

## TECHNICAL SPEC OF FORENSIC TOOLS :COMMENTS INCORPORATED

Minutes of meeting held on 11.10.2024 for consideration/ evaluation of comments received in response to Technical Specifications of forensic tools related to 'Forensic Electronics' in reference to DFSS letter No. DFSS/27(1)/ 2024-Manual/ 6656-60 Dated 23.02.2024

In reference to above letter the technical specifications were finalized & posted on DFSS website on 19.09.2024 & comments were invited from stakeholders till 30.09.2024. In response to that, following four companies/ vendors responded:

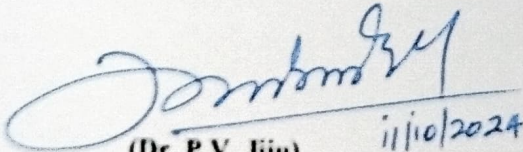
1. M/s 3rd Eye Techno Solutions, B2, 2<sup>nd</sup> Floor, 60 Feet Road, Pul-Prehladpur, New Delhi- 110044
2. M/s Pelorus Technologies Pvt. Ltd., 1<sup>st</sup> Floor, 16/1, Doctor Ln, Sector 3, DIZ Area, Gole Market, New Delhi - 110001
3. M/s Starlight Data Solutions Pvt. Limited, Level 3, Plot No. C3-3, Sector -129, Noida (U.P.) - 201304,
4. M/s Foundation Futuristic Technologies Pvt. Limited, B-7B, Devika Tower 6, Nehru Place, New Delhi - 110019

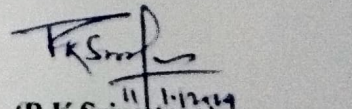
On the proper evaluation and examination of the comments from these stakeholders, following modifications are considered and being proposed in the existing technical specifications of forensic tools related to 'Forensic Electronics':

Sl.No.	Forensic Tool (Name of the Tool)	Specifications to be added in the existing technical specifications
1	Forensic Imager with Integrated Write Blocker (Falcon Neo)	<ul style="list-style-type: none"><li>• M.2 SATA &amp; 3.5" IDE.</li><li>• Should able to clone PCIe &amp; SAS SSD to PCIe &amp; SAS SSD respectively.</li></ul>
2	High End Forensic Workstation (FRED DX)	<ul style="list-style-type: none"><li>• OEM should be ISO 9001-2015 certified</li><li>• Product offered should be environment complied &amp; passed through 24 hour burn test.</li></ul>
3	iMAC Analyzer (Cellebrite Digital Collector + Cellebrite Inspector)	<ul style="list-style-type: none"><li>• Support for creation of image of Apple T2, M1, M2 &amp; M3 chips</li></ul>

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(Nilay Mistry)  
Associate Professor  
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(EXTERNAL MEMBER)

  
(Dr. P.V. Jiju) 11/10/2024  
Dy. Director & Scientist 'D'  
CFSL, Delhi

  
(R.K.Srivastava) 11/10/2024  
Dy. Director & Scientist 'D'  
CFSL, Delhi

No. DFSS/23/8/2024/2725  
Directorate of Forensic Science Services  
Ministry of Home Affairs  
Government of India

Block No 9, 8<sup>th</sup> Floor, CGO Complex  
Lodhi Road, New Delhi-110003

Dated: 19/09/2024


Notice

Directorate of Forensic Science Services invites objection/comments of the prospective bidders on the broad based specification derived by this department for following Software & Hardware Forensic tools.

S.No	Generic Name	Compatible tool
(i)	Forensic Imager	Tableau TX1
(ii)	Forensic Imager with Integrated Write Blocker	Falcon Neo
(iii)	Multiple Drive Forensic Imaging Hardware Tool with damaged Drive support	Atola Task Force
(iv)	Software for the Forensic Previewing, Image Mounting Password Cracking and Analysis of Digital Media	Access Data FTK
(v)	Software for Forensic Previewing, Imaging and Digital Analysis of Digital Media	Encase Forensic Software
(vi)	Software for Forensic Data Acquisition and Analysis of devices including Computer, Mobile, Drone, Car and Cloud Storage	Belkasoft Evidence Centre
(vii)	High End Forensic Workstation	FRED DX
(viii)	Workstation for Analysis of MAC OS Data	High-end Apple iMAC Workstation
(ix)	iMAC Analyzer	Cellebrite Digital Collector + Cellebrite Inspector
(x)	Software for the Forensic Data Extraction and Analysis of Live System, Hard Drives, Mobile Phones & Cloud	Magnet Axion Complete
(xi)	Mobile Phone Examination Device	MSAB XRY Complete
(xii)	Mobile Phone Examination Device	Oxygen Forensic Software
(xiii)	Mobile Phone Examination Device	UFED touch 3
(xiv)	Password Cracking Tool for Decrypting Password Protected Files	Passware Kit Forensic
(xv)	Software for Forensic Examination of video file /CCTV footage	DVR Examiner
(xvi)	Software for the Forensic Analysis of Optical Storage Media	CD/DVD Inspector

2. The objection/comments should be submitted by manufacturer/principal firm or their authorized Indian agent with valid agency certificate. Last date for submission of objections/comments is **30.09.2024**.

3. The objection/comments should be addressed to the Shri R.K. Srivastava, Deputy Director, DFSS Block No 9, 8<sup>th</sup> Floor, CGO Complex Lodhi Road, New Delhi-110003 or emailed to [cfs-dfss@nic.in](mailto:cfs-dfss@nic.in) . No communication in this regard will be entertained after the last date and if no comments are received within the stipulated date the broad based specifications will be treated as final.

  
(Dr Sayeed Ahmed)  
Deputy Director (Doc.)  
CFSL, Delhi

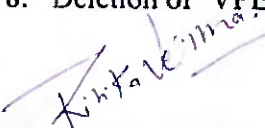
## Revision of Specifications of Standard List of Equipment

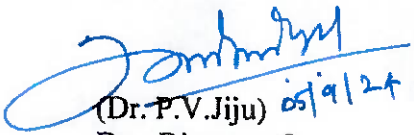
Ref No. DFSS/27(1)/2024-Manual/6656-60 Dated 23.02.2024


In compliance to above matter & reference, the committee after thorough deliberations has prepared the detailed technical specifications of forensic tools related to 'Forensic Electronics' being attached as Annexure-I. Regarding specifications of 'Write Blocker Kit (Annexure-21), 'High-end configuration server for back up & analysis' (Annexure-25), Hardware/Software for Audio Analysis (Annexure-26), Hardware/Software for Video Analysis (Annexure-27), Facial Recognition Software (Annexure-28) & Image Analyser Software (Annexure-29), no suggestions are being made as they are generic/ adequate.


The summary of recommendations for forensic tools to be added/ technical specifications up-graded/ replaced/ deleted is as follows:

1. 'Falcon' may be replaced with Falcon Neo (Annexure-21).
2. 'Magnet IEF' may be replaced with 'Magnet AXIOM Complete' (Annexure-22/ Sr. No. 6).
3. 'UFED Link Analysis', 'UFED Touch 2', 'UFED Chinex' may be replaced with UFED (Annexure-23).
4. 'DVR Examiner' may be shifted from minor equipment list to major equipment list (Technical Specifications attached) & 'Mobiedit' software tool may be added.
5. In Audio & Video analysis 'Authentication (Anubhooti solution, India)' may be added & 'AMPED five' may be replaced with 'Amped/ Amped Authentication' in minor equipment list.
6. The technical specifications of forensic software/ hardware tools may be upgraded for 'Tableau Duplicator' (Annexure-21), 'Encase Software', 'FTK', 'MAC System' (Annexure-22) & Password Cracking Tool (Annexure-24).
7. Addition of forensic tools i.e. 'Belkasoft Evidence Centre', High end Forensic Workstation', 'CD DVD Inspector', Oxygen Forensic Software', 'MSAB XRY Complete', 'Atola Task Force' & 'iMAC Analyzer' in major equipment list.
8. Deletion of 'VPER Kit', Forensic Triage Toolkit (Annexure-22)

  
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(Dr. Nilay Mistri)  
Associate Professor, NFSU, Gandhinagar  
External Member

Annexure-I

S. No.	Generic Name	Compatible Tool	Specifications
1	Forensic Imager	Tableau TX1	<ul style="list-style-type: none"> <li>• Capable to acquire/ clone Hard Disk Drives (HDD's)/ Digital Storage Media with SATA, USB, PCIe, SAS, FireWire and IDE connectivity.</li> <li>• Capable to acquire/ clone one source media into four destinations (with different connectivity) simultaneously.</li> <li>• Capable to detect encryption automatically on connected devices and to decrypt/ unlock APFS, BitLocker and Opal encryptions.</li> <li>• Capable to acquire/ clone digital evidence from MAC computers</li> <li>• Should support iSCSI networking protocol at source or destination port.</li> <li>• Capable to perform Standard operations i.e. Drive to Drive (clone) duplication, Drive to File (Image) duplication, Formatting, Wiping, Hashing, Blank disk check and HPA/DCO detection with removal capability.</li> <li>• With preloaded operating software</li> <li>• All required connectors, Cables and adapters to image and process drives of different type of different connectivity, as provided by OEM.</li> <li>• 3 (Three) Years On-Site Warranty with Firmware updates must be provided during the Warranty Period.</li> <li>• Product offered should be of Branded and should not be customized/ assembled &amp; OEM's proprietary certificate must be attached/ provided.</li> <li>• If required, the vendors may be asked to bring &amp; demonstrate the specifications offered in presence of Technical Evaluation Committee. <b>Desirable</b></li> <li>• Three days OEM Training with OEM Certification to be provided with three persons per machine at customer's site.</li> </ul>
2	Forensic Imager with Integrated Write Blocker	Falcon Neo	<ul style="list-style-type: none"> <li>• Capable to acquire/ clone data from multiple drives simultaneously (minimum 5 drives each at source as well as at destination)</li> <li>• Capable to acquire data at the rate of 50 GB/min. or higher</li> <li>• Capable to acquire clone data in Drive to Drive &amp; Drive to File/s format to support analysis in various forensic analysis tools</li> <li>• Capable to cross copy support for various hard disk interfaces including USB interfaces.</li> <li>• Capable to authenticate the data with multiple hashing algorithms</li> <li>• Capable to identify &amp; acquire HPA &amp; DCO areas of suspect media</li> <li>• Capable to acquire data directly from live system with support from content based image</li> <li>• Capable to boot/ mount the suspect media virtually in a write protected environment from the preview of live data.</li> <li>• Capable to acquire data from suspect RAID (all RAID configuration) drives.</li> <li>• Capable to acquire data over a network.</li> <li>• Capable to generate the log of processes</li> <li>• Capable to search for the keywords in the suspected</li> </ul>

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			<p>media.</p> <ul style="list-style-type: none"> <li>• Support for SATA, SAS, USB, IDE, mSATA, MicroSATA, eSATA, PCIe M.2 including NVMe drives. PCIe Cards, mini/micro SSD cards, 1.8" IDE, 2.5" IDE, SCSI, FireWire, Thunderbolt</li> <li>• With preloaded operating software</li> <li>• All required connectors, Cables and adapters to image and process drives of different type of different connectivity, as provided by OEM.</li> <li>• 3 (Three) Years On-Site Warranty with Firmware updates must be provided during the Warranty Period.</li> <li>• Product offered should be of Branded and should not be customized/ assembled &amp; OEM's proprietary certificate must be attached/ provided.</li> <li>• If required, the vendors may be asked to bring &amp; demonstrate the specifications offered in presence of Technical Evaluation Committee.</li> </ul> <p><b>Desirable</b></p> <ul style="list-style-type: none"> <li>• Three days OEM Training with OEM Certification to be provided with three persons per machine at customer's site.</li> </ul>
3	Multiple Drive Forensic Imaging Hardware Tool with damaged Drive support	Atola Task Force	<ul style="list-style-type: none"> <li>• Forensic imaging of drive with damaged head, freezing hard drive &amp; shorted hard drive.</li> <li>• Support imaging data from good heads only.</li> <li>• Support imaging of drive with surface scratches, with firmware issues.</li> <li>• Support imaging of drive with in-depth drive diagnostics.</li> <li>• Support for pause resume an imaging sessions and optimizing the settings to retrieve more data.</li> <li>• Current sensor on all SATA, SAS/SATA, IDE ports.</li> <li>• Automatic over current, over voltage &amp; short circuit protection.</li> <li>• Support for RAID reassembly &amp; imaging.</li> <li>• Wiping facility for multiple drives simultaneously (minimum 10 drives at a time).</li> <li>• Imaging facility for multiple drives simultaneously (minimum 5 drives at a time).</li> <li>• Support for hardware write protection in the source mode.</li> <li>• Support for SATA I/II/III, SAS, USB 2 &amp; 3, IDE, M.2 NVMe/ PCIe, Apple PCIe, FireWire, Thunderbolt 2 and 3.</li> <li>• With preloaded operating software.</li> <li>• All required connectors, Cables and adapters to image and process drives of different type of different connectivity, as provided by OEM.</li> <li>• 3 (Three) Years On-Site Warranty with Firmware updates must be provided during the Warranty Period.</li> <li>• Product offered should be of Branded and should not be customized/ assembled &amp; OEM's proprietary certificate must be attached/ provided.</li> <li>• If required, the vendors may be asked to bring &amp; demonstrate the specifications offered in presence of Technical Evaluation Committee.</li> </ul> <p><b>Desirable</b></p> <ul style="list-style-type: none"> <li>• Three days OEM Training with OEM Certification to be provided with three person per machine at customer's site.</li> </ul>

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4	Software for the Forensic Previewing, Image Mounting, Password Cracking and Analysis of Digital Media	Access Data FTK	<ul style="list-style-type: none"> <li>• Mandatory support for MAC, Window &amp; Linux based devices, network data and internet storage.</li> <li>• Should support RAM analysis.</li> <li>• Should support registry log analysis &amp; parsing of registry files.</li> <li>• Solution should have inbuilt module for detection for password protected files along with password cracking.</li> <li>• Should support decryption of a storage device in a locked, unlocked, or in disabled Bitlocker state.</li> <li>• Should support auto carving of files and adding the carved files to the file tree structure.</li> <li>• Should have inbuilt module to create forensic images of storage device in DD, E01 etc. format with authentication of at least two hashing algorithms i.e. MD5, SHA1 etc.</li> <li>• Should support PLIST, SQLite database, Apple DMG, DD_DMG disk image &amp; JSON file etc.</li> <li>• Support for automated processing for evidence with capability to indexing, auto de-NISTing, file signature analysis, hash analysis, protected file signature analysis, expand compound files, recovery of live/ deleted files &amp; partitions.</li> <li>• Should have integrated file parser for email, system info parser, IM parser, File carver, window event log parser, window artifact parser, Linux syslog parser etc.</li> <li>• Should be capable of extracting data from various compound files such as archives (7-ZIP, GZIP, RAR, TAR, ZIP), Browser files (Chrome, Edge, Firefox, IE, Safari), Email containers (DBX, MBOX, MSG, Mac Outlook OLM, PST, OST), Windows Artifacts (Active Directory, ESE DB, MS Office, OLE etc.).</li> <li>• Should support report generation of CSV based report for timeline analysis.</li> <li>• Should support automated explicit image identification by skin tone analysis.</li> <li>• Should have integrated Known File Filter (KFF) hash library.</li> <li>• The Solution must have perpetual license allowing the user to continue with the solution at the last version available on license expiry. The solution should offer license as USB hardware dongle.</li> <li>• The solution must include all interface cables, connectors, adapter kit, power cables, CD's/ DVD's &amp; other material, as supplied by OEM with the product.</li> <li>• If required, the vendors may be asked to bring &amp; demonstrate the specifications offered in presence of Technical Evaluation Committee.</li> <li>• <b>Desirable Specifications</b></li> <li>• Three days OEM Training with Certification to be provided with three persons per unit at customer's site.</li> </ul>
5	Software for the Forensic Previewing, Imaging and Digital Analysis of Digital	Encase Forensic Software	<ul style="list-style-type: none"> <li>• Support preview and acquire data directly from storage media including Computer/ Laptop Hard Disk Drives (HDD's), Smart Phones, Tablets etc.</li> <li>• Support to preview HDD's in write blocking mode.</li> <li>• Support for acquiring of data in single &amp; multi session.</li> <li>• Support for automated processing for evidence with capability to indexing, auto de-NISTing, file signature</li> </ul>

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	Media		<p>analysis, hash analysis, Protected file signature analysis, Expand compound files.</p> <ul style="list-style-type: none"> <li>• Should have integrated file parser for email (PST, OST, NSF, DBX, EDB, AOL, MBOX), System info parser, IM parses (AOL, MSN Yahoo), File carver, window event log parser, window artifact parser, UNIX login, Linux Syslog parser etc. and facility to extract internet artifacts, time line analysis</li> <li>• Support decryption of disks, volumes, folders &amp; files of the suspected media having various types of encryption.</li> <li>• Should have self script writing option for processing &amp; analysis of data.</li> <li>• Support various popular files formats for previewing of data</li> <li>• Should have capability for image authentication/verification by at least two hashing algorithms i.e. MD5, SHA1, SHA256 etc.</li> <li>• Mandatory support for MAC, Window &amp; Linux based devices.</li> <li>• Should be compatible with databases i.e. Microsoft SQL, Postgre SQL etc.</li> <li>• Extraction of text data from PDF, images and scanned documents.</li> <li>• Should preview storage media information about drive geometry, folder structure, bookmarked data &amp; acquisition status.</li> <li>• The Solution must have perpetual license allowing the user to continue with the solution at the last version available on license expiry. The solution should offer license as USB hardware dongle.</li> <li>• The solution must include all interface cables, connectors, adapter kit, power cables, CD's/ DVD's &amp; other material, as supplied by OEM with the product.</li> <li>• If required, the vendors may be asked to bring &amp; demonstrate the specifications offered in presence of Technical Evaluation Committee.</li> </ul> <p><b>Desirable Specifications</b></p> <ul style="list-style-type: none"> <li>• Three days OEM Training with Certification to be provided with three persons per unit at customer's site.</li> </ul>
6	Software for the Forensic Data Acquisition and Analysis of devices including Computer, Mobile, Drone, Car and Cloud storage	Belkasoft Evidence Centre	<ul style="list-style-type: none"> <li>• Support acquisition, examination &amp; analysis of digital evidence from mobile, cloud, computer, RAM, drone and vehicle sources.</li> <li>• Support FAT, exFAT, NTFS, HFS, HFS+, ext2, ext3, ext4, YAFFS, YAFFS2 file systems.</li> <li>• Support various image forensic image formats like Encase, E01, Ex01, FTK, DD, SMART, X-Ways, Atola, DAR, DMG etc.) &amp; memory dump formats with authentication of at least two hashing algorithms i.e. MD5, SHA1 etc.</li> <li>• Support analysis of Virtual machines like VMware, Virtual PC, Virtual Box, XenServer etc.</li> <li>• Support for archive files (such as tar, zip and others), Plist, Registry, SQLite Viewers, MFT.</li> <li>• Support analysis of various mobile OS, iOS (iPhone, iPad), Android Window, Blackberry with logical &amp; Physical backups.</li> <li>• Should of support analysis various artifacts from Windows.</li> </ul>

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			<p>MAC, UNIX based OSs</p> <ul style="list-style-type: none"> <li>• Should support parsing of social networking app, instant messages and peer to peer data parsing.</li> <li>• Supports automated processing and analysis of data, specific criteria of internet &amp; social media artifacts.</li> <li>• Support to carve data from deleted, destroyed or not permanently stored in the media.</li> <li>• Support to access of devices encrypted with Whole Device Encryption i.e. APFS, Bitlocker, TrueCrypt etc.</li> <li>• Support third party softwares i.e. Encase, FTK, UFED etc.</li> <li>• Should of support analysis of various online activities including games, payment applications, cloud artifacts etc.</li> <li>• The Solution must have perpetual license allowing the user to continue with the solution at the last version available on license expiry. The solution should offer license as USB hardware dongle.</li> <li>• The solution must include all interface cables, connectors, adapter kit, power cables, CD's/ DVD's &amp; other material, as supplied by OEM with the product.</li> <li>• If required, the vendors may be asked to bring &amp; demonstrate the specifications offered in presence of Technical Evaluation Committee.</li> <li>○ <b>Desirable Specifications</b></li> <li>• Three days OEM Training with Certification to be provided with three persons per unit at customer's site.</li> </ul>
7	High End Forensic Workstation	FRED DX	<ul style="list-style-type: none"> <li>• Xeon Processor, 3.1GHz Base, 4.7GHzBoost, 45MB Cache.</li> <li>• Minimum 128 GB DDR5 4800 MHz RAM or of higher capacity.</li> <li>• One OS storage Drive 2 TB (or of higher capacity) Internal M.2NVMePCIe Solid State Drive.</li> <li>• One temp Cache storage Drive 2 TB (or of higher capacity) SATA or SSD.</li> <li>• Two data storage drives each of minimum 6 TB capacity 7200 rpm SATA.</li> <li>• Minimum 4 Removable Hard Drive Bays including 2SATA, 1 USB &amp; 1 SSD. All Hot-Swap Bays must have both modes i.e. Read-Only &amp; Read-Write mode.</li> <li>• NvidiaGTX1050Ti, 4GB, 128bit GDDR5, 768 CUDA Cores Graphic Card to support forensic applications.</li> <li>• Integrated hardware Write Blockers for USB 3/2/1.1, PCIe, SATA, Firewire800/400, IDE, SAS &amp; Memory Card</li> <li>• The workstation must have capability to carry out the simultaneous imaging of 2 different devices of different connectivity attached through integrated Write Blocker ports.</li> <li>• Read &amp; write switches with sufficient cooling arrangements.</li> <li>• Pre-loaded Software: Licensed Windows 11 Professional (64bit), Linux with Dual Boot Option &amp; Microsoft MS office 2021 or latest version.</li> <li>• Optical drive to support CD, DVD &amp; Blu-ray disc for both modes read &amp; write.</li> <li>• 24" LED screen with integrated webcam, Keyboard &amp; Optical mouse.</li> <li>• Minimum 8 USB ports (2 each for 2.0, 3.0.3.1, 3.1/ type</li> </ul>

*Kishore Kumar*

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Annexure-I

			<p>C) along with 10 GB Ethernet Controller with RJ45 port.</p> <ul style="list-style-type: none"> <li>All required connectors, Cables and adapters to image and process internal/ external drives of different type including SAS, SATA, IDE, MicroSATA, SATA LIF, MacBook Air Blade Type SSDs, mini/micro SSD cards, 1.8" IDE (iPod), 2.5" IDE, PCIe SSD m.2 NVMe, PCIe SSD MacBook Pro, Server Class PCIe SSD etc.</li> <li>3 (Three)Years On-Site Warranty Firmware updates be provided in the Warranty Period.</li> <li>Product offered should be of Branded and should not be customized/ assembled &amp; OEM's proprietary certificate must be attached/ provided.</li> <li>If required, the vendors may be asked to bring &amp; demonstrate the specifications offered in presence of Technical Evaluation Committee.</li> </ul> <p><b>Desirable</b></p> <ul style="list-style-type: none"> <li>Three days One Day OEM Training with OEM Certification to be provided with three machine per person at customer's site.</li> </ul>
8	Workstation for Analysis of MAC OS Data	High-end Apple iMAC Workstation	<ul style="list-style-type: none"> <li>Should analyze Mac OS and dual-boot disk and partition images in multiple formats</li> <li>Should analyze configuration and log files from common OS applications such as Mail, Safari, iChat and Address Book.</li> <li>Should perform rapid searches using metadata.</li> <li>Capable to gather comprehensive machine usage information.</li> <li>List detailed information about every iPod and iPhone that has been connected to the machine.</li> <li>Capable to detect VMWare, Virtual Box &amp; Parallels Virtual Machines.</li> <li>Capable to detect and analyze File Vault-encrypted user directories.</li> <li>Capable for analysis of iCloud configuration Data</li> <li>Support for DD, EnCase, FTK, AFF and Apple disk images.</li> <li>Should run on Microsoft Windows OS as well as Mac OS.</li> <li>With latest configuration, 27" monitor and storage media not less than 2 TB.</li> </ul>
9	iMAC Analyzer	Cellebrite Digital Collector + Cellebrite Inspector	<ul style="list-style-type: none"> <li>Should have a forensic imaging and cloning facility with write-blocking option.</li> <li>Should have facility for data acquisition &amp; analysis of file systems structures i.e. HFS+, APFS, ExFat or NTFS etc for both OS i.e. MAC &amp; Window.</li> <li>Should have built in support for all commonly used picture &amp; video file types.</li> <li>Support for identification of origin of files &amp; advanced timeline analysis.</li> <li>Support for processing of forensic images or live Macs. Capability to boot the Mac and Windows systems via a USB dongle</li> <li>Support full log of calls, voicemail and social media with parsing option</li> <li>Support automatic chat timeline construction for messages &amp; skype</li> <li>Support image mounting for popular forensic image</li> </ul>

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Annexure-I

			<p>formats i.e. E01, EX01, L01, RAW, DD, DMG, AFF4 and fusion drives.</p> <ul style="list-style-type: none"> <li>• Support for time machine folder hard links.</li> <li>• Support for latest iOS backup encryption and decryption support for file vault and core storage keychain etc.</li> <li>• Support for built in live imaging.</li> <li>• Support for key word search to preview the data before acquisition.</li> <li>• Support to create customized reports in format of PDF, HTML, CSV etc.</li> <li>• Support imaging of RAM &amp; capture of volatile data.</li> <li>• The solution must include all interface cables, connectors, binder, adapter kit with tips, power cable adaptor, power cable clips, power cable PCB, voltage reduction adapter etc.</li> <li>• 3 (Three) Years On-Site Warranty with Firmware updates along with cables, connectors &amp; adapters to be provided in the Warranty Period.</li> <li>• If required, the vendors may be asked to bring &amp; demonstrate the specifications offered in presence of Technical Evaluation Committee.</li> </ul> <p><b>Desirable Specifications</b></p> <ul style="list-style-type: none"> <li>• Three days OEM Training with Certification to be provided with three persons per unit at customer's site.</li> </ul>
10	Software for the Forensic Data Extraction and Analysis of Live System, Hard Drives, Mobile Phones & Cloud	Magnet Axiom Complete	<ul style="list-style-type: none"> <li>• Support acquisition, examination &amp; analysis of digital evidence from mobile, cloud, computer and vehicle sources with integration of other third-party extractions, in one file/report.</li> <li>• Support analysis of data in an automated way by recovery, analysis &amp; presentation of artifacts from windows, UNIX, iOS, Mobiles</li> <li>• Should support data acquisition from Android devices and Logical acquisition from IOS Devices, windows phone, MTP devices, SIM Card acquisition and Kindle</li> <li>• Should support RAM analysis.</li> <li>• Should have inbuilt module to create forensic images of storage device in format (DD, E01, Ex01, .RAW, .BIN, .VHD, .VDI, .XVA, .ZIP, .TAR etc.) &amp; memory dump formats with authentication of at least two hashing algorithms i.e. MD5, SHA1 etc.</li> <li>• Support analysis of volume shadow copies</li> <li>• Support analysis of various mobile logical &amp; physical backups, chip off dumps, JTAG dumps &amp; TWRP images.</li> <li>• Mandatory support for MAC, Window &amp; Linux based devices, network data and internet storage.</li> <li>• Should have carving feature to extract evidence from deleted data.</li> <li>• Should support parsing of social networking app, instant messages and peer to peer data parsing.</li> <li>• Should support creation of portable cases for review purpose.</li> <li>• Should support analysis among files, users &amp; devices.</li> <li>• Should support time line analysis.</li> <li>• Supports automatic OCR from files &amp; categorize or sort obscene/ child abuse data for fast &amp; easy bulk data analysis.</li> <li>• The Solution must have perpetual license allowing the user</li> </ul>

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Annexure-I

			<p>to continue with the solution at the last version available on license expiry. The solution should offer license as USB hardware dongle.</p> <ul style="list-style-type: none"> <li>• The solution must include all interface cables, connectors, adapter kit, power cables, CD's/ DVD's &amp; other material, as supplied by OEM with the product.</li> <li>• If required, the vendors may be asked to bring &amp; demonstrate the specifications offered in presence of Technical Evaluation Committee.</li> <li>○ <b>Desirable Specifications</b></li> <li>• Three days OEM Training with Certification to be provided with three persons per unit at customer's site.</li> </ul>
11	Mobile Phone Examination Device	MSAB XRY Complete	<ul style="list-style-type: none"> <li>• Forensic solution for logical &amp; physical analysis of mobile phones running on android, iOS, Windows, blackberry, asha platform, KaiOS, Tizen OS, Symbian OS, Bada OS, Palm OS and custom build OS (supported model may differ).</li> <li>• Support bypassing &amp; unlocking security lock for mobile phones.</li> <li>• Support analysis &amp; parsing of data from different phone's metadata.</li> <li>• Support cloning, data acquisition &amp; analysis from all type of SIM Cards.</li> <li>• Support data acquisition &amp; analysis from all type of Memory Cards in write protected mode, GPS devices &amp; Satellite Phones and commercial Drones &amp; common drone platforms.</li> <li>• Support data acquisition &amp; analysis from expandable memory of Mobile Phones.</li> <li>• Support pulling the data from cloud resources at mobile phone &amp; analysis</li> <li>• Support link analysis, time line analysis &amp; data analytics</li> <li>• Support data acquisition &amp; analysis from popular chipset manufacturers i.e. MediaTek, Spreadtrum, Coolsand &amp; Infineon apart from Kirin chipset.</li> <li>• Support to generate customized reports &amp; audit logs, which cannot be tempered with.</li> <li>• The Solution must have perpetual license allowing the user to continue with the solution at the last version available on license expiry. The solution should offer license as USB hardware dongle.</li> <li>• The solution should allow for the extraction of at least up to 3 mobile devices simultaneously with just a single license key if required.</li> <li>• Support extraction &amp; decoding of data from all the following applications : Gmail, YahooMail, Outlook, Snapchat, Twitter, Tinder, WhatsApp, GB WhatsAppPro, NS WhatsApp, OG WhatsApp Pro, WhatsApp Business, Telegram, Graph Messenger, MobaGram, TrueCaller, Facebook, Messenger, Instagram, Kikmesenger, KakaoTalk, Wire, Calculator, Microsoft Teams, Message, MeWe, Slack, Line, Skype, WeChat, Google Duo, QQ Browser etc.</li> <li>• The forensic solution must be able to recover Deleted Video and Image Carving, Audio Files, Picture Files, Document Files, Smartphone App data.</li> <li>• The forensic solution should have an automated version of manual app examination on Whatsapp and Whatsapp for Business Messages.</li> </ul>

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			<ul style="list-style-type: none"> <li>• The solution must have option for extraction of data from non-standard mobile devices including cheaper clone phones</li> <li>• Support data extraction from iPhone 8 and higher versions till iOS 14.</li> <li>• The Solution must allow taking screenshots from Apple devices without the need of manually installing any additional application on the examined device</li> <li>• The solution must include all interface cables, connectors, binder, adapter kit with tips, power cable alligator, power cable clips, power cable PCB, voltage reduction adapter etc.</li> <li>• The solution must include all interface cables, connectors to connect &amp; extract data from Chinese chipset based devices.</li> <li>• 3 (Three) Years On-Site Warranty with Firmware updates along with cables, connectors &amp; adapters to be provided in the Warranty Period.</li> <li>• If required, the vendors may be asked to bring &amp; demonstrate the specifications offered in presence of Technical Evaluation Committee.</li> </ul> <p><b>Desirable Specifications</b></p> <ul style="list-style-type: none"> <li>• Three days OEM Training with Certification to be provided with three persons per unit at customer's site.</li> </ul>
12	Mobile Phone Examination Device	Oxygen Forensic Software	<ul style="list-style-type: none"> <li>• Forensic solution for logical &amp; physical analysis of mobile phones running on android, iOS, Windows, blackberry, asha platform, KaiOS, Tizen OS, Symbian OS, Bada OS, Palm OS and custom build OS (supported model may differ).</li> <li>• Support bypassing &amp; unlocking security lock for mobile phones.</li> <li>• Support analysis &amp; parsing of data from different phone's metadata.</li> <li>• Support data acquisition &amp; analysis from all type of SIM Cards.</li> <li>• Support data acquisition &amp; analysis from all type of Memory Cards in write protected mode and commercial Drones &amp; common drone platforms.</li> <li>• Support data acquisition &amp; analysis from expandable memory of Mobile Phones.</li> <li>• Support pulling the data from cloud resources at mobile phone &amp; analysis</li> <li>• Support link analysis, time line analysis &amp; data analytics</li> <li>• Support data acquisition &amp; analysis from popular chipset manufacturers i.e. MediaTek, SpredTrum, Coolsand &amp; Infineon apart from Kirin chipset.</li> <li>• Support to generate customized reports &amp; audit logs, which cannot be tempered with.</li> <li>• Support to extract deleted files from NTFS during live extraction.</li> <li>• The Solution must have perpetual license allowing the user to continue with the solution at the last version available on license expiry. The solution should offer license as USB hardware dongle.</li> <li>• Support extraction &amp; decoding of data from all the following applications : Gmail, Yahooemail, Outlook, Snapchat, Twitter, Tinder, WhatsApp, GB WhatsAppPro, NS WhatsApp, OG WhatsApp Pro, WhatsApp Business, Telegram, Graph Messenger, MoboGram, TrueCaller, Facebook, Messenger, Instagram, Kikmesenger,</li> </ul>

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			<p>KakaoTalk, Wire, Calculator, Microsoft Teams, Message, MeWe, Slack, Line, Skype, WeChat, Google Duo, QQ Browser etc.</p> <ul style="list-style-type: none"> <li>• The solution must have option for extraction of data from non-standard mobile devices including cheaper clone phones</li> <li>• The Solution must have ability for image &amp; facial categorization during data analysis.</li> <li>• The Solution must have ability to translate extracted data into at least two Indian languages.</li> <li>• The solution must include all interface cables, connectors, binder, adapter kit with tips, power cable adaptor, power cable clips, power cable PCB, voltage reduction adapter etc.</li> <li>• 3 (Three) Years On-Site Warranty with Firmware updates along with cables, connectors &amp; adapters to be provided in the Warranty Period.</li> <li>• If required, the vendors may be asked to bring &amp; demonstrate the specifications offered in presence of Technical Evaluation Committee.</li> </ul> <p><b>Desirable Specifications</b></p> <ul style="list-style-type: none"> <li>• Three days OEM Training with Certification to be provided with three persons per unit at customer's site.</li> </ul>
13	Mobile Phone Examination Device	UFED touch 3	<ul style="list-style-type: none"> <li>• Forensic solution for logical &amp; physical analysis of mobile phones running on android, iOS, Windows, blackberry, asha platform, KaiOS, Tizen OS, Symbian OS, Bada OS, Palm OS and custom build OS (supported model may differ).</li> <li>• Support bypassing &amp; unlocking security lock for mobile phones.</li> <li>• Support analysis &amp; parsing of data from different phone's metadata.</li> <li>• Support cloning, data acquisition &amp; analysis from all type of SIM Cards.</li> <li>• Support data acquisition &amp; analysis from all type of Memory Cards in write protected mode, GPS devices &amp; Satellite Phones and commercial Drones &amp; common drone platforms.</li> <li>• Support data acquisition &amp; analysis from expandable memory of Mobile Phones.</li> <li>• Support pulling the data from cloud resources at mobile phone &amp; analysis</li> <li>• Support link analysis, time line analysis &amp; data analytics</li> <li>• Support data acquisition &amp; analysis from popular chipset manufacturers i.e. MediaTek, SpredTrum, Coolsand &amp; Infineon including Exynos chipset.</li> <li>• Support to generate customized reports in csv, pdf, html formats &amp; audit logs, which cannot be tempered with.</li> <li>• The Solution must have perpetual license allowing the user to continue with the solution at the last version available on license expiry. The solution should offer license as USB hardware dongle.</li> <li>• Support extraction &amp; decoding of data from all the following applications : Gmail, YahooMail, Outlook, Snapchat, Twitter, Tinder, WhatsApp, GB WhatsAppPro, NS WhatsApp, OG WhatsApp Pro, WhatsApp Business, Telegram, Graph Messenger, MobaGram, TrueCaller, Facebook, Messenger, Instagram, Kikmesenger, KakaoTalk, Wire, Calculator, Microsoft Teams, Message, MeWe, Slack, Line, Skype, WeChat, Google Duo, QQ</li> </ul>

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			<p>Browser etc.</p> <ul style="list-style-type: none"> <li>• The forensic solution should have an automated version of manual app examination on Whatsapp and Whatsapp for Business Messages.</li> <li>• The solution must have option for extraction of data from non-standard mobile devices including cheaper clone phones</li> <li>• The solution must have ability to search for viruses, spyware, trojans and other malicious codes / threats in device.</li> <li>• Support data extraction from iPhone 8 and higher versions till iOS 16.</li> <li>• Support to TomTom trip-log decryption and data extraction from portable GPS devices.</li> <li>• Support for image carving and advanced location carving.</li> <li>• The solution must have ability to identify the usage of crypto currency and detect addresses or transactions within the device</li> <li>• The solution must have capability to provide a internal screenshot and video function to capture the evidence data.</li> <li>• The solution must have extraction capability from specified part of device instead of complete data extraction.</li> <li>• The solution must include all interface cables, connectors to connect &amp; extract data from Chinese chipset based devices.</li> <li>• The solution must include all interface cables, connectors, binder, adapter kit with tips, power cable adaptor, power cable clips, power cable PCB, voltage reduction adapter etc.</li> <li>• 3 (Three) Years On-Site Warranty with Firmware updates along with cables, connectors &amp; adapters to be provided in the Warranty Period.</li> <li>• If required, the vendors may be asked to bring &amp; demonstrate the specifications offered in presence of Technical Evaluation Committee.</li> </ul> <p><b>Desirable Specifications</b></p> <ul style="list-style-type: none"> <li>• Three days OEM Training with Certification to be provided with three persons per unit at customer's site.</li> </ul>
14	Password Cracking Tool for Decrypting Password Protected Files	Passware Kit Forensic	<ul style="list-style-type: none"> <li>• Recover passwords for various file formats and decrypt encrypted hard disks.</li> <li>• Should support batch file processing.</li> <li>• Should support password recovery for MS office, Open Office, PDF, Zip &amp; RAR, PGP, Truecrypt, Bitcoin Wallets, Apple iTunes backup, MAC OS keychain files, password manager &amp; other popular applications.</li> <li>• Able to scan computer and network for password-protected files and decrypt the same.</li> <li>• Acquire/ analyze live memory images, hibernation files, SAM files to extract encryption keys for hard disks &amp; passwords for windows &amp; MAC accounts.</li> <li>• Able to recover User Login passwords.</li> <li>• Able to run from a USB thumb drive and recover password without installation on a target PC.</li> <li>• Able to reset the password for Local and Domain Windows Administrators instantly.</li> <li>• Able to recover encryption key for hard disks protected with BitLocker, including BitLocker ToGo, TrueCrypt, FileVault2 and PGP volumes.</li> <li>• Able to recover passwords from email, websites and</li> </ul>

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			<ul style="list-style-type: none"> <li>network connections from standalone registry files.</li> <li>Should provide all password recovery solutions in a single package.</li> <li>The Solution must have perpetual license along with USB hardware dongle.</li> </ul>
15	Software for Forensic Examination of video file /CCTV footage	DVR Examiner	<ul style="list-style-type: none"> <li>Support bypassing the DVR passwords.</li> <li>Support identification of DVR Hard Disk Drive (HDD) file systems.</li> <li>Support acquisition of DVR HDD's.</li> <li>Support identification of DVR system time stamping &amp; video footage time stamping.</li> <li>Support DVR of variety of manufacturers.</li> <li>Support previewing the clips internally.</li> <li>Support exporting video footages/ outputs in popular /open file formats. without any alterations or loss of quality during the export process.</li> <li>Supports the examination of recovered/ extracted video content on a frame-by-frame basis.</li> <li>Support video retrieval from security camera systems, body cameras, dash cameras, phones and drones in popular formats i.e. AVI, MP4 etc.</li> <li>Should have ability to recover deleted or partially overwritten video from supported surveillance DVRs.</li> <li>Support searching of files on the basis of specific dates, times and specific time ranges.</li> <li>Support to create customized reports in pdf, html, csv &amp; xml.</li> <li>Support report generation with the integrity of extracted files using at least two hashing algorithms i.e. MD5, SHA-1, SHA-256 etc.</li> <li>Should support evidence source in form of physical DVR Drive, Forensic Image (DD &amp; E01), Video file from different sources, Cloud Camera.</li> <li>Should have facility to record the date and time mismatch in the DVR System &amp; ability to correct inaccurate date/time information on recorded videos.</li> <li>Software should have facility to maintain an audit log detailing all actions carried out during a process/ case.</li> <li>The solution must include all interface cables, connectors, adapter kit, power cables, CD's/ DVD's &amp; other material, as supplied by OEM with the product.</li> <li>3 (Three) Years On-Site Warranty with Firmware updates along with cables, connectors &amp; adapters to be provided in the Warranty Period.</li> <li>If required, the vendors may be asked to bring &amp; demonstrate the specifications offered in presence of Technical Evaluation Committee.</li> <li><b>Desirable Specifications</b></li> <li>Three days OEM Training with Certification to be provided with three persons per unit at customer's site.</li> </ul>
16	Software for the Forensic Analysis of Optical Storage Media	CD/DVD Inspector	<ul style="list-style-type: none"> <li>The Solution should be capable for analysis and extraction of data from CD-R, CD-RW and all types of DVD media - including HD DVD and Blu-Ray disc.</li> <li>The Solution should read all major CD and DVD filesystem formats including ISO-9660, Joliet, UDF, HSG, HFS, HFS+, DVD Video etc.</li> <li>The Solution should display all file systems when the disc contains data in multi file system.</li> <li>The Solution should have facility to include thumbnails</li> </ul>

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			<p>for pictures in reports generated, if required.</p> <ul style="list-style-type: none"> <li>• The Solution should be able to collect image file from Discs automatically in either ISO+CUE format or any other proprietary format.</li> <li>• The Solution should be able to capture all files, including which are not part of the directory structure (deleted or damaged).</li> <li>• The Solution should have one-step image collection from otherwise inaccessible CD or DVD discs.</li> <li>• The Solution should identify files containing graphic content (ART, BMP, GIF, JPEG, PNG, PSD, TIFF, etc.) independent of the file extension.</li> <li>• The Solution should support RAW images from storage of different digital cameras.</li> <li>• The Solution should scan all sectors of a disc for specific data.</li> <li>• The Solution should be able display information in either character or hexadecimal/character form.</li> <li>• The Solution should have facility to examine disc in single as well as multi sessions.</li> <li>• The Solution should be able to locate data on discs that has been dropped from the file system due to deliberate or accidental action.</li> <li>• The Solution should permit users to select the level of automatic retries performed whenever a data error is encountered.</li> <li>• Should display CD Text containing album, track and artist names on Sony and home-produced music CDs.</li> <li>• The Solution should display International Standard Recording Code to identify the recording studio and publisher of a music track.</li> <li>• The Solution should display Recorder Identification written to music CDs recorded on standalone CD recorders used with audio systems.</li> <li>• The Solution must have perpetual license along with USB hardware dongle.</li> </ul>
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