



## ANNEXURE H: TECHNICAL & FUNCTIONAL SPECIFICATIONS REQUIREMENTS

### Technical Bid Form: Supply, Installation, Maintenance of Cash Recycler and providing Managed & Cash Replenishment services

<b>Make of Proposed Cash Recycler:</b>
<b>Manufacturer/OEM:</b>
<b>Model:</b>

Annexure	Compliance (Yes/No)
<p><b>Recycler:</b> The Cash Recyclers proposed for deployment under this RFP shall comply with RBI, IBA, EMV, NPCI/NFS, UIDAI guidelines. If any new guidelines are issued by these organizations, the bidder shall arrange for its compliance / up-gradation and bear the cost for the same during the warranty period i.e. 3 years (Three years) after 3 years i.e. during AMC it will be done on mutually agreed terms. This clause is also applicable for hardware and OS of recyclers, TSS, etc. offered under this RFP.</p>	
1. Processor and Hardware	
1.1 Intel core i5 Processor with 3.1 Ghz, 9 MB cache and 9 <sup>th</sup> generation or above.	
1.2 8 GB DDR4 RAM or higher	
1.3 1x 1TB SATA HDD OR 500 GB SSD (Primary) + 1x 1TB SATA HDD (Secondary)	
1.4 USB ports in front for front access Cash Recyclers ( Minimum 5 USB with At least 2 USB port on the front side)	
1.5 On-board 2x 10/100/1000 Mbps Speed LAN Card (IPV 6 Compliance). DVD Writer (optional)	
1.6 Bidder should provide Cash Recyclers with Licensed Windows 10 Operating System or above with latest service pack or any other higher Operating Systems with latest updates and in case of Linux OS, the same should be latest version with latest service. Bidder is responsible to upgrade the OS of Cash Recyclers or higher version before expiry of extended support of Service Provider at no additional cost during both warranty and AMC period. Further, Bidder should ensure that on upgradation, there should be no disruptions of service and no performance related issues faced.	
1.7 OS hardening (with firewall). Cash Recycler should be adequately hardened and only essential services should be activated. No malware including viruses, worms, Trojans should enter the Cash Recycler and affect the system. <b>Hardening of Cash Recycler Machine should be done as per RBI/ Regulator's guidelines.</b>	
1.8 Cash Recycler should be accessible to physically Challenged, Wheel Chair Access and Visually Challenged as per ADA/AFA & RBI guidelines. <i>Talking ATM &amp; Voice guidance support with internal speakers and head phone jack. (Text to speech converter software) should be available. Text to speech systems (screen reader) should be available to assist the visually challenged customers as per the standards published by Indian Banks' Association. Voice guidance should be available in 2 languages (English and Hindi) as per the IBA standards. Other normal voice guidance should be available in 7 languages. (Bengali, Gujarati, Hindi, Kannada, Malayalam, Marathi &amp; Telugu). Required audio files should be provided by the vendor in a standard format. Voice Guidance Systems for Cash Deposit transactions should be provided as and when the same is mandated by Regulatory Authorities. The same should be implemented within the time line stipulated by the regulatory authority or six months from the date of mandate, whichever is earlier, without any extra cost to Bank. Voice guidance solution should be enabled by default and should be activated with insertion of earphone jack into the given slot by the card holder.</i>	



1.9	Cash Recycler should support reversal message of transaction.	
1.10	Multilingual Software for Customer Display apart from Hindi and English which will be provided by the Bank	
1.11	Trace Features (Provide log file for all Messages received and sent by cash dispenser. Especially in networked conditions, log should provide information from where the message is received and to which the message sent on their IP addresses)	
1.12	Software distribution agent utilities should be capable of Remote load of screens, to shutdown, start cash dispenser clear fitness etc.	
1.13	<b>Prevention of Shutter Tampering:</b> The machines to be deployed should have suitable technology to prevent incidents of shutter tampering.	
1.14	<b>CEN 3.0 or higher compliant XFS/equivalent software and should be capable of running multi-vendor software without hardware &amp; OS changes. CEN certificate to be submitted. Testing, installation and operationalization of the same without any additional cost to the Bank.</b>	

2. Currency Chest		Compliance (Yes/No)
2.1	UL 291 Level1 certified secured chest / CEN1 Certified Secure Chest	
2.2	S&G / MAS Hamilton (KABAMAS-CENCON) or equivalent dual electronic combination lock of 6+6 digits with capability having One time combination (OTC) option and audit trail without any hardware change	
2.3	Alarm sensors for temperature status, vibration status and chest open status while sending signal/messages to Switch/Management Centre	
3. Hybrid Dip Card Reader		
3.1	Dip Smart Card Reader / Magnetic stripe Reader with capability to read track 1 & 2	
3.2	EMV Level 1 Version 4.0 or later, as certified	
3.3	Cash Recycler should be ready for using EMV chip cards	
3.4	Software, firmware, license for using smart card on Cash Recycler. <b>Cash Recycler should be loaded with latest version of certified EMV kernel</b>	
3.5	EMV software on Chip Card access that Bank can implement on the machine upon enabling deposit and /or cash withdrawal by activating Cash recycler	
3.6	Conformance to RuPay, MasterCard, VISA standards etc.	
3.7	Contactless Card integration capability	
3.8	Dip card reader should have anti skimming device with the capability to prevent further transaction/shutdown/offline the machine with generation of alerts to central monitoring system after the detection of skimming.	
4. Screen Specification		
4.1	15" LCD with Touch screen and 8 function keys. Should support Industry Standard Protective Touch Screen. Function keys are optional, subject to adherence to all guidelines from RBI / IBA for visually challenged / differently abled person.	
4.2	Vandal Screen with Privacy Filter	
4.3	Rugged spill proof Triple DES(TDES) enabled keyboard with polycarbonate tactile / stainless steel EPP pin pad keys, EPP pin pad to be PCI Compliant with sealed metal keypad	
4.4	Touch screen with support for visually handicapped through Function Defined Keys 4 + 4 AND EPP. Function keys are optional, subject to adherence to all guidelines from RBI / IBA for visually challenged / differently abled person.	



4.5	Braille stickers on all devices as per requirements to support the visually challenged.	
4.6	Voice guidance support with internal speakers & headphone jack.	
4.7	Multi-lingual screens (minimum 3 languages) as per Bank's requirements to be supported.	
<b>5. Cash Recycler Module</b>		
5.1	Bunch Note Accepting minimum 200 notes and Dispensing with capacity minimum 100 notes.	
5.2	Cash Recycler should be capable to accept/dispense all denominations Rs.50, Rs.100, Rs.200 and Rs.500 of used and new notes. Cash Recycler should have template for all new variants of Rs.50, Rs.100, Rs.200 and Rs.500. Bidder to provide details. Bidder should update the software to support all new variants currency notes as well as new denominations, if any, issued subsequently without any extra cost to the Bank during warranty and AMC period.	
5.3	Minimum of 4 Recycler Cassettes each for different denominations, 1 Deposit Cassette for deposit of mixed denominations including rejected notes, impounded / counterfeit notes and retracted notes having at least one separate compartment for counterfeit notes. Every Cassettes should have lock & key/Latch/Secure Tag.	
5.4	Each Cassette should have capability to hold notes of any denominations.	
5.5	Denomination-wise sorting of the deposited currency notes.	
5.6	Encrypted communication and trust relation should be established between PC core and dispenser.	
5.7	Reject Bin with capability to hold Reject /Retracted notes <b>as stored in Universal acceptance cassette/Reject Bin + 1 Counterfeit bin.</b>	
5.8	Four orientation bill validation for good and bad currencies	
5.9	Notes deposited should be categorized and put into individual bins once they are accepted by the machine	
5.10	Should support card less transactions for account based transactions. <i>Should have capabilities to accept the deposits and make withdrawal through QR code scanning, NFC &amp; Bio metric authentication.</i>	
5.11	Should support card based transactions for all types of cards issued by the Bank/s	
5.12	Cash once deposited by the user should remain inside the safe. It should not be accessible without opening the safe in any condition like power failure or cash jam	
5.13	Cash Recycler should segregate Bank notes according to various categories of Bank Notes preferably with Recognition of the serial nos. of individual currencies 1) Real Bank Note (Accept) 2) Counterfeit Bank Note (Impound) 3) Suspicious Bank Note (Reject) 4) No Bank Note (Reject) 5) Non-recyclable notes. (Reject) In the above mentioned cases, the note should be accepted/impounded/ rejected as per the banks requirement. (Serial number of counterfeit currency retracted for impounding to be captured in EJ / MIS report of notes retracted ) Capability to back-track the depositor with recognition of serial Nos. of individual currencies storing and passing on both side image data along with account no and card no. of depositor for later processing.	



5.14	Cash Recycler offered must pass Genuine Note Recognition Test for Indian currency notes with 100% accuracy along with 100% trace with serial number of the currency notes to the account of the customers. i.e 100% of genuine notes should be accepted in all orientations and serial number of all accepted notes are tracked to customers account. However, the Genuine Note Recognition test will have to be demonstrated to the Bank and carried out by the Bank at the time of technical evaluation as also at the time of integration testing with Bidder. A failure at any stage will entail disqualification of the bidder / cancellation of the contract. (A Test bed of at least two machines for testing this functionality must be set-up by Bidder well in advance, as per the dates given for technical evaluation. Only one chance will be given to Bidder to demonstrate the success of this test.)	
5.15	Cash Recycler offered must pass Counterfeit Recognition Test for Indian currency notes with 100% accuracy in a single test. i.e. Pass awarded if 100% Percentage of genuine notes accepted in all orientations. However, the Genuine Note Recognition test will have to be demonstrated to the Bank and carried out by the Bank at the time of technical evaluation as also at the time of integration testing with Bidder. A failure at any stage will entail disqualification of the bidder / cancellation of the contract. (A Test bed of at least two machines for testing this functionality must be set-up by Bidder well in advance, as per the dates given for technical evaluation. Only one chance will be given to Bidder to demonstrate the success of this test).	
5.16	Cash Recycler offered must pass Counterfeit Retention & Tracing Test with 100% accuracy, i.e. counterfeits are retained and traceable to the depositor in a single test. However, the Genuine Note Recognition test will have to be demonstrated to the Bank and carried out by the Bank at the time of technical evaluation as also at the time of integration testing with Bidder. A failure at any stage will entail disqualification of the bidder / cancellation of the contract. (A Test bed of at least two machines for testing this functionality must be set-up by Bidder well in advance, as per the dates given for technical evaluation. Only one chance will be given to Bidder to demonstrate the success of this test.)	
5.17	Cash Recycler must pass the test to identify the year of issue of the Indian Currency Note with 100% accuracy in single test.	
5.18	Cash Recycler should have capability to handle plastic currency also, as and when introduced in India. The Bill Validation Technology should be available for the entire lifespan of the machine i.e. a minimum of 8 years.	
5.19	Foreign object detection in the input tray	
5.20	Temporary stack unit – escrow capacity of minimum 200 notes. <b>It should accept 200 notes at one go and prompt for more before processing the transaction</b>	
5.21	Should support pin based authorization of transactions	
5.22	Capability to react and request the customer to insert the bundle correctly.	
5.23	Capable of both side scanning of Bills	
5.24	Compliance to RBI's Note Authentication and fitness sorting parameters	
<b>6. DES chip / Security</b>		
6.1	Capable of supporting Remote key Management – DES/RSA	
6.2	Triple-DES (TDES) chip with encryption / verification / validation software. Should support AES without any additional hardware.	
<b>7. Integrated Cash Recycler Surveillance Solution</b>		
7.1	Solution must be able to capture image of the customer approaching and performing transactions at the Cash Recycler. This solution should be an Integrated with the machine and capture images based on motion.	
7.2	Solution should be able to store the images/video in a digital format for minimum 3 months at an average of 400 transactions per day.	



7.3	Solution must provide an interface to browse, search and archive the stored video / images on hard disk or external media.	
7.4	Solution must be able to capture and stamp the transaction information on the images.	
7.5	Superimpose date, time and transaction data on to the recorded images.	
7.6	The solution must not degrade the performance of Cash Recycler, e.g. speed of normal transaction	
7.7	The hardware should be integrated within the Cash Recycler.	
7.8	Solution must be capable to take necessary backup of stored image and retrieval the same at any point of time.	
7.9	Cash Recyclers should have external Dome Camera with required cabling and casing work at no additional cost and should be installed in such a way that it captures images of overall site.	
7.10	Cash Recyclers should have pilfered proof camera at the cash accepting/dispensing slots and be able to capture the images at the time of accepting and dispensing the cash.	
7.11	The solution must be capable of monitoring from a central location. The solution must be able to pull the required images from the central location and share the same over e-mail with bank as and when required.	
7.12	The solution must have a search facility to locate an image/event by date and time, card no, transaction reference no. and Cash Recycler ID.	
<b>8. Software Agent</b>		
8.1	The Cash Recycler should be capable of supporting a third party software agent such as SDMS / InfoBase /Radia, etc. Bidder should provide software agent for EJ pulling and Remote Monitoring Software support for the Cash Recycler to monitor its functions from a Central site. Bidder should install EJ software on all Cash Recyclers and pull the EJs on daily basis to its Managed service Centre.	
8.2	Should be capable of communicating with Bank's ATM Switch NDC/DDC protocols.	
8.3	Software for reading EMV Chip cards, smart card/ chip card EMV Version 4.0, Level 2 approved terminal resident application	
<b>9. Connectivity</b>		
9.1	Should have Network Interface Card 10/100/1000 Ethernet Card	
9.2	Should be capable of interfacing Bank's Switch IST using existing device handlers (NDC/D912) at no additional cost to the Bank	
9.3	Cash Recycler must support TCP/IP , IP Sec , TLS implementation	
9.4	Cash Recycler should be Ipv6 Complaint	
<b>10. Others</b>		
10.1	Minimum 40 Column 80 mm Graphic Thermal Receipt Printer	
10.2	Low media warning for all items viz. bills, journal roll, consumer printer roll etc.	
10.3	Machine should be print customers slip in HINDI, ENGLISH and Regional Language.	
10.4	EJ to be also written on Cash Recycler hard disk and replicated on the second hard disk. The solution should include EJ viewer.	
10.5	Support centralized EJ pulling. Serial no of all notes should be available with EJ or stored separately and made available as and when required.	
10.6	EJ should be non-editable with encryption or with checksum or any other solution to prove the authenticity of EJ before a third party such as the regulator (RBI) a Banking Ombudsman, Police Authorities	
10.7	In-built SMPS to work on 230V 50 Hz power supply.	



10.8	Support input voltage of 230V AC 50 Hz with +/- 5%variation.	
10.9	Should provide hardware and software for the day-to-day operations required by the custodian.	
10.10	Cash Recycler should have pin pad shield covering all three sides. It should be industry standard protection	
<b>11. Transactions to be made available at the Cash Recycler with Interface / connectivity to Bank's ATM Switch and Core Banking Software</b>		
11.1	Card less transactions to be made available.	
11.2	Card based transactions to be made available.	
11.3	Payment of taxes, Bills and any other value added services bank may have	
11.4	Biometric Finger printer reader with Software (UIDAI Approved Standard). The bidder should upgrade the Biometric Finger printer reader with Software during the contract period as per UIDAI/any statutory authorities' guidelines/directions without any additional cost to the Bank. Bank may ask to implement as and when required.	
<b>12. Cash Dispenser</b>		
12.1	Friction/Vacuum pick technology	
12.2	Cash recyclers can dispense only INR currency	
12.3	Dispense minimum 40 bills per Transaction	
12.4	Dispense used notes	
12.5	Should have indication (visible & audible) of proper insertion of all cassettes.	
12.6	A reject Bin/ <b>Universal Bin</b> with a minimum of 600 notes with a full size cassette for non-dispensing notes also acceptable to Bank as overall capacity.	
12.7	Each cassette should hold <b>minimum of 2500 notes</b>	
12.8	Capable of Multi currency dispensing	
12.9	Capable of dispensing Rs.50/-, Rs.100/-, Rs.200/- and Rs.500/- notes. All cassettes should be capable of dispensing all Notes.	
12.10	Dispense at least 10 notes per seconds	
12.11	Capable to retract notes but this functionality should be in disabled mode.	
12.12	Machine should be capable of functioning both as Cash Recycler and Cash Dispenser even when recycling is not enabled.	
12.13	Should not have any hardware module sensors which could be accessible by any end consumer either during idle state or during transaction processing to avoid tampering.	
<b>13. Interface for Banking Software &amp; ATM Switch Connectivity</b>		
13.1	Bidder shall provide software required for connecting the Cash Recycler to Bank's own Network.	
13.2	Bidder to provide utility for converting the Cash Recycler files, Containing transaction details, into ASCII format.	
13.3	Cash Recycler should be preloaded with CEN XFS 3.0 compliant layer or equivalent layer and should be capable of running multi-vendor software	
13.4	The model must support downloading of screens & state tables.	
13.5	(Bank will only introduce Cash Recycler bidder to CBS software vendor/Switch vendor and assist in obtaining clarifications, software etc., as may be needed from the latter. Bidder shall bear expenses, if any, for procuring such assistance/software etc.)	
13.6	Required supporting Software to support visually challenged persons using the software (Bidder/OEM should mention the name of software).	
13.7	EMV compliant software for CHIP Card reader along with license.	



<b>14. Others</b>		
14.1	Bidder to integrate – where feasible -- the alarm sensors of the Cash Recycler to the branch siren/hooter without any additional cost to Bank.	
14.2	Bidder to demonstrate proof of concept about Cash Recycler software being capable of supporting all the applications currently developed for the Bank such as Cash Recycler Locator, Railway ticketing, Campus fees payment, Mobile Recharge & other Utility Bill Payments.	
14.3	Cash Recycler capable of One to One Marketing. Client when Loaded on Cash Recycler should be able to interact with different CRM sources using open standard messaging standards.	
14.4	Cash Recycler should have rear mirrors covering majority area of ATM site which allow users to see what is happening behind him when he enters the PIN to avoid shoulder surfing.	
14.5	Cash Recycler should have PIN pad shield covering all three sides to avoid shoulder surfing and capture by the external cameras. It should be industry standard protection	
14.6	Two Colour Branding as per Bank's requirement.	
14.7	Bank stickers consisting of instruction set to the customers for operating Cash Recyclers have to be affixed at Bidder's is cost on the fascia at the time of installation.	
14.8	The Cash Recyclers need to be energy efficient. The Cash Recyclers to be supplied have to be fully functional in extreme weather conditions (temperature, humidity, dust, etc.) as per industry standard within the country	
14.9	All operating system upgrades / proprietary software upgrades / patches/ licenses will be provided free of cost and also installed in all the Cash Recyclers at no cost to the Bank for the entire period of support committed. OS Hardening has to be done for the Cash Recyclers. Bidder is responsible for ensuring that system does not get affected by virus/malware.	
14.10	Modification of the software pertaining to Cash Recycler for the purpose of enhancing the functionality will be done by Bidder at no additional cost to the Bank	
<b>15 Control Measures</b>		
15.1	The Recycler should contain Anti-skimming device integrated with Switch with to prevent the skimming attacks without additional cost to the Bank.	
15.1 a	The device should be capable of providing comprehensive skimming protection solution which achieves the following objectives 1. Senses unauthorized attachment of any device on the card reader module. 2. Sends the signal to switch and further to the remote Management Centre to put the machine out of service as well as block the card reader from accepting any more card insertions.	
15.2	The Recyclers deployed should be ready to carry out the EMV and PIN transactions from the day one without additional cost to the Bank for certification, licensing and testing etc.	
15.3	The Recyclers deployed should be integrated with TSS (Terminal Security Solution) covering various control measures as per the RBI/IBA/NPCI/VISA/MASTER/ any other statutory authorities' guidelines including Full Hard Disk encryption, whitelisting of application, disabling USB ports, disabling auto run facility applying the latest patches of OS, other software, time based admin access, BIOS passwords etc. without additional cost to the Bank. The bidder is required to maintain the required set up at their Managed Service Centre or DC. This facility is to be provided without additional cost to the Bank. The TSS can work in client server mode. Access to centralized dash board to bank shall be provided. The necessary hardware and manpower has to be managed by the bidder at their own cost.	



	Bidder should comply all the applicable guidelines issued by regulator from time to time.	
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**Terminal Security Solution Specifications:**

SN	Minimum Functionality required for Terminal Security Solution	Compliance (Yes/No)
<b>1</b>	<b>Terminal Security Client</b>	
1.1	The online TSS client software should be compatible with ATMs running on any version of Windows 10 or above and any future version of Windows OS installed in the terminals with managed & monitored centrally. In case of Linux OS, the same should be latest version with latest service) installed in the terminals.	
1.2	The TSS client software should be able to manage policies on terminals in windows domain as well as in workgroup.	
1.3	The TSS client software should protect the terminal from any attempt to change the terminal security settings, registry level changes or policies.	
1.4	The TSS client software should be able to detect and prevent any malware and spyware attacks and intrusion programs.	
1.5	The TSS client software should be password protected to prevent its un-installation, stopping, disabling or change of settings.	
1.6	In the cases of TSS client software unable to communicate with the central TSS server, Security Solution Agent policies should work / be intact with the last uploaded policies.	
1.7	The TSS client software shall not have performance impact of the terminals and the peripheral devices e.g. Switch, CD, Bunch Note Acceptor.	
<b>2</b>	<b>TERMINAL OS HARDENING &amp; WHITELISTING</b>	
2.1	The solution should harden the terminal operating system as per industry best practices and recommendations.	
2.2	The solution should be able to remotely change the hardening policy of the terminal OS.	
2.3	The solution should be able to block USB Storage devices on the terminal through centralized Control.	
2.4	The Operating System Hardening should be managed and administered centrally by the Facility Management Team.	
2.5	The solution should have a user Interface to be able to customize and manage the hardening policies by the Facility Management Team.	
2.6	During policy distribution to the ATMs/Recyclers, the hardening policies should be protected against manipulation.	
2.7	The hardening solution should also be incorporated to browsers and other software components running on self-service terminals e.g. personal firewalls, ip-address/ port management.	
2.8	The solutions should protect against malware being injected on to the machine and any other unauthorized Software installations. Via local means e.g. USB drive, CDROM etc.	
2.9	The solution should protect against the manipulation of executables e.g. .exe, .dll, .class etc. and scripts e.g. .js, .bat etc.	
2.10	The solution should protect against the unauthorized updating/ changing of configuration -property files	
2.11	The solution should have firewall functionality	
2.12	The solution should be capable of detecting and reporting any deviation/anomalies from the policies defined for the terminal.	
2.13	The solution should issue alert/ warning/ prevent once a threat has been identified	
2.14	The solution shall be able to disable Auto-run facility of .exe file from a network or a USB port.	





SN	Minimum Functionality required for Terminal Security Solution	Compliance (Yes/No)
2.15	The solution should block the unauthorized installation and running of software and services.	
2.16	Only permitted applications to be run in the terminals using Sandboxing concept or equivalent solution, thus effectively nullifying the need of any anti-virus solution.	
2.17	The solution should have capability to allocate only required ATM / Recycler resources to the Whitelisted applications. During the running of the Whitelisted applications, TSS should monitor if only those resources are being accessed. In case of any deviation, alert should be raised and resources should be blocked.	
2.18	Solution should be able to prevent terminal booting from any source / media other than Hard disk.	
2.19	The patch management of the solution should be managed centrally by the Facility Management Team.	
<b>3</b>	<b>TERMINAL ACCESS MANAGEMENT including One TIME Admin Access (OTC)</b>	
3.1	Solution should support user access to the terminals based on One Time expiring passwords as well as tokens.	
3.2	Solution should provide role based user access to the terminal files and settings.	
3.3	Solution should support time bound password management.	
3.4	The solution should allow for the remote user management.	
3.5	The solution should support online and offline password management i.e. One Time Combination lock through Mobile Application / Web Application Services.	
3.6	The solution shall be managed from a central point of management and should work with any standard terminal agent monitoring solution.	
3.7	The solution shall allow remote management of user credentials according to strong password and industry requirements.	
3.8	The solution shall allow an administrator to define different roles for various users & groups and assign each of them specific user rights.	
3.9	All default password should be changed at the time of installation of Recyclers.	
<b>4</b>	<b>Hard Disk Encryption</b>	
4.1	The solution should support Full hard disk encryption (FHDE)	
4.2	The solution should enable for an exact status of disk encryption to be retrieved and display centrally on a monitoring system. The Central dash board monitoring access shall be extended to Bank.	
4.3	The solution should be capable of changing the configuration of the hard disk encryption and the parameters used to encrypt the disk.	
4.4	The solutions should have the capability to decrypt an ATM hard drive outside of the ATM for recovery purpose only using the relevant encryption key.	
4.5	The ATMs should still cater to customers while the hard disk is being encrypted (during installation).	
4.6	The solution shall support Encryption of all data (user files as well as system files) from an ATM's hard disk.	
4.7	The solution shall protect data confidentiality when a system is out of operation.	
<b>5</b>	<b>Requirements of Central Application Software or Terminal Security Solution</b>	
5.1	The central solution (Hardware & Software) should be capable of supporting a minimum of 300 terminals throughout the contract period. Bank shall be provided with central solution / dash board for monitoring TSS as per RBI / regulatory guidelines.	
5.2	The proposed solution should conform to all regulatory, statutory, legal acts and rules more particularly from Cyber Security and IT examination Cell (CSITE), RBI.	



SN	Minimum Functionality required for Terminal Security Solution	Compliance (Yes/No)
5.3	The Solution should support various dashboard views with filtering, sorting and report generation capabilities for instant access to security status of terminals/devices.	
5.4	The software should have option to group the terminals based on various parameters (such as Make & Model, Zone, State, Test / Production etc.) for applying the policies and patches.	
5.5	The solution should support Deploying and updating of Security Policies and configurations.	
5.6	The solution should provide SMS and E-mail alerts for significant /critical events/changes.	
5.7	The Central TSS server should be able to install patches and software in the terminals remotely.	
5.8	The Solution shall have a Web Based interface for the Bank to monitor the performance and activities of the solution.	
<b>6</b>	<b>Requirements for Central Server Hardware</b>	
6.1	Successful bidder shall design, size, supply, install and maintain the required hardware for Application software, middleware (if any), and Database etc. for the total Terminal Security Solution.	
6.2	The Hardware shall be sized to ensure that RAM & CPU Utilization shall not exceed more than 60% at any given point of time during the contract period. In case of violation, the hardware shall be upgraded by the bidder to reduce the utilization below 60% without any additional cost to the Bank.	
6.3	The hardware technology proposed for the Terminal Security Solution should be the enterprise class, best of the breed, latest, tested and stable release of OEM and based on the latest platform enabling technology supporting the complete Terminal Security Solution.	
6.4	The production hardware must be enterprise class with adequate vertical and horizontal scalability. There must be adequate CPUs and memory available to accommodate the sizing and growth aspirations of the Bank during the contract period.	
6.5	Bidders are responsible to arrive at the sizing independently. The Bank is not responsible for any assumption made by the Bidder for not meeting the performance/service levels as desired in the document, the Bidder will at their cost carry out the necessary upgrades /replacements. The Bank will not pay any additional amount during the period of the contract.	
6.6	The recommended hardware should have high reliability, fault tolerance, redundancy and high availability having no single point of failure in the hardware (NSPOF).	
6.7	Bidder is required to provide the detailed configuration of the proposed Hardware.	
6.8	The system should be configured in Active- Passive mode	
6.9	Replication of data and configurations between Primary and DR Servers should be done on a daily basis. Bidder shall submit the details of synchronization methods.	
6.10	Bidders shall size the DR site which must be capable of handling 100% of the storage load of DC production. The Servers-CPU, memory and other components shall be sized at 100% of the DC.	
6.11	DR Drills to be conducted once in 3 months and DR to be made up whenever primary is not available. Penalty will be levied for Non-Performance of DR Drill once in 3 months.	
6.12	All servers are required to have a minimum of dual 1000 Mbps Ethernet network interface cards (NIC) or a better equivalent installed on the board itself or on different slots. Each NIC will be cabled from a different module on the switch using gigabit speed cabling.	

SN	Minimum Functionality required for Terminal Security Solution	Compliance (Yes/No)
6.13	The offered servers must be current/ recent in the OEM's product line and must be fully supported by the OEM for the duration of the project and for the warranty and post warranty.	
6.14	The Operating System available in the servers should not be out of support by the OEM. In case of Windows Server OS, the OS version should be Windows 2019.	

The Bank reserves the right to consider only those bidders who can demonstrate a fair degree of accuracy in their Cash Recyclers. The Bank will test the machines at no cost to the bank, before placing the orders.

### Additional terms

1. Deviations from technical specifications may be clearly indicated. Though the Bank has laid down the minimum configuration of both hardware and software of Cash Recycler to meet present requirements, the Cash Recycler should be upgradable to support any statutory /regulatory compliance requirements at mutually agreed cost.
2. Modification of the software pertaining to Cash Recycler for the purpose of enhancing the functionality will be done by the bidder at no additional cost to the Bank.
3. All operating system upgrades / proprietary software upgrades / patches/ licenses will be provided free of cost and also installed in all the Cash Recyclers at no cost to the Bank for the entire period of support committed. OS Hardening has to be done for the Cash Recyclers. The bidder is responsible for ensuring that system does not get affected by virus/malware.
4. The Cash Recyclers need to be energy efficient. The Cash Recyclers to be supplied have to be fully functional in extreme weather conditions (temperature, humidity, dust, etc.) as per industry standard within the country.
5. Declaration: -
  - We enclose the technical brochures for the model quoted.
  - We agree for the delivery period of systems and installation as **mentioned in Project Timelines – Annexure F.**
  - We offer a comprehensive warranty period of 36 months from the date of installation/satisfactory commissioning of the equipment without any visit charges/part replacement charges and comprehensive AMC of 48 months after warranty period without any visit charges/part replacement charges.
  - We agree for insuring the systems covering transit risk and storage cum erection risk for a period of one month from the date of delivery at the destination.
  - We submit that we shall abide by your Standard terms and conditions governing the quotations and Warranty mentioned.
  - We submit that we abide by the details given above.

Date:

Place:

Signature of Authorized Signatory:

Name of Signatory:

Designation:

Seal of Company: