

DATA RECOVERY SERVICE CENTRE TRAINING (WORKSHOP TRAINING)

Module D4 Firmware up gradation basis (wdr str)

MODULE D4 HARD DISK FIRMWARE BASIC & HARD DISK REPAIR TRAINING

D4. 1 Introduction to hard disk firmware

- What is firmware of hard disk
- Micro code of hard disk firmware
- Modules of hard disk firmware
- ·Types of modules in hard disk firmware
- Data modules ,Management Modules ,Techno Modules
- Where firmware store in hard disk
- What is negative cylinder/track of hard disk
- What is service area
- What is inside hard drive System Area?
- System area of hard disk
- UBA Modules (Utility Block Addressing)
- Modules store in which head side
- What happen if hard disk firmware module damage
- when hard disk firmware damage
- Common symptoms of hard disk firmware failures

D4. 2 Introduction to hard disk firmware modules in service area

- Smart Data
- System Logs
- Serial Number
- Model Numbers
- Security Data Passwords for drive – possible encrypted info.
- Bad block table
- P-List (Primary Defects List – manufacture defect info that does not change)
- G-List (Grown Defects Lists – sector relocation table)

- Program Overlays – Firmware, Executable Code, or updates
- Zone Tables
- Servo Parameters
- Specific Tables like RRO – (recalibrate repeatable run-out and head offsets)
- Test Routines
- Factory Defaults Tables
- Recalibration Code Routines
- Translator Data:
 - a. Converts Logical and Physical Address to locations on the drive
 - b. Heads and Track Skewing Info

D4. 3 Problems when hard disk firmware is corrupted

- Drive will not initialize
- Drive is slow responding
- Drive is not running properly
- Drive will not be recognized by the computer
- Head sticking clicking voice (may be due to firmware if hardware ok)
- Shows up with wrong S/N
- Show up with wrong Model no
- Hard disk asked for password
- Hang up on particular sectors
- identifies fine but fails to read any data or boot up operating system giving I/O device errors
- Smart error
- Primary Master Hard Disk Fail
- No operating system found
- USB Device malfunctioned
- S.M.A.R.T. Capable But Command Failed
- Disk boot failure. Insert system disk and press enter
- Drive Mount Failure or some other hard drive boot error.
- The hard disk will spin up when powered on, but be incorrectly recognised / not recognised at all by the computer
- The hard disk will spin up & be recognised correctly by the computer but the

system will then hang during the boot process

D4. 4 Basic Introduction to Different firmware repair instrument/software list detail

- **PC3000 UDMA**
- **MRT**
- **Dfl wdII**
- **SALVATION data product (now no support from 2012)**
- **Pc3000 pci 2.4/2.5 version (china no further support after 2007)**
- **Atola**
- **Firmware repair software without hard ware**
 - Wdr3, wdr5, wdr6
 - Str 3000
 - Mrt Maxtor repair
 - Samsung repair software

D4.5 Introduction to Seagate firmware repair tools

- Basic idea of seagate tools used with terminal command
- Seagate repair tools
- Seagate models detail
- About seagate models
- How to identify seagate models
- F3 series Segate hard disk models
- Understand Seagate terminal commands
- Usb to rs232 converter
- How to connect seagate hddisk with terminal connection

D4.6 Introduction to WDR hard disk firmware repair software tools

MODULE D5 MRT DEVICE USE FOR HARD DISK FIRMWARE REPAIR & DATA RECOVERY

D5. 1 data copy option on MRT device

D5.2 Segate hard disk firmware repair & data recovery

D5.3 Wd hard disk firmware repair & data recovery