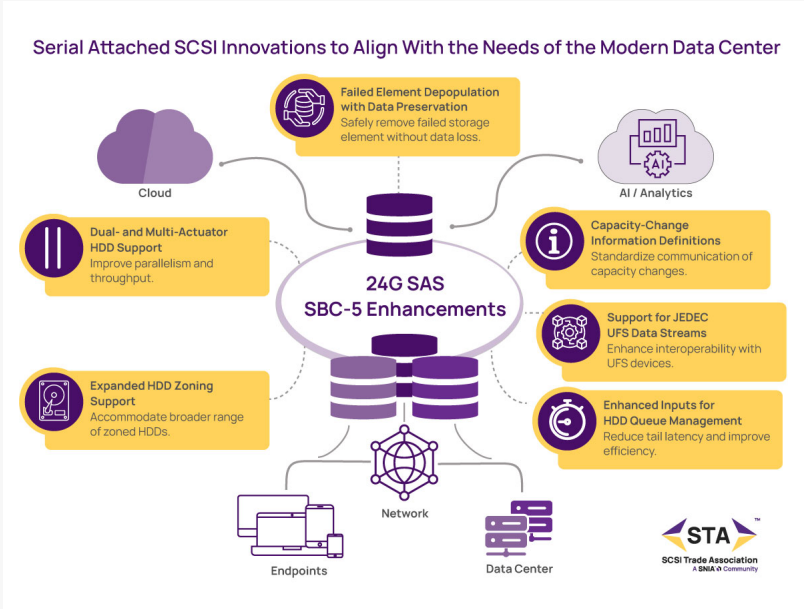
SCSI Continues to Innovate Data Storage with SBC-5

Advancements in storage performance, management, and resiliency highlight the latest SCSI Block Commands release

SANTA CLARA, CA, UNITED STATES, February 24, 2026 /EINPresswire.com/ -- For more than 40 years, SCSI (Small Computer System Interface) technology has served as a foundation for enterprise storage infrastructure. With the publication of SCSI Block Commands – 5 (SBC-5), a key specification of Serial Attached SCSI (SAS), SCSI continues to evolve, delivering new capabilities that enhance storage performance, management, and resiliency for modern data center environments.



Serial Attached SCSI Innovations to Align With the Needs of the Modern Data Center.

Developed by INCITS SCSI Technical Committee (T10), SBC-5 reflects the continued maturity of SCSI while addressing the evolving needs of today's large-scale storage deployments. The new specification places particular emphasis on HDD-based storage, which remains critical in hyperscale and enterprise data centers supporting data-intensive workloads.

> By advancing performance, management, and resiliency features, SBC-5 supports storage systems that must scale reliably over time."
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> *Cameron T. Brett, STA Chair*

SBC-5 introduces a set of enhancements designed to improve operational efficiency, scalability, and fault tolerance across complex storage systems, including:

- Failed element depopulation with data preservation, enabling the removal of a failed storage element without reformatting the media and without loss of existing data.

The device simply presents reduced capacity to the host, minimizing disruption and recovery time. This capability is currently used with HDDs and may be extended to SSDs in the future.

- Dual- and multi-actuator HDD support, improving parallelism and throughput in next-

generation HDD architectures. By enabling greater concurrency, SBC-5 helps increase performance per unit of capacity, measured as IOPS per terabyte.
• Enhanced host inputs to HDD actuator queue management, extending Command Duration Limits (CDLs) to give hosts greater control over workload behavior. This management feature improves efficiency and helps reduce tail latency in host-managed HDD environments.
• Expanded HDD zoning support, accommodating a broader range of zoned storage configurations for shingled magnetic recording (SMR)-capable HDDs, enabling greater flexibility for large-scale, sequential-write workloads.
• Broader capacity-change information definitions, standardizing how devices communicate capacity modifications to hosts, improving transparency and predictability when capacity changes occur due to maintenance, failure handling, or configuration updates.
• Support for JEDEC UFS data streams, enhancing interoperability with Universal Flash Storage (UFS) devices and reinforcing SCSI's adaptability across diverse storage technologies.

Together, these enhancements strengthen SCSI's role in large-scale storage environments where predictable performance, robust management, and resiliency are essential. In system architectures, SBC-5 features are implemented at the HDD and expander layers, complementing existing SAS infrastructures and supporting continued scalability.

"SBC-5 represents thoughtful and incremental innovation within a mature and widely deployed storage standard," said Bill Martin, Chair of INCITS SCSI Technical Committee (T10) and a member of the SNIA Board of Directors. "The new capabilities address real operational challenges seen in large-scale HDD environments while maintaining the stability and interoperability that users of SCSI devices expect from SCSI standards."

"The publication of SBC-5 underscores the continued relevance of SCSI in modern data centers," said Cameron T. Brett, Chair of the SNIA STA community. "By advancing performance, management, and resiliency features, SBC-5 supports storage systems that must scale reliably over time."

The SBC-5 specification (INCITS 571-2025) is now available for purchase on ANSI's website: https://webstore.ansi.org/standards/incits/incits5712025.

About the SNIA SCSI Trade Association (STA) Community
The SNIA SCSI Trade Association (STA) community promotes the understanding and use of Serial Attached SCSI (SAS) technology and influences the evolution of SCSI standards to meet future industry needs. To learn more, visit: https://www.snia.org/sta

About SNIA
SNIA is a not-for-profit global organization made up of corporations, universities, startups, and individuals. The members collaborate to develop and promote vendor-neutral architectures as well as international standards and specifications. SNIA promotes technologies related to the storage, transport, optimization of infrastructure, acceleration, format, and protection of data.

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