

The logo consists of the letters 'ATX' in a bold, sans-serif font. The letters are dark red with a slight gradient and are set against a white rectangular background that has a subtle gradient from top to bottom.

**ATX**

CORE SECURITY



Reduce time and costs in the Security of the ATM network as well as the start-up of the ATM by remotely facilitating the installation of ATMs, improving their times.

a) Use cases:

- General characteristics
- Remote BIOS password change
- Remote Desktop (KVM)
- Upgrade from Windows 7 to Windows 10
- Remote ATM Installation
- Image update
- Other value-added features

b) Sample Network Design



## General features of the software

- 1) Firmware, CPU, RAM, Hard Drive inventory extraction using Intel AMT
  - a) Unloading of said inventory
- 2) Insertion of licenses and personalization of users
  - a) Management of user roles and permissions on ATX's own functions
- 3) Control remoto del dispensador para encender o apagar la comunicación
- 4) Dispenser remote control to turn communication on or off
- 5) For ATMs with Intel AMT vPRO to be able to send reboot, power off and power on instructions
- 6) Segregation of user permissions for different accesses to the console
- 7) TLS configuration support and access through Graphic WEB console
- 8) Whitelist of ATMS connection to the console (a CVS is inserted to prevent ATMs without permissions from connecting to the console)
- 9) Access to ATM information (hardware, passwords and current communication status)



## General Characteristics of the BIOS password management module

- 1) BIOS password change
  - a) Individually
  - b) Group (Multivendor)
  - c) Scheduled Individual and Group (Hyo can go offline at the ATM)
  - d) Without the need to know the current password or insert the new one, passwords can be generated if the user does not have the permissions to know the passwords
  - e) Program the bios password changes for ATM NCR it is not necessary to take the ATM offline, in the case of DN and Hyo if it is necessary to reset the ATM
  - f) Password history with user id, time and password changed only for users with permissions
  - g) Rules to not allow passwords with a certain similarity based on a % of password equality (repeating passwords is avoided)



## General Features of the Remote Desktop Module using Intel AMT vPRO

### 1) KVM

- a) Graphic ATM connection
- b) Being able to manage the enabling or disabling of new disks
- c) Being able to insert the bios password without knowing it
- d) Full session recording for download and audit
- e) Being able to send predefined keyboard commands with the help of shortcuts
- f) Virtual full keyboard
- g) Assigned user permissions are required to access the KVM function

**Note:** Intel AMT vPRO is required to be enabled in BIOS and configured in MEBx for full functionality



## **Features of using ATX for Windows 10 upgrade**

- 1) Reduced costs of visits by personnel or technicians from manufacturers
- 2) Remote time control of the installation
- 3) Better control and security over the ATM image since it is not necessary for a technician to load it from a USB, with ATX an encrypted trunk is used so that no one has access to the image, and it is only decrypted at the time of installation
  - a) The rest of the time the image remains encrypted in a vault with AES encryption and a random password.
- 4) Reduction of staff time on site.
- 5) Screen customization when reinstalling the ATM (image customization)



 Update w10  
ATX Core Security

### **Process example:**

- 1) ATM image design in the laboratory
- 2) ATX lab installation and encrypted image extraction
- 3) Reproduction of the encrypted trunk to the necessary ATX that match the models of the extracted images
- 4) Shipping to ATX production with encrypted images (ATX installation)
- 5) Image Installation
- 6) Technician visit to repair or establish communication with the dispenser



## Features of the **REMOTE INSTALLATION** solution

- 1) Reduced costs of visits by personnel or technicians from manufacturers
- 2) Remote time control of the installation
- 3) Better control over the ATM image since it is not necessary for a technician to carry it on a USB, with ATX an encrypted trunk is used that nobody has access to the image
- 4) Re-install on any software failure
  - a) Operating system failures (manual boot by KVM)
  - b) XFS software failures
  - c) Disk encryption failures (manual initiation by KVM)
  - d) ATM failures or slowness in general
- 5) Screen customization when reinstalling the ATM (image customization)





## Process example:

- 1) Rescue the Virtual Journal
- 2) Launch the remote installation process (with a previous snapshot)
  - a) Automatic re-installation in case of software failure (20 min to 40 min)
  - b) Manual re-installation in case of operating system failure (black screen) (35 min to 50 min)
    - i) Individual or group installations can be programmed

**Note:** The visit is not necessary in the case of a software failure to communicate with the dispenser again (NCR and HYD), in case of an operating system failure it is necessary if you have configured to restore communication by Hardware.





### Process example:

- 1) Run the Snapshot process anytime you need to have a new image restore point remotely
  - a) This process will update the local image and it will be the image that will be used for later reinstallation when required
  - b) This process does not affect the ATM at all
  - c) Requires the ATM to be out of service for an estimated time
    - i) Estimated time 25 min to 40 min depending on ATM

With this process, it is possible to update ATM image by image to have the latest most current version and work within the ATX to be able to use it in case of ATM failure



Other value-added  
functionalities  
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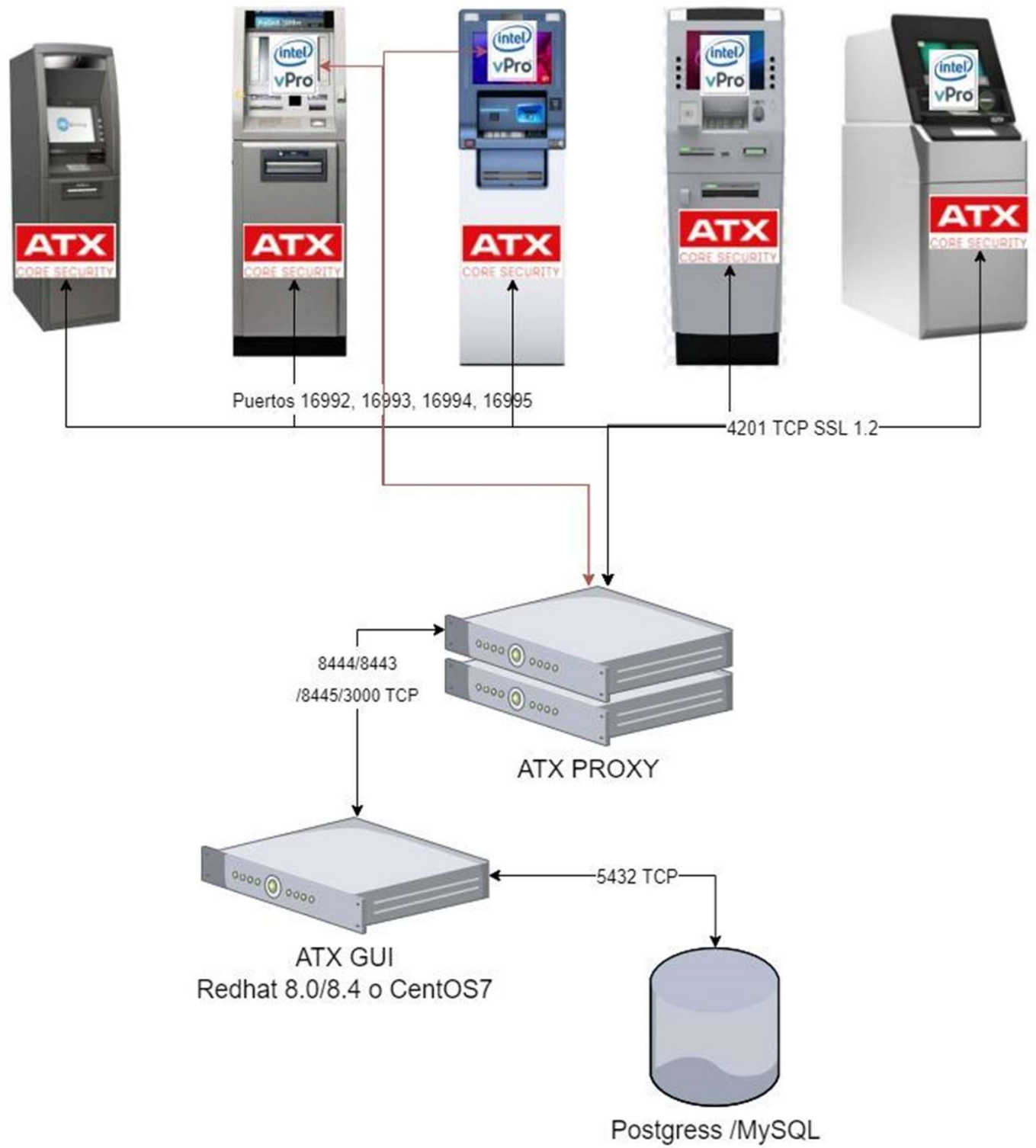
## Value-Added Features

- 1) Copy of Journal on ATX for incremental backup extraction
- 2) Schedule configuration snapshots and reinstalls on a program basis without user interaction (alert!)
- 3) Hard Drive Hardware Change Alerts (for ATMs that do not have a Hard Drive Whitelist)
- 4) Programming of alerts on physical sensors and response of said alerts on intel ATM (off, on or reset) or on dispenser (if the dispenser is installed)
- 5) Access to supervisor mode through F11 (Only NCR APTRA w10) by software and with hardware module for hyosung this to access by KVM in case of remote need for supervisor access
- 6) Create security rules on physical sensors

# ATX

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ATX infrastructure





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Physical Installation Example

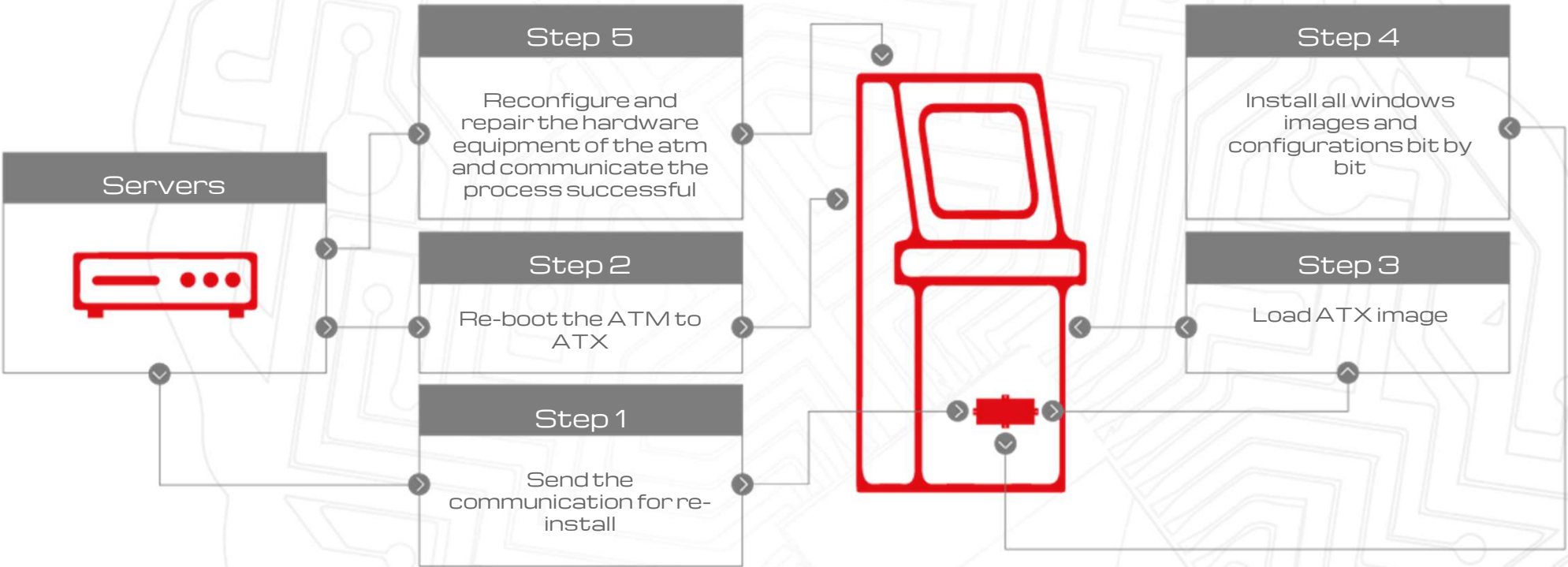




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Software  
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### Advanced ATX software installation



# ATX

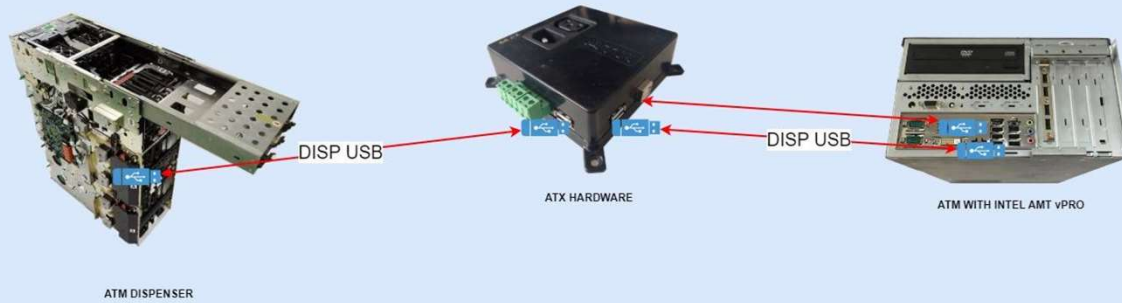
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### Hardware Installation

#### ATX Core Security

### 1) Types of physical installation in the ATM

ATX INSTALL FOR SECURE DISP. FEATURES (NO INSTALL)



ATX INSTALL FOR SECURE DISP. FEATURES PLUS REMOTE INSTALL



ATX INSTALL FOR REMOTE INSTALL FEATURE (NO 2FA DISP)





## CORE SECURITY

The next features are multi-vendor supported

- Change BIOS y boot Password
- TLS security support
- Protection for blackbox USB Attacks
- Protection for blackbox Net. Attacks
- Protect for Malicious XFS Messages
- Alerts of physical intervention
- Re-install Full ATM
- Agent for Windows XP/7/10
- Video recording of the activities carried out at the time of attention to a failure/service



## ATX Core Security

- Support for multiple ATM Dispensers
- Multivendor Solution
- We support Intel AMT KVM connectivity
- Protection against Hard drive attacks
- Alerts and protection against hardware and firmware attacks
- Correlation events to SOC
- Implement intel AMT Security policies
- Control and configure events for bios and other operations in groups or individual atm
- Block hardware attacks
- Extract hardware and firmware version through all the network
- Program events to be executed in schedule time





## Final Thoughts on Timing

These installation times of productive images must be considered that our solution compared to current processes:

Basic processes identified without coordination failures	Estimated times
<ul style="list-style-type: none"><li>• ATM problem identification or ATM non-operation</li></ul>	N/A
<ul style="list-style-type: none"><li>• Generate a visit ticket with the vendor</li></ul>	1 hour
<ul style="list-style-type: none"><li><ul style="list-style-type: none"><li>○ The vendor assigns a technician and transports him to the destination of the ATM</li></ul></li></ul>	1 to 5 hours
<ul style="list-style-type: none"><li><ul style="list-style-type: none"><li>○ The vendor assigns a response time</li></ul></li></ul>	From 6 hours to 48 hours or up to 72 hours
<ul style="list-style-type: none"><li>• Reinstall the OS with an image already designed</li></ul>	From 2 hours to 4 hours
<ul style="list-style-type: none"><li>• Coordinate with the valuable's transporter for access to the vault and re-pairing of the dispenser</li></ul>	There may be delays if the value carrier does not arrive on time or does not show up and this can cause delays of up to half a day or a full day
<ul style="list-style-type: none"><li>• Notify the bank of completion</li></ul>	15 minutes
<ul style="list-style-type: none"><li>• Install security software like Trendmicro among other processes including disk encryption</li></ul>	6 hours or more



## CORE SECURITY

Final estimates for putting an ATM into production from scratch in the city can be in quick response times from 6 to 24 hours and in towns or locations of distant transport or more specific coordination it can take 2 days or exceed 3 days that an ATM is out of service.

With our solution the advantages are:

- Minimize time to return to production and increase the availability of any ATM
- Operating expenses of professional service costs of the ATM brand and of the securities carrier for the opening of the vault in the repair of the dispenser
- Reduction of personnel involved in the processes
- Minimize security risks by not having the image on USB or technical disks that can be manipulated
- Minimize possible human errors and expenses associated with such errors due to lack of coordination, blocks (traffic jams or traffic that one of the parties cannot reach), storm events that make access difficult, among others
- Cost savings in the operation since we rely on a license for the necessary remote installations and not on visits or personnel
  - Each ATM can be reinstalled more than 2 times with the same cost

Seleccionar la opción de reinstalación en ATX	30m a 4h dependiendo de modelo de ATM
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# Feautres Table

ATM vendor	ATM	Intel AMT vPRO	PC core	Remote KVM	Installation with operating system (Full Hardware)	Instalación Sin sistema operativo (Hardware completo)	Installation Without Operating System (Full Hardware)	Installation without operating system (USB)	Journal extraction!
Hyosung	5700/7800	Yes	H87	Yes	Yes	Yes	Yes	Yes	Yes
	5700/7800	Yes	H81	No	Yes	Yes	No	No	Yes
	8200TA	Yes	i5-4590S i7-4790 i5-4460	Yes	Yes	Yes	Yes	Yes	Yes
	8200QT	Yes	i5-4590S i7-4790 i5-4460	Yes	Yes	Yes	Yes	Yes	Yes
	7800IA	Yes	i5-4590S	Yes	Yes	Yes	Yes	Yes	Yes
	8600S	Yes	i5-4590S	Yes	Yes	Yes	Yes	Yes	Yes





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Features Table

ATM vendor	ATM	Intel AMT vPRO	PC core	Alerts for attacks by detection of cable disconnections (AMT support)	HW change alerts	Remotely turn the dispenser on and off (full hardware)	Activate protections based on physical sensor reports (we have 3 sensors and complete hardware)	Image recovery from a local image	Dispenser re-matching (NCR teams are the only ones that require it)	Selective dispenser communication cutoff or by manual instruction (full hardware)
Hyosung	5700/7800	Yes	H87	Yes	Yes	Yes	Yes	Yes	No	Yes
	5700/7800	No	H81	No	Yes	No	No	No	No	Yes
	8200TA	Yes	i5-4590S i7-4790 i5-4460	Yes	Yes	Yes	Yes	Yes	No	Yes
	8200QT	Yes	i5-4590S i7-4790 i5-4460	Yes	Yes	Yes	Yes	Yes	No	Yes
	7800IA	Yes	i5-4590S	Yes	Yes	Yes	Yes	Yes	No	Yes
	8600S	Yes	i5-4590S	Yes	Yes	Yes	Yes	Yes	No	Yes



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Features Table

ATM vendor	ATM	Intel AMT vPRO	PC core	Shut down ATM when there is a network disconnection event	Block dispenser tests on demand (full hardware)	Dispenser Reset (Full Hardware)	Shut down dispenser with a security rule such as sensors or network (full hardware)	Turn off the manual dispenser with a TEST CASH at the moment it is being carried out (full hardware)
Hyosung	5700/7800	Yes	H87	Yes	Yes	Yes	Yes	Yes
	5700/7800	No	H81	No	Yes	Yes	No	Yes
	8200TA	Yes	i5-4590S i7-4790 i5-4460	Yes	Yes	Yes	Yes	Yes
	8200QT	Yes	i5-4590S i7-4790 i5-4460	Yes	Yes	Yes	Yes	Yes
	7800IA	Yes	i5-4590S	Yes	Yes	Yes	Yes	Yes
	8600S	Yes	i5-4590S	Yes	Yes	Yes	Yes	Yes



# Function table with HW and/or SW

Functionality	HW required	SW required	Type	Observations/Comments
ATM shutdown without permission	No	No	Notification	Only Available For ATMs with Intel AMT (Versions To Be Reviewed)
ATM Power Failure	No	No	Notification	Only Available For ATMs with Intel AMT (Versions To Be Reviewed)
Network cable disconnection	No	No	Notification	Only Available For ATMs with Intel AMT (Versions To Be Reviewed)
Send reboot instruction	No	No	Command	Only Available For ATMs with Intel AMT (Versions To Be Reviewed)
Remote execution of ATM power on instruction	No	No	Command	Only Available For ATMs with Intel AMT (Versions To Be Reviewed)
Alerts for attacks by detection of cable disconnections (AMT support)	No	Yes	Notification	Only Available For ATMs with Intel AMT (Versions To Be Reviewed)
HW change alerts	No	Yes	Notification	
Remotely turn the dispenser on and off	Yes	Yes	Notification	
Activate protections based on physical sensor reports (we have 3 sensors)	Yes	Yes	Notification	
Image recovery	Yes	Yes	Command and notification	
ATM current image extraction	Yes	Yes	Command	



## Function table with HW and/or SW

Functionality	HW required	SW required	Type	Observations/Comments
Dispenser re-pairing	Yes	Yes	Command	
Selective dispenser communication cut-off or by manual instruction	Yes	Yes	Notification	
Shut down ATM when there is a network attack	No	Yes	Notification	Only Available For ATMs with Intel AMT (Versions To Be Reviewed)
Extraction and alerting of complete ATM HW information	No	Yes	Notification and LOG	Only Available For ATMs with Intel AMT (Versions To Be Reviewed)
Block dispenser tests on demand	Yes	Yes	Notification	
Dispenser Reset	Yes	Yes	Notification	
Shut down dispenser with a network rule	Yes	Yes	Command	
Turn off the manual dispenser with a CASH TEST at the moment it is being carried out	Yes	Yes	Command	
Re-pair the dispenser with the activated device	Yes	Yes	Command	
Re-pair the dispenser with the device disabled	Yes	Yes	Command	





## Function table with HW and/or SW

Functionality	HW required	SW required	Type	Observations/Comments
Submit a patch or dispenser version update with the device activated	Yes	Yes		
Submit a patch or dispenser version update with the device disabled	Yes	Yes		
Submit a patch or dispenser version update	Yes	Yes		
Replicate a cash loading process with the connected device	Yes	Yes		
Reinstall ATM full remotely	Yes	Yes		



# Differences

Name of the solution	Feature												
	PRE-BOOT FEATURES									POST BOOT FEATURES			
	KVM	Intel AMT vPRO	Hardware and firmware inventory	BIOS / BOOT control	Remote Re - install ATM	Remote DISP control	2 Factor Auth. DISP	Remote Journal extract	Disk encryption	White list (USB) (ACL)	Firewall and integrity detection	Monitor XFS	VNC
NCR Solutions			X	X*		X*		X	X	X	X	X	X
DN Vynamics	X	X	X	X*				X	X	X	X	X	X
Checker GMV									X	X	X		
Cytttek RPS	X	X	X	X	X	X	X	X				XFSA	



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next Generation  
solution for ATMs"*

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