

INCITS 2003 ANNUAL REPORT
Covering the Period from 5/31/2002 through 1/15/2003
Technical Committee T13
I/O Interface – AT Attachment

January 15, 2003

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T13 Website <http://www.t13.org/>

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Informal Description of Work:

Technical Committee T13 is responsible for all interface standards relating to the popular AT Attachment (ATA) storage interface utilized as the hard disk drive, CD, and DVD interface on most personal and mobile computers today.

1. Executive Summary

At the moment, T13 is responsible for six published standards, two published technical reports, and three draft standards in development. One new project was initiated, two new standards were published, and one published standard was withdrawn during the year.

T13 began the year with 22 voting principal members and closed the year with 21 voting principal members.

Since the ATA interface is contained totally within the host computer enclosure and does not provide an external interface, Technical Committee T13 does not participate in the international standards process.

2. Significant Accomplishments

During the past year one new project was initiated, two new standards were published, and one published standard was withdrawn.

T13 was approached by the Consumer Hard Disk Drive Working Group of IDEMA Japan. Over six months a number of minor changes were made in the Audio/Visual commands in the ATA/ATAPI-7 draft to met the needs of these consumer product companies.

In November, T13 finally convinced the Serial ATA consortium to forward the Serial ATA 1.0 specification published by the consortium to T13 for inclusion in the ATA/ATAPI standards.

3. Significant Challenges

None.

4. Expected Challenges.

The inclusion of Serial ATA in the ATA/ATAPI-7 (1532D) project will cause a challenge in the timely forwarding of the project. However, it is believed that having this published in an ANSI standard as soon as possible is worth the effort.

5. Projects (Status 1/15/03)

An “x” in the first column of this table indicates that revision or development work is going on in this project; a “c” indicates re-affirmation activities. Details can be found below in the project discussions.

Work	Project	NCITS/ANSI	Title
c	2008D	NCITS 289-1997	AT Attachment – 3 Interface
c	1153D	NCITS 317-1998	AT Attachment Interface with Packet Extensions - 4
	1226DT	NCITS TR21-1998	Enhanced BIOS Services for Disk Drives
c	1248D	NCITS 316-1998	1394 to AT Attachment - Tailgate
	1321D	NCITS 340-2000	AT Attachment with Packet Interface - 5
	1367D	NCITS 346-2001	Protected Area Run Time Interface Extension
	1386D	NCITS 347-2001	BIOS Enhanced Disk Drive Services
	1407DT	NCITS TR27-2001	Address Offset Alternate Boot Feature
	1410D	NCITS 361-2002	AT Attachment with Packet Interface – 6
	1484D	NCITS 363-2002	BIOS Enhanced Dick Drive Services – 2
x	1510D		ATA/ATAPI Host Adapter
x	1532D		AT Attachment with Packet Interface - 7
x	1572D		BIOS Enhanced Dick Drive Services – 3

2008D AT Attachment – 3 Interface

Published standard ANSI NCITS 298-1997 is the evolved ATA interface standard to include among other things, Security feature set and Self-Monitoring, Analysis, and Reporting Technology (SMART). ANSI NCITS 298-1997 was withdrawn 28 August 2002.

1153D AT Attachment Interface with Packet Extensions – 4

Published standard ANSI NCITS 317-1998 is the evolved ATA interface standard to include among other things, ATAPI transport protocol for CD and DVD devices and DMA data transfer to 33 Megabytes per second. ANSI NCITS 317-1998 is due for maintenance in 2003.

1226DT Enhanced BIOS Services for Disk Drives

Published Technical Report NCITS TR21-1998 provides technical information which facilitates the likely evolution of disk drives including the accommodation of disk drives with capacities greater than 8 Gigabytes.

1248D 1394 to AT Attachment - Tailgate

Published standard ANSI NCITS 316-1998 defines the interconnect management, command, status, reset and security protocols for attaching ATA/ATAPI devices to the IEEE 1394 bus using SBP-2 transport protocols. ANSI NCITS 316-1998 is due for maintenance in 2003.

1321D AT Attachment with Packet Interface – 5

Published standard ANSI NCITS 340-2000 is the evolved ATA interface standard to include among other things, conversion of protocol flow charts to state diagrams and DMA data transfer to 66 Megabytes per second.

1367D Protected Area Run Time Interface Extension

Published standard ANSI NCITS 346-2001 provides a BIOS interface for x86 based systems that a user can invoke to launch an alternate operating system when the main operating system fails to run. Important features include management of the reserved area used to store the alternate operating system, boot MS-DOS '95 or compatible operating system, and the emulation of the "A:" device using data in a protected reserved area on the media.

1386D BIOS Enhanced Disk Drive Services

Published standard ANSI NCITS 347-2001 provides a BIOS interface that allows an operating system to access mass storage devices on an x86 architecture PC without understanding mass storage device protocols. These extended BIOS services do not have the 8.4GB limitation.

1407DT Address Offset Alternate Boot Feature

Published Technical Report NCITS TR27-2001 describes a modification to a feature described in the ATA/ATAPI-4 standard allowing a secondary operating system to be booted from a reserved area with minimal BIOS changes.

1410D AT Attachment with Packet Interface – 6

1410D is the evolved ATA interface standard to include among other things DMA data transfer to 100 Megabytes per second and 48-bit addressing. 1410D was published as ANSI INCITS361-2002 on 20 September 2002.

1484D BIOS Enhanced Disk Drive Services - 2

1484D builds on EDD (ANSI NCITS 347-2001) to provide definition for the Packet Sending Service that is mentioned but not defined. This project will further extended the types of both buses and devices that can be controlled using the EDD services. In particular, there has been a request to add SCSI RAID to EDD. 1484D was published as ANSI INCITS 363-2002 on 28 August 2002.

1510D ATA/ATAPI Host Adapter

1510D provides for the development and documentation of a standard programming interface for ATA host adapters. Currently the definitions of ATA host adapter programming interfaces are not well documented. 1510D is scheduled to be forwarded for first public review in January 2003. T13 voted to forward 1510D to INCITS for first public review at the December 2002 plenary meeting and it will be forwarded as soon as the letter ballot comment resolution changes have been incorporated into the draft standard.

1532D AT Attachment with Packet Interface – 7

1532D is the evolved ATA interface standard to include among other things DMA data transfer to 133 Megabytes per second. 1532D is scheduled to be forwarded for first public review in June 2003. Recently T13 was offered the Serial ATA 1.0 specification for inclusion into the ATA/ATAPI standards by the consortium that developed the specification. T13 concluded that this material should be included in an ANSI standard as soon as possible. T13 voted to delay the forwarding of 1532D until this material can be included. Once the extent of this change is understood, a new date for forwarding will be determined.

1572D BIOS Enhanced Disk Drive Services - 3

1572D builds on EDD-2 (ANSI NCITS 363-2002) to address Infiniband, PCI Express, HyperTransport, Serial ATA, CD-ROM Boot, and INT 13 Functions 0-39h. This project will further extended the types of both buses and devices that can be controlled using the EDD services. 1572D is scheduled to be forwarded for first public review in February 2003.

6. Committee Activities

a. Previous Years' Meetings (Dates and Locations)

#33	Feb 19-20, 2002	Placerville, CA - Adaptec
#34	Apr 23-24, 2002	Longmont, CO - Seagate
#35	June 25-26, 2002	Irvine, CA – Phoenix Technologies
#36	Aug 20-22, 2002	Longmont, CO - Maxtor
#37	Oct 22-24, 2002	Las Vegas, NV – Fujitsu
#38	Dec 16-18, 2002	Irvine, CA – Western Digital

b. Next Year's Planned Meetings (Dates and Locations)

#39	Feb 18-20, 2003	Irvine, CA – Pacific Digital
#40	Apr 22-24, 2003	Longmont, CO - Seagate
#41	June 24-26, 2003	San Jose, CA – Phoenix
#42	Aug 19-21, 2003	Longmont, CO - Maxtor
#43	Oct 21-23, 2003	TBD – Fujitsu
#44	Dec 16-18, 2003	Las Vegas, NV - IBM

7. Liaison Activities

Liaison Representatives from T13:

	Committee	Representative
T10	NCITS Technical Committee T10	P. McLean
SFF	SFF Committee	D. Colegrove
IDEMA	International Disk Drive Equipment and Materials Association	D. Colegrove

Also see 2. Significant Accomplishments.

8. Membership and Officers

a. Officers

Chair	Peter McLean – Maxtor Corporation
Vice-Chair	Dan Colegrove – IBM Corporation
Secretary	Curtis Stevens – Pacific Digital

b. Membership

Status:

T13 has presently 21 voting member organizations: Absolute Software; Adaptec, Inc.; Apple Computer, Inc.; Fujitsu Computer Products of America, Inc.; Hitachi America Limited; IBM Corporation; Intel Corporation; LAD Storage Consulting; LSI Logic; Maxtor Corporation; Microsoft Corporation; Network Appliance; Pacific Digital Corporation; Phoenix Technologies Limited; Qlogic Corporation; Seagate Technology; Sierra Logic; ST Microelectronics; Toshiba Corporation; Vixel, and Western Digital Corporation.

This list represents the voting membership as of 31 December 2002, On 1 January 2003, the IBM disk storage organization and the Hitachi disk storage organization formed a new company Hitachi Global Storage Technology. These are the organizations representing these companies at T13. It is not yet clear how this will effect T13 membership.

In addition, it is believed that membership may increase in 2003 due to the inclusion of Serial ATA in the ATA/ATAPI-7 draft standard.

9. Future Trends and Related Technical Activities

It is anticipated that a follow-on project providing enhancements to Protected Area Run Time Interface Extension (ANSI INCITS 346-2001) will be begun during 2003. These enhancements will include the extension of the address space to 48 bits.

In addition, a technical report describing the usage of the Audio/Visual commands in ATA/ATAPI-7 is anticipated.

It is believed that no future of the parallel ATA physical interface will be undertaken. The serial physical interface will evolve in both speed and functionality over the next ten years just as the parallel interface did over the last twenty years.

10. Other Administrative Information

None

Peter T. McLean – Chairman T13