OSTA DVD Compatibility Panel

Early morning,
October 19, 2004
OSTA DVD Compatibility Panel

Speakers:

• **Tony Jasionowski**
  - Recordable DVD Council (-RAM)

• **Andy Parsons**
  - RW Products Promotion Initiative (-R/-RW)

• **Ted Matsui**
  - DVD+RW Compatibility and Convergence Group (+R/+RW)

• **Subutai Ahmad**
  - OSTA DVD Compatibility Committee
OSTA DVD Compatibility Committee

OSS
October 19\textsuperscript{th}, 2004
What is the “OSTA DVD Compatibility Committee?”

- A joint effort by 3 organizations:
  - OSTA (Optical Storage Technology Association)
  - NIST (Natl. Inst. of Standards & Technology – US Chamber of Commerce)
  - DVDA (International DVD Association)
Committee Goals

• The OSTA DVD Compatibility committee
  – Is format and vendor neutral
  – Writes and publishes test plans
  – Chooses products based on market data
  – Publishes anonymous results
  – Provides general guidelines for consumers
  – Provides detailed technical results to OSTA members (media and drive manufacturers)

• We test compatibility from a consumer and market standpoint

• We do not test specifications or standards compliance
Core Committee Members

- Subutai Ahmad (YesVideo, Committee Chair)
- Oliver Slattery, Fred Byers (NIST)
- Bob Zollo & Lee Prewitt (Software Architects)
- Jim Taylor (Sonic Solutions, Chairman DVDA)
- Dave Bunzel (Santa Clara Consulting, President OSTA)

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- Active input from OSTA member companies (media and drive manufacturers)
Test Roadmap

• **Phase 1 (2002 – 2003):**
  – Created objective test plans
  – Assess compatibility of 1X media and DVD-ROM drives
• **Phase 2 (2003-2004):**
  – Tested DVD burners, ROM drives and 4X media
• **Phase 3 (2004):**
  – Testing 8X media
• **Phase 4, 5 (2005):**
  – Will test DVD Recorders, dual layer discs
Product selection

- Key goal is to provide a snapshot of the US market
  - Select media and drives based on US market share data
- DVD-ROM drives represent 60% market share manufactured during 2000-2003
- Burners represent 75% of US market share as of end 2003
- Media brands represent 65% (-R) and 85% (+R) market share

Thanks to Santa Clara Consulting Group and Fujiwara-Rothschild for market data
Test Methodology

• Record discs using a master ROM-disc as source
  – Disc image uses over 97% of the disc capacity
  – All discs recorded at max speed, with verify on
  – Phase 1 used 1X discs, Phase 2 used 4X discs

• DVD-ROM playback test
  – Install each drive in test PC
  – Compare data in recorded disc against control ROM disc
  – “Pass” requires 100% score on a byte to byte comparison basis against control disc
  – Check 1% of the data spread out across disc

• Test plan published by NIST
Highlights of Test Results
## Phase 1 vs Phase 2

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### DVD-ROM Drive

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Compatibility has improved

1999 2000 2001 2002 Phase 2
1999 2000 2001 2002 2003/4

0.0% 10.0% 20.0% 30.0% 40.0% 50.0% 60.0% 70.0% 80.0% 90.0% 100.0%
Matchmaking

- Specific media-burner combinations have problems
  - Indicated by red rows
- Important to update firmware on burners
- Burner mfrs should ideally list media that work with their drives
Edge Effect

• Edge effect clearly seen
• In Phase 2, 38 out of 50 failures were in the outer edge of the disc
• “Edge” begins to appear around 10% from end of the disc and becomes significant around 5% from the end
• Ignoring errors outside the edge, compatibility rises to 98%
Media Quality

- There is a significant spread in media quality
- Worst media brand scored 80.5%
- Best media brand scored 100%
RAM results

- Phase 1 tested RAM compatibility
- RAM results
  - Several drives did not support RAM (red F or NA)
  - Those that did claim support tested well

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Other observations

• No significant difference between formats
  – R vs +R, or R vs RW
  – Media quality and edge effect are bigger factors
• Burning was reliable
  – Only 1 disc failed to verify
  – Write times consistent with rated speed
    • Avg 15 minutes to burn 4.6GB on 4X drives
• Independent test validation was consistent
Conclusions

• Overall results improving over time
• Edge effect in failures is very clear
  – When recording, avoid filling up the disc for best compatibility
• Media quality matters:
  – Significant variation in media quality
• Media-Burner combinations matter
  – Consumer should update firmware on burners
  – Underscores importance in media/drive mfr relations