CROSS-PLATFORM

SOFTWARE FOR SELF-SERVICE DEVICES

A FEW WORDS ABOUT THE PRODUCT

TellME software supports at least 60 types of bank self-service terminal/devices manufactured by more than 15 global companies making it the leading and most preferable software products for this type of devices. For over 15 years, SPL has been developing software, having administered over 100,000 successful installations of the software around the world. SPL provides verified and reliable cross-platform software solutions enjoying the position of leadership within this industry.

By becoming our client, you will be able to take advantage of the intelligent and multifunctional software solution TellME with open architecture, multifunctional web applications, integrated security services, extended monitoring functions and enhanced efficiency of the self-service device network.

TellME universal cross-platform software is the driving force for every bank self-service device!

INTRODUCTION

These days, banks and non-bank financial institutions: operator companies, unit trusts, managing companies and others aim to expand the range of their services and increase the number of outlets to provide these services to the population. On the one hand, the retail business evolves into the strategic area of activity, on the other hand, as a result, the client base grows exponentially.

As efficiency increases, retail costs decrease and the extension of service networks are key to this goal. This can only be achieved by using integrated self service solutions.

There is a long steady interest in retailing, and along with it in automation of billing and payment operations where both recipients and payers follow the way of automation of the billing and payment operations allow the conclusion that this market has formed both objectively and subjectively. Both recipients and payers are ready to switch to direct approach today excluding the middlemen being the atavism of the paperwork technologies. At the same time, financial institutions can and must be positioned to offer relevant technology, to carry out financial portion necessary to facilitate the transactions.

Self-service device networks are among the most important banking tools providing direct service points to their customers. Such services must be built taking into account future business opportunities and implementation of the changing priorities, designed to ensure proper quality of the customer service.

Our unique approach to the self-service terminal industry reflects a solution to the obsolescence of traditional ATM networks relying on proprietary softwareb ased on twenty-year-old architectures when ATM's were single function machines with embedded proprietary software delivered by a sole vendor.

Within this brochure, we introduce the main technological principles and functional capabilities that SPL placed into its integrated solutions in order to further develop current self-service system networks, as well as anticipate future ones.

TellME ARCHITECTURE

SPL offers an integrate solution for all self-service device networks called

Cross-platform Software for Self-Service Devices TellME (or just TellME).

The TellME software platform architecture is shown in Figure 1 below.

TellME consists of 3 main software layers:

1. Hardware Abstraction Layer (HAL).

Provides independence from the selfservice device hardware components, regardless of manufacturer.

This layer supports the following components of WOSA/CEN XFS: Aptra XFS, ProBase, Agilis XFS, Nextware, OKI SP, GRG XFS, TellME XFS, and others.

The system supports self-service devices supplied by the world’s largest manufacturers such as NCR, Wincor Nixdorf, Diebold, Nautilus Hyosung, OKI, GRG.

2. Kernel

Controls the basic logic of the system and ensures interaction between the hardware abstraction layer (HAL), different business services and remote control and device monitoring systems (Unified Agent).

3. Business Services

Controls initialization and performance of different business services.

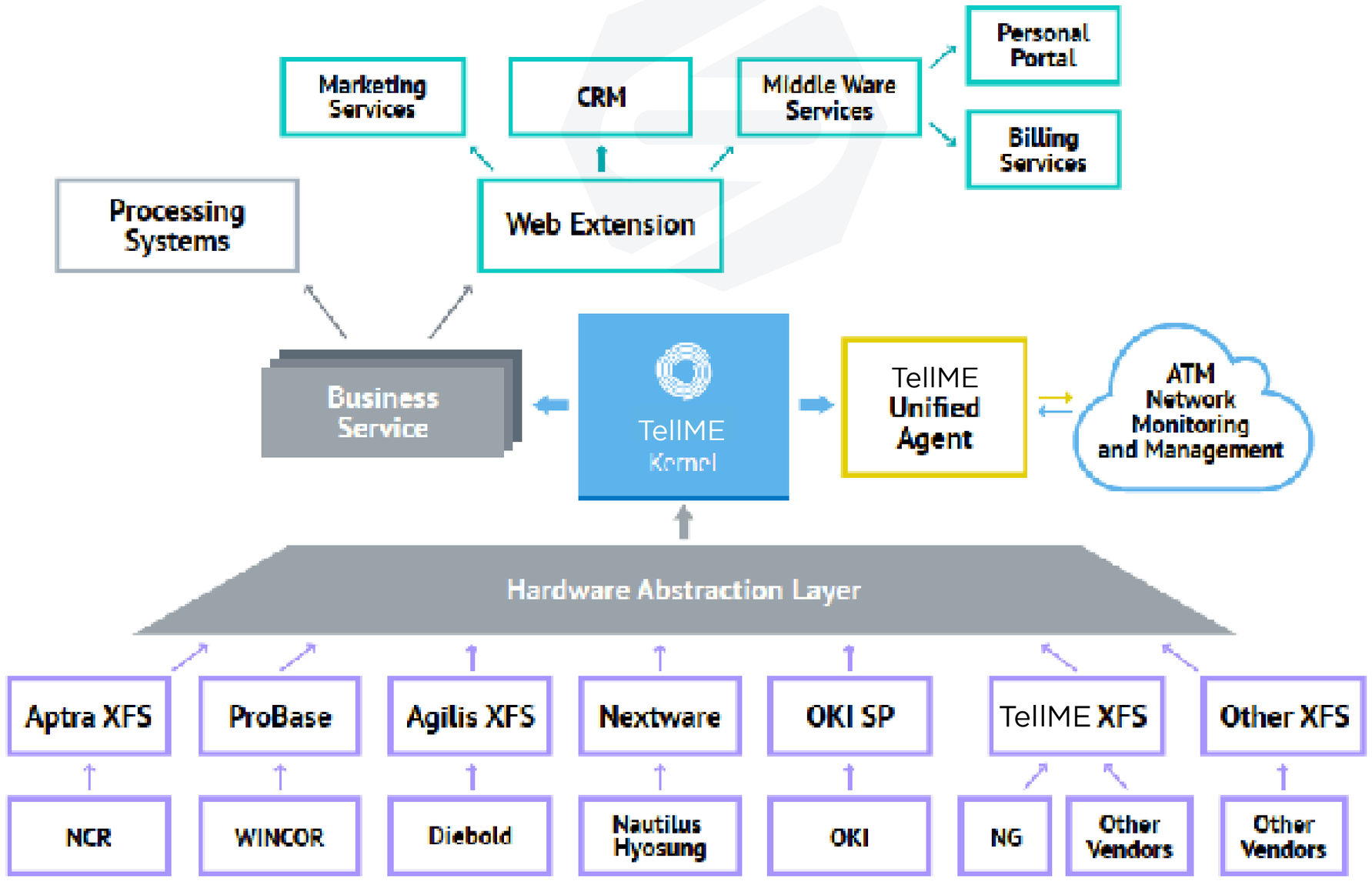
Compatibility with processing systems

Enables implementation of various interaction schemes with the biggest processing centers, for example SmartVista, OpenWay, Compas, Tieto Enator and supports financial on-line protocols: APTRA Advance NDC and ISO 8583, including EMV support.

WEB interface service control

Provides additional functionality for interaction with external systems, for example billing systems, business management systems, etc. WEB-Extension (an additional component) extends the interface possibilities of the system capabilities, using a web browser to display information for the customer.

WEB-Extension allows using any modern possibilities f the Microsoft Internet Explorer object.


Marketing Services
CRM
Middle Ware Services
Personal Portal
Billing Services
Processing Systems
Web Extension
Business Service
TellME Kernel
TellME Unified Agent
ATM Network Monitoring and Management
Hardware Abstraction Layer
Aptra XFS
ProBase
Agilis XFS
Nextware
OKI SP
TellME XFS
Other XFS
NCR
WINCOR
Diebold
Nautilus Hyosung
OKI
NG
Other Vendors
Other Vendors

SOFTWARE PLATFORMS AND PRODUCTS

This Chapter contains brief technical descriptions of software products and platforms for the solution included into the integrated solution for the self-service banking system.

TellME is a software product and platform designed for all types of self-service devices/terminals. The product supports various versions of XFS-providers from various developers.

Extension of NDC Standard Protocol. In order to extend the capabilities of TellME in relation to the customer service under NDC protocol, a set of extended general states has been developed.

The format of standard NDC states supported by TellME meets the specifications of APTRA Advance NDC Reference Manual, APTRA Advance NDC & NDC+, EMV Integrated Circuit Card (ICC) Reference Manual.

TellME Unified Agent is a software-based component designed for remote monitoring and control of self-service devices utilizing TellME software. It acts as a communication facilitator to interface with third-party monitoring systems. The interaction with the bank monitoring agent and the additional component TellME Unified Agent is achieved by exchanging WMI-commands (Windows Management Instrumentation Commands) and informing the device status utilizing the XFS protocol.

WMI represents a Windows core technology intended for the centralized management and monitoring of the in-service mode on a self-service device, as well as the state of a financial session. TellME Unified Agent allows for the processing of a pre-defined WMI-command list.

Using XFS protocol commands, TellME Unified Agent delivers requests to the self-service device's manufacturer Service Provider or to the hardware abstraction layer (HAL) of TellME in order to obtain device status information.

TellME Advanced Security is a software product intended to increase the security level while a self-service device is in operation.

This product allows the required security policy settings to be made automatically by using the templates prepared in advance for particular self-service models operating under TellME.

The main task for TellME Advanced Security is to ensure reliability of TellME software operation and its protection, and also to protect the data used by TellME against unauthorized access (i.e. data reading, software modification, etc.).

WEB-Extension is a software-based component designed to manage the potential multitude of screen outputs within a particular web browser, and also integration with external systems. The operating principle of this TellME application is to utilize Microsoft Internet Explorer object in order to display a variety of information on the screen for a user, dialogue with it and data input.

Web-Extension is designed to provide a user-friendly enhancement to standard TellME screen outputs and NDC protocol maintenance scripts. WEB-Extension manages a GUI (Graphic User Interface) implemented through standard HTML, flash animations, video clips and other objects that Microsoft Internet Explorer can utilize in order to display a message.

EXTENSION OF STANDARD NDC PROTOCOL

Extensions of the standard NDC protocol make it possible to:

- Limit the maximum number of banknotes being accepted
- Control the state of main cash dispenser devices and change the customer service algorithm on the basis of this data
- Input information using a barcode reader
- Display HTML pages and process the results of this display with the framework of NDC scenario
- Print local receipts (for example, if there are no host communications) or local data at any time of transaction
- Print logos on customers' receipts
- Mask out transactions containing critical data in the buffer log files
- Use virtual notes removing limitations of NDC protocol with regard to acceptance of not more than 90/999 notes per operation (this is relevant for coin accepting machines)
- Return a card to the customer within the NDC scenario
- Save the transaction buffer data into individual screens to show the data later within the standard NDC scenario, etc

WEB EXTENSION APPLICABILITY

TellME uses Microsoft Internet Explorer COM-object to display information to a user, organize a dialogue with him/her and to allow client data input.

Web-Extension displays idle screens implemented with the use of HTML, flash-animation, video files and other objects that can be displayed by means of Microsoft Internet Explorer.

Data exchange between TellME and HTML-content

Using Web-Extension as an interface add-on to TellME provides for data exchange between them in the both directions. The structure and parameters of a screen being substituted, as well as input parameters and events, can be a part of such data.

Data can be exchanged between TellME and HTML-content with the use of a software shell containing a browser, or with the use of special ActiveX objects included into TellME.

Using HTML screens instead of own NDC

Today, almost all NDC screens can be substituted with HTML pages downloaded using Web-Extension tools.

Using HTML screens instead of own TellME screens

If there is a need to replace the standard TellME screens with HTML pages, it is necessary to consult SPL on possible settings, or modifications of the managing scenarios for a particular self-service devices.

Printing receipts from HTML pages

It is possible to print any information on customer's receipt from HTML pages through the use of the standard ActiveX object included into TellME structure. This mechanism is recommended to print data that cannot be transferred onto the printing buffer of the protocol in use.

Integration with external systems

WEB interface provides additional functionality for interaction with external systems. WEB-Extension software component allows establishing functional interaction with the billing systems and business management systems (i.e. CRM-systems, service portals, banking) and other similar systems.

SOLUTION ADVANTAGE

6.1. Easy adaptation and Support of Equipment by Different Manufacturers

TellME supports all the ATMs manufactured by the world's leading vendors offering the interface of Microsoft WOSA/XFS – CEN/XFS, as well as the cash-in ATM's kiosk information systems made by the key manufacturers. Below are the main advantages of using the same universal software platform for cash machines made by different manufacturers:

- Versatility:
  - Multiple of various versions of XFS providers
- Reduction in license costs for ATM software
- Reduction of personnel training expenditures
- Decrease of time cycles for design/development, testing and certification for new hardware platforms and software solutions
- Use of a wide range of equipment for terminals and kiosks. An opportunity to choose almost any equipment running under Microsoft Windows
- Creation of a self-service device network based on specific requirements of location, configuration and hardware component without concerns of software limitations
- Trouble-free integration with the software and hardware components made by the thirdparty manufacturers

6.2. Support of Several Service Protocols

With regard to the processing center: Use of the standard protocol for interaction with the international business service processing systems allows quick and efficient connection of a device to the frontal systems of different suppliers.

No need for modification of the processing center's software.

Supported online financial protocols: APTRA Advance NDC and ISO 8583.

6.3. Service of a Wide Range of Card Payment Products and Cash-in Operations

The system accepts and serves different types of cards with magnetic strip and chip-based cards, and ensures cash operations.

Additional international or domestic products can be integrated into the system without reprogramming and reinstallation of the whole system.

Currently, the card products of the following business services are supported: MIR, Visa, Europay, Mastercard, American Express, including the cards of EMV standard and DUET smart cards.

6.4. Integration with External Systems

The system is compatible with external modules that provide additional services for Bank's customers. In particular, remote banking or cash-in modules (for utilities, cell phone payments, mortgage and loan payments, etc.). When using the self-service devices with the cash-in feature, Banks may provide their services to "non-bank" customer groups. Currently, TellME software is integrated with various retail payment systems, such as WEBIUS, ANYWAY, etc.

An alternative option of TellME integration with the bank's indigenous billing network is WEB-Extension software component.

6.5. Cutting the Processing Time of Online Operations

In contrast to most current self-service device management systems, TellME does not require any intensive dialogue with the processing center. All key rules and scenarios are performed by the relevant software components of the system.

Since performance of operations in the online mode requires only a positive reply of the processing system with regard to the authorization request from a self-service device by facilitating a valid communication request, the amount of data exchange in the system decreases dramatically, which in turn increases the speed and transaction performance reliability (especially when installing on self-service devices that use channels and environments with unsecured delivery).

In combination with additional security features, this allows for the use of public and corporate GPRS-channels.

6.6. Security and Fault-Tolerance

TellME provides stable and secure operation of devices in the in-service, maintenance and collection modes.

System security is developed based on industrial standards and specialized software and hardware solutions. For all types of supported devices, an automatic system of security policy settings for Windows OS (TellME Advanced Security) has been implemented to meet the modern security requirements in the operation of bank's complex software-and-hardware systems. The security settings limit access rights to the console and other applications, maintenance of full audit logs, etc.

To meet the requirements of the international payment cards industry, SPL received an international certificate confirming certification under PCI PA-DSS (Payment Card Industry Payment Application Data Security Standard). This standard has been implemented by PCI SSC – (Payment Card Industry Security Standards Council), an organization established by international payment systems Visa, MasterCard, American Express, JCB and Discover. In 2012, the Company received an international certificate of TellME software compliance with PCI PA-DSS 2.0.

In November 2017, SPL certified TellME under PA DSS 3.2 and became the first Company in the CIS to certify the product of such type for compliance with the requirements of international security standard of the payment card industry PA-DSS version 3.2.

LIST OF LICENSED SOFTWARE COMPONENTS USED IN TellME

No.	*Product code*	*Licenses for software components*
1	SPL 7-K	Basic software component controlling the basic logic of the software operation and ensuring interaction between the self-service device equipment and business services. This component meets the requirements PA-DSS (Payment Application Data Security Standard) version 2.0
2	SPL 7-MNDC	Component to service international bank cards with a magnetic stripe under NDC. This component supports a set of key standard NDC states, as well as its own general purpose NDC general states.
3	SPL 7-MTK	Component to service international bank cards with a magnetic stripe under ISO8583 protocol, TietoEnator system (Transmaster)
4	SPL 7-MOW	Component to service international bank cards with a magnetic stripe under ISO8583 protocol, OpenWay system (WAY4)
5	SPL 7-EMV	Extension of SPL-M-xx components to serve international bank cards of EMV standard

6	SPL 7-D	Component to serve DUET chip-based cards (not including the license for DUET software used on the bank's end)
7	SPL 7-Exch	Component to perform offline foreign exchange transactions
8	SPL 7-Z	Component to service Golden Crown chip-based cards, (not including the license fees for the business service)
9	SPL 7-CDM	Component to dispense cash in bills
10	SPL 7-CDM Spray	Component to dispense cash in bills through Spray-dispenser
11	SPL 7-CDM-C	Component to dispense cash in coins
12	SPL 7-BIM	Component for cash-in in bills
13	SPL 7-BIM-C	Component for cash-in in coins
14	SPL 7-RCL	Component for acceptance and dispense of cash in bills through the recycle device

15	SPL 7-V	Agent for security and video surveillance system
16	SPL 7-WEBExt	WEB-Extension – a component of extending software applications based on standard HTML pages
17	SPL 7-WEBFront	Component to support external frontal payment WEB-applications
18	SPL 7-UXFS	Unified Agent component, a universal interface for adaptation with different monitoring systems
19	SPL 7-PE	Payment Engine component that provides access to available capabilities of the software without dependence on particular implementation of the interactive interface between a user and an operator. The developers require this component to develop its own interface based on the Software Kernel.

SPL GROUP

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