

# ATMContent Manager

ATMRewards v2.0E

Technical Whitepaper



## PRODUCT OVERVIEW

ATMContent Manager ("ACM") is a product of the ATMRewards Software Platform. ACM is a Web-based ATM SCREEN & RECEIPT CONTENT Development, Management, and Delivery System. Version 2.0e supports text and graphic content. To enable ATM content changes, the system interfaces with the ATM directly via an Agent installed on the ATM, and/or indirectly via the ATM Host (the "Component Interfaces").

The ATM Host Component Interface automates the process of text-based screen and receipt content changes for state-screen based ATMs. The Agent Component Interface enables remote distribution of graphic files and other multi-media content<sup>?</sup>.

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<sup>?</sup> All content (text and graphics) for NCR Aprta Edge ATMs is managed via the ATM Agent. The Host Interface Component is not required.

## KEY FEATURES

- ❖ MULTI-VENDOR ATM differences (912, NDC, AANDC, and Aprta Edge) are seamlessly managed
- ❖ Intuitive WEB-BASED INTERFACE for easy online access [Supports Single Sign On]
- ❖ MULTI-LEVEL ADMINISTRATION modules segregate system level IT functions from content development functions to allow application access by users ('ATM Advertisers') with limited ATM operations knowledge
- ❖ Content is managed like an advertising campaign using a POWERFUL BUILT-IN RESERVATION SYSTEM for conflict resolution for campaigns with future start and defined end dates, and for real-time campaign monitoring
- ❖ POWERFUL CRM ENGINE for targeted marketing messages and other real-time information (i.e. Weather, Headlines, Sports) based on dates, times, locations, and cardholder preferences
- ❖ SUPPORT FOR NCR APTRA EDGE and other XFS web-based ATMs does not require interface with ATM Host Systems

## TECHNICAL OVERVIEW

ATM Host Systems today already manage the process of changing ATM screen and receipt content. The process is, however manual and very cumbersome. ATMRewards System integrates within the existing ATM operations framework to automate the process of distributing and managing content on ATMs.

### Changing Content on ATMs- A Primer

There are three (3) basic types of ATM Applications: 1) Legacy State-Screen based ATMs, such as NCR NDC and Diebold 912; 2) ISO8583 based proprietary ATMs, such as Triton and Tidel; and 3) Client-Server XFS based Web-ATMs such as NCR Aprta Edge. ATM Host Systems are architected to handle all ATM devices for transaction processing, but changing screen content to support

advertising messages is very limited, and only possible for state-screen and web-ATMs. A key limitation in supporting advertising messages is that ATM Host Systems do not have file distribution capabilities. Graphic files have to be loaded locally on the ATM via flexible media.

For state-screen ATMs, the ATM Host Systems download ATM Configuration Files (also known as "Load Files") to establish the ATM screen content and manage the customer transaction flow. Screen definitions in the Load File contain the text messages that will display on ATM Screens. Screen definitions may contain references to graphic images for display on the ATM screen. The graphic file, however, must be stored in the proper local directory of the ATM to avoid screen display errors.

For Aprta Edge ATMs, the ATM Host follows a similar process as in state-screen ATMs to configure the text-based content for Welcome, Wait, and Thank You screens. The changes are downloaded as NDC Load File messages to the "Data Dictionary," which establishes the consumer flow screens on the EDGE ATM (see NCR EDGE Programmers Reference Manual for details). Again, the content changes are severely limited because the ATM Host is not able to act as a true client-server system to distribute the objects needed by the EDGE web-ATM for multi-media Ad messages.

## **ATM as a Marketing Channel- The Challenges**

Employing ATMs as a marketing channel (a "Customer Touch point") has certain limitations. Some are "inherent" and natural given the core function of the device, while some are "perceived" due to the age-old bias that the device is nothing but a Cash Dispenser. Some limitations are "regulatory" in nature due to government regulations on ATM advertising. Lastly, some challenges are "legacy" due to the hardware, software, and OS limitations of the installed base of legacy ATMs, while others are "imposed" due to the lack of standards in content management for multi-vendor ATM applications, thereby making the

task of centrally deploying and managing content cumbersome, and technically daunting.

The challenges in ATM advertising include: 1) small screen Size for Ad display, 2) short window of opportunity to present Ad message (less than 20 seconds for entire customer experience, and less than 8 seconds during Wait transaction processing), 3) a numeric only key pad that limits the user inputs that can be solicited during interactive Ad messages, and 4) under-powered CPU, Video drivers, and Memory that limits the multi-media capabilities of the device.

Even if an advertiser is prepared to work with the limitations of ATM Advertising, the industry has been unable to provide a centralized ATM Content management system that unifies and "un-complicates" the task of deploying content on an entire ATM portfolio that includes multi-vendor, multi-OS, legacy, and web-based ATMs.

Consider this... a financial transaction can be seamlessly managed across ALL devices via a single platform, but NOT marketing content!

Traditionally the ATM Host Software vendors have been the "great unifiers" in the industry by providing a single platform solution that manages multi-vendor device differences at the Device Handlers ("DH") Level. Host software vendors continue to focus on financial transactions, ignoring the growing need for content management solutions. The task of providing server-side content management solution falls on ATM vendors who are neither motivated nor strategically positioned to develop a unified solution that works on ALL devices. Consequently, there is glut of ATM vendor specific solutions, but no unified platform!

## **ATM Content Management- A Solution**

Accounting for the limitations, content and marketing messages that are suitable for MOST ATMs are: 1) Simple up-to-date textual<sup>?</sup> mass marketing messages on Welcome, Wait, Thank

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<sup>?</sup> Graphic content support depends on ATM hardware and if Agent Component Interface is installed on ATM to download image files.

You, and Out of Service Screens ("Key Marketing Screens"), 2) Targeted marketing messages to provide ATM user with relevant and contextual information, 3) Interactive marketing messages to solicit input from ATM user, 4) Coupons based on ATM location to reward user behavior, and 5) ATM Personalization to collect user preferences for Fast Cash, Language, and Receipt, to personalize the ATM experience.

### ATMRewards ATMContent Manager

standardizes supports for all above marketing messages via a unified interface where vendor and OS differences are managed behind the scenes. Supported marketing messages are:

Component Interface	Supported Marketing Messages	Supported on
<b>Host Interface Only</b>  <i>Full TEXT content support</i>  <i>Introduce new Transaction Sets for State Screen ATMs</i>	Mass Marketing Messages on Key ATM Screens, and Receipts  Targeted Messages and Real Time Information on Wait & Thank You Screens, and Receipts  Interactive Ads triggered by FDK select, or at the end of a financial transaction (ex: Would you like more information on Car Loans? If YES, Enter Ph#)  Coupons triggered by FDK select, or at the end of a financial transaction (ex: Would you like a coupon for Free New Burger at McBurgers?)  ATM Personalization for Fast Cash, Language, and Receipt	OS/2 & WINDOWS  TCP/IP, Bisync, x.25, Dial up  NDC, AANDC, 912, Agilis emulation on any vendor hardware  <u>No Support for NCR Aprta EDGE</u>
<b>Agent Interface Only</b>  <i>Full Graphic Content Support</i>  <i>Limited Text Support via LSC</i>	Remote Graphic Distribution to enable Mass Graphic Messages on Key ATM Screens  For State-Screen ATMs, Textual content changes are supported via LSC; however, no support for Targeted or Real time content, or for coupons and interactive Ads  ATM Personalization is ONLY supported on NCR Edge & Diebold Agilis ATMs	WINDOWS  Limited Support for OS/2 <sup>?</sup>  Most ATM Vendors (Diebold, NCR, Fujitsu, Wincor)  <u>Full support for NCR EDGE</u>
<b>Combined</b>  <i>Full Power</i>	All of the above; including the ability to create full multi-media marketing message interlaced with both text & graphics	

<sup>?</sup> TEKchand provides an OS/2 Agent with limited download capabilities. The Agent cannot be installed on NCR OS/2 ATMs.

### How the ATMRewards System Works- A Primer

To automate the process of content management, ATMRewards Platform communicates with ATMs 1) indirectly through the ATM Host Systems to modify specific screen definitions in the ATM Load file and 2) directly via the ATM Agent on ATM to download graphic files.

To change text-based content on state-screen ATMs, ATMRewards system interfaces with the ATM Host. Installation of ATM Agents is not mandatory if the ATMRewards system does not manage graphic content. Likewise, if the ATMRewards system will ONLY manage graphic content for ATM Screens, then an interface with ATM Host is NOT required.

For Aprta Edge ATMs, all content is managed via the ATM Agent on ATM. No ATM Host interface is required!

The "Point" within the ATM consumer flow where an "Ad" is inserted for display to the ATM user is known as an "Ad Point." Welcome, Wait, and Thank You Screens are examples of Ad Points. A collection of Ad Points defined in the system to interface with an ATM Load File, are referred to as a Work Order ("WO"). ATMRewards system impact on a Load File is restricted by the WO.

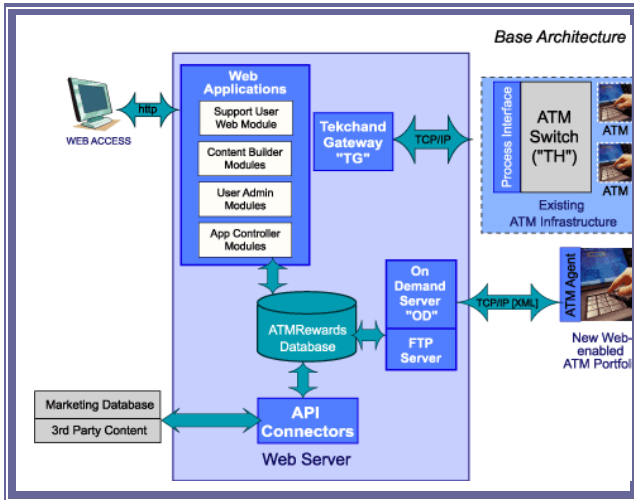
To separate the function of WO development from that of content development (i.e. "ATM Advertising"), ATMRewards system provides two key user modules: 1) ATMContent Controller Module, and 2) ATMContent Builder Module. ATMContent Controller ("ATM Operations") manages the one-time task of building Work Orders, while the ATMContent Builder ('Advertiser') manages the recurring task of defining the ACTUAL Ad Content for the Ad Points in the WO. As part of WO development, the Controller sets restrictions to guide the process of content development by the ATMContent Builder. Along with such parameters as: 1) screen size; 2) number of text characters for screen; and 3) non-writable area of ATM screen,

the Controller establishes whether the ATM Screen (i.e. the Ad Point) will reference graphic images.

The Ad content developed for an Ad Point is known as a "Campaign." The process of developing and managing content for an Ad Point by an ATMContent Builder is known as "Campaign Management."

### ATMRewards Platform System Components

The platform has three (3) major components:



- ❖ **Web-Centric**- to provide an intuitive web-interface for all content development, delivery, and management functions
  - ✓ Application servers to provide web interface for database setup and support ("Controller"), user and content administration ("Admin") and development and management of Content for multi-vendor ATMs ("Builder")
- ❖ **Switch-Centric**- to interface with the ATM Switch (or "ATM Host" Systems) to support content changes on legacy ATMs with zero hardware/software changes
  - ✓ Gateway Servers ("TG") to handle communication with ATM Switch and serve content to Terminal Handlers for delivery to connected ATMs
  - ✓ Application Servers to manage certain States and Screens of the ATM Load File to "overlay" Base Load delivered by Host
  - ✓ Process Interface on Tandem (or IBM Mainframe) to communicate with TG and

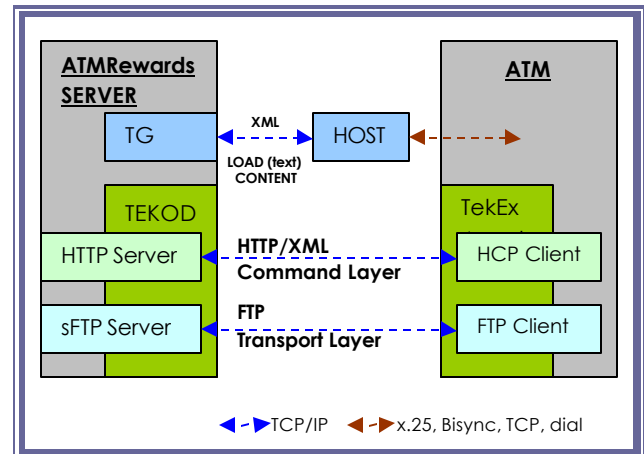
to translate XML to Device Native (NDC, 911/912)

- ❖ **ATM-Centric**- to interface directly with ATM to distribute graphic files and to manage all content related and ATM management functions for Web-based ATMs.

### ATM-Centric Component Overview- Working with the ATM Agent

When an ATMContent Builder ('the Advertiser') defines a marketing message ('Ad Campaign') that includes graphic content, the ATMRewards system first successfully distributes the graphic file(s). Then, if needed, the system will change the ATM Load File via the ATM Host to reference and display the image(s) on ATM Screen(s).

The process of downloading graphic images is fully automated, and managed via the TEKchand Agent ("TekEx Agent") that is installed on the ATM. The Agent is a set of thin 'Client' programs that use the TCP/IP layer to communicate with the ATMRewards 'Server'. The Client-Server communication is done via HTTP/HTTPS using XML for information exchange (the Command Layer or "HCP"). Secure FTP is used for file transport (the Transport Layer)



The ATM Agent, using HTTP/HTTPS, contacts the server at a regular frequency to see if there are any jobs to perform. In the case of a download request, the Agent invokes the FTP layer to spool the file(s) onto the ATM, then uses the HTTP/XML layer to perform the necessary ATM vendor-specific commands to 'activate' the graphic image for use

by the ATM application (912, AANDC, Edge, etc). Finally, if the download process is successful, and the images are already referenced in the existing ATM Load File, the new Ad message will immediately display on the ATM Screen. However, if the images are NOT already referenced in the ATM Load File, then, the system will begin the process of Load File changes via the ATM Host Interface.

In the case of a failure, the Agent will continue to retry until a maximum number of attempts is reached, after which, the graphic image and the campaign will be marked 'undeliverable.'

### Managing ATM Content without Interfacing with Host Systems

ATMRewards can be set-up to support content changes without interfacing with the ATM Host. In this case, the system employs the Local Screen Customization ("LSC") feature to induce Load File change on State-Screen based ATMs to enable the display of content on the ATM screen or receipt. The LSC feature is available on most ATMs (NCR NDC 5.4++), and works as follows: 1) ATMRewards creates the appropriate NDC or 912 "Load File" message for an ATM Screen, 2) Instead of passing the Load Request to the TG for distribution to the HOST, the system creates an Object ("file" ex: LOCSC1 for NCR) and downloads it to the appropriate ATM directory as specified by the ATM vendor to enable LSC and, 3) The Agent now either re-starts the ATM or triggers a re-Load of the ATM. Upon re-load, the ATM Application reads the LSC file and "overlay" (i.e. override) the ATM screen definition loaded by Host with those in the LSC folder of the local ATM drive. Now, when the ATM goes In-Service, the new Ad message downloaded by the system will display.

As an example of system flexibility, take the case where ATM Operations wants to use ATMRewards for graphic content management, but does not want to interface the system with the ATM Host or employ the LSC feature on ATM. In this case, the ATMContent Controller, will restrict the permitted

graphic file names (ex: "icon100.gif") that can be uploaded by a Builder for an ATM Screen (ex: "Welcome screen") to the graphic file names that are PRE-REFERENCED in the screen definition of the ATM Load File. In this example, the ATMContent Builder will only be able to upload "icon100.gif" for the "Welcome" screen, thereby overwriting the existing "icon100.gif" on the ATM. Consequently, the new graphic content will be displayed immediately on the ATM screen without need to interact with the ATM Host.

### ATM Advertising Support via Agent Only

Types of marketing messages supported by the ATM Agent depend on whether the ATM is State-Screen based or Web-based. For state-screen ATMs, the platform is best suited for graphic file distribution. Targeted messages, interactive messages, ATM Personalization, and other CRM content is not supported without the Host Interface. For the newer web-based ATMs such as NCR Apra Edge, most content, including text, receipt header/trailer messages, ATM Personalization, and most CRM messages are supported without the need for Host based communication. The following table summarizes the current ATM Agent-based content support provided by the ATMRewards Platform:

Vendor	OS	Application	Supported Content via ATM Agent
NCR	OS/2	NDC 5.xx	Not Supported
	WIN	NDC 5.xx	Graphic Images on key ATM Screens, Receipt Header & Trailer Messages, and Text & Load File changes via Local Screen Overlay
		AANDC	
NCR	WIN	EDGE 2.0.xx	Marketing Content for all key screens, Promote Objects, Wallpaper & Buttons, and ATM Personalization
Diebold	OS/2	911/912	Graphic Images on key ATM screens (requires a one-time change of ATM Load File to reference the graphic icons)
	WIN	911/912	
		TCS	

Fujitsu	OS/2	912 Emulation	Same as Diebold
	WIN		
Wincor	WIN	912	Same as Diebold

## SYSTEM REQUIREMENTS

### ATM

Prerequisites: ATMs with TCP/IP ? ATM agent must be installed?  
 Supported ATM: Diebold 911/912 Emulation (OS/2 and Windows)  
 ? NCR NDC/AANDC Emulation (Windows Only) ? NCR Apra  
 Edge ? Fujitsu (912 Emulation) ? Wincor (912 Emulation)

### ATMRewards Content Server Hardware

**IBM:** IBM X346 Rack Mount Server: 884036U  
 CPU: 2x 3.4GHz Xenon Processor with / 2Mb L2  
 Memory: 3 GB RAM ? Storage: 2 x 36Gb 15k rpm - raid 1  
 configuration 4 x 73Gb 15k rpm - raid 10 configuration. ?  
 Controllers: 1 ServerRAID-6M Ultra320 SCSI Controller  
**SUN:** Sun Fire V40z ? CPU: 2x AMD Operon Model 844 ?  
 Memory: 3 GB ? Storage: 2 x 73Gb 10k RAID 1 configuration ? 4 x  
 73Gb 15k RAID 10 configuration ? Optical: 1 DVD/Floppy drive ?  
 Controllers: 1 RAID Controller Half-length/Full Height PCI-X card

### Server Software

OS: Red Hat Enterprise Linux 3 Advance Server, or  
 SuSe Linux Enterprise Sever 9, or Sun Solaris Unix  
 Java j2sdk1.4.0\_02 for Linux ? Webserver: Jakarta Tomcat 3.2.2,  
 Apache 1.3.20 ? Application Server: WebSphere 5.1/6.x ?  
 Monitoring: Big Brother or other ? File Transfer Server: sFTP,  
 pureFTP, proFTP, (SSH can be made available if required)

### EFT Switch (Host Systems) Interface :

Base24: TEKchand provides a C API for Base24 Device Handlers  
 on Tandem ? Connex Advantage: eFunds provides Process  
 Interface (PI) for Connex Advantage v1.4 and above ? IST: also  
 provided by eFunds

*Note, There are NO requirements for ATMRewards System to  
 interface with EFT Switch if customer will ONLY change and  
 manage multi-media (graphic images) content on ATMs.*

### For More Information or Product Demo:

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