Solutions for self-service machines CYTTEK

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cyttek GROUP

ATM's

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XFS

ANALYTICS

XFS ANALYTICS

and benefit companies and financial institutions, so that they can automate the resolution of any case or question they may have about their operation in real time.

THE FIRST SOLUTION IN THE MARKET ATMS ANALYSIS IN REAL TIME

Our solution is based on analyzing different ATM layers such as operating system, Journal Layer and integrating all the necessary systems in a single solution, to offer 360º visibility on any question you want to ask to improve the operation of your ATM network.

BENEFITS
XFS ANALYTICS

THE SOLUTION HAS A WEB INTERFACE THROUGH ACCESS WITH PASSWORD AND SSL,

in which bank cases and logs are completely protected under the best industry standards.

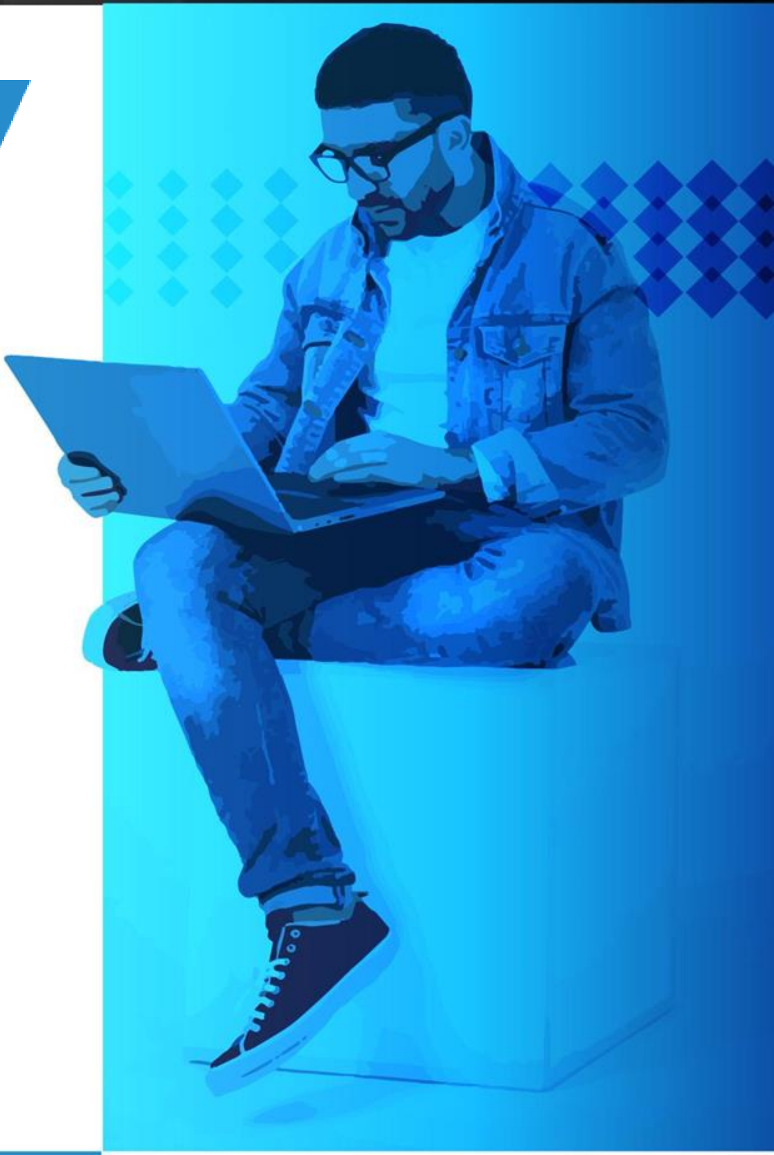
Eliminate the need for highly specialized, dedicated full-time staff to identify and analyze ATMS network problems.

Control the provider of hardware and cash replacement in their routine tasks.

Save time and resources in the analysis of any type of problem in the ATM network of any hardware brand and software.

Carry out impartial and truthful analysis of the information collected in real time.

Information collection and processing fully secured.



REQUISITOS XFS ANALYTICS

Operating System

Windows XP, 7 y 10

Hardware

All models from NCR, Diebold-Nixdorf (diebold and Wincor Nixdorf) , OKI, GRC, WRG, Nautilus, others.

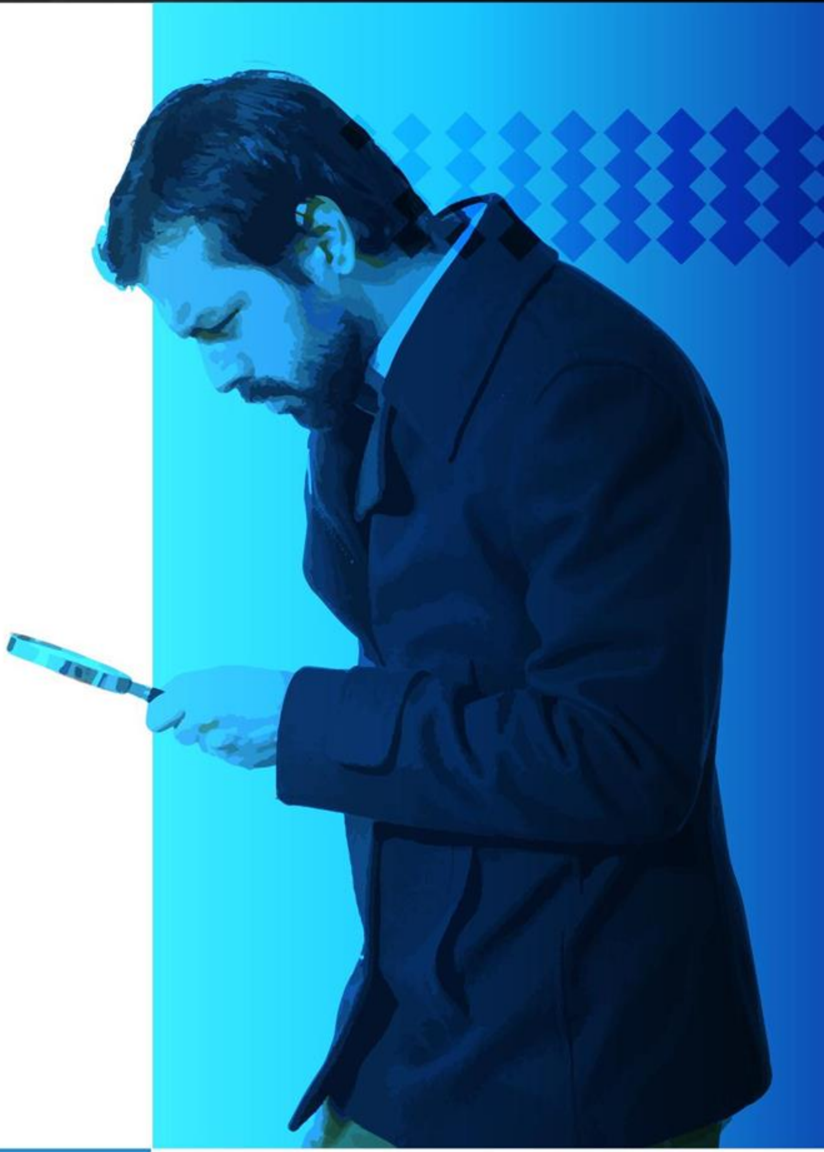
Software XFS

Kal, Agilis, APTRA, Procash/ probase, MP2, Dynasty, J/XFS, Phoenix XFS and others more.

XFS
ANALYTICS

OPERATIONS DETECTED XFS ANALYTICS

- Card Errors
- Dispensing Errors
- Transaction Errors
- Ticket printing Errors
- Check Deposit Errors
- Maintenance Mode Errors



XFS ANALYTICS CHARACTERISTICS

- Detection of cash replacement errors.
- Analyze cases of cash shortages in real time from multiple ATMs at the same time.
- Extraction of results in PDF or by mail.
- Information storage in a safe and reliable environment.
- Access and control of roles for all information analysis processes.
- Interactive interface with ATM / PoS location management.
- Management of Roles and permissions for access to information.

- Management of multiple banksManagement of different currencies.
- Detection of ATM errors and cash shortages in real time.
- Safe and friendly web interface.
- Extraction of logs from Virtual Journal, XFS Software (Agilis, APTRA, Dynasty, KAL) among others.
- Extraction of logs from Windows and third-party software such as Mcafee / GMV Checker / Symantec.
- Hardware events extraction such as skimming and cash trapping alerts.

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ATM's Products

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- Card Errors
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- Maintenance Mode Errors

ATX

CORE SECURITY

One word for the solution

"PreBoot"

...not post boot

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ATX CORE SECURITY

Introduction

ATX Core Security

ATX Core Security is security and protection software against advanced computer attacks, aimed at Automatic Teller Machines (ATMs).

The **first layer** of physical protection allows you to connect and report events from solutions such as anti-skimming and electronic locks.

The **second layer** allows you to control aspects of the BIOS control to protect the access or loading of malicious software before the operating system boots and also protect the disk itself.

The **third layer** allows you to control dispenser orders directly by protecting the ATM dispenser.

In addition, we are the only solution on the market that allows the ATM to be reinstalled completely remotely without the need for a visit from the securities carrier or the manufacturer's Service.

ATM Remote Pre-Boot Solution

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

- 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

Product Purpose

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 characteristics

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) Dispenser remote control to turn communication on or off
4) For ATMs with Intel AMT vPRO to be able to send reboot, power off and power on instructions
5) Segregation of user permissions for different accesses to the console
6) TLS configuration support and access through Graphic WEB console
7) Whitelist of ATMS connection to the console (a CVS is inserted to prevent ATMs without permissions from connecting to the console)
8) 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*

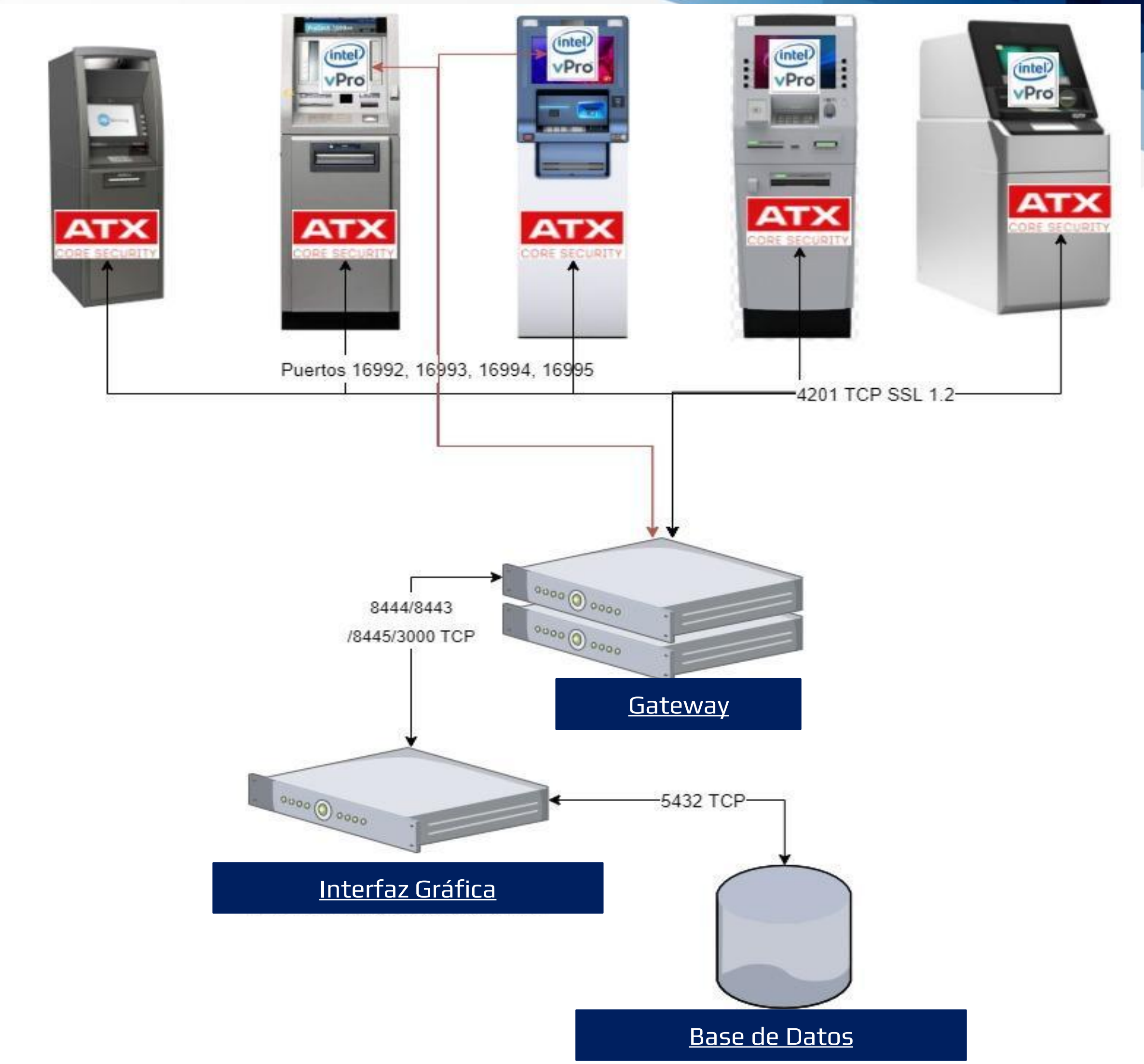
Features of using ATX for Windows 10 upgrade

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)

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)

Infraestructura ATX



Puertos 16992, 16993, 16994, 16995

4201 TCP SSL 1.2

8444/8443 /8445/3000 TCP

Gateway

5432 TCP

Interfaz Gráfica

Base de Datos

Suite Multivendor SW
JanuX

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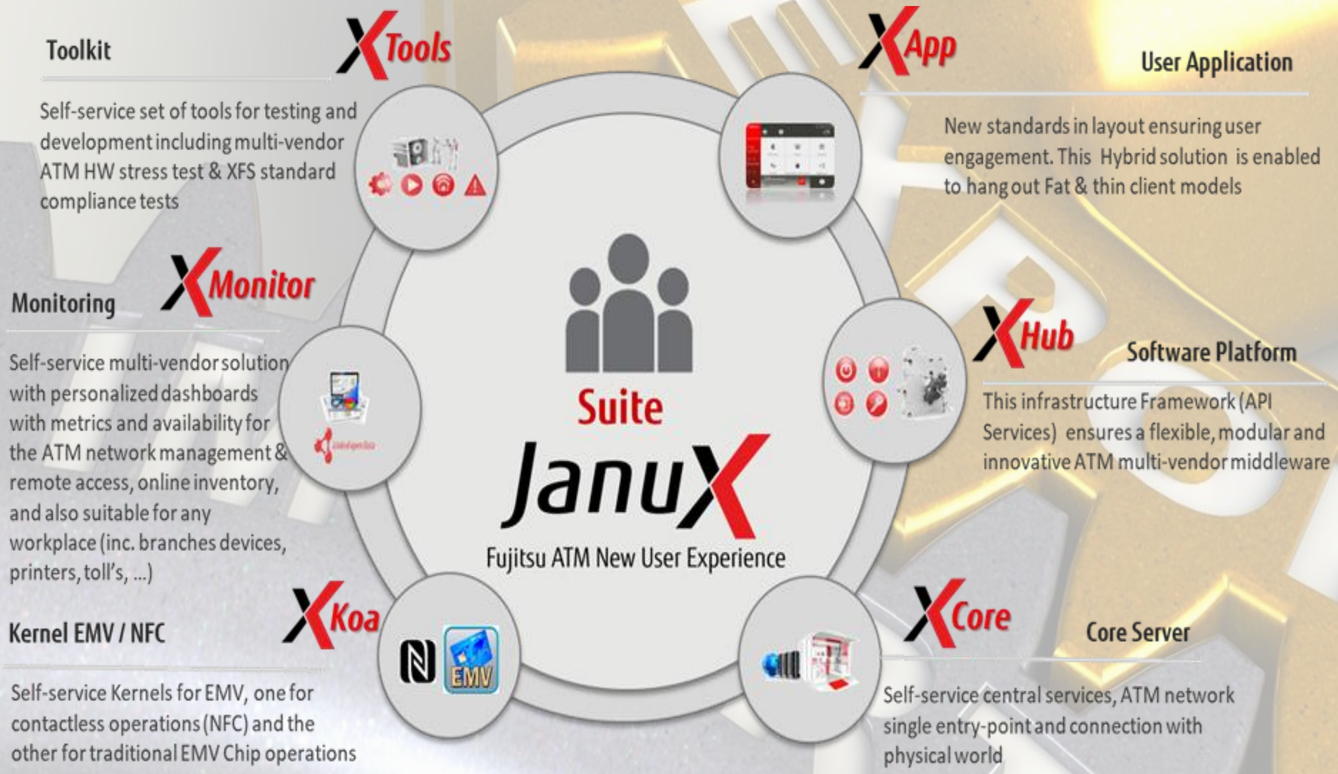
JanuX Suite – Excellence Centers

More than 55% of ATMs in Spain work with Janux applications

- Fujitsu has 2 development centers for the JanuX Suite self-service solution located in Madrid and Barcelona
- Fujitsu also has a self-service Center of Excellence located in Barcelona, operating 24x7x365.
- Entities such as Caixabank, Ibercaja and Banco Sabadell entrust the monitoring of their ATM network to Janux
- Aimed at improving operation indicators (unavailability and resolution times) as well as business indicators (derivation and profitability)
- From the CoE we have helped to transform the channel of different Entities into a Business channel.

JanuX Suite– Global Self-Service Solution



Toolkit

Self-service set of tools for testing and development including multi-vendor ATM HW stress test & XFS standard compliance tests

Monitoring

Self-service multi-vendor solution with personalized dashboards with metrics and availability for the ATM network management & remote access, online inventory, and also suitable for any workplace (inc. branches devices, printers, toll's, ...)

Kernel EMV / NFC

Self-service Kernels for EMV, one for contactless operations (NFC) and the other for traditional EMV Chip operations

User Application

New standards in layout ensuring user engagement. This Hybrid solution is enabled to hang out Fat & thin client models

Software Platform

This infrastructure Framework (API Services) ensures a flexible, modular and innovative ATM multi-vendor middleware

Core Server

Self-service central services, ATM network single entry-point and connection with physical world

Base Platform – Quick Implementation

Digital transformation

Collaboration with mobile channels, telephone banking and branches.

Focus on Access Security and Operations (Logical and Physical Security)

Early Warnings / Anti-Fraud Management

Online and dynamic personalization

Independence, of technology and provider

ATM and Office Integration

Provides office operations in a self-service environment

Incorporating a complete set of functionalities and focused on interaction and communication with the client

Service as a “commodity”:

Service offered through a Cloud where the Entity is the owner of the Application but only pays for the service.

JanuX Suite – Self-service aligned with strategic objectives

Multivendor Application

XApp

- State-of-the-art self-service application
- HTML5/CSS
- LooK&Feel customizable by entity, group, client…
- Multi-Entity
- Preconfigured business operations
- Accessibility (ADA / APSIS4all)

Monitoring

XMonitor

Set of applications and services that process the information received from ATMs to carry out effective monitoring and management of the self-service network:

- Status/Management at terminal/device level
- Unavailability analysis / Dashboard
- Inventory management
- Troubleshooting
- Management of advertising and marketing campaigns
- View and update customer preferences
- Generation and preconfiguration of installable versions
- Distribution of versions and version updates. In turn, it allows keeping track of the different versions of existing components in the self-service terminals.

Kernel EMV

XKoa

- Fujitsu has 2 Kernel depending on the contact or contactless devices that you want to treat
- MDCS EMV Kernel: "EMV Level 2" certified controller that allows access to chip cards according to the specifications defined by this regulation
- MDCS NFC Kernel: Controller that allows access to chip cards in "contactless" mode according to NFC protocol.

Remote Key Loading

XRKL Cloud

- It constitutes a Cloud-based solution for remote loading of keys in a "pay-per-use" service model under compliance with PCI regulations.
- Client-server system based on cryptography techniques compatible with PCI regulations for remote sending of the master key
- The system consists of 3 main elements:
  - Key management software (RKL Server + DB)
  - Key Manager HSM
  - ATM agent (client)

ATM Cloud Lab

XCloud Lab

- It offers a complete self-service virtual laboratory in the cloud.
  - Concept of "virtual cashier" replicable in different instances (farm) and available "from anywhere"
  - Allows you to have the full host-connected client application environment installed on each instance
  - It allows to carry out the activities of development, QA and maintenance of the self-service software in an agile way
  - Enables massive, automated network stress, performance, and regression testing

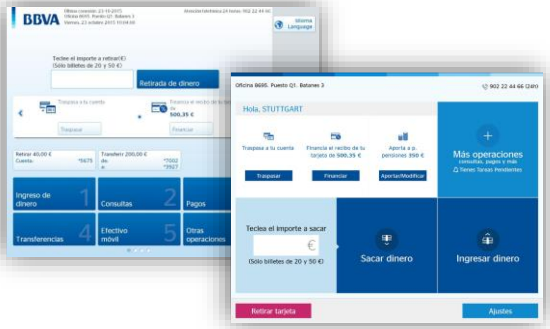
New XFS Standard

XXFS4IoT

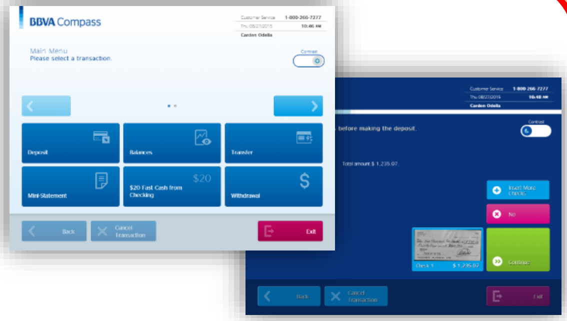
- New Middleware for cloud environments
- Cloud Native
  - MDCS MW IoT on IoT ATMs
  - MDCS MW IoT over ATMs NOT IoT (easing the transition)
- Independent S.O.
- Approach by device
- Built-in native security (TLS v1.3 transport, encrypted messaging, integrity check, access policies, …)

JanuX Suite – Flexible and quick to adapt

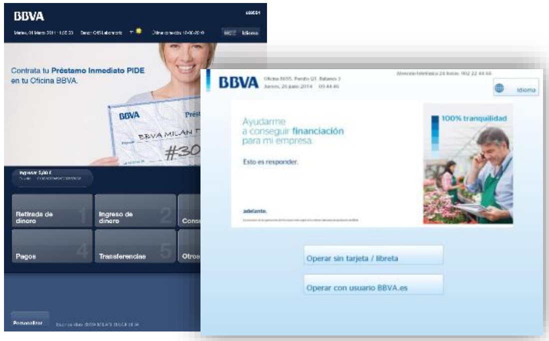
Look and feel



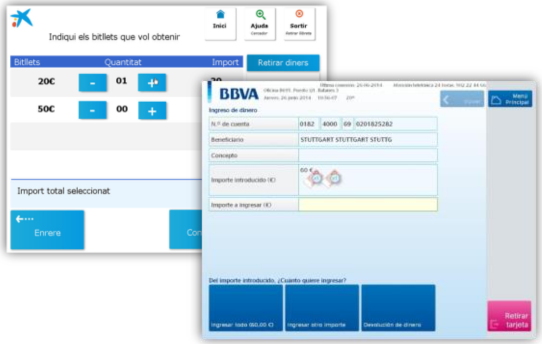
Contras change



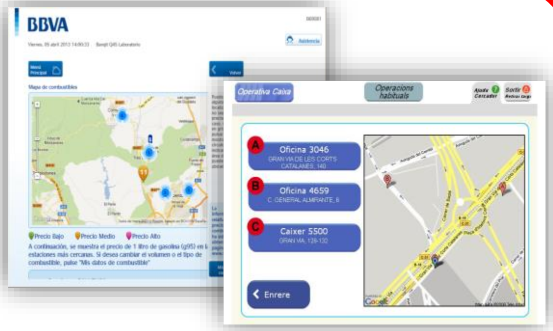
Advertising / CRM


BBVA
Contrata tu Préstamo Inmediato PIDE en tu Oficina BBVA.
Retirada de dinero
Ingreso de dinero
Pagos
Transferencias
Ayudarme a conseguir financiación para mi empresa.
Esto es responder.
100% tranquilidad
Operar sin tarjeta / libreta
Operar con usuario BBVA.es

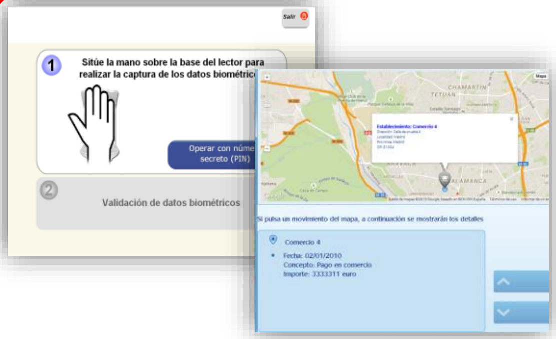
Denomination selection



Geolocation



Security


Salir
1
Sitúe la mano sobre la base del lector para realizar la captura de los datos biométricos
Operar con número secreto (PIN)
2
Validación de datos biométricos
Si pulsa un movimiento del mapa, a continuación se mostrarán los detalles
Comercio 4
Fecha: 02/01/2010
Concepto: Pago en comercio
Importe: 3333311 euro

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Software Security Checker

www.cyttek.com

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Checker ATM Security

Cybersecurity product specifically designed for financial self-service networks.

Checker ATM Security® is a world-class cybersecurity product specifically designed for ATMs and kiosks. *Checker*® will help you protect your ATMs from logical fraud while meeting applicable PCI-DSS requirements quickly and effectively, even for unsupported versions of the ATM operating system.

+ 250.000

Protect more than 250.000 ATMs

+ 40

It has a presence in about 40 countries around the world

+ 80

Serves more than 80 clients

Checker ATM Security

[redacted]

PROJECTS checker

gmv® INNOVATING SOLUTIONS

[redacted]

Checker ATM Security

- **Checker®** provides a set of tools to create, implement, and maintain security policies on the server side, and have them enforced on the agent (ATM) side.
- Protection of the entire system based on security policies.
- Operating system protection
- Process execution protection
- device protection
- Data Protection
- Centralized monitoring and management
- Restriction of local access to ATMs
- hard drive encryption
- Audits and reports
- White Lists

Checker® supports a wide variety of operating systems and platforms, so it is suitable for almost any ATM in the world:

- Compatible with Windows NT4, Windows XP, Windows 7, Windows 8, and Windows 10.
- Compatible with the 32- and 64-bit versions of Windows 7, Windows 8, and Windows 10.
- Compatible with BIOS and UEFI firmware.
- Compatible with discs formatted in GPT and MBR.

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ATM Security Services

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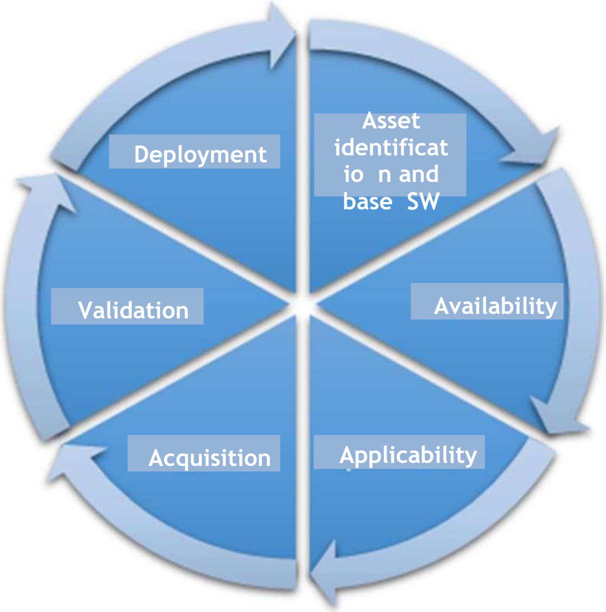
Vulnerability and Patch Management Service

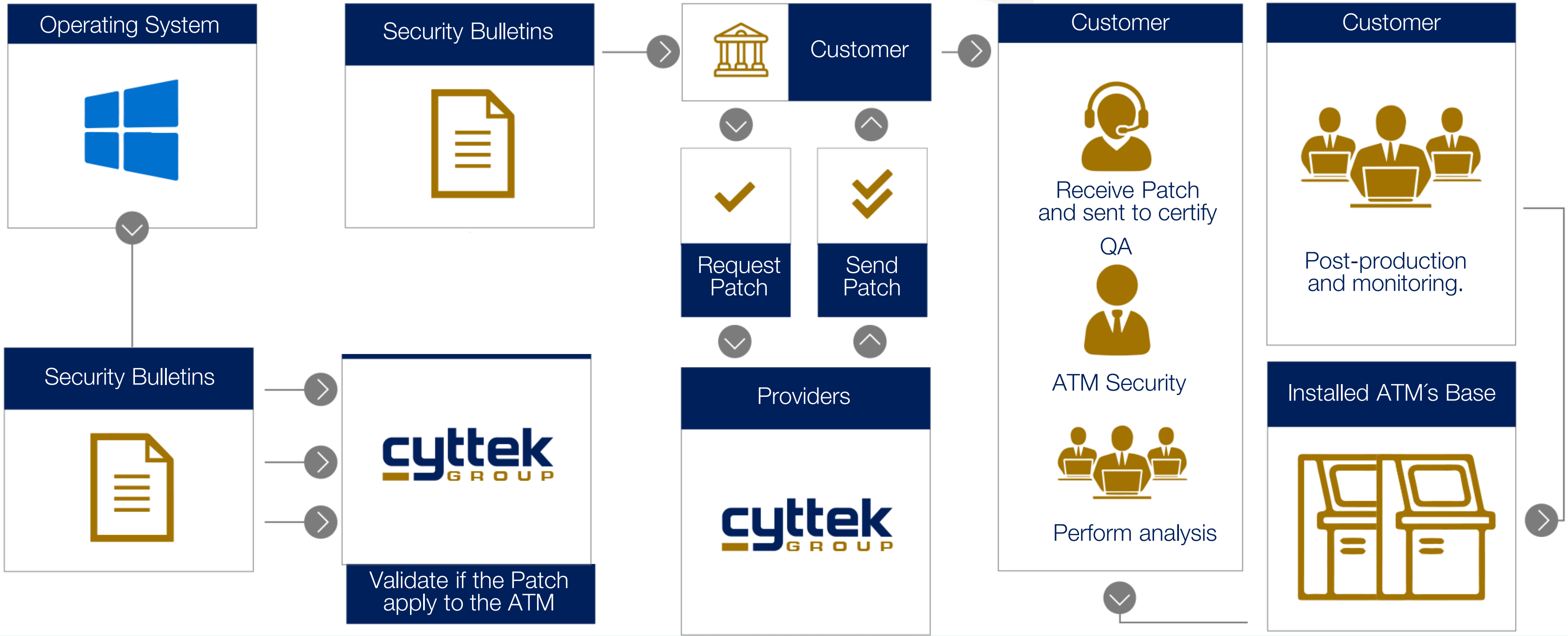
The patch service consists of a comprehensive multi-vendor service to minimize the operational risks of the channel in availability and vulnerability, this service consists of:

1. Download, Install, Analyze and Validate the Microsoft patches that it publishes every month in a multivendor manner and with emphasis on security to avoid avoiding patches that are critical for the ATM.
2. Test, Install, Analyze and Validate the impacts of Third-Party patches such as Intel, American Megatrends, which impacts on performance and applicability have.
3. Development of tailored security patches for the identification, applicability, mitigation and validation of solutions developed tailored by ATM security experts in order to mitigate multi-vendor attacks.
4. Analyze, Install, Validate and report on incomplete manufacturer updates or patches from manufacturers NCR, Diebold Nixdorf, Hyosung that may contain security errors.



Service Flow WINDOWS PATCH

Currently there is no formal instance where a review and installation of Windows Hotfix is carried out that keeps the ATMs updated and safe and it depends on the vision of the manufacturer and the type of service acquired with the manufacturer and many times the manufacturer does not take the best Security decisions simply for not wanting to work, since our service is focused 100/ on the security and stability of the ATM network.



Operating System

Security Bulletins

Security Bulletins

Validate if the Patch apply to the ATM

Customer

Request Patch

Send Patch

Providers

Customer

Receive Patch and sent to certify

QA

ATM Security

Perform analysis

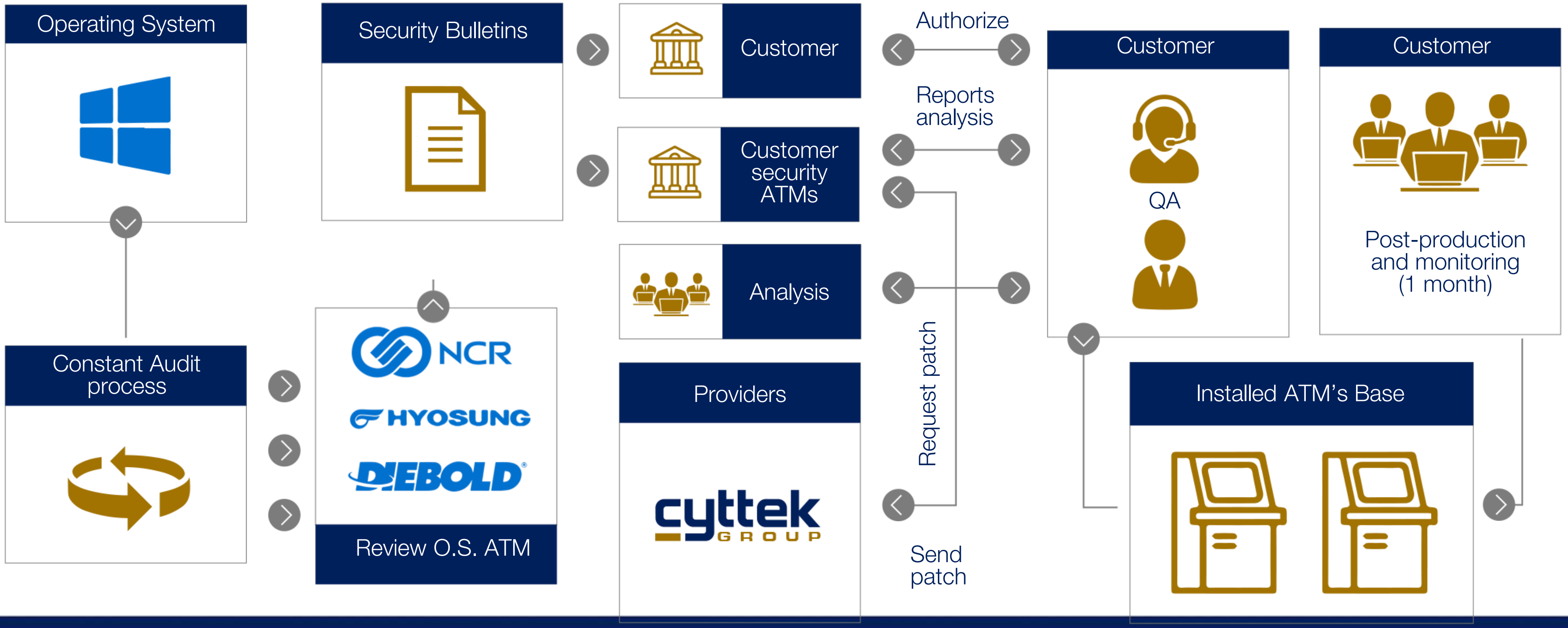
Customer

Post-production and monitoring.

Installed ATM´s Base

Service flow SECURITY PATCHING

Service that allows the identification of security flaws, development of patches and testing of patches necessary to be implemented in different brands and models of ATMs to speed up the OS patching process in order to keep the security of the systems updated.



Operating System

Constant Audit process

Security Bulletins

NCR
HYOSUNG
DIEBOLD

Review O.S. ATM

Customer

Customer security ATMs

Analysis

Providers

cyttek GROUP

Authorize

Reports analysis

Request patch

Send patch

Customer

QA

Customer

Post-production and monitoring (1 month)

Installed ATM's Base

"We have create the next Generation solution for A TMs"

Rafael Revert
CEO of Cyttek Group