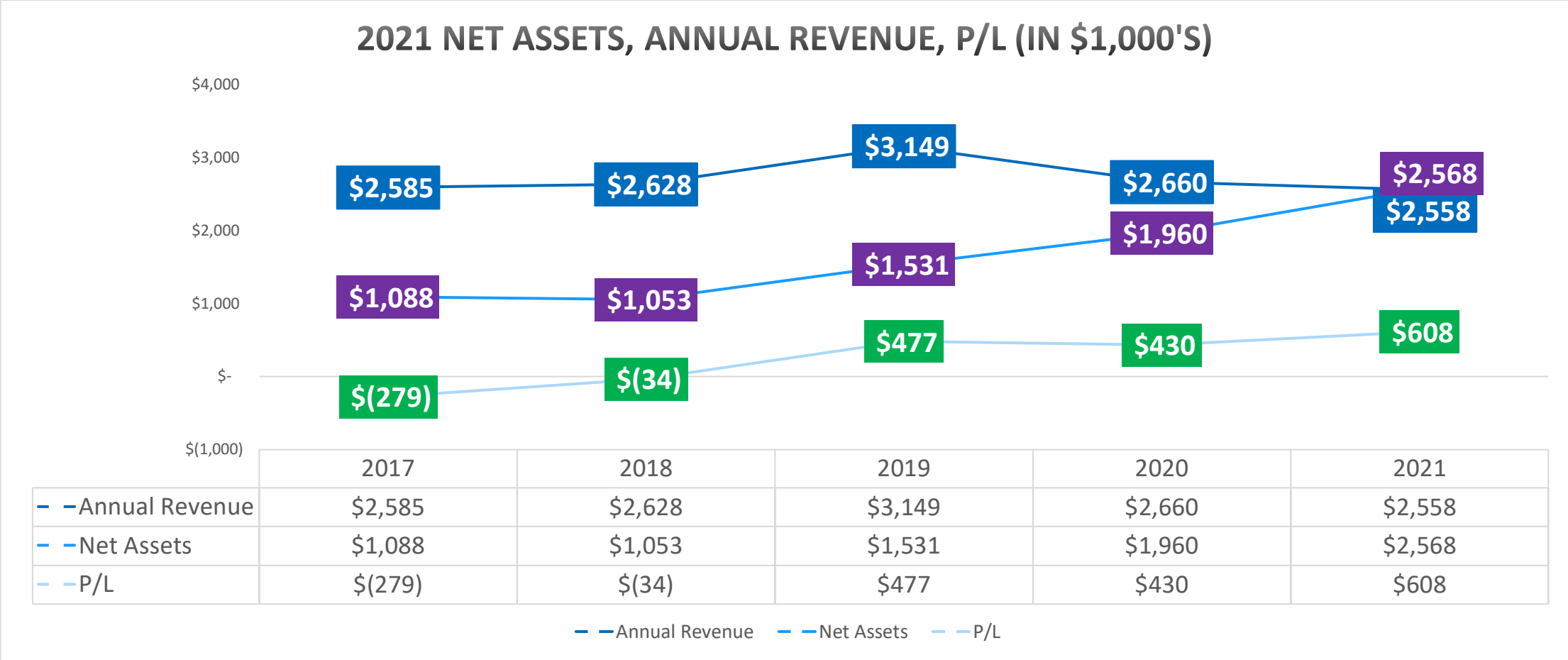
Quorum is 15 of 28

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SNIA FY2021 Annual Report
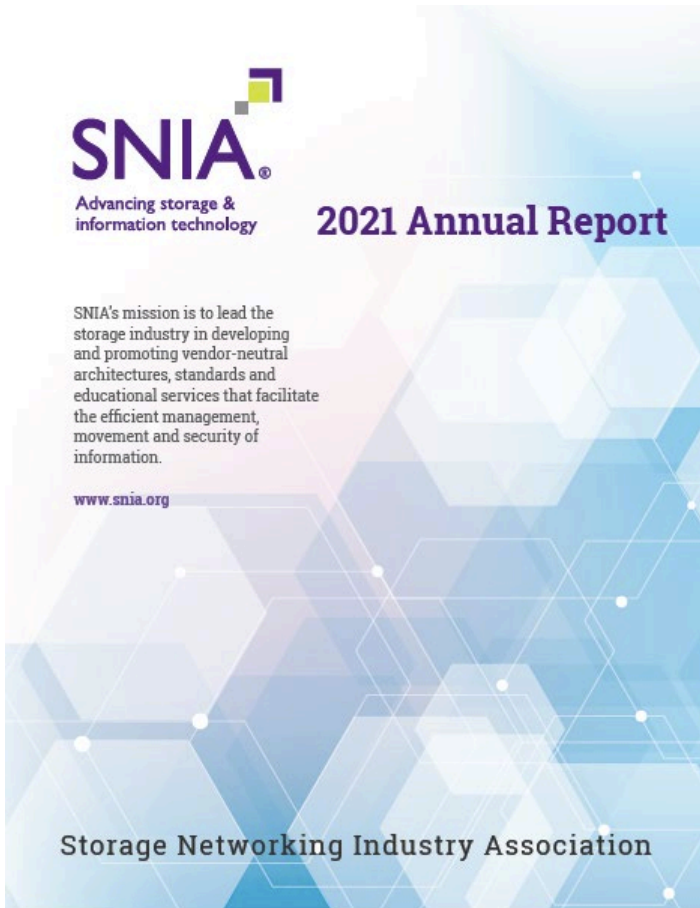
Motion: Approve 2021 Meeting Minutes

FY2021 annual report posted on SNIA website:
(https://www.snia.org/about/corporate_info/documents)

https://www.snia.org/sites/default/files/corp-docs/AnnualReport21.pdf

SNIA Fiscal Report: 2021

2021 NET ASSETS, ANNUAL REVENUE, P/L (IN $1,000'S)

	2017	2018	2019	2020	2021
– –Annual Revenue	$2,585	$2,628	$3,149	$2,660	$2,558
– –Net Assets	$1,088	$1,053	$1,531	$1,960	$2,568
– –P/L	$(279)	$(34)	$477	$430	$608

– – Annual Revenue   – – Net Assets   – – P/L

Note: P/L numbers include allowances for bad debt, depreciation and vacation accrual. For details, refer to our 2021 annual report at: http://snia.org/about/corporate_info/documents

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FY2022

SNIA Vision and Mission

Vision Statement

- Be the globally recognized and trusted authority for storage leadership, standards, and technology expertise.
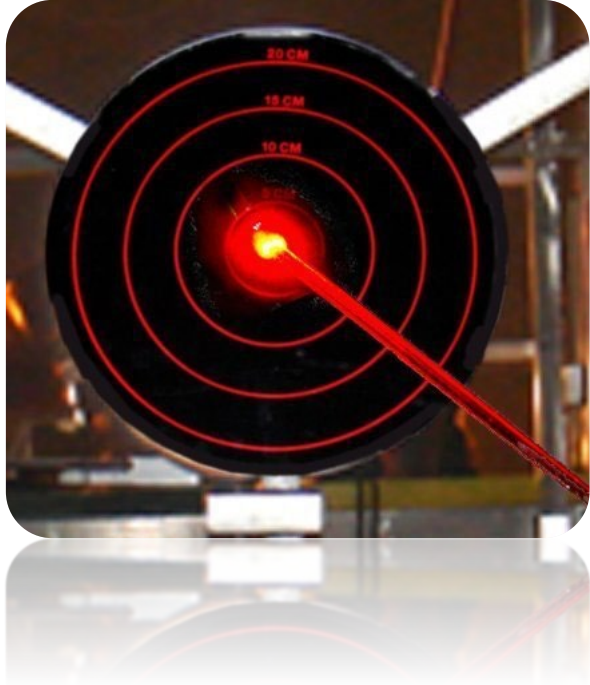
Be "all things storage."

Mission Statement

- Lead the storage industry worldwide in developing and promoting vendor-neutral architectures, standards and educational services that facilitate the efficient management, movement and security of information.

Lead the storage ecosystem

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SNIA Focus for 2022

- **Technical Focus and Marketing Initiatives**
  - Updated Specifications, Standards
- **SNIA Internal Efficiency**
  - Root out inefficiencies, provide guidance for consistency and simplify processes
- **Membership**
  - Focus on retention and member satisfaction with SNIA programs
  - Bring new work/groups into SNIA
- **Alliances and Partnerships**
  - Engage our existing Strategic Alliances and grow them; establish new ones
  - Enhance partnerships with other SDOs and Open Source community
  - Execute on collaborative work registers and foster new areas of collaboration
  - Strong focus on next-generation technologies and infrastructures
- **Execute online education objectives**
  - Strong webcast agenda; outside-in analyst engagements
  - Build out online education library and organize our content; Dictionary updates
- **Balanced Budget**

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2022 Achievements – Technical Publications

ACHIEVEMENT UNLOCKED
1000G- Create Offspring

SNIA Standards

- Computational Storage Architecture and Programming Model v1.0
- Smart Data Accelerator Interface ("SDXI") Specification v1.0
  - *Membership vote active, to be published November 2022*
- Swordfish Scalable Storage Management API Specification v1.2.4a
- TLS Specification for Storage Systems v2.1

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2022 Achievements – SNIA ISO Standards

- **ISO/IEC 17826:2022**
  - Information technology — Cloud Data Management Interface (CDMI) Version 2.0
- **ISO/IEC DIS 5965**
  - Swordfish v1.2.4a submitted to ISO PAS process on August 24, 2022

2022 Achievements – Public Review Drafts

- Smart Data Accelerator Interface ("SDXI") Specification v0.9.7
- Computational Storage API v0.8 rev 0

- CDMI Extensions and Profiles

https://www.snia.org/publicreview

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2022 Achievements – SFF TA TWG

- Published 2 new specifications:
  - SFF-TA-1023: Thermal Characterization Specification for EDSFF Devices
  - SFF-TA-1026: Storage System High Speed Cable Interconnect
- Revised/updated 2 additional specifications:
  - SFF-8071: SFP+ 1X 0.8mm Card Edge Connector
  - SFF-TA-1005: Universal Backplane Management (UBM)

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2022 Achievements – Membership

- **Membership:**
  - 83 core members (+8 new members YTD)
  - 20 Educational Institution members
  - 23 non-core Regional Affiliate Members

- **Voting membership: 29 (+6 new/upgrade)**

- **Technology Affiliates**
  - 78 SFF TA TWG members
  - 41 DNA Data Storage Alliance members [New April 2022]

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Let's Talk About Us… (CSC/MRKT)

- Internal Efforts
  - Better cross-collaboration focus with TWG/F&I Chairs
  - Creating a database of content created for sharing
  - Continuous work to improve Causeway experience

- External Efforts
  - Marketing efforts Continue strong!
  - PR work expands as well
  - Published content is growing
  - Website 'cleanup' in progress
    - FEEDBACK welcome on change(s)

SNIA Visibility due to Marketing

| What	Visibility
SNIA Website	Average of 165,000 total views each month
SNIA Webcasts	Deliver an average of 2 webcasts each month
SNIAVideo/YouTube	Over 6,800 subscribers, total views average about 15,300 per month
SNIA Blogs	Publish an average of 4 blogs per month with an average of 2,400 views per month
SNIA "What Is" pages	Generates an average of over 13,000 views per month
SNIA Matters Newsletter	Over 37,400 global subscribers
SNIA Podcasts	Deliver an average of 2 per month Discussions underway about possibly expanding this program

Education – A SNIA Priority

- Storage Developer Conference (SDC)
  - Annual conference BY Developers FOR Developers
  - SDC'22 – over 120 educational sessions, plus networking Birds-of-a-Feather
- Educational Webcasts
  - Live vendor-neutral webcasts produced by Forums, Initiatives and Committees
  - Covering a wide range of storage and storage-related topics
- Resources
  - SNIA Educational Library https://www.snia.org/educational-library
    - A single repository of all SNIA educational content
    - Over 3,000 assets
  - SNIA Dictionary
    - Concise and clear definitions of more than 2,000 technology terms
    - Ongoing major review and revision – input welcome
  - "What Is" pages
    - Expanded descriptions of key technologies
- Geek Out On Storage!
  - Quarterly Campaign promoting various Technology Focus Areas
  - A single landing page with Videos, Podcasts, White Papers, Definitions
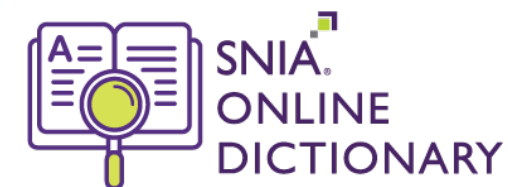
2022 Achievements – Events and Regions

Raising SNIA industry leadership profile

Events

- **Members Symposium (Jan - virtual)**
- **Storage Security Summit (May – virtual)**
- **Persistent Memory and Computational Storage Summit (May - virtual)**
- **SMB3 IO Labs**
  - June – Virtual
  - Sept. - Onsite and Virtual
- **Three Storage Developer Conferences**
  - SDC EMEA (Jun: Virtual)
  - SDC India (Aug: Virtual)
  - SDC Global (Sept: Face to Face and On-Demand)

Regions

➤ **SNIA EMEA - Regional Affiliate**
  - Successful SDC EMEA event; SMB3 IO Lab and education; multiple podcasts and webcasts

➤ **SNIA Japan - Regional Affiliate**
  - Ongoing technical storage seminars, end user surveys and industry engagements executed virtually

➤ **SNIA India - Regional Affiliate**
  - SDC India event as virtual conference; sustained Meet-up program; multiple webcasts

➤ **SNIA Malaysia - Regional Community**
  - Community led by Chin-Fah Heoh, with blogs

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2022 Strategic Alliances
Raising SNIA industry leadership profile

- **New Alliances completed/refreshed in 2022**
  - NVM Express / DMTF / SNIA three-way alliance
  - The Green Grid (TGG)

- **New Alliances in the process of being developed**
  - Open Compute Project (OCP)
  - PCI SIG
  - Universal Chiplet Interconnect Express (UCIe)

- **Existing Alliances in the process of being refreshed**
  - CXL

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Strategic Alliances

2022 DNA Data Storage Alliance

Raising SNIA industry leadership profile

- SNIA Welcomes the DNA Data Storage Alliance this year as a new SNIA Technology Affiliate group
- Group is growing fast and technical work is already underway – join it now!!

https://dnastoragealliance.org/members/become-a-member/

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DNA Data Storage Alliance - At a Glance

History
- Formed on October 12th, 2020 by Ilumina, Microsoft, Twist and Western Digital
- Climbed to 60+ members by 2Q-2022
- Joined SNIA as a Technology Affiliate group as of Jun-2022; back to ~40 members

Mission
- Create and promote an interoperable storage ecosystem based on DNA as a data storage medium

Scope
- Educate the market to create awareness and adoption of DNA data storage
- Develop a DNA data storage industry technology roadmap to drive R&D and funding
- Develop standards and/or specifications as needed by ecosystem

DNA DATA STORAGE

PRESERVING OUR DIGITAL LEGACY: AN INTRODUCTION TO DNA DATA STORAGE

JUNE 2021 — A PUBLICATION OF THE DNA DATA STORAGE ALLIANCE www.dnastoragealliance.org

DNA DATA STORAGE
A SNIA TECHNOLOGY AFFILIATE

MARKET OUTLOOK: ARCHIVAL STORAGE USAGE ANALYSIS, REQUIREMENTS, AND USE CASES

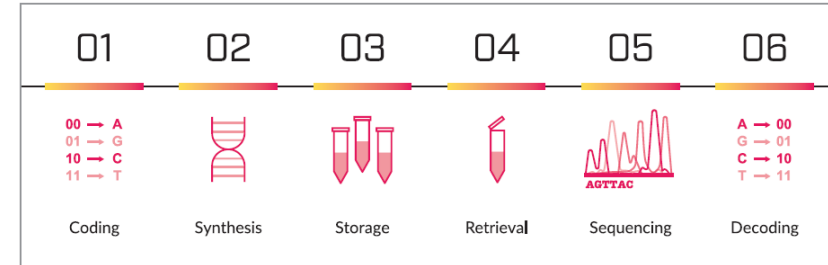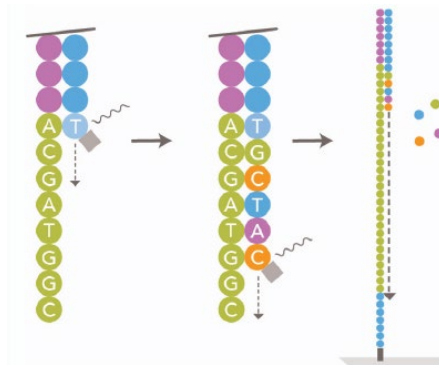OCTOBER 2022 — PART 1: ADVANCED DRIVER-ASSISTANCE SYSTEMS (ADAS)
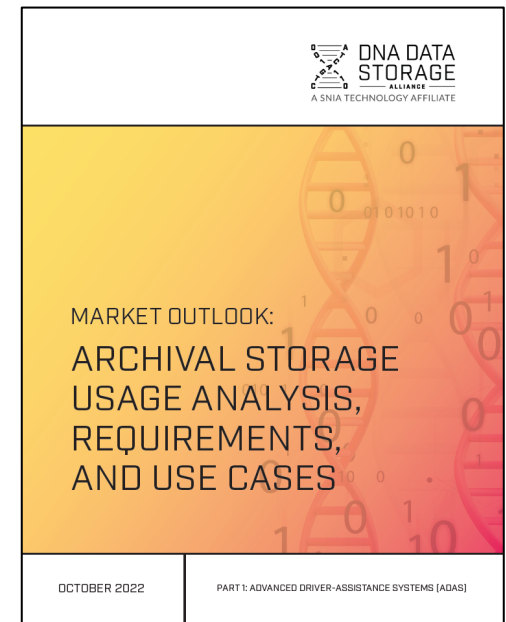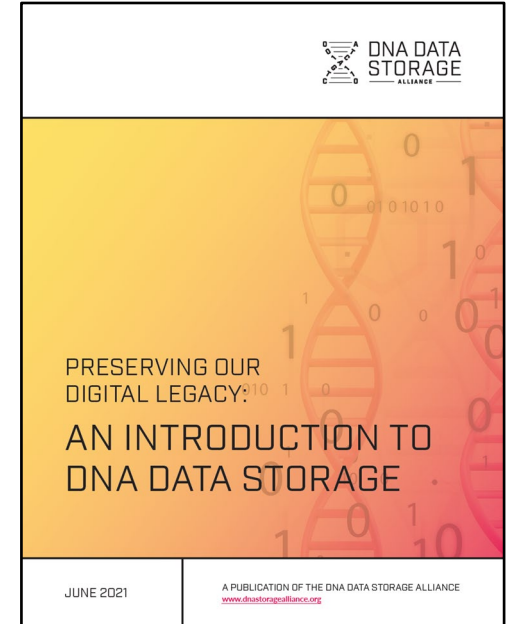
Industry Technology Roadmap SIG

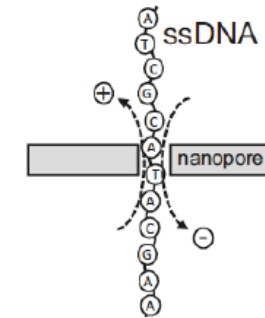Roadmap for how DNA data storage can scale to commercial viability

- Key technologies and challenges in the pipeline
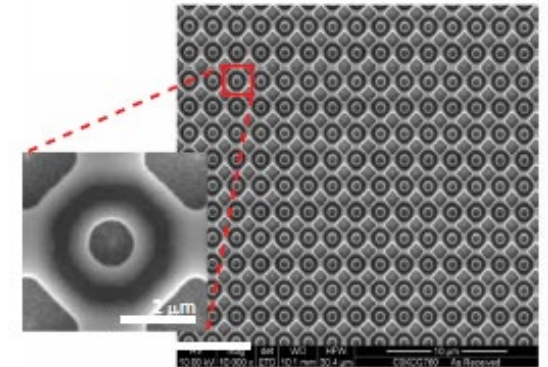- Success metrics: capacity, transfer rates, cost, …
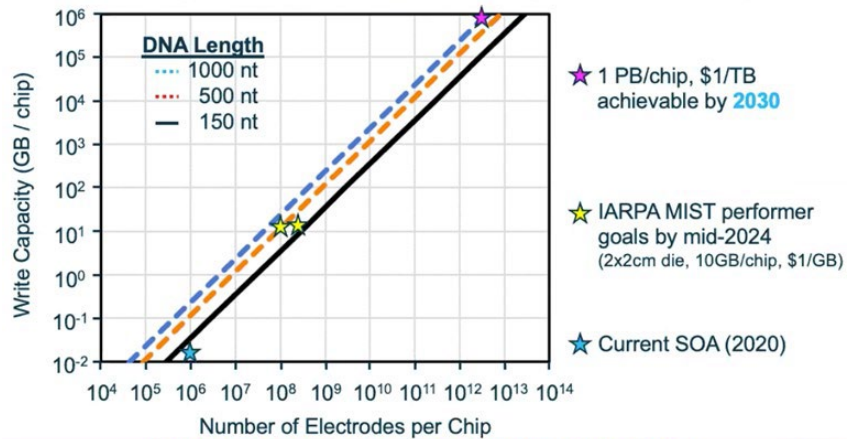
Sequencing by Synthesis

Nanopore Sequencing

Electrochemical Synthesis

Guide for academic/industry research and investment

DNA Data Storage Alliance: TWG sub-groups

DNA Archive Rosetta Stone (DARS)

- Mission: Create standard mechanism to identify, parse, and access the full contents of any DNA data archive.

- Strategy: Create a universal DNA-based identifier (i.e., master boot record), and standard access methods for such identifier.


Interoperable Interfaces

Mission: Ensure physical compatibility of synthesis, storage, and sequencing modules to ensure "plug-and-play" integration and avoid vendor lock in, such as:

- plug and play swaps of instruments
- recovery of molecules for read, irrespective of supplier being existent at read time
- issues of fluidics in data centers

DNA Digital Data Retention

- Mission: Enable consumers of DNA-based storage systems to have confidence that the data they store in this medium will be reliably preserved and recovered

- Strategy: Define standard metrics and verification methods to enable comparison of data retention across various DNA physical storage methods
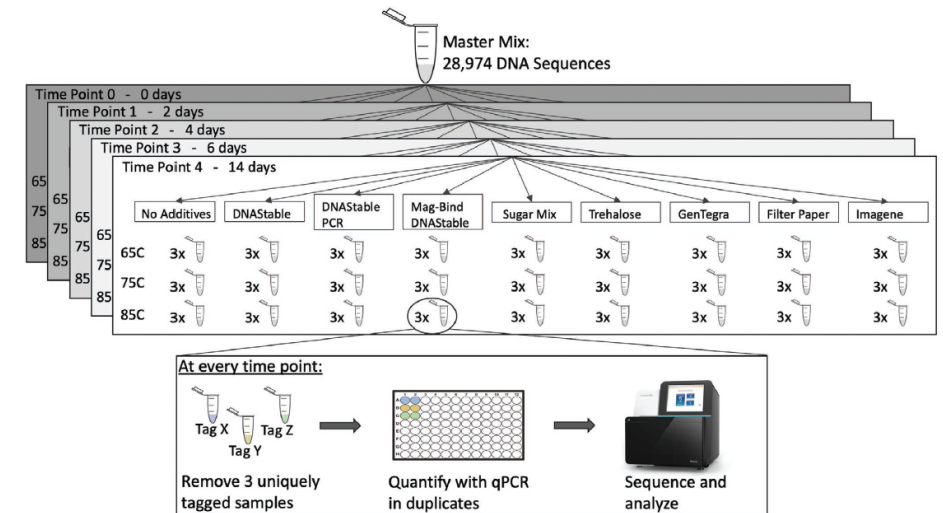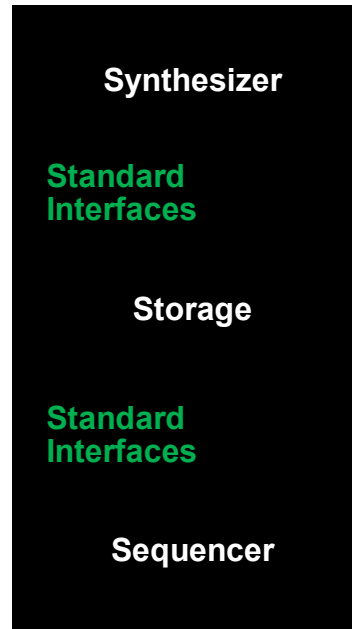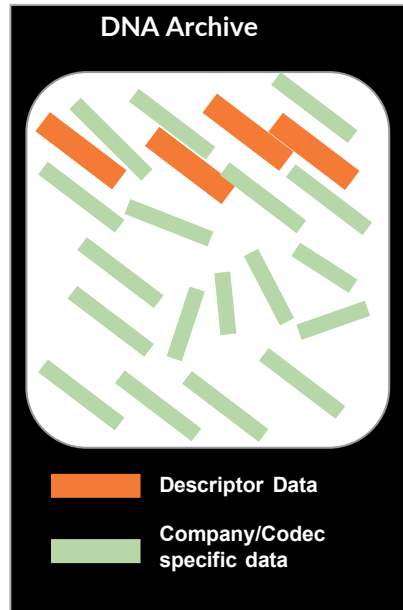
An Empirical Comparison of Preservation Methods for Synthetic DNA Data Storage
L. Organick, B. H. Nguyen, R. McAmis, W. D. Chen, A. X. Kohll, S. D. Ang, R. N. Grass, L. Ceze, K. Strauss, *Small Methods* 2021, 5, 2001094.

DNA DATA STORAGE
ALLIANCE
A SNIA TECHNOLOGY AFFILIATE

Come join us:
dnastoragealliance.org

SNIA Focus for 2023

- **Balanced Budget**
- **Technical Focus and Marketing Initiatives**
- **Membership**
  - Ensure retention and member satisfaction with SNIA programs
- **Alliances and Partnerships**
  - Amplify SNIA's voice in industry forums and solidify position as trusted advisor in the public sphere
  - Leverage our existing Strategic Alliances and grow them; establish new ones
  - Enhance partnerships with other SDOs and Open Source community
  - Execute on collaborative work registers and foster new areas of collaboration
  - Explore opportunities with next-generation technologies and infrastructures
- **Execute online education objectives**
  - Promote webcast, whitepapers, podcasts, and videos
  - Continue to grow online education library; Dictionary updates

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Goals From the Chair

- ## Are you *proud* to be a SNIA member?
  - My goal is to make SNIA an organization that makes members *proud* to be part of it

- ## Three Phase Approach
  - Short Term - Simplicity & Accountability   *- Ongoing process*
  - Medium Term – Internal cross-collaboration   *- Ongoing process*
  - Long Term – Outreach and create a "Global Ecosystem" Organization   *- Moving into current phase*

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2022/3 - SNIA Focus Areas

2022

- Actions:
  - Training SNIA groups, more interaction
  - Implementing consistency in documentation procedures
  - Simplified electronic communication
  - Standardized on single information platform
  - Initializing checks and balances
- Audits:
  - SNIA Group SWOT analyses feeding into strategy and tactics

Accomplishments

- Actions
  - All chairs meetings, people communicating outside of silos that help strengthen intra-organizational collaboration and education/awareness
  - Inter-group introductions and communication
  - Codified agenda/minutes, created easier search/find of documents
  - Ongoing work with Causeway team to help usage concerns, standardized mailing lists, and communication flow
  - Began implementing LifeCycle processes to reduce of inefficient initiatives and facilitate new incubation
- Audits
  - Allowed refocusing of resources and efforts to more high-return activities
  - Now part of ongoing self-reflection and evaluation

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2023 Goals, Directions, and Initiatives

- CSC
- Lifecycle
- Strategy

- Holistic Use
- Inputs/Support

- Outbound
- Membership
- Promotion
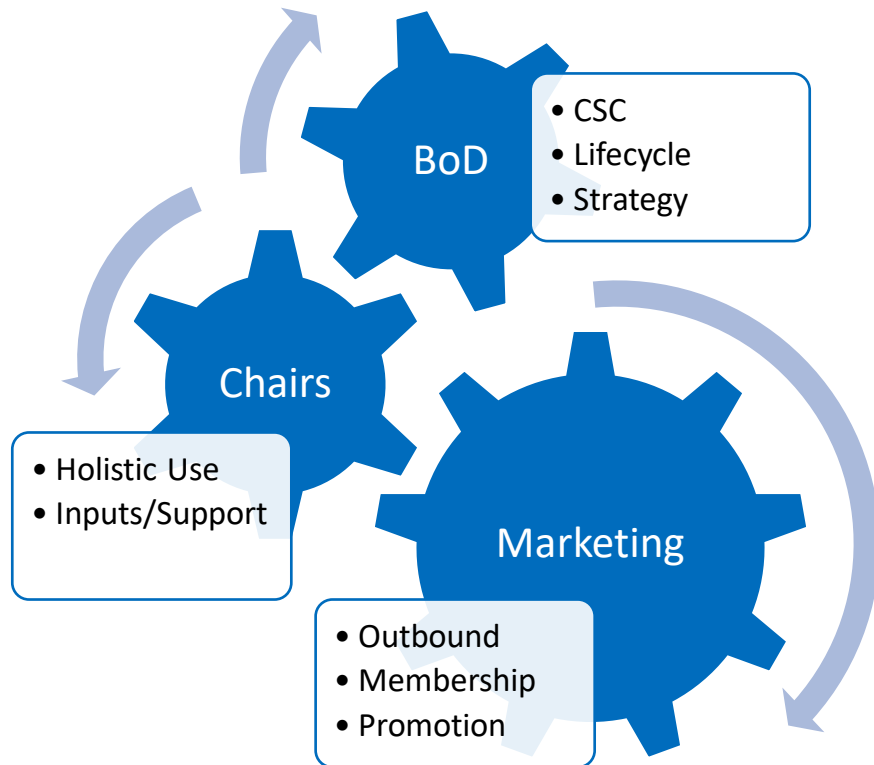
- **Standardized Communication**
  - Standardize access methods, reporting methods, archiving methods
  - Ongoing efforts to improve communication effectiveness
  - Creating methods of cross-group awareness to maintain consistent external messaging

- **Improve support for members/groups**

- **Facilitate and enable "champions" to ensure ongoing, strong industry alliances**

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SNIA Industry, Technical Outreach

- **Strategic Questions**
  - What are the impacts/consequences of SNIA's work?
  - Who are our alliances? Who should we work with?
  - What are the ways to distribute SNIA technology across disciplines?
- **Tactical Questions**
  - What are the key projects?
  - Which groups will be pivotal in 3-5 years?
- **Cloud**
  - Where does it fit?
  - Data/Metadata considerations?
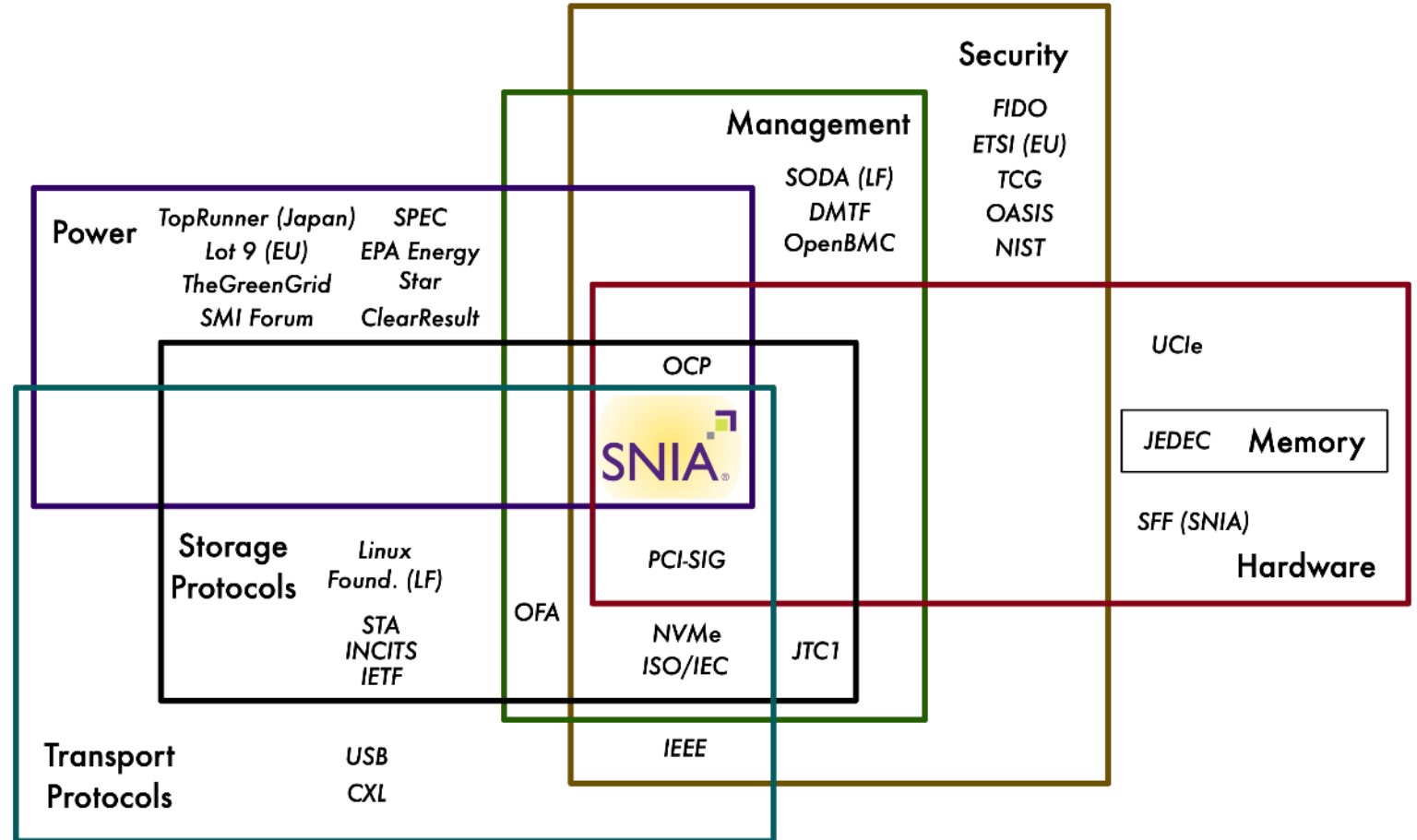
*not to scale

Needs and Requirements

- Needs:
  - Good ideas **and** the people to follow up on them
    - Lots of people doing a little bit more = major progress
    - "The consistent support of the many is more effective in the long term than the major support of the few" – Spock
- Requirements
  - Encourage additional expertise to join SNIA in: Cloud, Security, Compute, Memory, Containers, File Systems, High Performance Computing, AI/ML
  - Identify WIIFM
  - Recognize demographic elements to future storage considerations

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Discussion and Q&A

- What are your thoughts?
- Give us your feedback on the org, technical work streams, the industry, and the trends

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Board of Directors and Technical Council

Elections 2022-2023

2022-2023 Elected SNIA Board of Directors

- Richelle Ahlvers – Intel **
- Peter Corbett – Dell **
- John Geldman – KIOXIA *
- Roger Hathorn – IBM **
- Dave Landsman - Western Digital *
- Chris Lionetti – HPE *
- Chris Lueth – NetApp **
- David McIntyre – Samsung *
- J Metz – AMD *
- Scott Shadley – Solidigm **
- Board Advisors:
  - Michael Oros – SNIA Executive Director
  - 2022-2023 Technical Council Chair(s) (TBD)

* Directors elected to a new 2-year term. ** Directors serving year-2 of elected or appointed term.
Three (3) At-large Seats and Five (5) Advisor Seats on Board of Directors may be appointed by the SNIA Board.

2022-2023 Elected SNIA Technical Council

- Curtis Ballard – HPE *

- Mark Carlson – KIOXIA *

- Anthony Constantine – Intel Corporation **

- Shyam Iyer – Dell *

- Fred Knight – NetApp *

- Bill Martin – Samsung **

- David Peterson – Broadcom **

- Leah Schoeb – AMD ***

- TC Advisors:
  - Arnold Jones, SNIA, TC Managing Director

* Members elected to a new 2-Year Term as Voting Members. ** Serving Year-2 of Term in elected seat. *** Elected to a new 1-Year Term. Three (3) Voting Seats and 14 Advisor Seats may additionally be appointed by the SNIA Board.

SNIA Staff and Contractors

(as of October 1, 2022)

- **Executive Director**: Michael Oros

- **Operations and Business Services**
  - Michael Meleedy, Business Operations Director
  - Kelli Martin, Business Services Coordinator
  - *Andee Wilcott, Web Manager (Contractor)*

- **Marketing**
  - *Kristin Hauser (Contractor)*
  - *Diane Marsili (Contractor)*
  - *Denise Ridolfo (Contractor)*

- **Membership Services and BizDev**
  - Erin Weiner, Membership Services Manager

- **Education and Global Programs**
  - *Paul Talbut, Regional Program Director (Contractor)*

- **Technology and Technology Center**
  - Arnold Jones, Technical Council Managing Director
  - *Contractor support model for Lab*

- **SNIA Emerald**
  - *Dave Thiel, Program Director (Contractor)*

- **SMI Management and Program Support (Includes F&I Programs)**
  - Tom Mancuso, Senior Technical Operations Manager
  - *Brooke Candelaria, SMI Marketing (Contractor)*

- **CMSI Management and Program Support**
  - *Marty Foltyn, CMSI Marketing (Contractor)*

Note: SNIA has Contractor Agreements with additional industry and subject matter experts in various functions and Forums and Initiatives (F&Is)

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2023 – SNIA Events

- SNIA Annual Members Symposium
  - January 23-26, 2023

- Persistent Memory + Computational Storage Summit
  - https://www.snia.org/pm-summit
  - April/May 2023

- Persistent Memory Hackathons
  - https://www.snia.org/pmhackathon

- SNIA Technical Symposium | April 24-26, 2023

- SDC India | TBD
  - https://www.snia.org/sdcindia

- SNIA Members Symposium/APTS | July 24-28, 2023

- SDC North America | Sept. 18-21, 2023
  - https://www.storagedeveloper.org

- SNIA Technical Symposium | October 23-25, 2023

Mark Your Calendars!

Acknowledgement

- We could not do the work of SNIA without our dedicated volunteers. You are consistently the greatest asset for the organization and industry!

- Feedback on how we are doing and new initiatives to start/consider is always encouraged

- The support of all SNIA member companies, SNIA staff and contractors is deeply appreciated

SNIA

Questions

Your Feedback is encouraged and always appreciated.

Thank you

We look forward to your active participation
in SNIA throughout the upcoming year.

Backup

Newsletters, Education, Social Media

- [SNIA Matters](https://www.snia.org/news_events/news/snia_matters) Newsletter – subscribe: https://www.snia.org/news_events/news/snia_matters
- SNIA Education - https://www.snia.org/educational-library (searchable)
- SNIA Dictionary - https://www.snia.org/dictionary searchable dictionary
- SNIA on YouTube - https://www.youtube.com/user/SNIAVideo
  Hundreds of Technology-focused presentations are available for free
- SNIA Webcasts on BrightTalk – view upcoming and on-demand webcasts at https://www.brighttalk.com/channel/663/snia-webcasts
- SNIA Podcasts - https://www.snia.org/events/storage-developer/podcasts
- SNIA Mailing Lists - https://www.snia.org/subscribe
- SNIA on Storage Blog - http://sniablog.org
- SNIA Standards: https://www.snia.org/standards
- SNIA on Twitter - https://twitter.com/SNIA
- SNIA on LinkedIn - https://www.linkedin.com/company/snia/
- SNIA on Facebook - https://www.facebook.com/SNIA.ORG

SNIA

SNIA Gold Deck

SNIA Introductory and Overview Presentation


https://www.snia.org/about

SNIA

SNIA Educational Resources

SNIA's library of recent presentations, videos, tutorials, white papers, and more are now accessible through our Educational Library.

The SNIAVideo YouTube channel features hundreds of videos covering a vast array of storage topics. From Persistent Memory to Cloud, Data Management to Power Efficiency-- plus coverage from our global events--our channel offers news, education and insights for all levels of storage professionals.
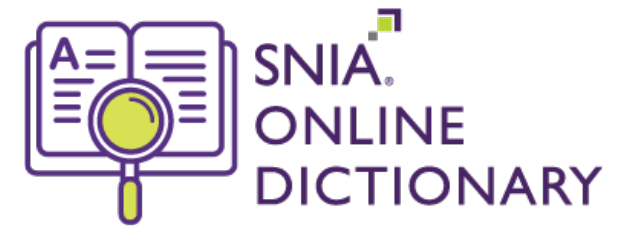
The SNIA Dictionary, which contains terms and definitions related to storage and other information technologies, is the storage networking industry's most comprehensive effort to arrive at a common body of terminology for the technologies it represents.

SNIA's Current Technology Global Focus Areas

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SNIA's 2021 Technology Global Focus Areas

PERSISTENT MEMORY

COMPUTATIONAL STORAGE

NETWORKED STORAGE

CLOUD STORAGE TECHNOLOGIES

PHYSICAL STORAGE

POWER EFFICIENCY MEASUREMENT

STORAGE MANAGEMENT

DATA GOVERNANCE & SECURITY
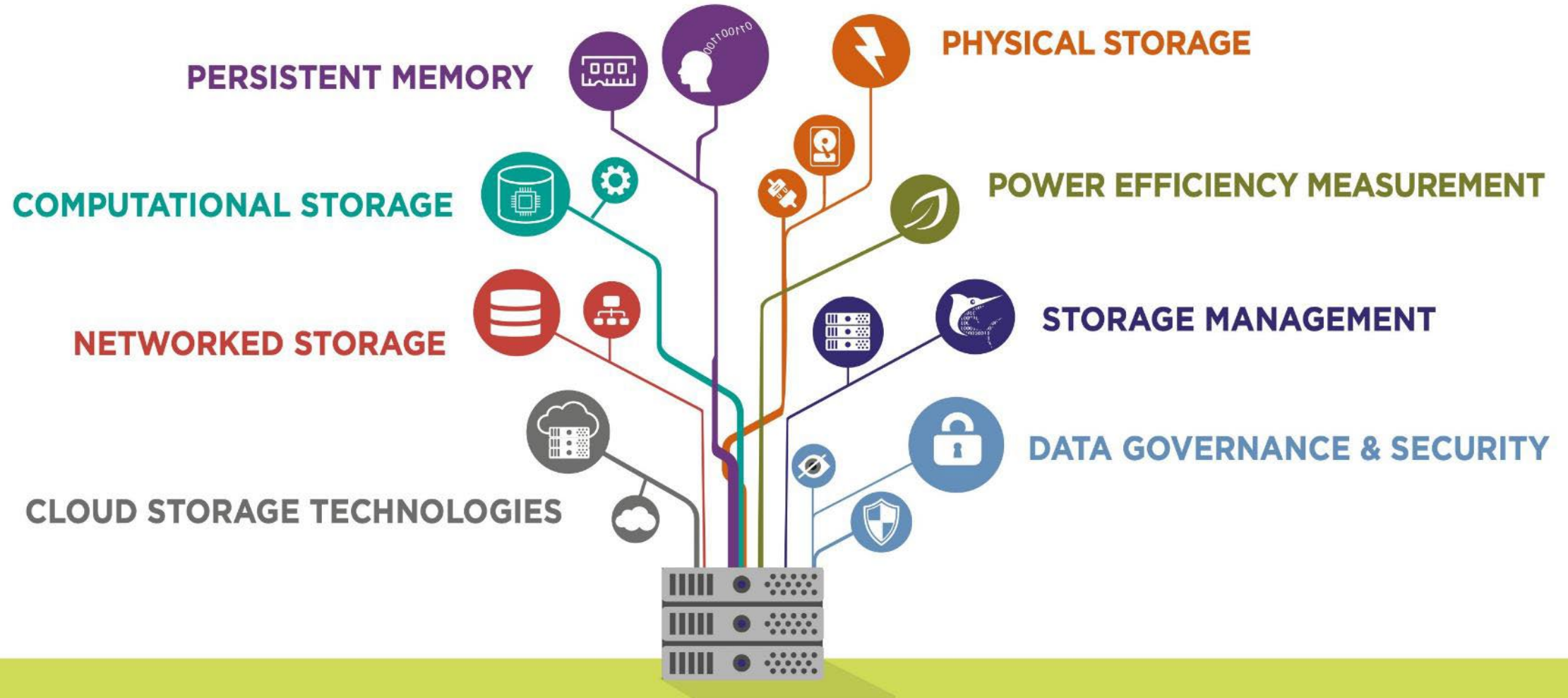
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SNIA's Technical Work Driven by Each Focus Area

PERSISTENT MEMORY
- Non-Volatile Memory Programming Model
- Smart Data Accelerator Interface
- NVDIMMs

COMPUTATIONAL STORAGE
- Services and Products
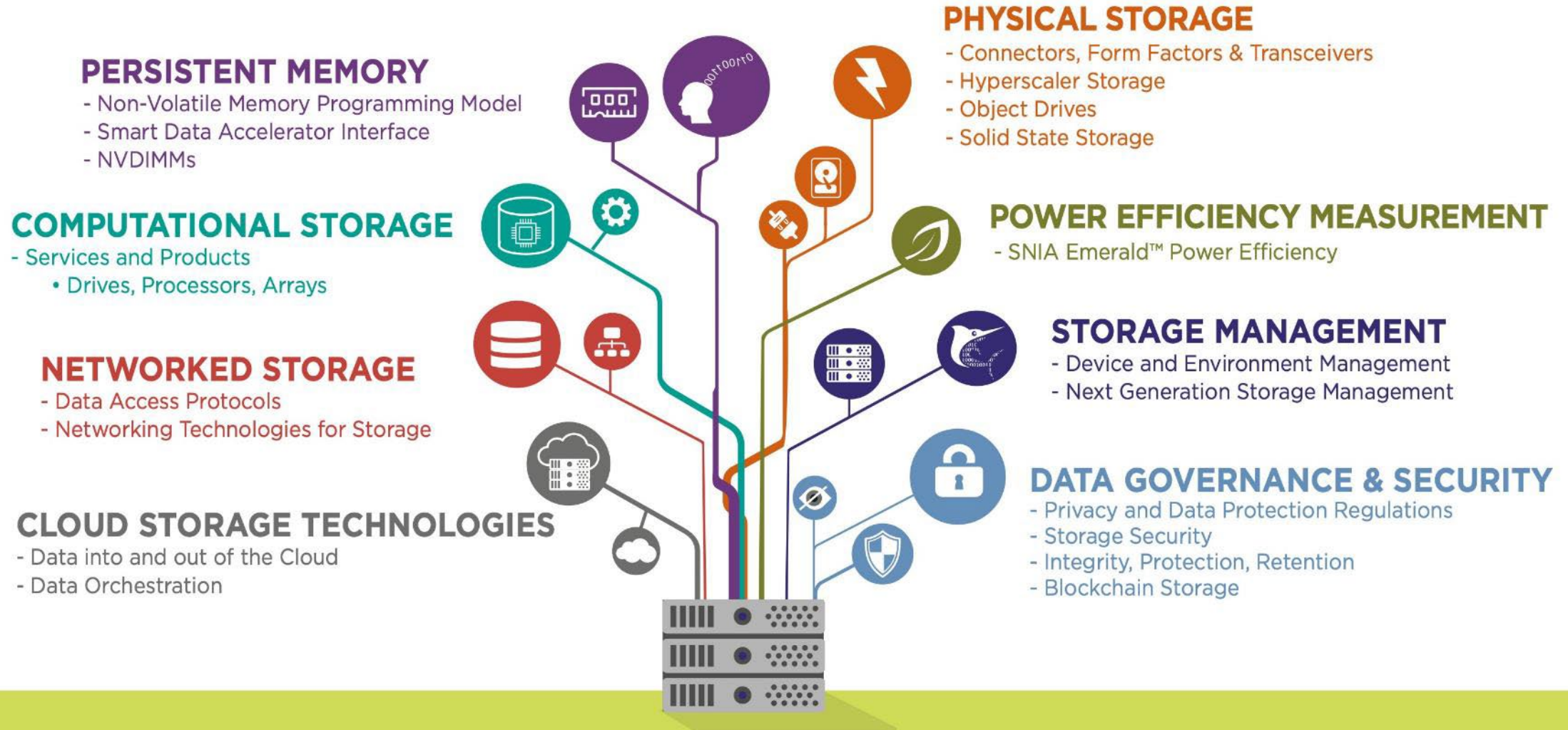 - Drives, Processors, Arrays

NETWORKED STORAGE
- Data Access Protocols
- Networking Technologies for Storage

CLOUD STORAGE TECHNOLOGIES
- Data into and out of the Cloud
- Data Orchestration

PHYSICAL STORAGE
- Connectors, Form Factors & Transceivers
- Hyperscaler Storage
- Object Drives
- Solid State Storage

POWER EFFICIENCY MEASUREMENT
- SNIA Emerald™ Power Efficiency

STORAGE MANAGEMENT
- Device and Environment Management
- Next Generation Storage Management

DATA GOVERNANCE & SECURITY
- Privacy and Data Protection Regulations
- Storage Security
- Integrity, Protection, Retention
- Blockchain Storage

SNIA

The Real Value of SNIA Membership

INFLUENCE

- ✓ Influence storage technologies important to the marketplace
- ✓ Amplify your vendor storage expertise and reputation
- ✓ Participate in the development of international standards

COLLABORATE

- ✓ Participate in multi-vendor interoperability activities
- ✓ Gain insight into disruptive industry trends
- ✓ Form strategic alliance partnerships
- ✓ Develop relationships throughout the industry

LEAD THE INDUSTRY

- ✓ Educate on all things storage
- ✓ Drive standards development and adoption
- ✓ Align strategic business objectives with worldwide standards

SNIA®