

WL • Energy Security Suite • Energy Security Service

end-to-end security
for device communication
for smart metering & smart grid



Worldline



Energy security services

New challenges for the liberalised energy industry

A critical requirement for the smart devices in the energy industry is the ability to securely and reliably transmit consumption data. The DLMS/COSEM standard, which is commonly used on an international basis, specifies the preparation and transmission of information between meters and utility services providers as well as the encryption of data before transmission.

The requirement for a secure end-to-end data encryption brings along complex consequences for the devices management system. Highly challenging cryptographic processes, highly available hardware security modules, high performance data center security environments, in which the cryptographic servers are operating and store the associated keys, are all as important requirements as the special software to process, e.g. in accordance with the DLMS/COSEM security.

Security solution for the utilities sector

The ESS is the cumulative result of over 40 years of experience at Worldline in the realisation of the highest security standards for electronic payment systems. The integrative security solution fulfils the security requirements of the energy industry in accordance with the DLMS/COSEM standard. ESS enables consumer energy suppliers to communicate securely with the smart devices while maintaining the highest throughput rates, availability and scalability. ESS manages pools of hardware security modules (HSM) and simplifies the maintainability and configurability of the security application.

Application-oriented interfaces simplify the integration in head end systems, regardless of the connection and the availability of HSMs. The API also provides symmetrical and asymmetrical cryptographic functions that can be either compiled in the application or be retrieved by an assigned ESS server.

DLMS/COSEM for smart metering

The automated meter reading requires universal definitions and communication standards. The DLMS/COSEM standard (IEC 62056 / EN 13757-1) is the most commonly used international standard for the communication with utility services devices.

Energy Security Service - Functions

- End-to-end message encryption (e.g. conforming to DLMS/COSEM) from the smart devices to the head end system
- Encrypted storage of data in the back office
- Cryptographic standard functions for symmetric (DES/3DES/AES) and asymmetric (RSA-and ECC) encryption

Autarkic security environment

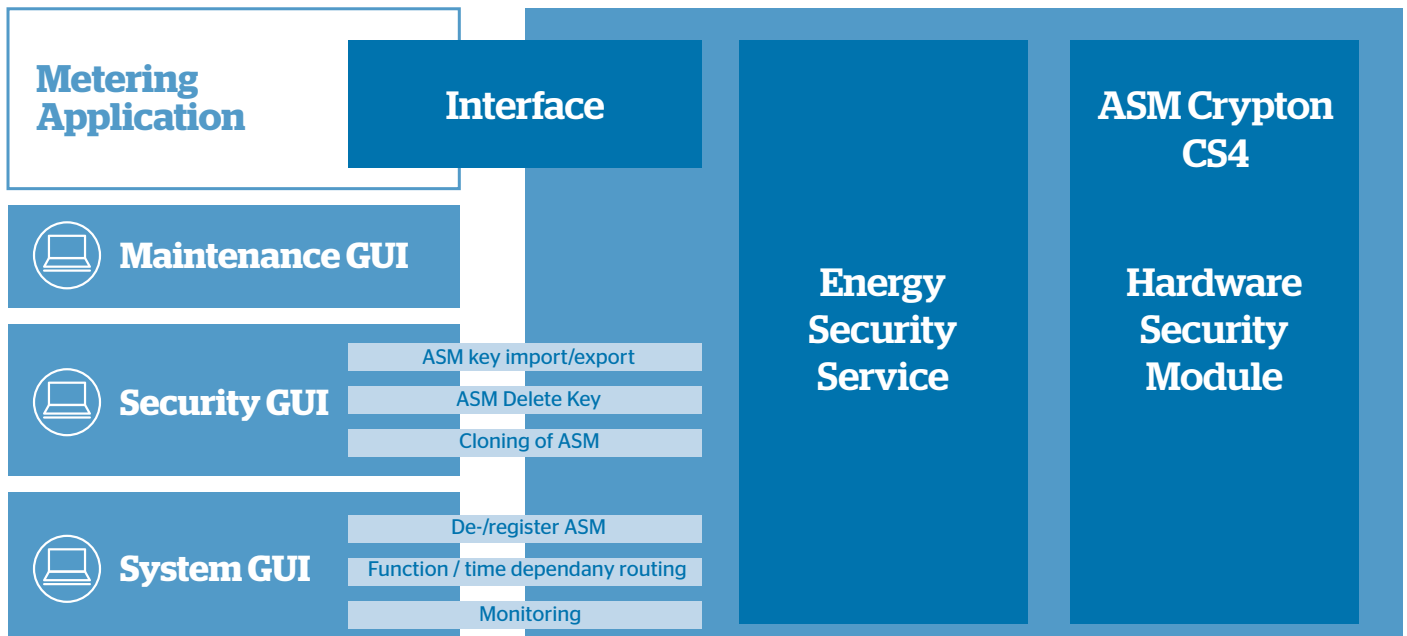
Energy Security Service contains all functions for the routing and communication to HSMs

- The API provides access to the implementation of the DLMS/COSEM security requirements,
- the routing engine handles the addressing of the associated HSMs and the conversion of logical key names into physical information for storage. It also includes the functionality for the load distribution between the HSMs,
- the network engine secures the conversion of the application requirement into the HSM protocol and manages the communication protocols,
- GUIs are provided for HSM administration, HSM key management and energy specific configuration,
- time and function dependent routing and different key storage areas enable customer-specific functions to be retrieved from each HSM.

ESS can be operated with the Worldline security module Crypton CS4 (ASM). It is based on the proven CryptoServer hardware, which has a FIPS 140-2 level 4 certification. ESS and ASM together form a closed secure environment which can be physically separated from the application platform.

Key factors for efficient device communication

- Cost-efficient IT security solutions for high throughput rates
- Data streams that cannot be manipulated
- Transmission of forged meter readings/consumption values is impossible
- Protection against hackers
- Data on consumer behavior is not accessible
- False meter readings are prevented
- Competitors are unable to retrieve competitive sensitive information
- Reliable operation due to integrated load-balancing and fail-over
- Simple integration using proven interface standards





About Worldline

Worldline [Euronext: WLN] is the European leader in the payment and transactional services industry. With innovation at the core of its DNA, Worldline's core offerings include pan-European and domestic Commercial Acquiring for physical or online businesses, secured payment transaction processing for banks and financial institutions, as well as transactional services in e-Ticketing and for local and central public agencies. Thanks to a presence in 30+ countries, Worldline is the payment partner of choice for merchants, banks, public transport operators, government agencies and industrial companies, delivering cutting-edge digital services. Worldline's activities are organized around three axes: Merchant Services, Financial Services including equensWorldline and Mobility & e-Transactional Services. Worldline employs circa 11,000 people worldwide, with estimated pro forma revenue of circa 2.3 billion euros on a yearly basis.



Mobility & e-Transactional Services

The digital revolution is reinventing current B2C processes offering unprecedented opportunities to do more and better with less - however the associated innovation and technological challenges are huge. Our customers expect an end-to-end partner to support them in the creation of innovative digital products, leveraging similar experiences cross sectors, committing on joint business cases while managing smoothly the associated change management. We provide fully end-to-end processing services to digitalize business processes including new, contextual digital products for business innovation and operational efficiency, such as seamless journey management, connected living or digitization services while leveraging if needed our strong payments capabilities.

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