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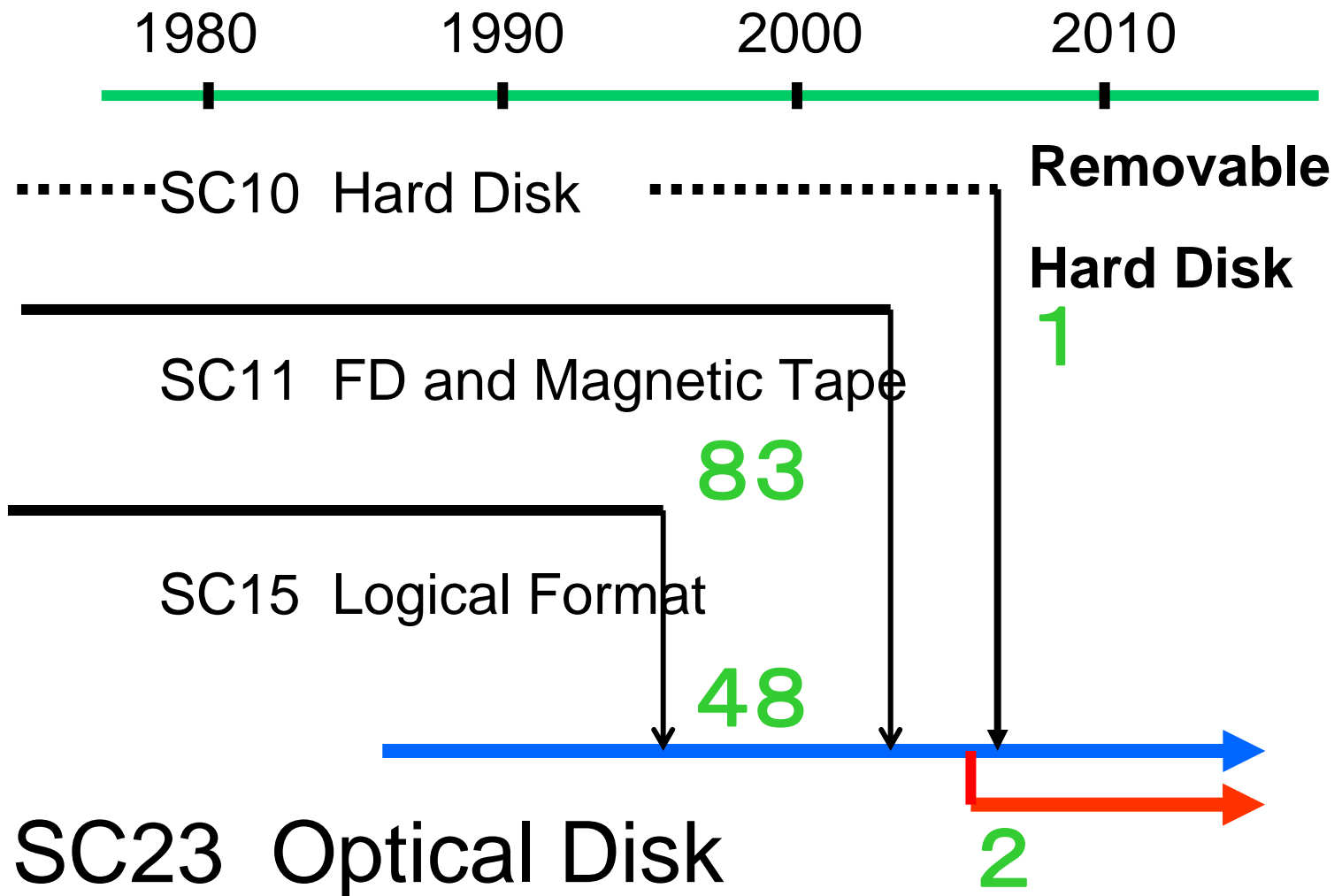
# Report of SC23

## Digitally Recorded Media for Information Interchange and Storage

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# SC23 Digitally Recorded Media for Information Interchange and Storage





# SC23 Digitally Recorded Media for Information Interchange and Storage

## Scope:

Standardization in the field of removable digital storage media

~~(other than hard disks)~~ utilizing optical, holographic  
and/or magnetic recording technologies

for digital information interchange and/or storage, including:

- Algorithms for the lossless compression of data.
- Volume and file structures.
- Methods for determining the life expectancy of digital storage media.
- Methods for error monitoring of digital storage media

In 2007 SC23 has set a new baseline to develop

Test method for the estimation of the archival lifetime

Data migration method for DVD

In 2008 : a removable Hard Disk cartridge

# Optical disk is a kind of symbol of IT

## ISO IT Strategy 2010 and beyond

by Daniele Gerundino, Strategic Adviser to the ISO Secretary-General

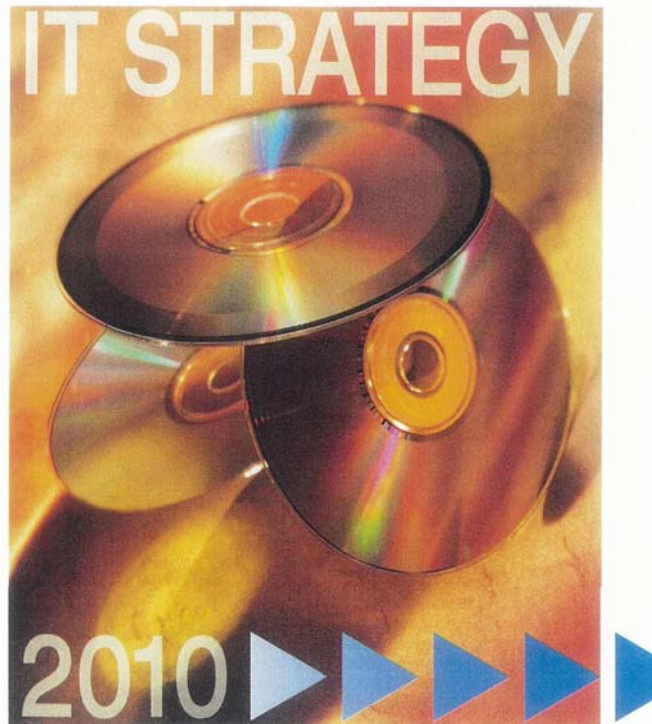
The design and implementation of IT applications and services supporting ISO's international standardization processes have, during the past several years, been devoted primarily to standards development, addressing:

- the electronic development and dissemination of documents;
- the management of users, groups and roles;
- the automation of core sub-processes (such as electronic balloting); and
- the introduction of tools supporting collaborative work for experts engaged in the development of International Standards.

These developments have contributed to the substantial improvement in efficiency of the standardization system.

From a user perspective, however, the needs for developing richer content (well beyond the current document format), and for accessing that content in ever more convenient and flexible ways, have so far been covered to a limited extent. This is a new key priority area that ISO is committed to address in the near future.

To review these issues and discuss current and future challenges concerning the use of information technology within ISO, 61 participants from 21 ISO member bodies, plus invited



In 2008

There are accumulated

3,000,000,000 drives,

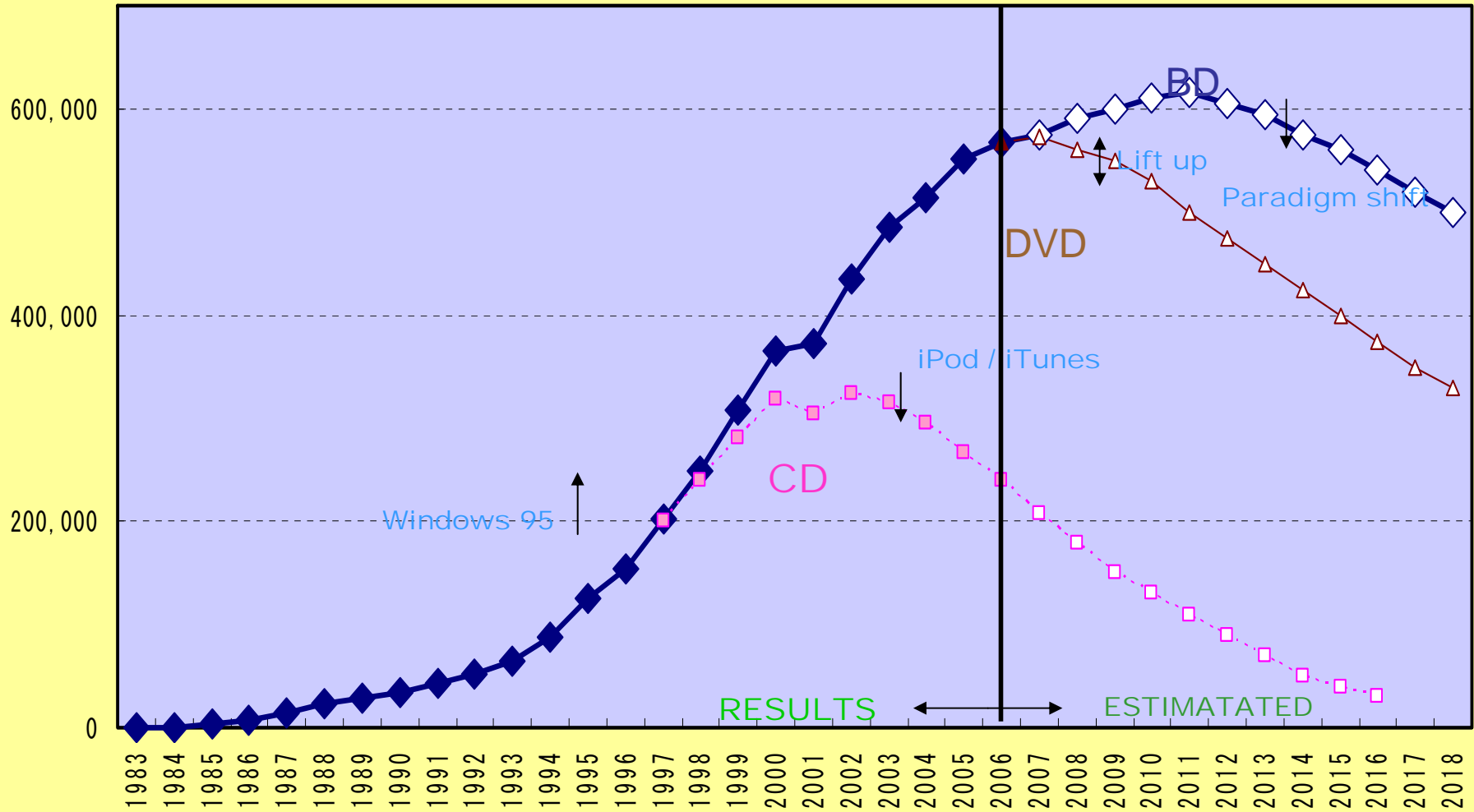
20,000,000,000 media,

in the world

BD (Blu-ray Disc) is expanding as same speed as that of DVD in 10 years ago.

# OPTICAL STORAGE MARKET

ANNUAL DRIVE SALES Thousands



Source: Fujiwara-Rothchild., Ltd 2008





# Optical Disk 1

- gradually taken over by flash memory
- threatened by broadband internet and greater connectivity
- + a desire for possessions
- + physical and virtual will feed each other
- DVD—download, BD—LIVE
- + diffusion of HD-TV
- + relaxing a regulation, dubbing 10 times
- + storage



# Optical Disk 2

+ post DVD is settled into BD

+ green IT

low power consumption data center

+ super high vision in near future

RGB 33 Million pixels each, 7680x4320

12 bit, 60 frames per second → 72 G bps

SMPTE 2036-1-2007 → 128 Mbps



# Optical Disk 3

## Hospital's Data Survives Hurricane Katrina

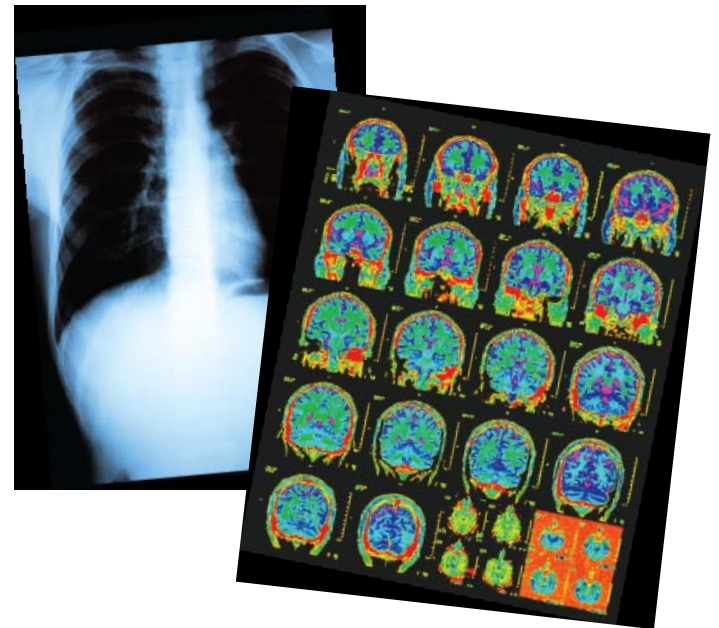
*Optical Disk stands up to a Category 5 hurricane, when other storage technologies fail.*

All the RAID data was lost.

*A year after the tragedy, the Southeast Louisiana Veterans Health Care System has restored 95% of its pre-Katrina patient data.  
6.2 Tera Byte.*

**disaster-recovery**

Source: Plasmon.com



# ISO Focus

The Magazine of the International Organization for Standardization

Volume 5, No. 6, June 2008, ISSN 1729-8709

*New on*

## **ISO/IEC standard for estimating the useful life of DVDs**

*by Sandrine Tranchard,  
Communication Officer,  
ISO Central Secretariat*



Dr. Yoshinobu Mitsuhashi, Chair of the ISO/IEC subcommittee (JTC 1/SC 23) that worked on the standard, comments: "Digital supports allow important storage

*the shelf*

**ISO/IEC 10995:2008**

*Test method for the  
estimation of the archival  
lifetime of optical media*



# Joint Working Group

**SC23** discussed the Fast Tracked ECMA 379 for optical media archive life testing that targets recordable and rewritable **DVDs**.

**ISO/IEC 10995 : 2008.**

**ISO/TC42** - Photography :methods for estimating the life expectancy of **CD-R** (ISO 18927:2002), **MO** (ISO 18926:2006) ,etc.

In 2007, ISO/TC 42 proposed a Joint Working Group with SC23 for the development of **optical storage media longevity testing**

After discussions on the theme of projects to be handled in the **JWG**, the schedule, the administrative issues, etc. SC23 conducted a letter ballot - establishment of the JWG that was accepted and proposed to JTC1 for its approval.

It is a time to gain more wide adoption of the test method within the total industry. One standard does not fulfill various users' requirements and it is reasonable to develop another. Moreover TC 42 and I3A (International Imaging Industry Association, Secretariat of TC42) are good at messaging the standard and products to the market, so **it is beneficial for both SC 23 and TC 42 to cooperate with each other.**

# Joint Working Group

- Between JTC1/SC23 and ISO/TC42
- The proposed JWG will be:
  - administered by JTC 1/SC 23
  - disbanded if the NP which will be submitted in the future fails.
  - disbanded if either the ISO/TC 42 experts or JTC 1 /SC23 experts do not agree that consensus has been achieved.

# Magnetic Tape

**drives > 36 million, sales are steady 5 B\$**

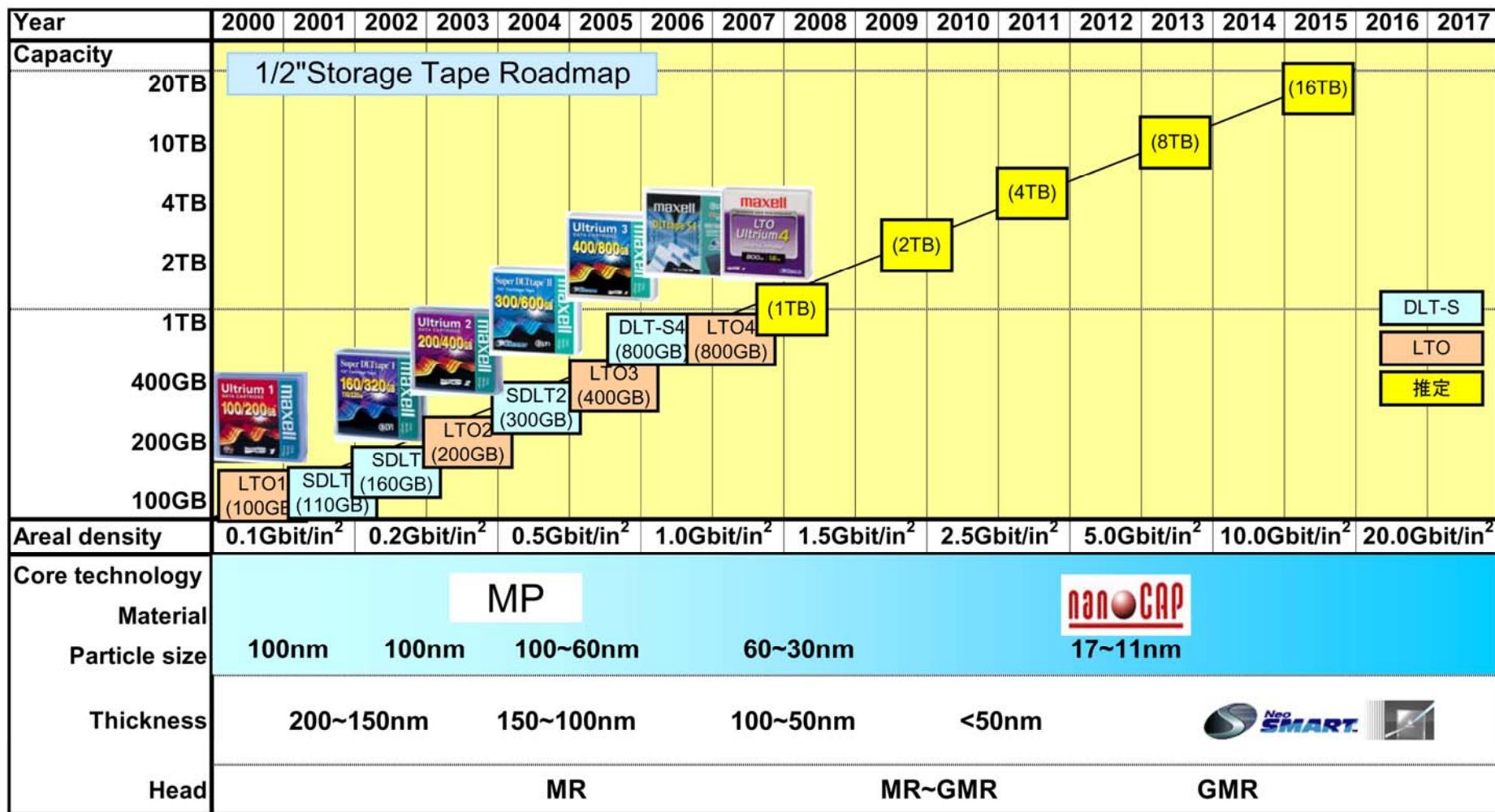
capacity : doubling every 1.5 year

**LTO (Linear Tape-Open) technology is dominated in 2008 1TB per reel → 4TB in a few years**

DDS/DAT, DLT, VXA, AIT, and Half-inch series are surviving



# Magnetic Tape Roadmap



Source: Maxell 2008





# Magnetic Tape

## Database backup

In disaster recovery system

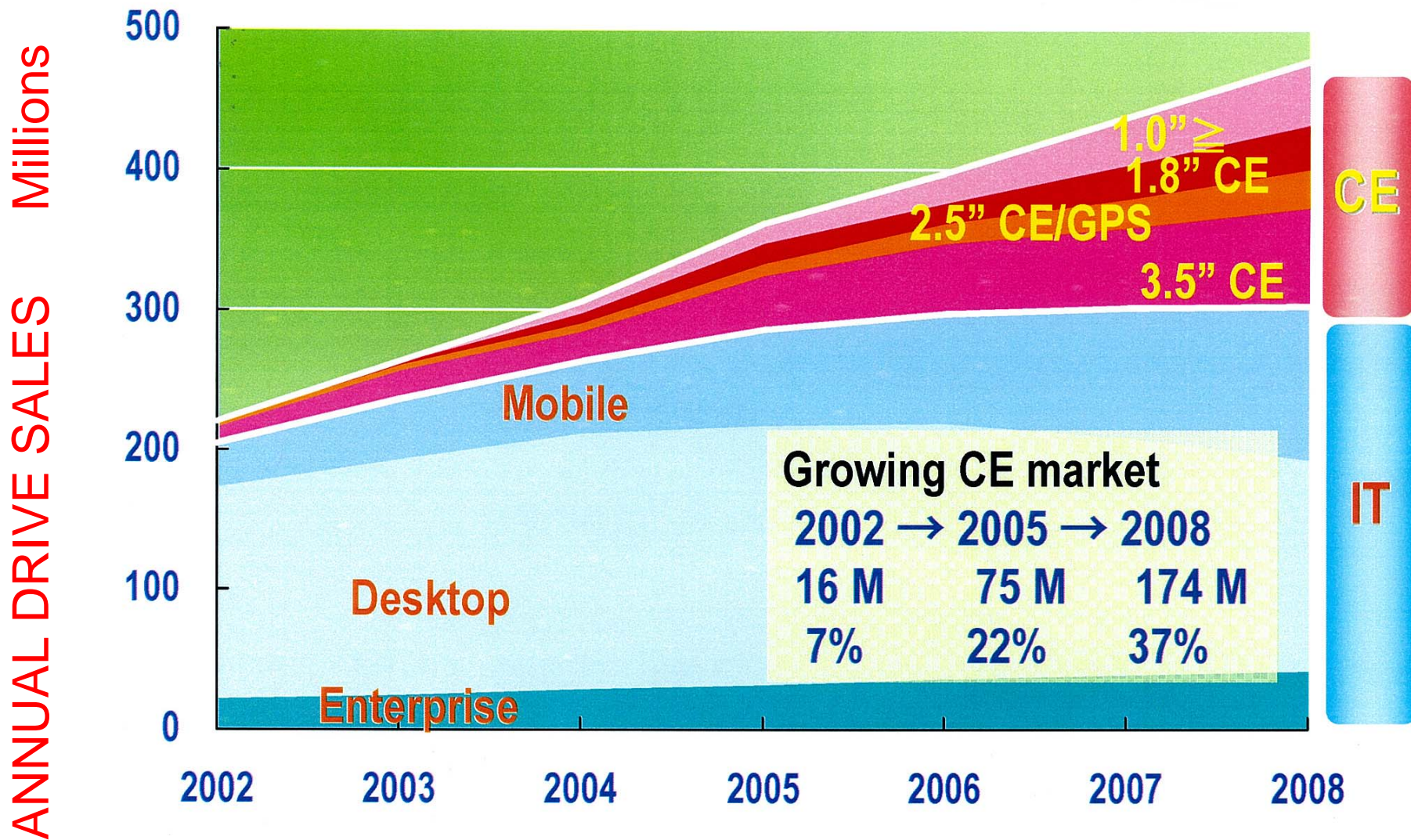
WORM (Write Once Read Many)

In proof of documentation

## Archival storage

JEITA is discussing test method for the estimation of the archival lifetime of magnetic media

# HDD market



Source: Fujitsu



# Removable Hard Disk

**JTC 1 N 8971 2008-02-25**

**SC 23 Proposal for modifications to Scope**

**JTC1/SC 23 N 1520 2008-07-29**

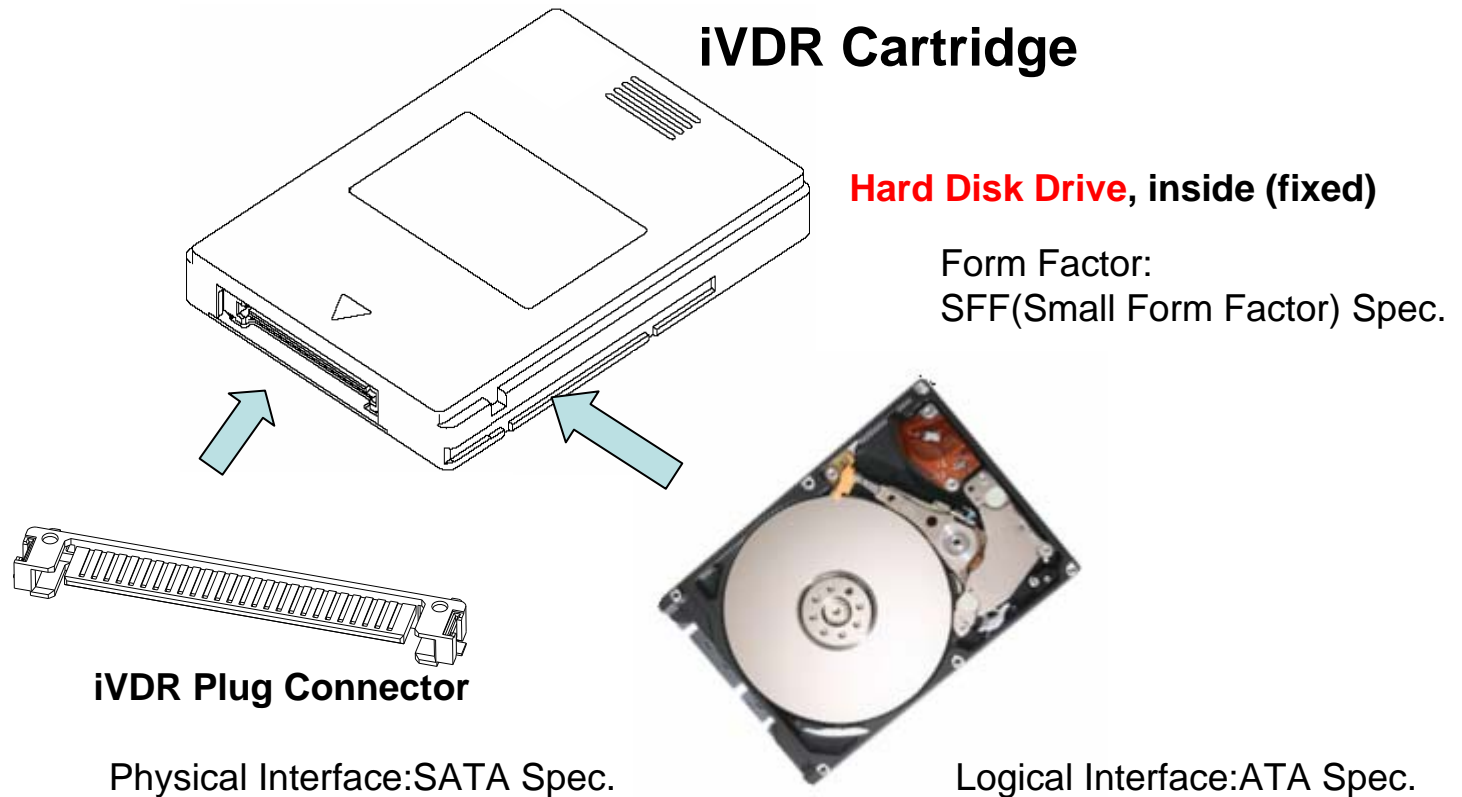
**Proposal for a New Work Item, Information  
Versatile Disk for Removable usage (iVDR)  
cartridge**

**Proposal by JNB based on iVDR Consortium**

**Ref. <http://www.ivdr.org> 46 companies (As of 26 May, 2008)**



# iVDR Hardware Composition



## Major Specifications around HDD:

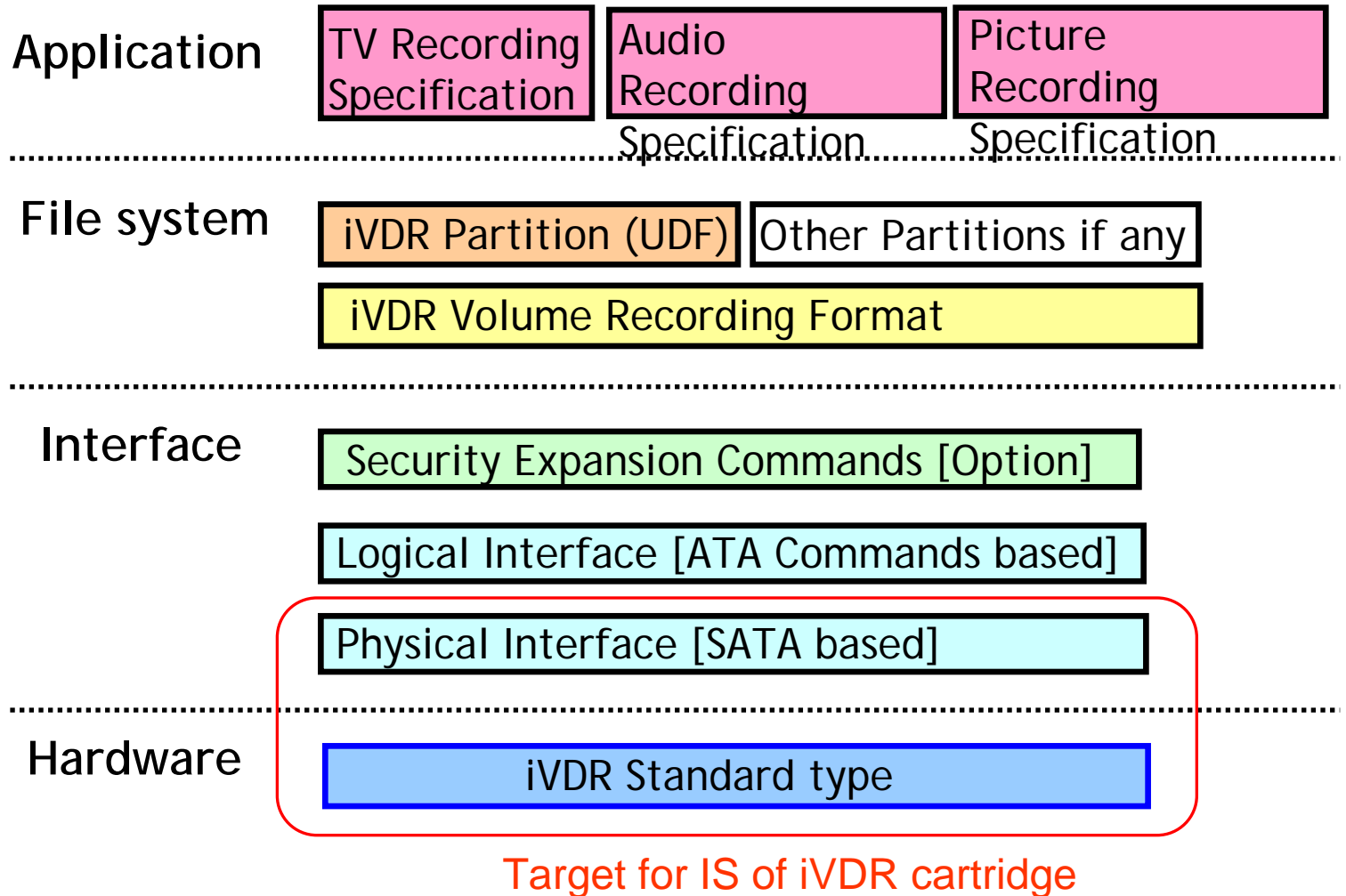
ANSI INCITS 397-2005 (1532D): AT Attachment with Packet Interface - 7 Volume 3

Serial ATA Interface Organization Serial ATA Revision 2.6, February 15, 2007 (Serial-ATA)

SFF Committee SFF-8201 Specification for Form Factor of 2.5" Disk Drives Rev 2.4, May 30, 2005

Source: [www.ivdr.org](http://www.ivdr.org)

# iVDR Specifications Layers





## 13<sup>th</sup> SC23 Plenary Meeting, September 20<sup>th</sup>, 2007

Co-located with Ecma TC31 Meeting, [Montreux](#), [Switzerland](#)

**6 NBs and Ecma, total 23 participant**



**Jeju Korea**

## 14<sup>th</sup> SC23 Plenary Meeting, December 17<sup>th</sup>, 2008

Expected a JWG and one WG Meeting, December 16<sup>th</sup>, 2008






# SC23



Responding to users' requirements industry has started to standardize the archival related issues.

Storage industry is increasingly concentrated in a few large international companies that have facilities in various countries in the world. The research and development of storage media are dominated only in US and far east Asia.

If exemption from the 5 P-members requirement for acceptance, reducing from five to four is realized, industry is quite encouraged to propose NWIs and will develop standards in ISO/IEC JTC1/SC23.



SC23 regrets that the change is not effective:  
the minimum requirement of five P-members to four for the acceptance of NWIs in SC23 that has only 10 P-members

2007-11 JTC1 Plenary Meeting

2008-3 SWG-Directives Meeting: Recommendation 21

2008-7 SWG-Directives Meeting: Recommendation 2

Thank you for your kind attention

<http://www.itscj.ipsj.or.jp/sc23/>

