UDF 1.50 approved errata

Base Document: OSTA Universal Disk Format Specification, revision 1.50
Document: UDF 1.50 approved errata
Date: December 6, 1999; last modified July 24, 2006

Purpose of this document:

This document contains the UDF Document Change Notices (DCNs) that were approved as UDF 1.50 errata by the OSTA UDF Committee.

Notice:

The UDF 1.50 errata document has not been well maintained. From March 2000 until July 2006, it contained the text of DCN 5003, 5008 and 5028. In the June 2006 UDF committee meeting DCN-5163 was approved, especially as errata for the UDF revisions 1.50 and 2.00. DCN-5163 is now added to the UDF 1.50 errata document.

Note: In the period between July 1999 and June 2006, there were more DCNs approved that also contain UDF 1.50 errata text. Maybe these DCNs have to be added to this document to complete the UDF 1.50 errata.

History of this document:

04-02-1997: Release of the approved UDF revision 1.50 document.
01-03-2000: Added DCN 5003, 5005 and 5028 as approved by the UDF committee.
…t.b.d. …
21-07-2006: Added DCN 5163 as approved on June 12, 2006.

Contents:

Document: OSTA Universal Disk Format Revision 1.50	**DCN-5003**
Subject: *Addition to sequentially written file systems*	
DCN#: 5003	
Date: December 6, 1998	

Description:

Sequential File Systems in UDF 1.5 are missing some information that Random-Access File Systems provide: the current volume name and the number of files & directories on the volume. This information is added to the `VAT File Entry` in an optional Extended Attribute.

Change:

Add the following paragraph:

3.3.4.5.1.3 Logical Volume Extended Information

The *LVExtensionEA* is stored only in `VAT File Entries`. It is optional. It shall only be used on UDF 1.5 compliant media, not on UDF 2.0 or later (UDF 2.0 provides already a different solution).

This extended attribute shall be stored as an *Implementation Use Extended Attribute* whose *ImplementationIdentifier* shall be set to:

"*UDF VAT LVExtension"

LVExtensionEA format

RBP	Length	Name	Contents
0	2	Header Checksum	Uint16
2	8	Verification ID	Uint64
10	4	Number Of Files	Uint32
14	4	Number Of Directories	Uint32
18	128	Logical Volume Identifier	dstring

Verification ID – When writing this EA, a copy of the Unique ID field in the VAT ICB's File Entry shall be stored here. When reading, this value helps identifying whether the values in Number Of Files & Directories are accurate: Only when this field is identical to the Unqiue ID field, those values are valid, otherwise the reader shall assume that the fields are invalid. The values shall only be updated when the Number of Files & Directories is known, otherwise these values shall not be modified or all filled with zero bytes.

Number Of Files – Same as in 2.2.6.4

Number Of Directories – Same as in 2.2.6.4

Logical Volume Identifier – Specifies the current logical volume name as assigned by the user. This name can be different from the L.V.I. in both the LVD and the FSD. When it is different, this value precedes the other values.

Document: OSTA Universal Disk Format	**DCN-5005**
Revision 1.50	
Subject: *Correction for "Non-Allocatable Space" file*	
Date: May 23, 1999	

Description:

Name for sparing file "Non-Allocatable Space" has wrong translation in representation (In 2.3.13 in UDF 1.5)

Change:

In 2.3.13, replace the text
(#4E,#6F,#6E,#2D,#41,#6C,#6C,#6F,#61,#74,#61,#62,#6C,#65,#20,#70,#61,#63,#65)
with
(#4E,#6F,#6E,#2D,#41,#6C,#6C,#6F,#63,#61,#74,#61,#62,#6C,#65,#20,#53,#70,#61,#63,#65)

			DCN-5028
Document:	OSTA Universal Disk Format		
	Revision 1.50		
Subject:	*Correction for processing permissions.*		
Date:	July 9, 1999		

Description:

The Attribute and Delete permissions should be changed from Enforce to Ignore for UNIX.

Change:

In section 3.3.3.3, replace

Attribute	directory	The file's permissions may be changed.	E	E	E	E	E	E
Attribute	directory	The directory's permissions may be changed.	E	E	E	E	E	E
Delete	file	The file may be deleted.	E	E	E	E	E	E
Delete	directory	The directory may be deleted.	E	E	E	E	E	E

With

Attribute	directory	The file's permissions may be changed.	E	E	E	E	E	I
Attribute	directory	The directory's permissions may be changed.	E	E	E	E	E	I
Delete	file	The file may be deleted.	E	E	E	E	E	I
Delete	directory	The directory may be deleted.	E	E	E	E	E	I

Document: OSTA Universal Disk Format   **DCN-5163**
Subject: *Sparing Packet Length errata for UDF 1.50 and UDF 2.00*
Date: June 07, 2006; last modified June 12, 2006
Status: Approved June 12, 2006

Description:

This DCN is **for the UDF 1.50 and UDF 2.00 errata only**.

For UDF 1.50 and UDF 2.00, the Sparing Packet Length is equal to a fixed value being 32, see 2.2.9. For UDF Revision 2.01 and higher, the Sparing Packet Length is determined by the medium fixed packet length (e.g. 32 for CD-RW) or ECC blocking factor (e.g. 16 for DVD-RW and DVD+RW). This change was established in DCN-5039. However, this DCN was not approved as UDF 1.50 and UDF 2.00 errata. This means that in fact for a DVD using sparing, the Sparing Packet Length must still be equal to 32 for UDF 1.50 and UDF 2.00, which means that 2 ECC blocks are spared in one Sparing Table entry, also if only one of them is defect. The recommendations for DVD-RW (using UDF 2.00) did not mention this and defined a value of 16 instead (DCN-5071 and UDF 2.00/2.01 errata document). The DVD+RW recommendations in DCN-5076 mentioned it but the sentence was deleted when it was implemented in the UDF 2.50 specification. In order to solve the confusion, we will for UDF 1.50 and 2.00 allow other values than 32 but add also a note to warn for the consequences. A UDF 1.50 and 2.00 implementation should at read use the value as defined in the Sparable Partition Map and when creating a file system it should use 32 or the value for the medium as recommended by UDF 2.01 and higher revisions.

The value of 32 must be allowed for all media in order to avoid that existing UDF implementations are broken while they are according to the current UDF 1.50 and 2.00 specification.

Changes:

Add a new entry for this DCN to the UDF history table in section 6.17:

Description	DCN number	Updated in UDF Revision	Minimum UDF Read Revision	Minimum UDF Write Revision
Sparing Packet Length errata for UDF 1.50 and UDF 2.00	5163	---	1.50	1.50

and …

In 2.2.9, table "Layout of Type 2 partition map for sparable partition"
replace:

| | Packet Length | Uint16 = 32 |
by: | Packet Length | Uint16 |

and below the table replace:

- Packet Length = the number of user data blocks per fixed packet. Shall be set to 32.

by:

Packet Length = the number of user data blocks per sparing packet. Shall be set to 32. The sole exception is that some implementations may use 16 for DVD media but this may reduce compatibility. When 32 is used for DVD, then 2 ECC blocks are spared together using one Sparing Table entry.