PC–3000 HDD DATA RECOVERY EXPERT TRAINING

seminar program

1. HARDWARE SOLUTIONS IN DATA RECOVERY

PC–3000 TECHNOLOGY. DATA RECOVERY PROCESS ARRANGEMENT

▶ Correct ways to organize data recovery process when using PC-3000 EXPRESS/UDMA.

▶ How to identify hard drive family? Most common mistakes when identifying hard drive family.

▶ HDD serial port and what is special in using various adapters.

▶ Peculiarities and nuances you should know how to connect USB drives: Samsung, WD.

▶ Initial diagnostics of Hard Disk Drive.

> **PRACTICE:**
> Identifying hard drive families, connecting hard disk drives through serial port.

TYPICAL DAMAGES OF HDA, PCB AND TECHNIQUES TO HANDLE THEM

Spindle motor, six main reasons why spindle motor does not get started. Types of bearings and spindle motor coil schemes. Techniques for diagnosing damages.

> **PRACTICE:**
> Correct steps for finding malfunctions on a drive that does not start its spindle motor: (measuring spindle motor coils resistance, spindle motor launch check, heads stack preamplifier isolation for exluding it from diagnostics, removal of jammed heads from disk surface etc.)

Platters, current various density of surfaces in HSA. How to diagnose damaged platters. Data Extractor Techniques to read data from HDD with multiple BAD-sectors.

Heads, differences between physical and logical head maps. Factory disabled heads, read/write element assembly, Micro JOG concept. Damages of heads, safely repair HDD and replace the inner parts of HDD using HDD Surgery tools, methods to clear heads, search for donors to replace HSA. PC-3000 Techniques to diagnose heads. Reading data at unstable reading with the help of Data Extractor.

PCB, identification of key components on PCB. Methods to find damages and repair PCB. Donor PCB adaptation.

> **PRACTICE:**
> How to detect damaged components on PCB, how to correctly adapt donor PCB.

2. SOFTWARE SOLUTIONS IN DATA RECOVERY

HDD MICROPROGRAM

Two parts of microprogram, HDD startup initialization sequence. Microprogram structure in ROM. How to better use PC-3000 EXPRESS/UDMA when working with HDD in Kernel or Safe mode.

HDD service area, location, SA copies, service information modules, module catalogues, methods to access. Module catalogue coordinate and service area regions. HDD Modules importance level. How to apply PC-3000 EXPRESS/UDMA to diagnose and repair service information.

> **PRACTICE:**
> Techniques for checking service information and start the drive if it hangs at initialization, if capacity is determined as 0, if computer is not detected in BIOS.

HDD TRANSLATOR (USER DATA STORAGE ARRANGEMENT)

Why translator is so important to get access to user data. Importance of initial modules to get translation tables. Techniques for recovering and repairing translator and auxiliary modules with the help of PC-3000 EXPRESS/UDMA.

> **PRACTICE:**
> Data recovery when translator modules and auxiliary translator modules are damaged.

Static and dynamic parts of HDD translator. Correlation between dynamic part and head map. MR-Head Shift Technology — how to adjust dynamic part of translator if MR-Heads are damaged.

> **PRACTICE:**
> Data recovery when one or several head/s is/are damaged, MR-Head Shift Technology for data recovery when drives produce knocking sound (Western Digital, Seagate, Samsung).

3. BOOSTING DATA RECOVERY SKILLS

HOT-SWAP as universal method to recover data. Looking for matching donor and adapting donor for HOT-SWAP.

How to efficiently recover data from USB drives. Testing and getting access to user data through serial port. How to connect SATA connector to USB drive PCB. Data recovery techniques for Full Encrypted HDD with USB 3.0.

Data Extractor as powerful system for data recovery, what is special in using Data Extractor at recovering data of particular file systems. How to use Raw Recovery mode in efficient way.

> **CASE STUDY:**
> Case studies on Data Extractor to recover data when service areas of file systems are damaged.