

TAS **cashless 3.0**TM The absolute framework for electronic payment management



cashless 3.0: the ultimate payment experience

Today's market globalization demands speed, ease of use and flexibility. TAS Group's response: **cashless 3.0, the end-to-end card payment solution and universal channel management solution for card and token related payments.**

cashless 3.0 is the state-of-the-art solution covering all issuer, acquirer and switching business procedures in one comprehensive system delivering secure back office transaction processing in real-time. The flexible management of cardholders, payment products and merchants makes it suitable for all market requirements while retaining compliance to international and domestic card schemes, security standards and communication interfaces. Its highly configurable design enables new standards and requirements to be implemented simply with faster time-to-market.

A MODULAR APPROACH

Completely based on open standards, the cashless 3.0 platform consists of independent modules assembled to create a solution tailored to meet customer needs.

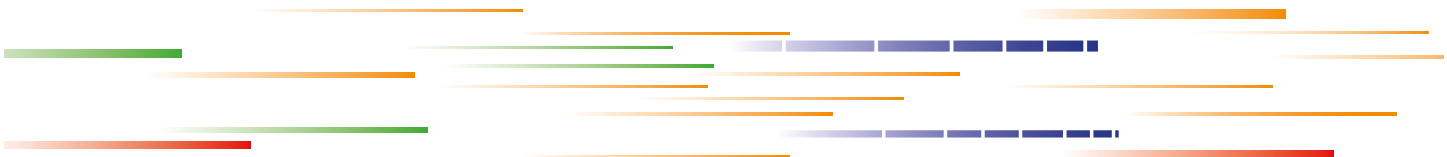
Each component is:

- **Independent** – all modules are auto-consistent
- **Easy to integrate** – all modules are plug-ins
- **Gradually activated** – migration to new framework is simplified to reduce associated business risks.

This modularity, coupled with clear interfaces between business processes, allows the selected components to be easily implemented into an existing environment or provided as a stand-alone solution.

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Where flexibility and time are key factors in the success of a value proposition, cashless 3.0 provides accelerated time-to-market for the design and creation of new payment products and services by offering high parametric characteristics and easy definition of business rules.

Major Strengths

- Full regulatory compliance
- Scalable and highly customizable
- White label user friendly interfaces
- Meets state of the art market technology standards.

Major Benefits

- Issue and manage new and multi-application products with faster time to market; example: payment + transport and/or loyalty
- Leverage cutting edge technologies to integrate new payment channels while managing higher volumes of transactions and improving performance
- Overcome card-centric approach to instead focus on customer payment experience
- Comply with all technical and security issues defined by card networks and regulatory organizations in the electronic payment industry
- Export success cases, such as prepaid exponential growth.

TECHNOLOGY HIGHLIGHTS

cashless 3.0 relies on the innovative programming models offered by the Java EE 7.0 platform, creating **total independence** from the application server, operating system and the DBMS, resulting in **true portability at no additional costs**. The framework is designed with the **highest level of flexibility** in any hardware/software configuration during deployment, and with the ability to scale each service individually.

The SOA approach, on which the entire platform is based, makes each needed resource immediately available as a web service to support the interoperability of multiple functions.

MAIN CHARACTERISTICS

cashless 3.0 guarantees true adaptability with seamless, smooth integrations between banking products and value added services (VAS). **The EMV chip is the ideal “collector” of products/ services and can be activated on a card, on a smart-phone or on other devices.** In fact, most flagship products of TAS customers are multi-application cards.

The framework **features**:

- Online authorisation for real-time processing
- 24/7 operations
- Real-time fraud prevention
- Support of all card types
- Card association compliance
- Highly automated
- Flexible business rules
- Flexible data model
- Portal/web-services components facilitate secure linkages with other systems and 3rd parties
- Platform independent – deployable on any vendor environment
- PCI/PA-DSS compliant



The main business processes covered by cashless 3.0 solution are:

- Issuing
- Acquiring
- Fraud Management
- Payment Gateway
- Direct Link to Card Networks.

cashless 3.0™



cashless 3.0: The Next Big Thing in Card Management

ISSUING

cl CARD 3.0 covers the **Issuing domain** engineered by TAS Group for **designing and managing new payment products**. The new solution maintains a strong focus on EMV chip card management. Abandoning the card-centric monolithic application model, cl CARD 3.0 allows issuers to manage customer portfolios in different countries on a single platform.

The architectural design utilises “state of the art” technologies and has a strong focus on the end-user who must be able to easily create and manage new products.

cl CARD 3.0 introduces an **original approach that enables Issuers to focus on business rather than worrying about the potential constraints** of the physical payment vehicle or underlying technologies.

DESIGNING AND MANAGING NEW PAYMENT PRODUCTS IS MUCH EASIER

Financial institutions face a very competitive marketplace with increasing demands on FI marketing and business managers for new, fresh and micro-targeted products. Time-to-market is a critical success factor and **cl CARD 3.0 enables the creation of new and customized products in just a few clicks**.

In addition to traditional payment cards, usually carrying a national application alongside an international brand, more and more new products have appeared in recent years encompassing: prepaid and credit co-branded cards, payment applications on mobile SIM cards, digital wallets, prepaid cards with value added services. Most of these products are offered in bundles (e.g. Mobile SIM + prepaid card) or in collaboration with third parties.

Leveraging TAS Group’s 30+ years of experience in designing prepaid and multi-application card products for the largest financial institutions in Italy, **cl CARD 3.0 allows Issuers to significantly reduce time-to-market and issuing costs of multi-application payment products** through the designer module, which supports the user in translating business and technical requirements into a new offering with complete autonomy.

Moreover, cl CARD 3.0 maintains the functional core coverage available in previous iterations of TAS Card Management System with the added benefit of **all components now being a pluggable and self-configurable cloud of services from which information and functions can be consistently accessed from multiple channels**.

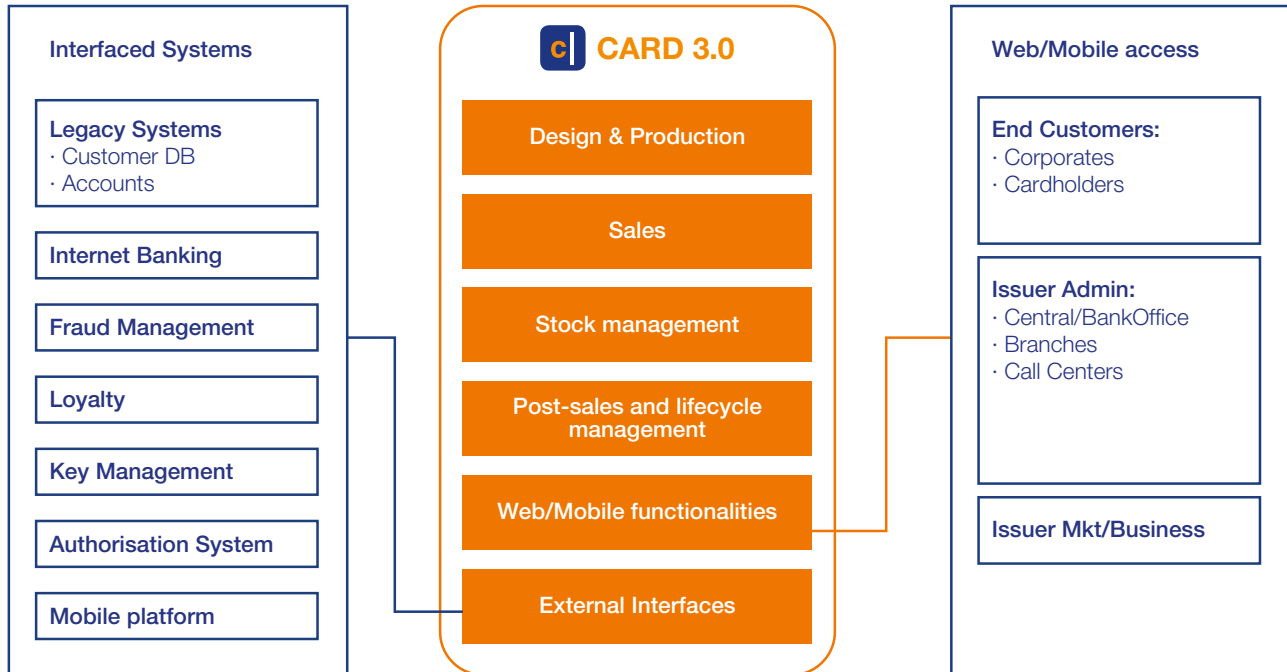
cl CARD 3.0 uses last generation RDBMS providing fast and efficient business analytics features. Data mining, social network analysis, and artificial neural network are incorporated into the system empowering detailed investigations of customer behavior - powerful features when used to design fraud prevention patterns or develop highly targeted marketing propositions.

Developed as an elastic, pluggable and self-configurable cloud of interoperating services, cl CARD 3.0 allows maximum customisation of:

- profiles and permissions
- external services
- localization requirements
- graphic user interface



It operates as a multi-currency, multi-language, multi-product and multi-Issuer system and supports simple integration with behavioral scoring, fraud detection and CRM systems.



ci CARD 3.0 COMPONENTS

DESIGN AND PRODUCTION

Issuers are guided through the process of defining all the characteristics for the new payment product. It allows system administrators to assign certain configurations to different user profiles within the organization. For instance, top decisions can be made at a business level, whereas specialized users can define the bottom level payment application parameters. Product characteristics are grouped into main categories:

- Payment applications to be included in the Product
- Value added services, like transportation, authentication, loyalty
- Physical supports for cards, Mobile SIM cards, dongles
- Type of payment product , including debit, credit, prepaid, digital wallet
- Other services linked to the product, such as SMS alert, authentication services, and more.

Integrity rules are also built in, eliminating risks due to inconsistent product design. With the extreme configurability inherent in the large number of parameters managed by ci CARD 3.0, the Issuer can act autonomously in the creation of new products – without the need of ad hoc software developments.

SALES

This component covers all functions normally involved in the sales process. These include registration and alignment with the customer database, eligibility checks and integration with branch front-office applications. The sales process is guided and the front-office user is provided with real-time information on stock availability of the different products, recommended product propositions and active campaigns for the targeted customer.

PROCESS-CONTROL SYSTEM

The Process-Control System (PCS) manages and monitors the entire production process of all payment instruments issued. The PCS Monitor provides real-time information on the status of each card to be delivered to the end-customer. Back office personnel can keep track of all processes in progress, the status of files sent to personalization bureaus, and the production and mailing of cards and PIN codes to individual customers. This module integrates seamlessly with the EMV data preparation solution supplied by cl eMission, part of the cashless 3.0 suite.

STOCK MANAGEMENT

Automatically replenish stock levels based on sales progress. The advanced Stock Management component manages inventories of any device sold or distributed by the Issuer, such as payment cards and relative PIN mailers, PCRs or tokens for e-banking, tickets, etc.

Through this advanced system, Issuers can sell prepaid cards directly at branches while maintaining a certain amount of cards and PIN codes mailers in-store. Cards and PIN code mailers are linked by the system only upon sale, avoiding risks of illegal usage. Stock levels and minimum order amounts are parameters defined during configuration. When sales reduce stock levels below a certain threshold, the system automatically generates a card order request to trigger replenishment card and PIN production.

POST SALES AND LIFECYCLE MANAGEMENT

Post Sales and Lifecycle management includes all potential activities carried out on payment products post-issuance. Activities can be performed via mobile devices or home-banking websites in addition to front-office applications because cashless 3.0 supports multi-channel interfaces.

A lifecycle monitor enables the financial institution to maintain control over the evolution of issued products. Because of the numerous adjustments that can be made to a payment product after issuing – product profile modifications, additional applications loading, even cardholder access and modification of limits and other information associated to a card – it is vital for the issuer to keep track of all changes carried out on products. The lifecycle monitor stores information pertaining to all modifications on issued instruments and provides a detailed view of the modification history to authorized users.

WEB / MOBILE ACCESS

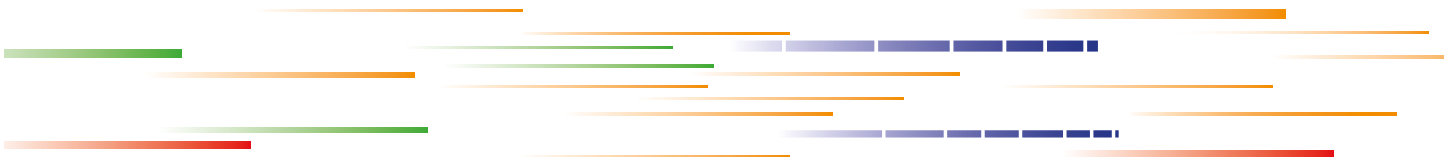
cl CARD 3.0 provides web/mobile functionalities to allow access to different types of end customers and organizational users.

The two main end-customer oriented portals are:

- **Corporate portal** – enables a corporate to perform activities on its set of corporate cards (request new set of cards, monitor employee's transactions, request temporary blocks, execute top-ups, etc).
- **Cardholder portal** – enables a single cardholder to restrict or modify their card spending characteristics (e.g geography, Merchant Category Codes, etc)

Other portals provide access to appropriate functions for the various types of authorized users within the issuing company:

- Administrative Personnel
 - Central Department/ Back Office
 - Operators of the Branches
 - Call center operators
- Marketing/Business professionals



ACQUIRING

Acquiring channels are covered by two main components: **cl POS Management** and **cl ATM Management** products.

cl ATM MANAGEMENT

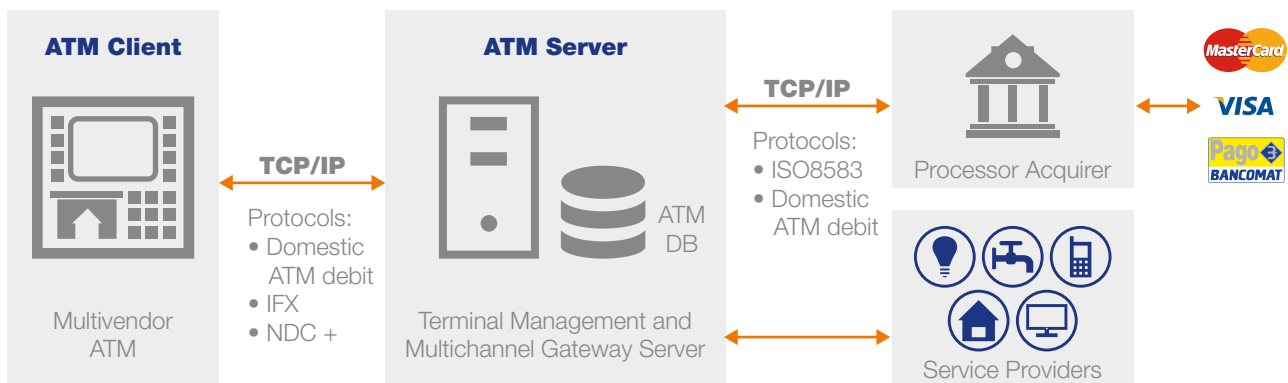
A completely integrated solution for all types of traditional and innovative ATM terminals

Branches are still the preferred channel through which banks communicate with their customers, especially for product consulting and problem solving. Most financial products are still sold in branches where relationships and trust are more easily built.

However, as the number of digital transactions increase and the overall branch-transaction revenues decrease, banks face the challenge of improving productivity at the branch level.

Across the globe, financial institutions are investing in innovative IT solutions for the retail channel to increase the automation of operations and the integration of new, unattended services. In this scenario, technologically advanced branches are the key contact point for attracting new customers and ATMs will potentially become a very important channel for delivering value-added services with high profitability. In fact, the latest generation of kiosks and ATMs are no longer mere cash dispensers. Instead, they now give access to a wide range of advanced services like: card application, cardholder registration, bill payments, fast deposits of cash and checks, top-up operations, ticketing, wire transfers, and more. In order to oversee advanced services and centrally manage electronic transactions, **cl ATM Management** offers a server-based and ready solution plus a multivendor client software, completely independent from the ATM hardware to manage all types of ATM terminals.

c ATM Management



cl POS MANAGEMENT

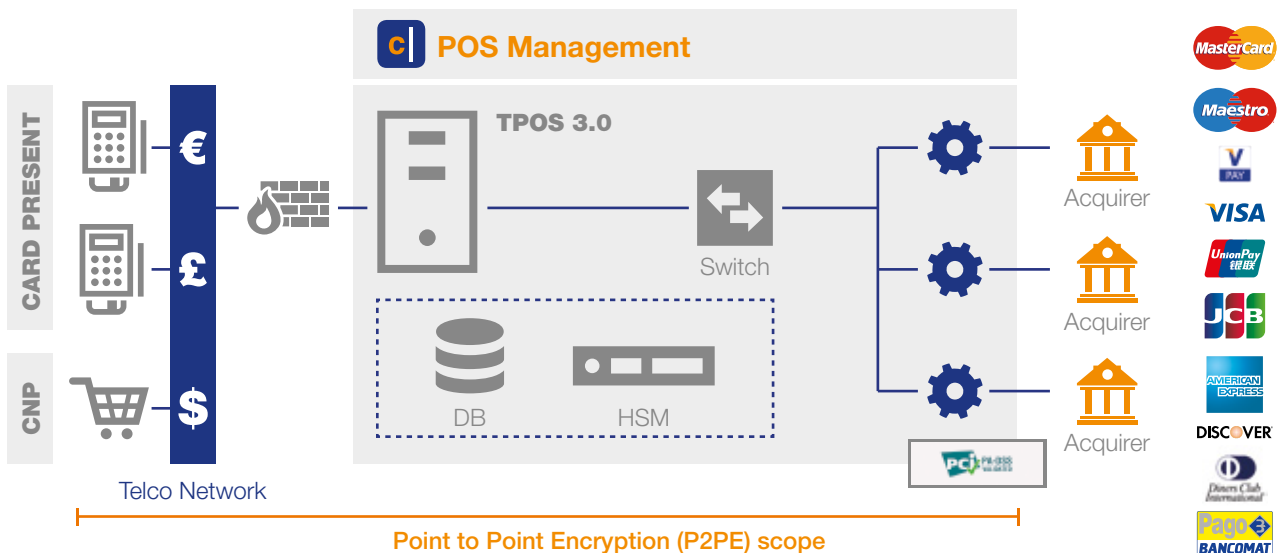
A unique multi-acquirer card present and CNP solution for domestic and cross border merchant acquiring

It allows business to overcome the current fragmentation in the payment acceptance market, in terms of terminal to acquirer standards, by leveraging recent regulations on cross border acquiring and P2PE certification.

cl POS Management is built for financial institutions that want to leverage the advantages of P2PE and cross border processing to offer standard solutions to merchants all across Europe.

Large merchants may have hundreds to thousands of stores, which means there are thousands of point-of-sale (POS) systems and PIN entry devices (PEDs) – all requiring PCI compliance. Achieving and maintaining compliance is a complex, time consuming and costly process.

cl POS Management enables merchants, both brick & mortar and e-commerce, to effectively remove their stores from the scope of PCI DSS compliance, thereby saving money.



A NEW WORLD OF PAYMENT SOLUTIONS IS ON THE WAY...STAY TUNED!

The Issuing and Acquiring domains are just the first basic step of several new developments TAS Group is delivering to the marketplace through the cashless 3.0 philosophy:

- addressing global business challenges and technological evolutions
- ensuring interoperability, competitiveness and economy of scale
- meeting local requirements aligned to prescribed international standards.

More added-value components have been designed to unleash emerging trends in Acquiring, Fraud Management, e-Commerce & m-Commerce.

Discover the entire range of cashless 3.0 modules on www.tasgroup.eu

TAS Group provides services and technological applications for cards, payment systems and financial markets. We operate globally, delivering innovative solutions to empower our customers' business.

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