cryptoVision

Product Brief

ePasslet Suite

Java Card Framework for eID documents

ePasslet Suite is a Java Card framework that contains a complete set of applications for implementing electronic ID cards, travel documents, driver's licenses and other similar electronic documents. It supports many international standards.

MANAGEMENT SUMMARY

ID cards, passports, driving licences and other identification documents can be equipped with a small computer chip. The result is called an electronic identity card (eID). The embedded chip increases security and can be used for many interesting applications, e.g. for computer login, automated age verification and proof of identity on the internet.

Electronic identity documents have become very popular in recent years. There are more than 120 states and non-state entities (i.e. United Nations) currently issuing ePassports, and over a billion ePassports in circulation. Many countries also issue electronic identity cards.

To realize eID applications, it is necessary to implement them on the ID chip. The ePasslet Suite, a product developed by cryptovision, is ideally adapted for this purpose. The suite consists of a collection of Java Card applets, each of which implements a special eID functionality, making working with these chip-secured documents easy and secure.

The ePasslet Suite is delivered either as a solution embedded in the ROM or pre-installed in the flash memory of a Java Card enabled smart card. The ePasslet Suite provides applets for various eID document applications, including electronic passports, eIDAS compliant signature cards, ISO 18013 electronic driver's licenses, electronic health cards, custom national eID cards, and more. The solution also allows for post-issuance activation of applets, and new applets can be developed using an internal core library API that provides a comprehensive set of functional blocks, reducing memory requirements and time to market.

The ePasslet Suite is executable on NXP JCOP, Infineon SECORA ID X and Verido's Sm@rtcafé Expert. This means that all market-leading Java Card operating systems are supported, which offers the customer great flexibility. In particular, the operator of an eID system can work with several suppliers of Java Card solutions at the same time (second source).

The ePasslet Suite is the ideal solution for government agencies looking to add functionality to eID documents.

What is an electronic identity card?

An electronic identity card or electronic identity document (eID) is a passport, identity card, driving licence or similar document that is equipped with a smart card chip. This chip can be contact-only or contactless. Electronic identity documents can be used for many applications, including proof of identity on the internet, automated age verification, digital signatures, encryption, physical and logical access, digital payment and even the storage of health insurance information. Electronic identity documents have become the de facto standard. Since 2004, the majority of countries have been issuing machine-readable travel documents (MRTD) as required by the International Civil Aviation Organization (ICAO).

Many countries such as Austria, Belgium, France, Germany, Malaysia, Saudi Arabia, Spain and the UAE have introduced electronic ID documents and dozens more countries are planning to introduce them in the near future. Several countries have already started planning or implementing projects for electronic health cards. Since identity documents generally have a long validity period, it is essential to plan applications thoroughly and establish adaptable solutions.

BASICS

ePasslet Suite

cryptovision's ePasslet Suite is a flexible solution for national identity cards, signature cards, driving licences, security access cards, travel documents, health cards and other eID systems.

Electronic identity cards

ePasslet Suite offers applets for eIDAS compliant eID cards with various profiles being supported. This includes, for example, the profile used in Germany. In addition, ePasslet Suite makes it easy to put proprietary national identity cards into practice.

Java Card

The ePasslet Suite is based on the Java Card standard. It offers a large collection of Java Card applications for all common requirements and enables multi-application cards and documents.

Vendor independence

The ePasslet Suite runs on NXP JCOP, Infineon SECORA ID X and Veridos Sm@rtcafé Expert and thus on all major Java Card platforms. The operator of an eID system is thus independent and can change providers without much effort if necessary.

ICAO

With the ePasslet Suite, the operator of an eID system can easily fully implement a Machine Readable Travel Document (MRTD) according to the International Civil Aviation Organization (ICAO) specification.

The ePasslet Suite supports the MRTD protocols Basic Access Control (BAC), Password Authenticated Connection Establishment (PACE) and Extended Access Control (EAC).
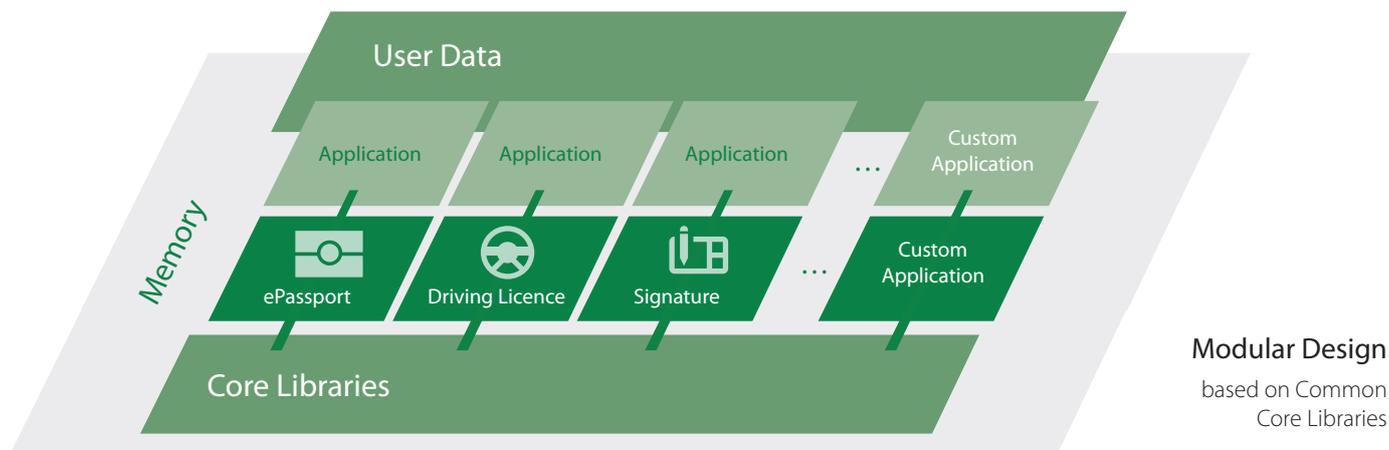
Certified security

Two versions of the ePasslet Suite have been certified to Common Criteria (ISO 15408) at EAL 4+, each with four configurations and corresponding protection profiles. The latest product version has already been certified twice to CC EAL5+.

Further applications

The ePasslet Suite enables, among other applications, both the International Driving Licence (IDL) and a European Health Insurance Card (eHIC). With the ePasslet Suite, multiple applications with shared resources can be realised on the same card.

If necessary, further applications can be instantiated and new applets can be developed and even loaded afterwards on already issued cards.

PRODUCT ARCHITECTURE

User Data

Application | Application | Application | ... | Custom Application

Memory

ePassport | Driving Licence | Signature | ... | Custom Application

Core Libraries

Modular Design
based on Common Core Libraries

ePasslet Suite is based on the Java Card standard. It consists of a collection of Java Card applets implementing a wide range of eID functions.

ePasslet Suite Editions

ePasslet Suite is available in three editions.

Edition 1

- ICAO MRTD with Basic Access Control (BAC) and Password Authenticated Connection Establishment (PACE)
- ISO 7816 File System
- ISO Driving License with Basic Access Protection (BAP) and PACE

Additionally in Edition 2

- ICAO MRTD with EACv1 (including BAC and PACE)
- ISO Driving License with EACv1 or EAP (including BAP / PACE)
- ePKI / Secure Signature Creation Device
- Vehicle Registration
- Health Insurance
- Fingerprint Match-on-Card (based on 3rd party matching package)

Additionally in Edition 3

- Customized eID with EACv2
  (Reference: German eID Card)
- Residence Permit
  (Reference: EU Residence Permit)
- Citizen Card
  (Reference: European Citizen Card)
  – identification, authentication, signature –

Additional applications

ePasslet Suite applications can be freely customized through various configuration options. In addition, cryptovision can develop new applets that are tailored to the customer's needs.

SUPPORTED SYSTEMS

The ePasslet Suite can be used on any GlobalPlatform-compliant executable Java Card. A performance optimized version is available on NXP JCOP, Veridos Sm@rtcafé and Infineon SECORA ID X.

Reference project

With approximately 30 million inhabitants, Ghana is the second most populous country in West Africa. The National Identification Authority (NIA) of Ghana and its private partner Identity Management Systems Ltd II (IMS II) will issue over 16 million national eID cards. The Ghana Card is the primary means for connecting citizens and foreign residents to government ministry services. Both the citizen card and the foreign resident card are based on cryptovision's ePasslet Suite and are configured with multiple applications including a custom national eID applet, an ICAO applet valid for travel within the ECOWAS subregion, a digital signature PKI applet and biometric fingerprint Match-on-Card functionality.

CUSTOMERS

The ePasslet Suite is used by the following customers, among others:

- **Germany:** The German security printing company, Bundesdruckerei, uses the ePasslet Suite to expand its eID portfolio.

- **South American country:** A country with more than 10 million inhabitants in South America is now using the ePasslet Suite for both the electronic passport and the national electronic ID document.

- The ePasslet Suite has also been used for ePassports, eID cards, eHealth cards, eVoting cards, driver's licenses and many other applications in more than 30 projects in 25 countries.

cryptovision

cv cryptovision GmbH is one of the leading specialists for modern, user-friendly cryptography and secure electronic identities. With its solutions, over 250 million people worldwide and a multitude of institutions in the digital world protect themselves against hacker attacks, manipulation, misuse of identities and espionage.

cryptovision addresses various industries such as public administration, health, automotive, finance & insurance, energy or IT. Its customers include countries such as Nigeria, Ghana and Ecuador, institutions such as the German Armed Forces, the German Federal Office for Information Security (BSI), the city of New York and companies such as E.ON, VW and Allianz.

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