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Automated certification manager for energy systems

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Cyber security for energy systems - The challenges for securing digital systems

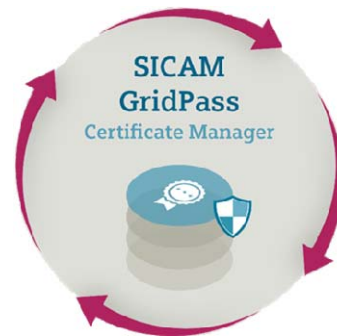
The top priority in the digitalization of energy networks is the safety culture of grid operators and their increased responsibility due to the connectivity of devices and grids.

Generally, cyber security is enhanced by employing multiple security controls (defense-in-depth approach).

The security controls include:

- Identity management
Unique IDs for personnel and products for authentication
- Access control
Specification of roles and restrictions for authorization
- Secure communication
Agreement of cryptographic details for securing network protocols
- Malware protection
Validation of the source and integrity of OT software and firmware
- Data backup
Verification of the integrity of process data
- Protection of setting values
Verification of the integrity of OT settings

The administration of these security controls can become a complicated and time-consuming task with the increasing number of digitalized and networked products and services in energy systems.



Building a public key infrastructure (PKI) helps in managing these increased requirements in a scalable way by bringing security based on certificates into the energy systems.

SICAM GridPass manages digital certificates for secured operation of substations

SICAM GridPass manages digital certificates for your OT network automatically and thus allows for the effective and efficient use of the security controls. The digital certificates are managed according to the following criteria:

- Authenticate: Verification of the identity and authenticity of automated signature requests
- Issue: Automatic or manual signing of certificates
- Renew: Re-issue of certificates
- Revoke: Management and provision of a list of revoked certificates

reliable and efficient

SICAM GridPass – Overview of the functions:

- Management of digital X.509 certificates for OT use
- Creating or importing certification authorities (CA)
- Automated signing and management of certificates using EST protocol (Enrollment over Secure Transport) in adherence to IEC 62351-9
- Automated certificate management using EST for SICAM A8000 CP 8050 devices for securing IEC 60870-5-104 telecontrol protocols
- Manual creation and export of certificates incl. private keys via PKI standards
- Certificate revocation list (CRL) – distribution service: products can retrieve the CRL from SICAM GridPass to check if a certificate being presented as part of a connection request has been revoked, and if so to refuse the connection request
- Web-based engineering and management
- Role-based access control according to IEC 62351-8 with role-based views
- Support for user accounts that are managed locally in the product or centrally via RADIUS
- Logging of security-relevant events via Syslog



Benefits

- High level of cyber security and easy handling of your security levels - automated management of the digital certificates of the substation operator
- IT/OT interoperability support of international safety standards like PKCS, X.509, EST and IEC 62351
- Minimum of installation work - only one installation required in your network (software license for 50, 250, 1,000 or 10,000 clients available)
- Ready for use with SIPROTEC, SICAM and third-party products



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For all products using security features of OpenSSL, the following shall apply:

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (www.openssl.org) and cryptographic software written by Eric Young (ey@cryptsoft.com).