

**EVIDEN**

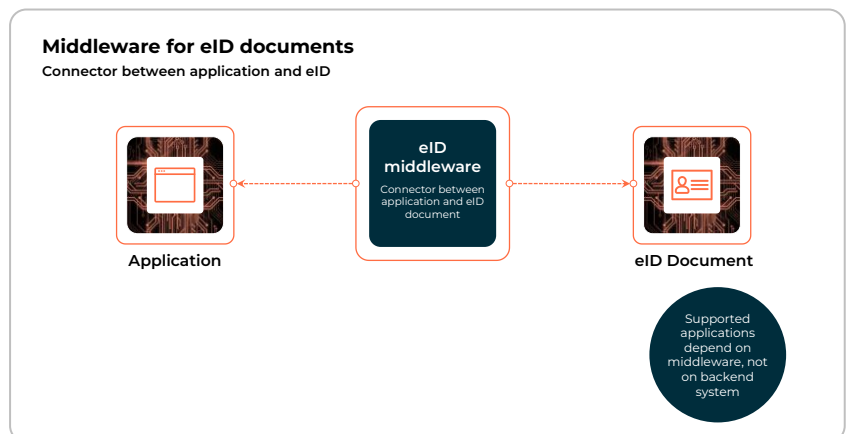
# The Importance of Middleware in eID Card Projects

National identity projects often involve the issuance of chip-based eID (Electronic Identity) documents paired with digital credentials for citizens. Combining physical and digital credentials allows governments to expand the range of services provided to citizens while enhancing accessibility. This whitepaper explores the significance of middleware in eID card projects and highlights the capabilities of cryptovision SCinterface eID, a versatile middleware solution by Eviden Digital Identity. It discusses the need for middleware, multi-platform support, interoperability, and the role of SCinterface eID in enabling secure and seamless eID card deployments.



## Introduction

National identity projects are increasingly combining chip-based eID documents with digital credentials to provide citizens with a comprehensive identity solution. These initiatives offer a wide range of services and greater convenience for citizens. However, the successful implementation of such projects requires robust middleware solutions to bridge the gap between physical eID cards and digital authentication processes.

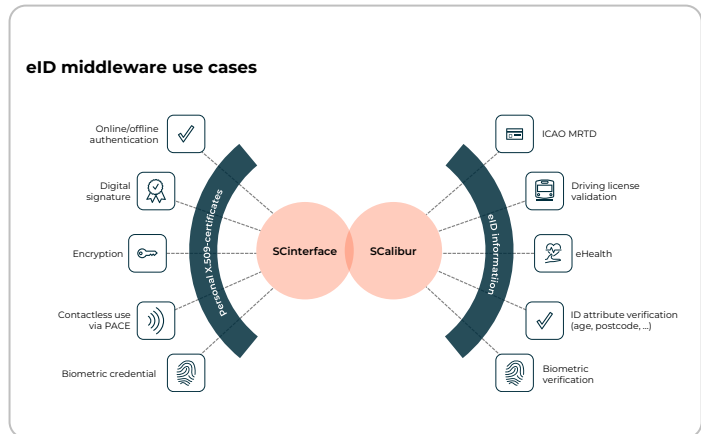


# Why Middleware Solutions for eID Card Projects?

## Enhancing Citizen Services

National identity projects aim to provide citizens with secure and efficient access to various services, from government portals to financial transactions. By issuing eID documents that combine citizen identification, authentication, and electronic signature capabilities, governments can significantly expand the scope of services offered.

If the eID card's signature functionality meets the requirements of national electronic signature laws – which often involves Common Criteria certification as a Secure Signature Creation Device (SSCD) - citizens can sign documents & transactions in a legally binding fashion. This greatly enhances the applicability for both eGovernment and private enterprise services.



## The Role of Middleware

Middleware, specifically smart card middleware, plays a crucial role in these deployments. It facilitates access to the digital certificates, key materials, and demographic information stored on the eID card. Middleware acts as the bridge that connects the eID card to the operating system and enables secure communication between the card and applications.

## Diverse Citizen Environments

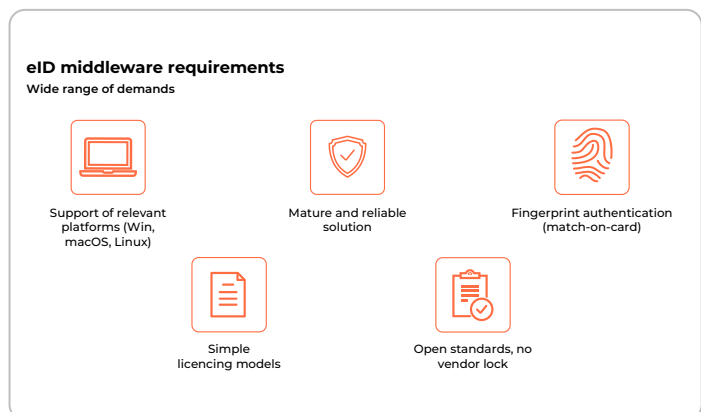
Unlike corporate environments with standardized hardware and software, governments must accommodate citizens using a variety of platforms and operating systems. Ensuring broad platform support is essential to maximize eID adoption across diverse user preferences.

## Platform Support for Adoption

To ensure the widest possible adoption, governments should prioritize platform support for Microsoft Windows, Apple macOS, and Linux distributions. This approach allows citizens to use their eID cards regardless of their chosen operating system.

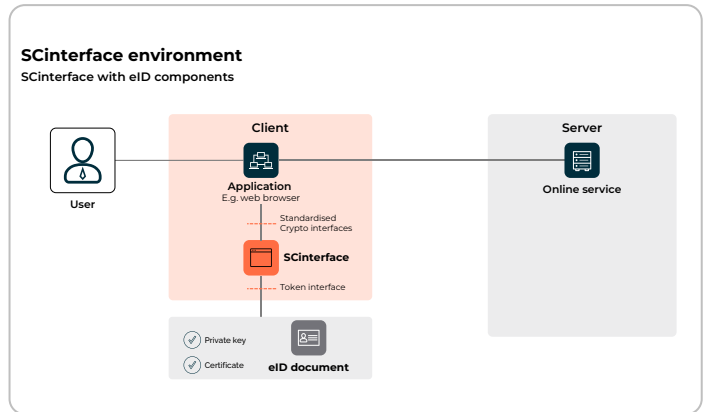
## Standard Conformity

Smart card manufacturers worldwide strive to implement card profiles that conform to relevant Public Key Cryptography Standards (PKCS). This conformity enables card issuers to support a wide range of PKI-enabled applications and use cases. Middleware vendors, like cryptovision, develop universal middleware solutions that support numerous card profiles, promoting interoperability.



## Universal Middleware Approach

Universal middleware solutions offer support for different platforms. cryptovision's SCinterface eID, for example, supports more than 100 different chip card platforms and profiles. This approach minimizes compatibility issues and simplifies the integration of various smart card manufacturers' products into eID projects.



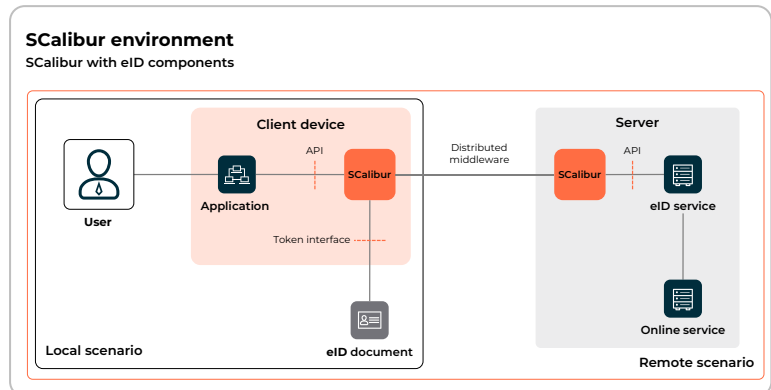
## Card Replacement and Middleware Compatibility

Card replacement in eID projects does not necessarily require the immediate replacement of all legacy cards. Middleware solutions that support both legacy and current cards can be used, allowing for a phased transition. This ensures that older cards can continue to be used until their operational life ends, while new cards are issued with compatibility.



# Eviden Digital Identity: Middleware Solutions for eID Projects

Eviden offers several middleware components, including the CardOS API designed to support Eviden CardOS smart cards. Additionally, cryptovision's SCinterface eID and SCalibur complement Eviden's middleware offerings, providing broad support for PKI applications in eID card projects



## Interface Protocols for Smart Card Applications

Integrated circuits within eID cards lack device drivers typically found in traditional devices. Smart card middleware is essential to establish connections between eID cards and operating systems. Different operating systems require specific cryptographic interfaces, such as Microsoft's Cryptographic Service Provider (CSP) and Minidriver, Apple's CryptoTokenKit, and PKCS#11 for Linux distributions.

## Integrating Smart Card Support for Certificate-Aware Applications

Once middleware is installed and an eID card is connected, most PKI-enabled applications require minimal configuration. Users select the appropriate digital certificate on the eID card, and the certificate can be used across various applications. This simplifies the integration process and allows eID projects to start with basic use cases and expand functionality gradually. eID card issuers can opt for a Minidriver certified by Microsoft, which allows for this Minidriver to be automatically deployed to clients via Windows update mechanism.

# Cryptovision SCinterface eID: A Versatile Middleware Solution

## Introduction to SCinterface eID

Cryptovision SCinterface is a powerful middleware solution designed to integrate credentials from various security devices, including smart cards, tokens, remote tokens, and virtual smart cards. It supports over 100 different chip types, operating systems, and profiles in different form factors. SCinterface offers features like configurable PIN caching, biometric support, and PACE (Password Authenticated Connection Establishment) support

The eID edition of SCinterface comes with a simplified and accessible user interface to facilitate user adoption and streamline use. It can be easily localized for various languages and alphabets. SCinterface eID supports secure contactless signature operations using PACE protocol to secure PIN entry and Biometric user verification with fingerprint Match-on-Card as a PIN replacement or complement. With a SSCD certified eID card (see above), electronic signatures can be made to be legally binding and equivalent to a hand-written signature.

## Supported Crypto Interfaces

SCinterface eID provides support for critical crypto interfaces on major platforms, including:

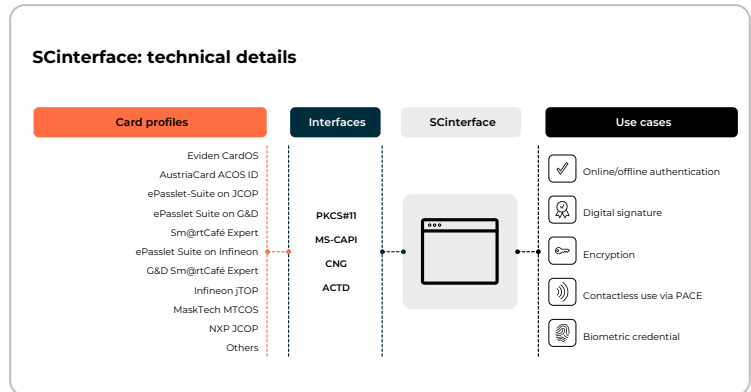
- Microsoft CSP and Minidriver (for Windows)
- Apple Crypto Token Driver (for macOS)
- PKCS#11 (for Linux derivatives, Windows, and macOS)

With support for multiple platforms and crypto interfaces, SCinterface eID ensures broad compatibility and interoperability.

## Application Scenarios

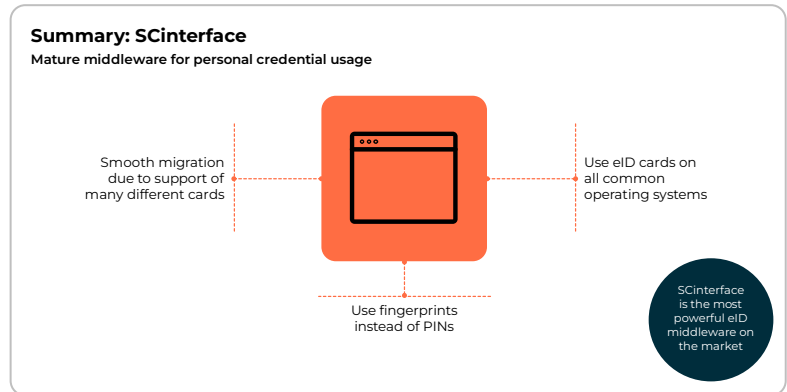
SCinterface eID facilitates a wide range of applications, including:

- Card holder verification using the eID card and PIN or biometric verification
- Web-Login
- VPN-Login
- Secure WiFi Access
- Single-Sign-On (SSO)
- Secure email communication
- Document encryption and digital signatures

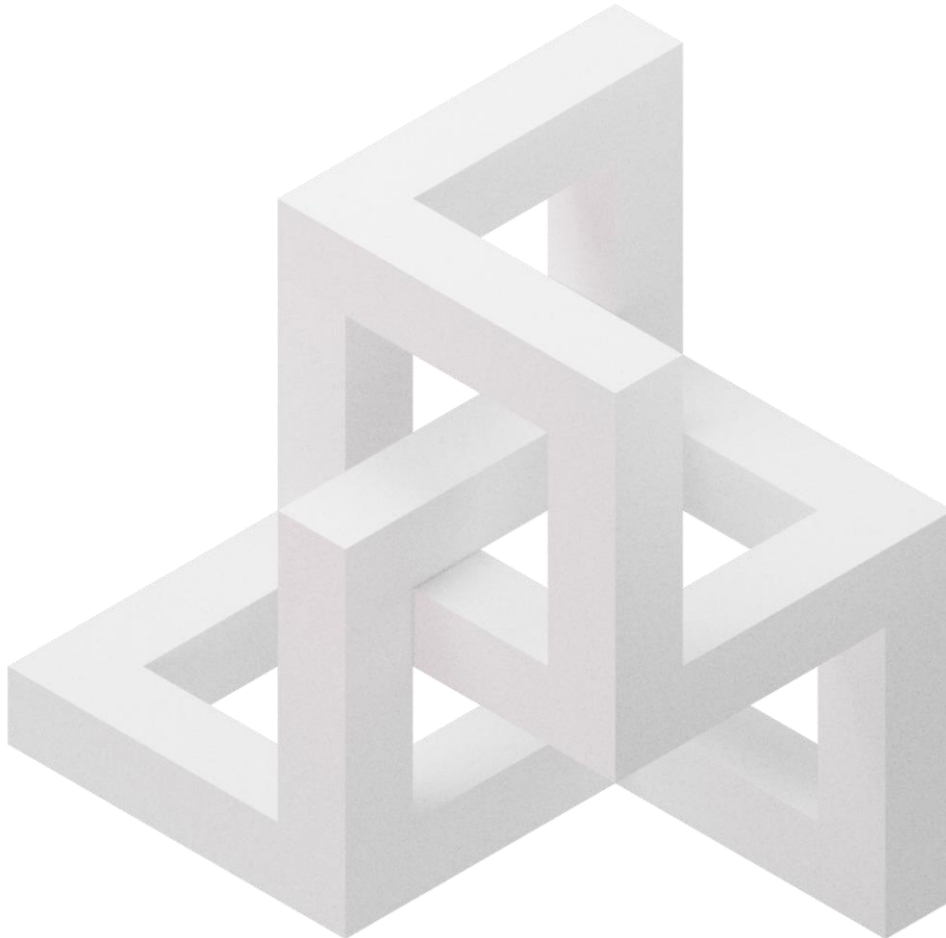


# Conclusion

Middleware solutions are essential components in the success of eID card projects, bridging the gap between physical eID cards and digital services. Cryptovision SCinterface eID offers a versatile and robust middleware solution that supports a wide range of security devices, platforms, and applications. With its comprehensive support for crypto interfaces and diverse use cases, SCinterface eID is a valuable asset for governments and organizations implementing eID projects.



**This whitepaper has explored the importance of middleware in eID card projects and highlighted the capabilities of SCinterface eID. As governments worldwide continue to advance their national identity initiatives, robust middleware solutions like SCinterface eID will play a pivotal role in ensuring secure, efficient, and user-friendly eID card usage.**



# EVIDEN

## About Eviden<sup>1</sup>

[Eviden](#) is a next-gen technology leader in data-driven, trusted and sustainable digital transformation with a strong portfolio of patented technologies. With worldwide leading positions in advanced computing, security, AI, cloud and digital platforms, it provides deep expertise for all industries in more than 47 countries. Bringing together 53,000 world-class talents, Eviden expands the possibilities of data and technology across the digital continuum, now and for generations to come. Eviden is an Atos Group company with an annual revenue of c. € 5 billion.

<sup>1</sup> Eviden business is operated through the following brands: AppCentrica, ATHEA, Cloudamize, Cloudreach, Cryptovision, DataSantics, Edifixio, Energy4U, Engage ESM, Evidian, Forensik, IDEAL GRP, In Fidem, Ipsotek, Maven Wave, Profit4SF, SEC Consult, Visual BI, Worldgrid, X-Perion.

## About Atos

Atos is a global leader in digital transformation with 105,000 employees and annual revenue of c. € 11 billion. European number one in cybersecurity, cloud and high-performance computing, the Group provides tailored end-to-end solutions for all industries in 69 countries. A pioneer in decarbonization services and products, Atos is committed to a secure and decarbonized digital for its clients. Atos is a SE (Societas Europaea) and listed on Euronext Paris.

The [purpose of Atos](#) is to help design the future of the information space. Its expertise and services support the development of knowledge, education and research in a multicultural approach and contribute to the development of scientific and technological excellence. Across the world, the Group enables its customers and employees, and members of societies at large to live, work and develop sustainably, in a safe and secure information space.

Connect with us



[eviden.com](https://eviden.com)