



INTERSOFT

TECHNICAL INSTITUTE

Address: Bu-3 Pooja Archade, Motiwala Perfume Lane, Bhagatalav Main Road, Surat 395003, Gujarat, INDIA.

M.no: +91-9824144698, +91-9824044699

Tel.No: (0261)2424396

Email-id: intersoft05@hotmail.com

Website: www.intersoftinstitute.com

Skype-id: intersoft05

DATA RECOVERY TRAINING COURSE MATERIAL

MODULES	COURSES	FULL DAY 6 HRS
MODULE E1	BASIC ELECTRONICS	HALF DAY
MODULE D1	LOGICAL DATA RECOVERY TRAINING	HALF DAY
MODULE D2	HARD DISK PCB REPAIRING CONCEPT	1 DAY
MODULE D3	PHYSICAL DATA RECOVERY TRAINING	1 DAY
MODULE D4	HARD DISK FIRMWARE BASIC AND REPAIR TRAINING	1 DAY
MODULE D5	DATA EXTRACOR OF MRT AND SEGATE FIRMWARE REPAIR TOOLS	1 DAY
MODULE D6	WD, SAMSUNG, TOSHIBA FIRMWARE MRT REPAIR TOOLS	1 DAY

Terms & Condition:-

- ⇒ Registration Fees 1000/- Extra On Any Course
- ⇒ Reserve Seat before class and take online class
- ⇒ Course content, Fees & chapter may be change without prior notice

MODULE E1

BASIC ELECTRONICS ANALOG, DIGITAL, PRACTICE

1. **AC, DC, Electronics**, (Electrical, Current, Voltage, Watt, Ampere, Types Of Circuit, Measure.)
2. **Types of Material**, Working Detail of Circuit, Different Components.
3. **Resistor**: Types, Uses, SMD, Measure, Value.
4. **Capacitor**: Work, Types, Ceramic, Electrolyte, Tantalum
5. **Induction / Coil**: Work, Types, Check.
6. **Transformer**: Work, Types, Step Up, Step Down, SMD, Checks.
7. **Diode**: Semiconductor, N Type, P Type, Work, Types, Testing.
8. **Transistor**: Work, Types, NPN, PNP, Testing Method, Uses.
9. **FET, MOSFET**: Work, Types, NPN, PNP, Testing, Single Channel, Dual Channel, Testing, Uses.
10. **Other Components**: Fuse, Crystal, RTC.
11. **Digital Electronics**, Types of Number Systems, Conversion.
12. **Types Of Logic Gate**: AND, OR NOT NOR, NAND, Flip Flop, Exclusive.
13. **Study of Different** Chip Datasheet with Different Gates and Working Idea of Different Chips.
14. **Soldering**, Removing, Cold Testing, Warm Testing, Procedure of Components.
15. **Project on Electronics**, practical Idea of Using Different Components. Resistor, Capacitor Diode Transistor, MOSET, Fuse, Coil, Led, Switch etc.
16. **Soldering** and Desoldering Practice

MODULE D1

LOGICAL DATA RECOVERY TRAINING

D1.1 Introduction to Storage Device , Hard disk types , Models and O.S

- HDD Traditional Hard disk drives
- Floppy Disk , Zip Drive, Tape Disk, CD/DVD, USB pen drive, Mobile technology storage
- Types of hard disk 3.5" 2.5" 1.8"
- Different hard disk converter, (1.8 zip, scsi, id, sata , micro sata , sca80,)
- SSD solid state disk
- Different types of Hard disk Converter used
- Difference between HDD & SDD disk drive
- Basic understanding between different OS with different version
- Windows (FAT16, FAT32, NTFS, NTFS5)
- Unix (UFS, EAFS, HTFS, VxFS, FFS), Linux (Ext2, Ext3, Ext4 JFS, ReiserFS)
- Apple Macintosh (HFS, HFS+), Novell Netware (NWFS, Net386, NSS)
- Difference between FAT & NTFS, Hard disk different models
- Identify hard disk size from models no

D1.2 Hard Disk Data recovery common problems, with fault

A. LOGICAL DATA RECOVERY PROBLEMS (disk detected in BIOS are mainly logical problems)

Common faults of logical problems

- Failure of Boot Sector, Master Boot Record MBR Failure
- Operating System Malfunction or Crash
- Partition shows but not access, Partition automatic loss, Data loss due to virus
- Format error message
- Your system will not boot. You might get a message. "no boot-up disk available"
- A file may contain no data or just partial, even incorrect data.
- Message hard disk not recognize
- Message that there is no free space available on disk
- Corruption of files on files systems, Corrupt File System Structure
- Cross Linked Files, Reformatted or Repartitioned Hard Drive
- recently accessed the data and suddenly you cannot access it.

We can used logical software for user mistakes for recovery

- ✓ Formatted hard disk
 - ✓ Deleted files & folders
 - ✓ Accidental Deletion of Data
 - ✓ Improper Shutdown:
- Memory card error**
- Format, Card error, No data shown

PHYSICAL PROBLEMS (not detected in bios are main physical problems)

B. HARD DISK ELECTRONICS FAILURE MAIN PROBLEMS

Logic board (controller) failures.

- Totally dead Hard Drive does not spin up
- When hard disk connects to computer, computer does not start or hangs
- Broken power connectors, Broken data connectors
- Spindle/arm driver chip failure
- You can see a burned component on the hard drive circuit board.
- Connector of motor or head is damaged
- Printed circuit board failures including pre-amplification
- TVS diode blow up, Protection fuse, Ohms resistor open
- PCB Damaged due to liquid, Fire Damage, Ceramic capacitor short
- Mosfet short, or not giving output, Data connector resistor open, Electric shock
- Pcb circuit open / short,

C. HARD DISK MECHANICAL FAILURE PROBLEMS

- Clicking hard drive, Drive not spinning, Head crash, Damaged Platters
- Actuator failure, Stepper motor failure, Spindle bearing seizure (block)
- More voice from hard disk, Head stuck on platter, Liquid Damage, Fire Damage,
- Dropped Hard Drives

D. HARD DISK FIRMWARE FAILURE PROBLEMS

- Hard disk not found in bios at all
- Model of hard disk shows wrong
- Head sticking voice (may be due to firmware if hardware ok)
- Shows up with wrong S/N, Show up with wrong Model no
- Hard disk spinning but not shown in bios
- Hard disk asked for password, Bad sector
- 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
- Hard drive not recognized
- Drive Mount Failure or some other hard drive boot error.
- The hard disk will spin up when powered on, but be incorrectly recognized / not recognized at all by the computer
- The hard disk will spin up & be recognized correctly by the computer but the system will then hang during the boot process

HARD DISK LOGICAL DATA RECOVERY

D1.3 Understanding Hard Disk Structure

- Hard disk structure, Disk Platter, Read Write Head, Spindle motor, Head arm, Head actuator (voice coil actuator), Air Filter, Tracks, Sectors, Cylinders, Cluster, Cluster size in FAT& NTFS, CHS cylinder head sector addressing, ZBR zoned boot record, Types of connection, SCSI, SATA, PATA, LBA& CHS calculation , Sector , Cluster addressing, Logical & physical addressing.

D1.4 INTERNAL PARTS OF HARD DISK DEMO HARD DISK from INSIDE

IDENTIFICATION OF INTERNAL PARTS, DISASSEMBLE SATA 3.5 DRIVE1TB ST31000333AS

- HDA head and disk assembly, PCB printed circuit board, MCU micro Controller Unit, VCM voice coil motor controller, Buffer Memory, Flash chips, Shock sensor, TVS diode transient voltage suppression diode, Breath hole, Head contacts, Motor Contacts, Recirculation filter, Top dumper, Top platter, Platter clamp, Top magnet, Plate with heads and connectors, HSA head stack assembly, HSA stopper, VCM voice coil motor, VCM HSA Actuator, Arm, HGA Head Gimbals Assembly, Bearing, FPC flexible printer circuit, Gasket, Sliders, ABS air bearing surface, Preamp, Heater, Gimbal, Platter Clamp, Spacer ring, WD Internal parts demo.

D1.5 Understanding data stored on hard disk & Microsoft files structure

- What is a file system?
- Types of files systems
- DOS 3.3 (FAT12), DOS 5.0 (FAT16), Windows 3.1 (FAT16), Windows 95 (FAT32 OSR 2), Windows 98/ME (FAT32), Windows NT/2K/XP (FAT32 / NTFS), FAT file allocation table, NTFS New technology files system, FAT/NTFS COMPARISON , How FAT works, How data store in hard disk in fat, Explaining disk block, allocation method, File slack space, Linked allocation, Attributes of files systems, NTFS File attributes, MFT files working idea, Deleting NTFS FILES.

D1.6 working concept of Format, Partition & computer booting process,

- Initializing a Hard drive, Low level Format (factory)
- Initializing a hard drive with FDISK, Master partition table
- Partition type codes, Partition table entry, Single primary partition
- One primary with extended partition, Boot process, Hard disk boot sequence (dos), Windows 2000 boot process, Post, MBR, Boot Record
- MBR (Master Boot Record), GPT (GUID Partition Table), NTFS, Partition boot sector, MFT (master file table), Used of different software

D1.7 Data recovery Software used for different problems, steps with features

- Data Recovery of MBR corrupted, Data Recovery of Deleted Files
- Data Recovery from Deleted Partition, Data Recovery from Reformatted Partition
- Data Recovery from External Drives, Data Recovery from USB Drive
- Data Recovery from Camera Card, Data Recovery from CD/DVD
- Data Recovery as RAW Recovery, Data Recovery from Damaged Sector
- Data Recovery from RAID

Recovery Features

- FAT Support, NTFS Support, Quick Scan, Deep Scan, Media File Recovery, Email Files Recovery, Microsoft Office File Recovery, Recovers from Unbootable Drive

Search and Recovery Options

- Search by File Extension, Search by Date, Search by File Size, File Preview, Batch Recovery, Saves Scan Information, Network Recovery, Help & Support, Supported Configurations, Windows 7, Windows Vista, Windows XP.

Top common data recovery software used in market

- Stellar Phoenix, R Studio, Data rescue, Get data back, Icare, Power data recovery, Salvation, Encase, Kernel, Ptools, Hard disk Stenar, Hard disk Regenerator.

Corrupted files repair software

- Excell repair, Access repair, Power point repair, Jpg repair, Backup files
- Repair video master avi, divx,xvid,mpeg, rm, rmvb, asf, wmv, wma , ac3

Understanding Basic concept of RAID

D1. 8 Pen drive and Memory card logically data recovery concept

- Pen drive data recovery, Memory card data recovery concept
- Data recovery from Pen drives, Data recovery from memory card
- Data recovery from Zip drives concept
- Data recovery concept of iPods, Digital cameras, Mobile phone, etc

MODULE D2

HARD DISK PCB REPAIR TRAINING

D2.1 SMD Basic electronics for hard disk components and PCB repair

- Basic electronics fast revision
- Working concept of electronics component resistor, capacitor, diode, transistor, fuse, tvs diode, MOSFET, etc.
- Multimeter basic concept, testing different components
- Measuring and Identify ok, Short, Open components
- Introduction to component of hard disk PCB , resistor, capacitor, diode, transistor, MOSFET chips
- Removing and Inserting Different components, Working concept of chips,

D2. 2 Common problems in hard disk due to pcb fault

- Totally dead Hard Drive does not spin up
- When hard disk connects to computer, computer does not start or hangs
- Broken power connectors, Broken data connectors
- Spindle/arm driver chip failure
- You can see a burned component on the hard drive circuit board.
- Connector of motor or head is damaged
- Printed circuit board failures including pre-amplification

- TVS diode blow up, Protection fuse, 0ohms resistor open, PCB Damaged due to liquid , Fire Damage, Ceramic capacitor short, Mosfet short, or not giving output
- Data connector resistor open, Electric shock, Pcb circuit open / short

D2.3 INTRODUCTION HARD DISK PRINTED CIRCUIT BOARD, BLOCK DIAGRAM, SECTION OF PCB

INTRODUCTION TO DIFFERENT SECTION OF HARD DISK

- Introduction & Block diagram of hard disk printed circuit board
 - Identify different chips on hard disk
 - Mcu, driver chip, flash ram chip , buffer chip
 - Identify different component on hard disk
 - Resistor, capacitor, tvs diode, transistor, fuse , inductor, rectifier
 - identify circuit types, no models, Block diagram of hard disk pcb
 - How pcb work, Identify hard disk pcb

HARD DISK SECTION

- Hard disk Power section normal molex, sata
- Hard disk Dc to dc converter power section
- Hard disk Data section connection sata pata
- Hard disk Firmware section
- Hard disk Ram/ Buffer section
- Hard disk Vcm controller section
- Hard disk Spindle motor controller
- Hard disk Mcu section
- Hard disk Pre amplifier section
- Hard disk Head contact section
- Hard disk Spindle motor section

D2.4 Power section & DC to DC converter, (Mosfet & other smd component working and power detail in hard disk)

- Types of hard disk power connector
- Power input (sata pata), Pata old Molex 4 pin (5v & 12v)
- Sata connection 15 pin (5v, 3.3v, 12v)
- Checking hard disk open short thru power connector
- Understanding Protection circuit
- Semi conductor mosfeter transistor Manufacture
- Semi conductor mosfet transistor components
- Tvs diod, 0ohms resistor, fuse,
- Dc to dc converter, Transistor used as switching
- Step down from 5v to 2.5, Mosfet working function
- Testing of mosfet in hard disk pcb

- Linear output, switching output
- work of inductor in hard disk
- PWM controller IC, Power supply to different chips

D2.5 Mcu section, Data section, preamp section head (chip working concept power main signals)

- Data section of hard disk, Sata connection 7 pin
- Signal detail of sata connection, Pata connection of hard disk 40pin
- Signal detail of pata connection, Connection detail of sata and pata connector
- Main control chip MCU manufacture (ardent, agere, pokar, seaglet, oscar, beagle, dsp, lucent, quantum, wdtsiemens, shxxx, tlxxx)
- Hard disk mcu chips, Working detail of MCU chip, Connection detail of MCU
- Voltage of hard disk MCU chip, Hard disk head connector
- Pin out detail of hard disk head connector
- Main signals detail of head contact, Working concept of hard disk preamp
- Hard disk preamp chip manufacture with identify
- Hard disk preamp chips, Pin detail of hard disk preamp chip
- Connection of head, vcm coil, micro actuator
- Types of hard disk head
- Ferrite heads, Amr heads, Thin film heads, Metal in gap (MIG) heads
- Tunneling magnetoresistive (TMR)
- Perpendicular magnetic recording (PMR)
- Giant magneto resistive (GMR)

D2.6 Buffer Ram, flash rom section (working concept types and main signals)

- Hard disk RAM BUFFER Chip, Hard disk RAM BUFFER
- Working function of Buffer chip, Pin detail voltage supply of buffer chip
- Datasheet study of buffer chip, Connection of buffer chip with other chip
- Hard disk EEPROM FLASH Chip manufacturer
- Hard disk EEPROM Flash chips, Working function of EEPROM
- Pin detail of EEPROM, Connection of Flash EEPROM chip with other chip

D2.7 VCM Motor controller & read channel chip working concept and main signals

- Hard disk Read Channel Chip manufacturer
- Hard disk Read channel chips
- Working function of read channel chip
- Pin detail , voltage supply of read channel chip
- Hard disk motor controller chip manufacturer
- Hard disk motor controller chips
- Working function of motor controller chips
- Pin detail, voltage supply of motor controller chip
- Spindle motor power supply from motor controller chip

- Switching , linear mosfet power controller
- Connection detail of motor controller chip with other chip

D2.8 Live pcb tracing, different volt of pcb, fault finding of hard disk pcb

Online offline

- Offline tracing of hard disk pcb with multimeter
- Testing power connector main volt, Testing tvs diode, Testing all capacitor
- Testing spindle motor continuity
- Online Live tracing of PCB with multimeter
- Testing Power of mcu, Testing Power on buffer chip, Testing Power on read write chip, Testing Power on spindle motor

D2.9 Identify hard disk pcb no for donor pcb (Samsung, Seagate, wd, Hitachi, IBM, Maxtor,)

- Hard disk model no, Hard disk pcb no, Hard isk pcb printer no
- Matching criteria of different hard disk
- Seagate Hard Drive PCB Swap Replacement Guide
- Western Digital PCB Swap Replacement Guide
- Samsung PCB Swap Replacement Guide
- IBM Hitachi PCB Swap Replacement Guide
- Maxtor PCB Swap Replacement Guide
- Hitachi PCB Swap Replacement Guide
- Toshiba PCB Swap Replacement Guide
- When firmware replacement is important
- What is glist, plist on hard disk, Service area on hard disk platter
- Which models required firmware chip replacement after swapping PCB
- Which models required no firmware replacement after swapping PCB

D2.10 Replacing component and IC's of hard disk (demo, video)

- Removing and inserting of different component from hard disk PCB
- Removing resistor, mosfet, transistor, diode, fuse demo
- Removing and inserting of different chips from hard disk PCB
- Firmware chip, replacement idea, Hard disk socket and connector

MODULE D3

PHYSICAL(MECHANICAL) DATA RECOVERY TRAINING

D3.1 PHYSICAL (MECHANICAL) HARD DISK FAILURE PROBLEMS

- Clicking hard drive, Drive not spinning, Head crash, Damaged Platters
- Actuator failure, Stepper motor failure, Spindle bearing seizure (block)
- More voice from hard disk, Head stuck on platter, Liquid Damage
- Fire Damage, Dropped Hard Drives, Different voice in different hard disk (video)
- Common fault and solution in physical repair

D3.2 DONOUR SELECTION OF DIFFERENT HARD DISK

- Data recovery and donors
- Donors' Recognition: Firmware Donors, PCB Donors, Head Donors
- Matching criteria of Donours for hard disk
- Different models and product detail of hard disk
- Identify hard disk size, types, models, platter, connection etc from models no
- Hard disk vendors with model detail
- Select donor for hard disk to be recover
- Identify from hard disk, Model no, Rpm
- DCM drive configuration matrix (western digital hard disk)
- Key (Maxtor), Site Code (Seagate hard disk)
- MLC machine level code(Hitachi, IBM)
- Firmware code (Seagate, Samsung hard disk)
- Manufacture dates, Manufacture in country
- Matching donor for western digital hard drive
- Matching donor for SEAGATE hard drive
- Matching donor for TOSHIBA hard drive
- Matching donor for FUJITSU hard disk
- Matching donor for HITACHI (IBM) hard drive
- Matching donor for HITACHI (Native) hard drive
- Matching donor for SAMSUNG " hard drive
- Matching donor for Maxtor " hard drive
- Matching donor for QUANTUM-MAXTOR 3.5" hard disk

D3.3 Data Recovery Instrument detail and using detail with demo on opening hard disk

- Instrument list demo used for physical data recovery
- Instrument detail used for data recovery, Motor unstuck tools, Punching tools
- Clean room concept
- Hand gloves, fingers top cover, HD HPE PRO
- Different instrument used for data recovery centre
- Replacement of Damaged Heads - Read-Write head change tools
- Replacement of Magnet - Magnet Exchanger Tools
- Platter Transplantation --- Platter Replacement Tools

- Seized Damaged Bearings Replacement -- Spindle motor Replacement Tools
- What are clean room data recovery cases?
- Head swap process for hard drives with or without spacers/bracelet
- Multiple platter exchange process, Clean room or clean bench
- Hands on practice using HD HPE PRO/ or OTHER INSTRUMENT for data recovery cases.

D3.4 practice on head replacement of hard disk

- Precaution to be taken before opening hard disk
- Step by step removing parts guidelines
- Donor and patient hard disk to be kept ready on bench
- How to open hard disk, How to use magnet tools for remove top magnet
- How to remove top magnet, How to take out head from hard disk
- How to swap head from donour to patient
- How to use head tools to keep distance between heads
- How to split head outside, Removing head form 2.5 and 3.5 hard disk
- Removing and inserting read, write head of different computer hard disk
- Removing and inserting read write head of different 2.5" hard disk

D3.5 practice on Platter replacement of hard disk

- How to open screw of platter, How to swap platter from donor to patient
- What care to be taken for platter replacement, Removing platter of hard disk
- Removing and inserting platter of different computer hard disk
- Removing and inserting platter of different laptop 2.5" hard disk

D3.6 practice on Spindle motor changing of hard disk

- How to unstuck spindle motor of hard disk, How to remove out spindle motor
- How to replace with donor spindle motor
- Removing and inserting spindle motor of different computer hard disk
- Removing and inserting spindle motor of different 2.5" hard disk

D3.7 Basic idea of data recovery from dead pen drive, memory card, flashcard

- Basic internal structure of pen drive, Concept of Swapping chip of pen drive
- Basic repairing idea of pen drive, Bios programmer xeltek super pro idea for reading chip

D3.8 Introduction to Hard Disk Firmware repair instrument list

Introduction to Different firmware repair instrument/software list detail

Ace lab original pc3000

- Ace portable usb, Ace udma, Ace.

DFL Data Recovery Equipments

- (1) DFL - DDP USB3.0 (Data Dr. Pro Usb3.0)
- (2) DFL - URE USB3.0 (USB Recovery Express)
- (3) DFL - DE USB2.0
- (4) DFL - FRP - STII For Seagate
- (5) DFL - FRP - WDII For Western Digital
- (6) DFL - FRP - HT For Hitachi
- (7) High Speed USB Programmer Pro
- (8) DFL - Data Recovery Start-Up Suite
- (9) DFL - Data Recovery Grow-Up Suite

Salvation data product

- Data compass, HD doctor for Seagate, HD doctor for WD, HD doctor for Maxtor, HD doctor for Hitachi

Firmware repair software without hard ware

- Wdr3, wdr5, wdr6, Str 3000, Mrt Maxtor repair, Samsung repair software

D3. 9 Data recovery common problems and solution flow chart

- Hard drive does not get detected,
- Hard drive gets detected but data is inaccessible
- Hard disk drive displays no sign of power and/or no sound of the drive "winding up
- Hard disk drive powers up & then spins constantly with a loud winding sound
- Hard drive powers up and then winds down, non-responsive
- Hard drive unit emits an OCCASIONAL clicking sound
- Hard drive unit emits a CONSTANT clicking sound
- Hard drive unit powers up, but the drive does not mount, and there is no discernible data read/write sound
- Hard drive powers up and a scraping sound is audible
- Hard drive has been exposed to water damage,
- Hard drive unit has been exposed to fire

MODULE D4

FIRMWARE UPGRADATION BASIC

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 dsik 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 hardware**
 - 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 Seagate 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 Seagate hard disk firmware repair & data recovery

D5.3 Wd hard disk firmware repair and data recovery

MODULE D6

WD, SAMSUNG, TOSHIBA FIRMWARE MRT REPAIR TOOLS

- Common problems in wd hard disk due to firmware problems
- Booting process of hard disk, Connection types of hard disk with firmware tool
- Types of hard disk and families , models, types architecture MDL DCM LBA
- Identify families from model no ,
- Types of hard disk pcb , pcb no , pcb families
- Matchng USB hard disk pcb with SATA hard disk pcb
- Basic idea of WD hard disk ROM firmware files, different extension
- Types of module, unique main micro moduels
- ROM Modules files (ROM FILES 0A, 0B/20B, 30, 47, 0D, 4F)
- Analysis of ROM Module Data Structure
- Read, write , editing , regenerate of rom modules
- Backup of ROM modules in service area
- Structure of different rom module
- Viewing editng identify, read , copy rom modules, ROM files
- MAIN MODULES OF SERVICE AREA (moduel 01, 11, 13, 5c, 10 1f , 02 , 35, 49)
- LDR file loading on WD hard disk, Directory listing Module ,
- Key module for data backup old I series and new royl series
- Read,write, repair, editing modules of wd hard disk s
- Micro code firmware vertion, Wd fixing option
- SPT value calculation, CASE study of WD hard disk firmware repair option

CONTACT

WWW.INTERSOFTINSTITUTE.COM

Skype-id: intersoft05

Email-id: intersoft05@hotmail.com

M.no: +91-9824144698

+91-9824044699

Address: BU-3, Pooja Arcade, Motiwala Perfume Lane
Bhagatalav Main Road, Nanavat,

Surat- 395003

