

Smart Preparation & Personalization System

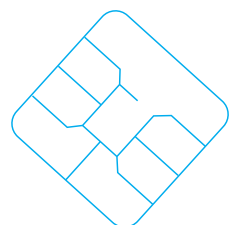
Smart Preparation & Personalization System is designed to be used by card issuers, data collectors and card personalization bureaus as it covers the whole process of multi-application smart card issuance. It can measurably increase efficiency, control and security of card production a cost affective way. It imports, extracts, transforms, generates data to be personalized and manages the whole production lifecycle of smart cards. SPPS takes significant attention on security, it corresponds to even the highest industry standards.



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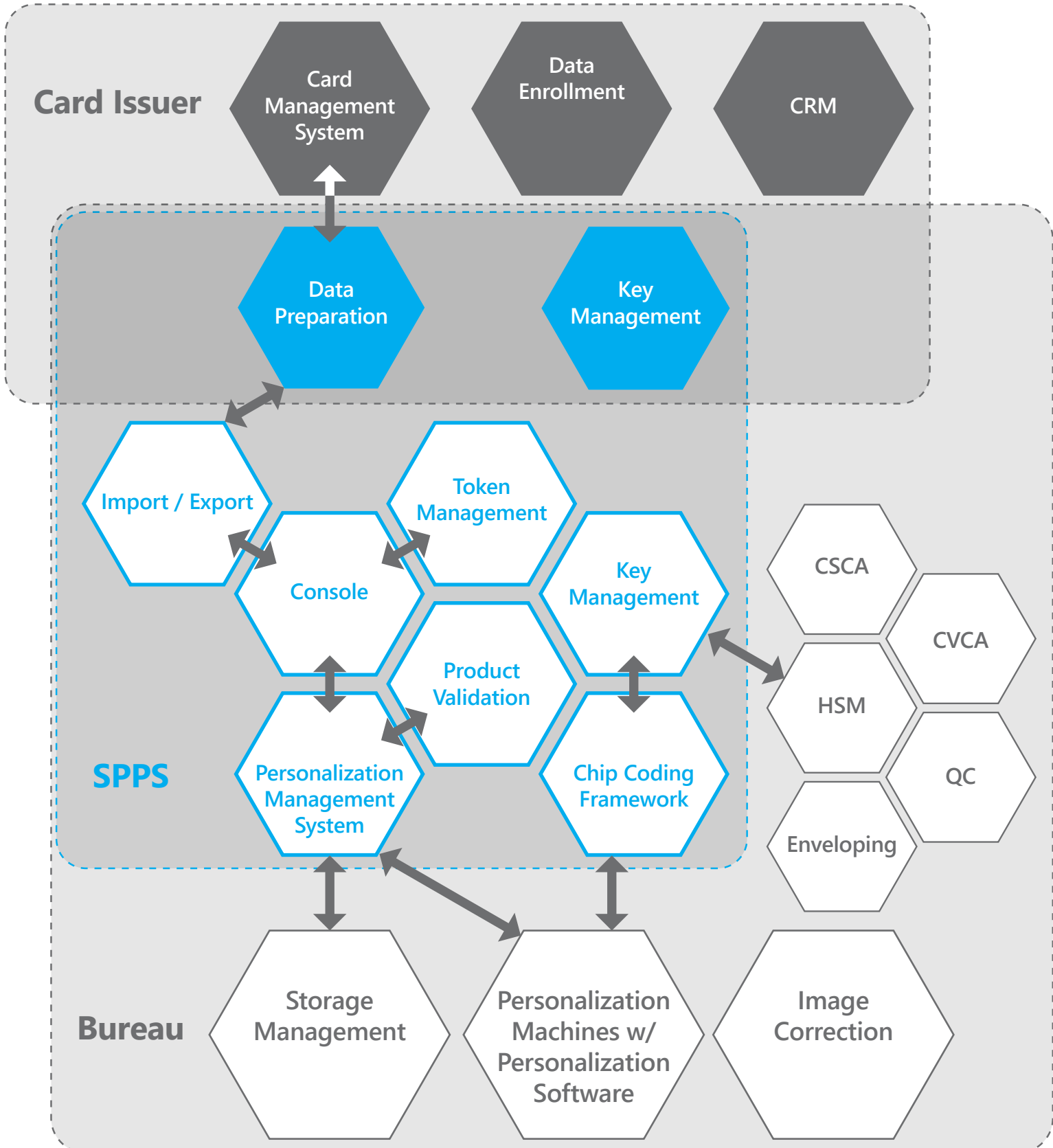
Features

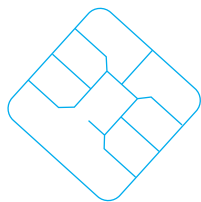
- **Multi Application** - Production of both single and multi application smart cards.
- **Multiple Card Types** - Parallel production of different type of smart card products such EMV, PKI, EID.
- **Customized Workflows** - Extensible with new functions or by customization of existing behavior according to customer requirements.
- **Integration** - modular architecture in order to support easy integration into existing Card Management Systems and Personalization environments.
- **Security** - Secure, role based access control and highly confidential data handling - all personalization data are stored in encrypted form during the whole production process.
- **Key management** - basically any HSM is supported having PKCS#11 interface. A software token is included for easier testing the card production workflow.
- **Personalization management** - advanced routing of personalization batches to personalization equipments with load balancing. Integration to storage management and production planning systems.



Architecture

SPPS has several modules for certain tasks in the card issuance process. As they can be integrated with 3rd party systems, it has a lot of different configuration possibilities. The basic modules are the following:





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Data preparation module

SPPS Data Preparation module supports both scenario, when it is to be done by the Card Issuer or Perso Bureau according to the relevant standard:

- ICAO Doc 9303
- ICAO SAC
- BSI TR-03110 EAC1/EAC2
- ISO Driving License
- EMV-VISA, EMV-MasterCard

Proprietary or 3rd party data preparation also can be implemented or integrated according to the actual custom requirements.

E.g. for EMV data preparation Cryptomathic CardInk has been integrated.

Import / Export module

Push / pull automatic or manual data import from Ftp, Web Service or local directory is supported in multiple formats. In case of XML, W3C XML Schema validation is done for all imported batches while XML Digital Signature and/or XML Encryption and content validation are also supported.

Key Management module

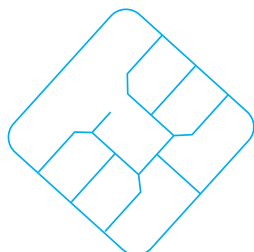
In connection with a PKCS#11 HSM, SPPS Key Management module can generate and import all the secret keys required by the data preparation and card personalization process.

Chip Coding framework

SPPS offers an universal and plug-in extendible chip coding framework integrated with Mühlbauer MCES for all common contact and / or contactless smart cards. Data preparation tasks such as key generation and document signing can also be implemented here.

In order to comply with very high security requirements, together with SPPS Data Preparation it is possible to keep all data in encrypted form until they are sent to the coding machine, or sent them to the chip in encrypted form or secure message according to the actual chip capabilities, providing end to end security

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Token Management module

Secure, role based access control are optionally can be based on PKI tokens implemented on smart cards. Token Management module can be used for administration tasks of that tokens.

Product Validation module

This module can be integrated as a final quality control tool that verifies the contents of any smart card produced with SPPS. It gives a full view of card state and quality, file structure and data stored on the chip.

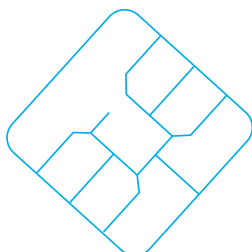
SPPS Console

SPPS Console is designed to control the whole data preparation & smart card personalization process for each batch and also for each single card. At the end of production a batch status report is generated in order to send detailed personalization result info to the card issuer.

Personalization Management module

SPPS has been integrated with Mühlbauer INCAPE system. If INCAPE is not available SPPS PM module is a simplified solution providing similar functions and interface for the rest of the system.

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Technical aspects

- **Extensible framework oriented architecture**
- **Digitally signed and encrypted personalization scripts**
- **Secure, token based access control**
(Hardware Security Module, SQL Server)
- **Chip Coding Module**
(chip coding logic may be developed entirely in SPPS)
- **HSM access on PKCS#11 interface**
- **On the fly automatic encipherment / decipherment of personalization data**
- **Standard PKI interface to Country Signer Certificate Authority system**
- **Integrated with Mühlbauer GetID, INCAPE, MCES**
- **Integrated with Cryptomathic CardInk**
- **Common Perso (GP) and P3 (Thales) data format support**
- **Personalization equipment support**
(Mühlbauer CLP54, SCOPE5400, SCP 5600, Bauer + Mück SC10)