

UBIVELOX

Life innovation with UBIVELOX

USCMS

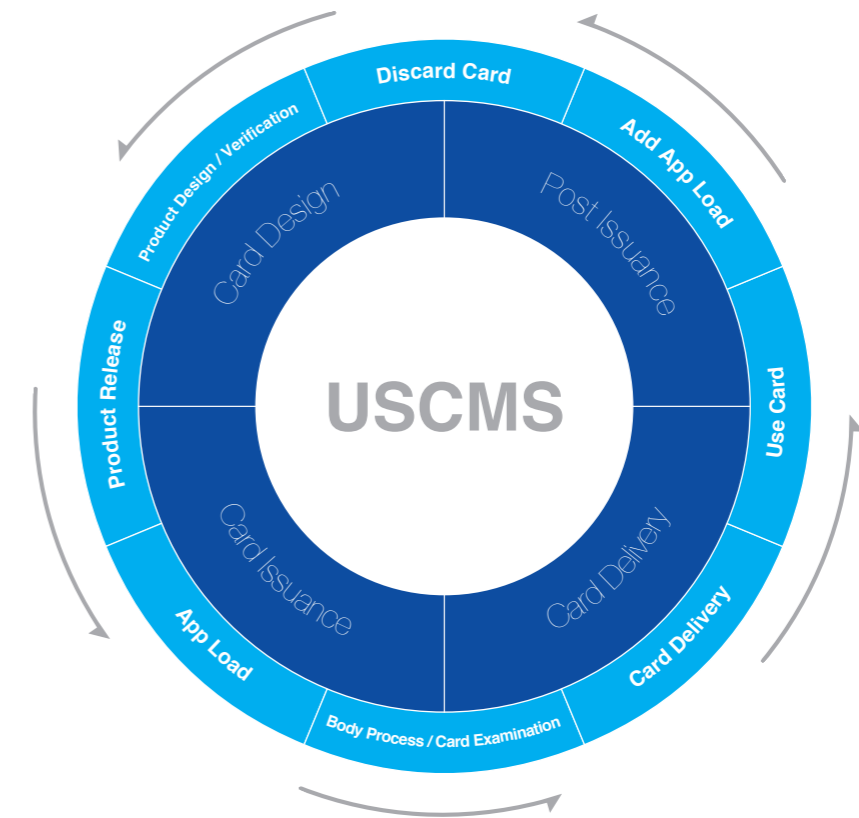
- USCMS Overview
- USCMS Component
- USCMS Functions
- USCMS Product Package
- USCMS System Requirements
- Application Product
- Maintenance
- Core Solution
- Optional Solution

USCMS Overview

USCMS is the most optimized and the best solution which can quickly and flexibly cope with market change and various customer needs based on UBIVELOX's cutting-edge original smartcard technology and various and abundant experiences in smartcard service field such as Finance, Telecommunication, Public, Transportation and University.

Users can manage the entire life cycle of smartcard from the issuance till the final discard in a consolidated way.

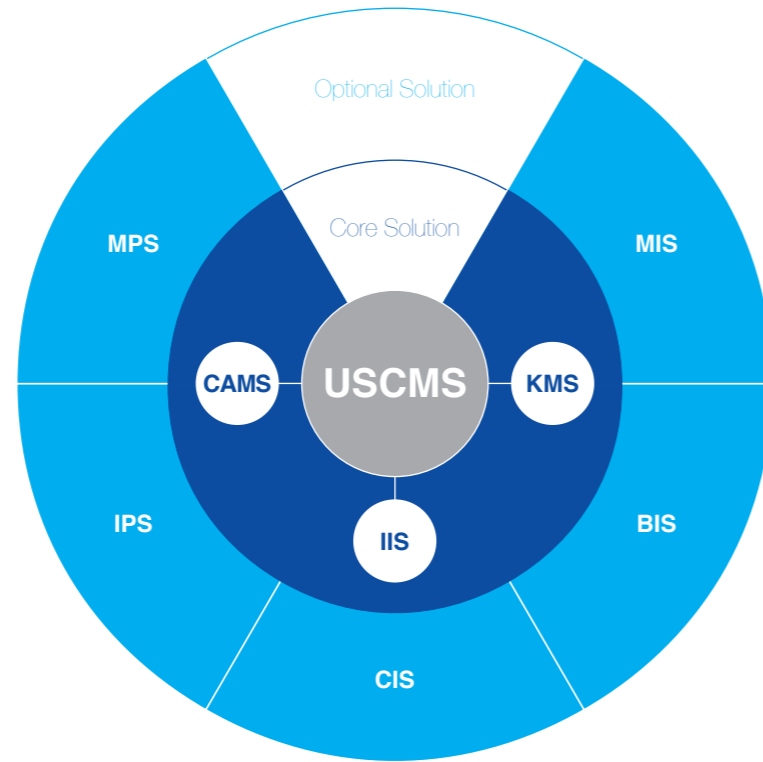
Smart Card Life Cycle



Smart Card Application	Smart Card Platform	Smart Card Chip
VISA / MASTER / JCB / T-Money / Hi-pass etc..	JAVA / MULTOS / NATIVE	NXP / INFINEON / STM / SAMSUNG etc..

USCMS Component

USCMS is consisted with Core Solution and Optional Solution. Core Solution is providing the main functions such as the issuance and management, and Optional Solution is the part of the functions which can be selected based on the customer's business environment and the management efficiency of each customer.



USCMS Functions

Core Solution of USCMS is consisted with IIS, an integrated issuance management module, CAMS managing issuance related data(profile, products, etc.) and KMS for key management. Optional Solution is consisted with CIS for mass issuance, BIS for instant issuance system in branches, MIS for mobile issuance, MPS for the integrated management for the keys in card, and OPS for managing issuance process and monitoring. With an systematic composition of each solution, users can organize the product suits them the best as they want to.

Core Solution(CS)

IIS | Integrated Issuance System

Adapter, IAP, Loader

CAMS | Card & Application Management System

IC Chip, Application, Key, Load file Profile Management
 Issuer Product Management
 Credit Brand CA Certificate Management
 Statistics and Reporting
 System Management

KMS | Key Management System

Key Management / HSM Management

Optional Solution(OS)

MPS | Multi-PerSAM System

Multi-PerSAM Card and Device Management

IPS | Issuance Process Management

Inventory Management / Issuance Process Management

CIS | Central Issuance System

BIS | Branch Issuance System

MIS | Mobile Issuance System

USCMS Product Package

USCMS is a per module base licensing product which provides a minimum system can process the basic functions of the environment for building issuance system with a packaged product composition and it also provide selective options for matching with the environment of the customers already implemented the system.

ITEM	TYPE	Core Solution			Optional Solution				
		IIS	CAMS	KMS	CIS	BIS	MIS	IPS	MPS
ALL	PREMIUM	•	•	•	•	•	•	•	•
Finance (F)	BASIC	•	•	•	•				
	STANDARD	•	•	•	•	•		•	
Mobile Carrier (T)	BASIC	•	•	•	•		•		
	STANDARD	•	•	•	•		•	•	
Public / School (P)	BASIC	•	•	•	•				
	STANDARD	•	•	•	•			•	
Transportation (T)	BASIC	•	•	•	•				
	STANDARD	•	•	•	•	•		•	
Etc. (E)	BASIC	•	•	•	•				
	STANDARD	•	•	•	•			•	

TIP! Issuance module is consisted with BASIC, STANDARD and PREMIUM type and it is possible to build the system in the most cost effective and fast way by selecting the optimized product to the customer's environment. And since UBIVELOX provides discounts on combined products compare with the single module purchase, it is more effective to buy packaged products concerning the optimized functions.

When introducing system for the first time, we recommend PREMIUM type but considering the expandability and environmental change for entering into other business field, it is suitable to implement the minimum BASIC product which can be easily added with a new system module for the optimization.

NOTICE! We offer discounts to customers with existing UBIVELOX system based on a separate inquiry.

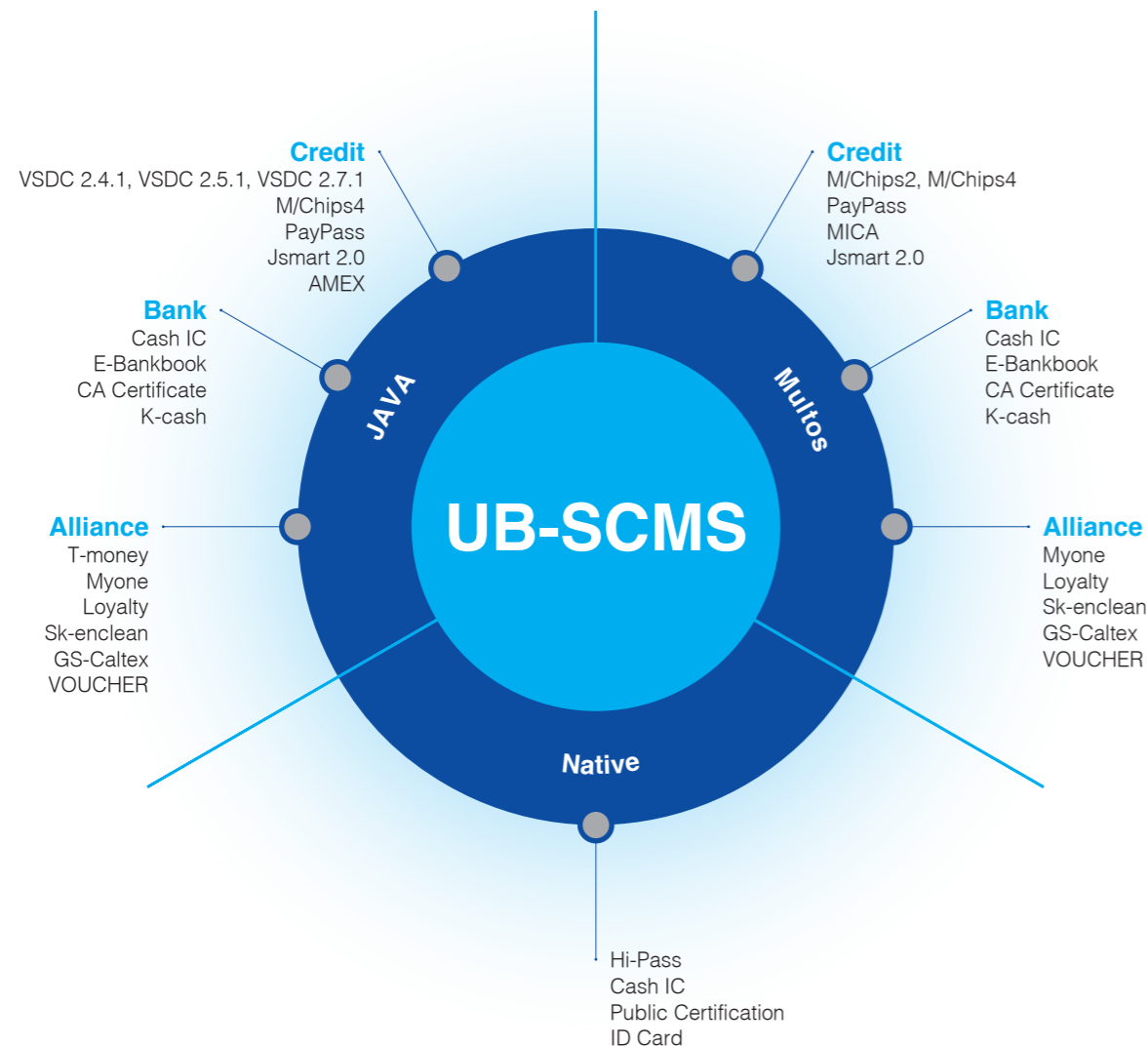
USCMS System Requirements

The following specification is recommended for introducing USCMS but it can be flexibly changed and implemented with the customer's development environment after an additional development and test.

H/W	SPECIFICATION	S/W	SPECIFICATION
Server	AIX	OS	32bit
HSM	Safenet (Recommended Model : pso-600)	WAS	Weblogic, JEUS
		Database	ORACLE 11gR2
		JDK	1.5

Application Product

It is possible to select or add the applications to be issued to smartcard when building USCMS and UBIVELOX can develop all the kind of applications issued in domestic market irrespective of chip type.



Maintenance

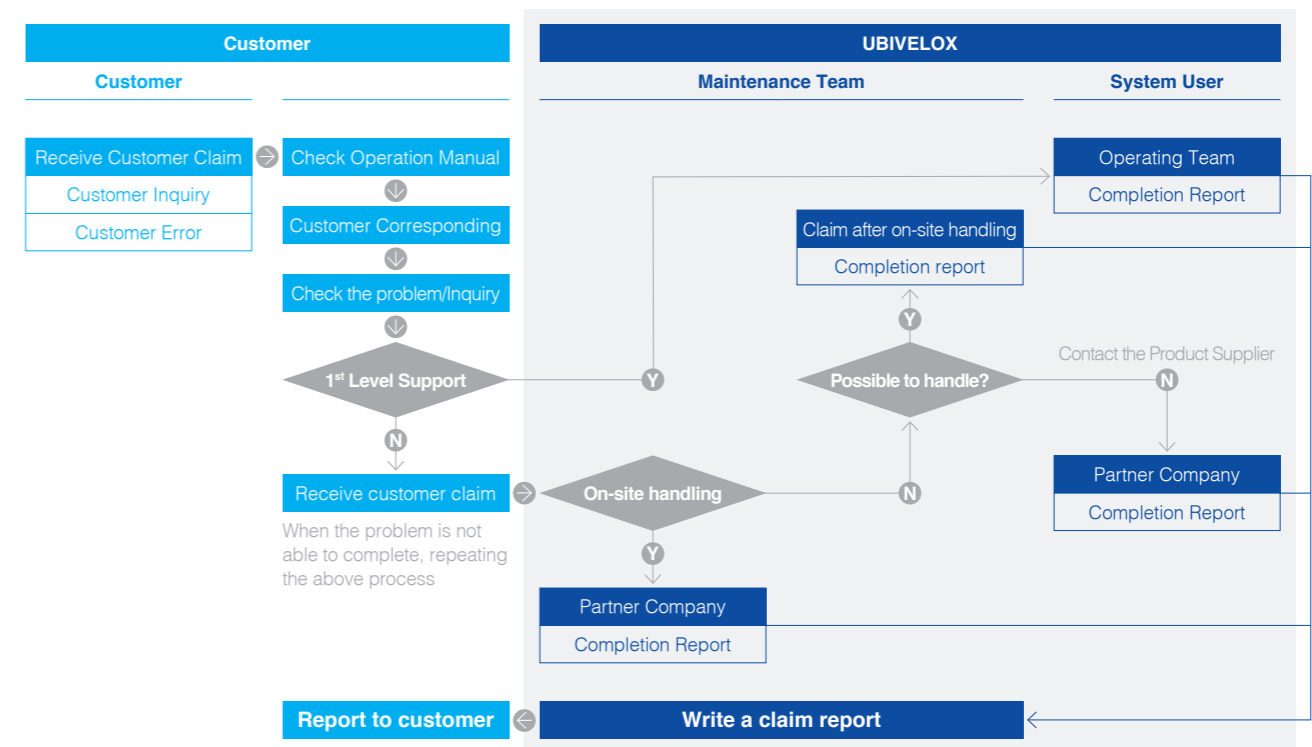
When a customer purchases USCMS, UBIVELOX provides various maintenance services based on its typical policy and flow.

Maintenance Policy

For the first year after the building of USCMS, UBIVELOX provides 1 year complementary maintenance and for the development asides from the main product will be subject to be charged at customer's cost.

Type	Detail	Remarks
Check and error handling	1 year complementary maintenance after the system building · Help Desk system support · Regular check-up (Monthly/Quarterly) · Irregular check-up · Supporting system related error handling	Free of charge maintenance
Additional development	Application development and chip implementation aside from the complementary maintenance will be charged at a cost case by case	Case by case maintenance at a cost

Maintenance Flow

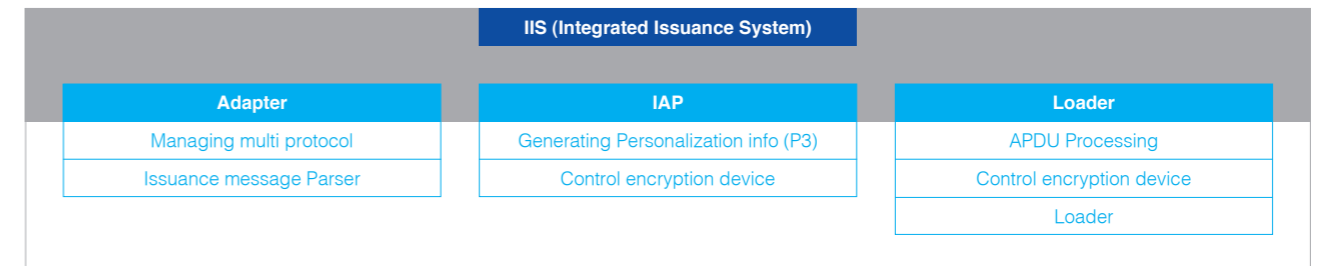


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- **Core Solution**
- **Optional Solution**

IIS (Integrated Issuance System)

IIS is an integrated issuance system of USCMS processing mass central issuance, over the counter issuance (customer report) and linked issuance with mobile carrier and transportation payment service operator (OTA issuance and multi-domain issuance.) Issuance engine is integrated based on central issuance system and designed to have flexibility for easy expansion considering the characteristics of OTA and instant issuance. And it has standardized issuance module for the major applications.



Managing Multi Interface

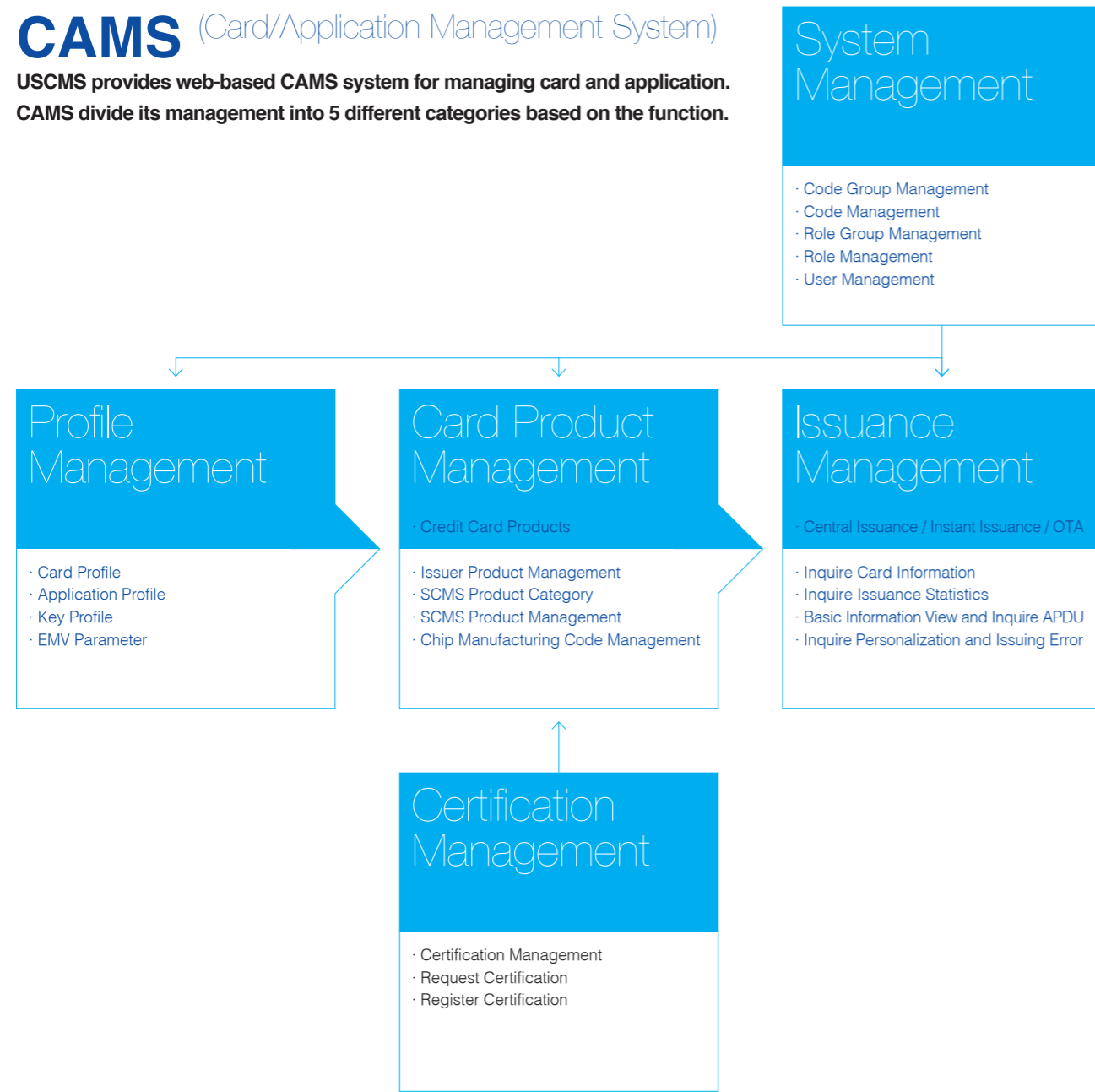
- Instant Issuance at Branches : I/F with Branch or Host (TCP/IP, EAI, SOAP)
- Central Issuance : I/F with Host or Issuing Machine Module (FTP, TCP/IP, SOAP)
- MIS Issuance : I/F with Host or Mobile Carrier Linked System [TSM] (TCP/IP, EAI)
- Allocation of PerSAM : I/F with Multi PerSAM Server (TCP/IP)
- Control Encryption Device : I/F with HSM

Integrated Issuance Engine

- Standardized Issuance Engine for Major Applications
 - SPS (Loaded with Java Standard Issuance Specification Engine)
 - ALU (Loaded with 3 MULTOS Standard Issuance Specification Engine)
 - LOCAL (Loaded with By Pass Engine for Issuance Specification of each Local Application)
- Automated Loading for Load File
- Decide to load the application real-time based on the chip information when it is issued
- Based on product composition, automatically loading Cap File and ALU when there's no file on the target chip

CAMS (Card/Application Management System)

USCMS provides web-based CAMS system for managing card and application. CAMS divide its management into 5 different categories based on the function.



KMS (Key Management System)

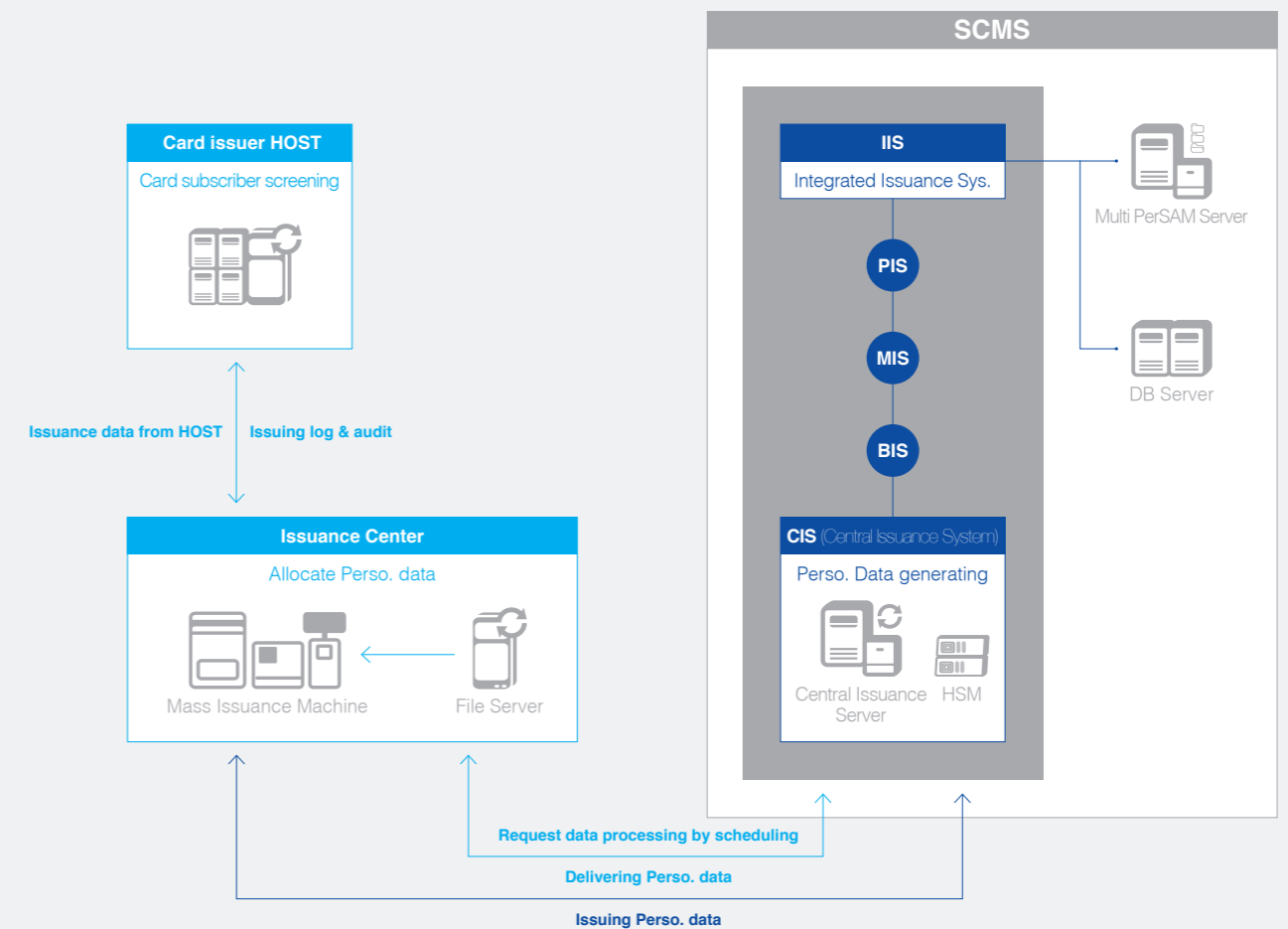
KMS manages all the keys necessary for issuing IC Card issuance and authentication and supporting all the contents defined in Global Platform Specification for managing IC Card security management. The system is in charge of Key Creation, Injection, Migration, Backup and Destruction based on PKCS#11 and supporting encryption process for Data Personalization.

Key Create	Generating the actual key with combination of more than 3 key components
Key Injection	Generating key on HSM with KMS based on keys created from outside
Key Migration	Encrypting and importing key from HSM to move the key to the other HSM
Key Backup	Encrypting and saving the existing keys to an outside location for preventing the problem from a hardware damage or disaster
Key Destruction	Destructing keys to prevent from reusing and restoring in HSM

IIS (Integrated Issuance System) | CIS (Central Issuance System)

Central issuance module for compositing various products

- Supporting multi products with a same chip and a same product with multi chips
- Supporting issuance of various platforms such as VGP, MULTOS, Native Platform, etc.
- Supporting automation of receiving issuance message processing, Preparation Grouping and Scheduling
- Avoiding dependency on specific model by making the control module of issuance machine to dummy style



IIS (Integrated Issuance System) | **BIS** (Branch Issuance System)

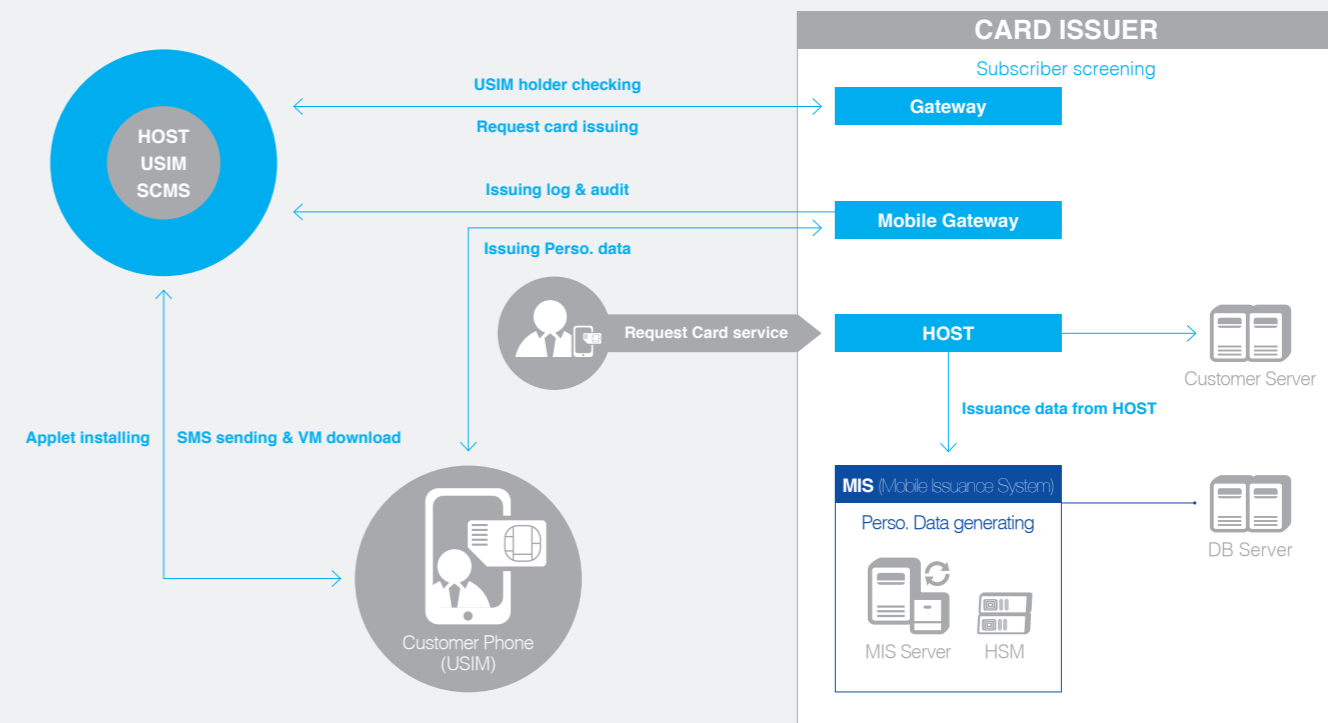
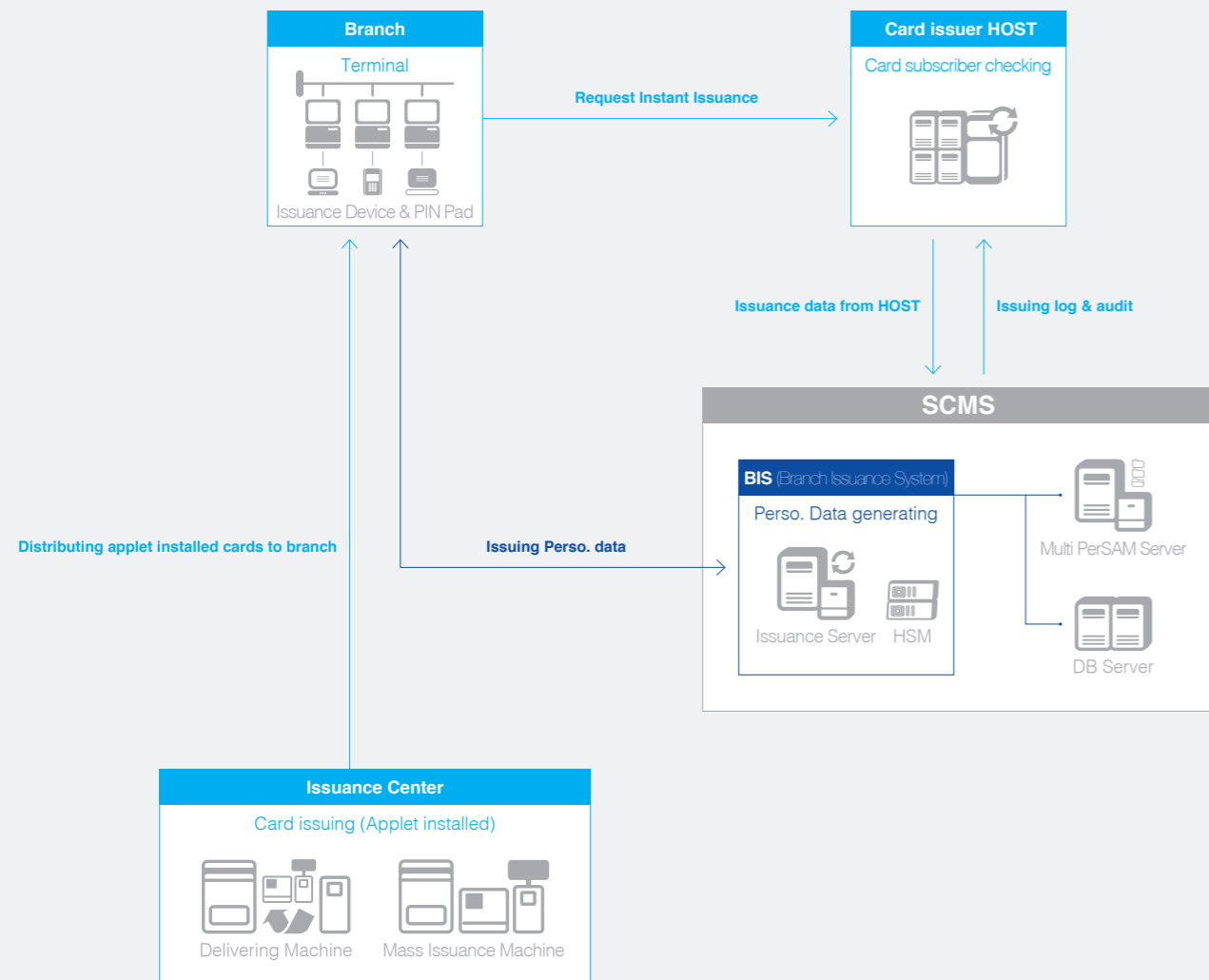
Central issuance module for compositing various products

- Supporting instant issuance of all product in various type (1st, 2nd, Full Issuance, etc.)
- Supporting APDU Grouping matching with the communication message environment of the issuing company
- Not dependent on a specific issuing machine

IIS (Integrated Issuance System) | **MIS** (Mobile Issuance System)

OTA issuance module for supporting standard issuance process and various USIM

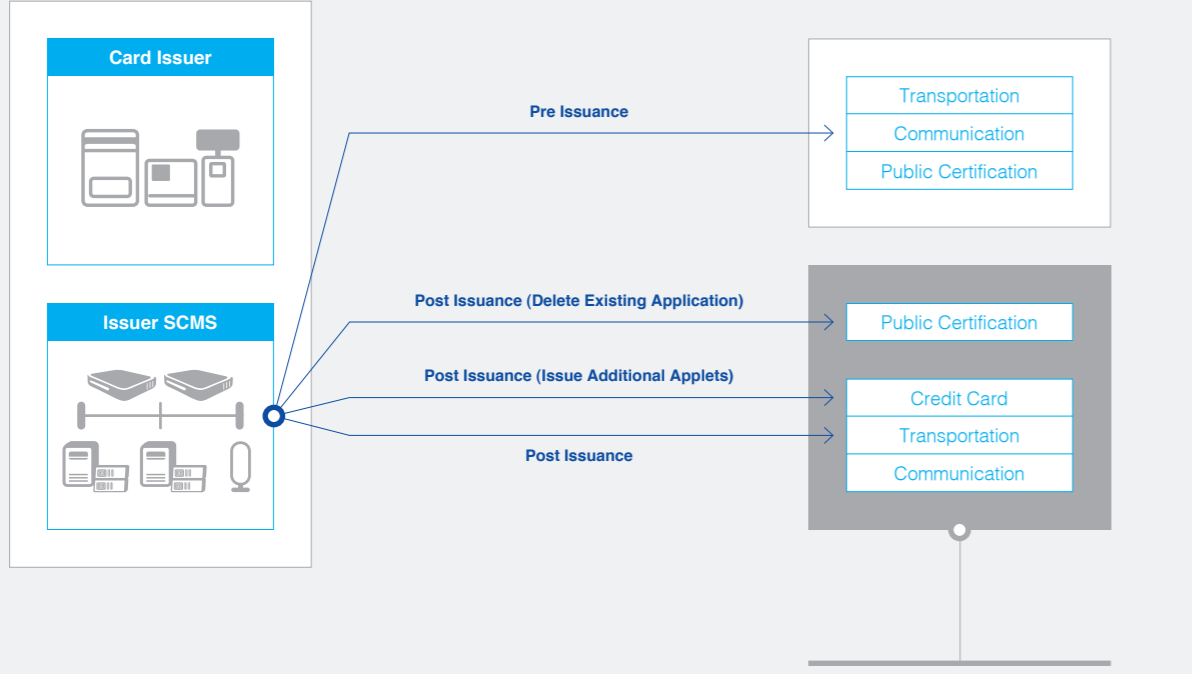
- Supporting various USIM cards and EMV applet versions
- Applied OTA issuance standard process (VISA & MASTER & USIM Gift Card & USIM Coupon)



IIS (Integrated Issuance System) | **PIS** (Post Issuance System)

Post issuance module easy to adapt with issuing company's policy and customer's needs

- Adding and deleting service application
- Processing customer's lost
- Able to manage efficient and separate customer management and promotion
- PIS module can be operated separately or operated with the integration with CIS, BIS, MIS



Divide Post Issuance

Based on post issuance request type,

- **Delayed next online pull**
(Request and evaluation needed)
- **Delayed next online push**
(Process lost, Apply Issuer Policy, etc.)
- **Immediately online pull**
(Request and evaluation not needed, Web)

IPS (Issuance Process Management System)

IPS manages card issuance process systematically for each step and prints various data in the format as the user wants by collecting log data from the machine on each phase.

Issuance Process Management

Managing Card Registration	Registering card to DB after system automatically processed the issuance and delivery message transmitted from host to issuing center
Managing Production Order	Applying various group condition to registered card and processing it to issuance and delivery machine all at once. And processing group efficiently by applying delaying condition and material stocks
Managing Blank Card Release	Providing change-over interface based on the data generated from the integration with stock management system and managing blank card stock by recognizing the operator with RF Card and verifying released material
Managing Machine Allocation	Automatically allocating machine efficiently based on the data from production order and managing manual allocation
Managing Issuance Processing	Generating P3 file for the issuing machine and analyzing log file of processed card issuance and realize error cards and managing material release by integrating with material management system
Managing Delivery	Managing the carrier print and flier insertion process by integrating with delivery machine system and approving the processed products to move on to the next step after analyzing log file
Managing Change-over	Stopping issuance after sending up the data of card products completed delivery process and control the direct delivery process

State Management

Integrated Monitoring	Providing real-time data about issuance status and processing status to a large-sized monitoring screen
Issuance Status	Providing statistics of registered issuing target, error status and delayed amount
Processing Status	Providing real-time of stan-by and processed amount and processed ratio

Basic Management

Code Management	Managing operational code and operator registered code for the process management
Machine Management	Setting modules of issuance, delivery, dividing machine and I/F
DMSET Management	Setting DMSET which is set and operated to the machine for delivery process
TAG Card Management	Managing tag card for each group of process

System Management

User Management	Managing the user authority for accessing process management system
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MPS (Multi-PerSAM System)

PerSAM Management	Managing many and various Per SAM in a consolidated way Issuing cards without the process of changing PerSAM when issuing many cards on one issuing machine
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