

# SIEMENS

Ingenuity for life

## Cyber Security for Digital Substations

Benefit from products and certified system solutions

[www.siemens.com/gridsecurity](http://www.siemens.com/gridsecurity)

### The importance of Cyber Security

Increased networking of systems, standardization of communication protocols and operating systems – simplifying processes ensures efficient operation. But the other side of the coin is that these trends also make our networks vulnerable.

What can effectively protect our energy supply from attack? A solution which takes security into account at every stage of the development process. And at the end, contains exactly the security features that are needed. Looking at security as an integral component is important for a secure infrastructure – already during network planning and the design process.

Siemens offers well-thought-out products, systems and solutions to ensure the security of the energy automation infrastructure. From the outset, they meet the most stringent security requirements – including those of the BDEW Whitepaper (German Association of Energy and Water Industries), IEC 62443, IEC 62351 and NERC CIP (North American Electric Reliability Corporation, Critical Infrastructure Protection).

Siemens Secure Substation Automation Solution is certified by TÜV Süd Munich according to IEC 62443-2-4 (Security program) and IEC 62443-3-3 (Security functions).



### Our systems and solutions for digital substations: Secured from end to end

The more comprehensively IT security is taken into account in energy automation systems, the more effective and cost-effective the solutions. Siemens offers holistic concepts for efficient security architecture in your substation.

- End-to-end designs for security architectures including the requisite hardening measures
- Well tested security architectures
- Recommendations for network components
- Security updates, virus protection
- Solutions for system-wide user and computer management
- End-to-end solutions for monitoring and logging security events
- Secure remote access solutions
- Patch management



# Reliable and safe

## Our products:

### Integrated Advanced Cyber Security

#### **SIPROTEC 5 and DIGSI 5**

- Encrypted communication between engineering tool and protection device
- Secure communication password
- Secure storage of key material in on-board crypto-chip
- Device uses key stored in crypto-chip to allow only firmware signed by Siemens to load
- Device-internal and central logging of security relevant events

#### **SICAM A8000**

- Encrypted communication for engineering
- Encrypted communication optionally via VPN/IPSEC or in accordance with IEC 62351 for IEC 60870-5-104
- On-board application layer firewall for IEC 60870-5-104 communication
- Secure storage of key material in on-board crypto-chip
- Device uses key stored in crypto-chip to validate and allow only firmware signed by Siemens to load
- Role-based access control with support for IEC 62351 roles
- Integration into central user management (RADIUS)
- Device-internal and central logging of security-relevant events

#### **SICAM PAS and PQS**

- Encrypted communication with network control center optionally via VPN/IPSEC or in accordance with IEC 62351 for IEC 60870-5-104 or DNP3 TCP
  - Protection from malware through virus scanner or application whitelisting solutions
  - Role-based access control
- Integration into central user and computer management (Microsoft Active Directory Server)
- Logging of security-relevant events

#### **SICAM SCC**

- Protection from malware through virus scanner
- Role-based access control
- Integration into central user and computer management (Microsoft Active Directory Server)
- Logging of security-relevant events

#### **Siemens solutions for digital substations offer:**

- Secure operational management of substations and systems
- Integrated security at the product, system and solution level
- Experience gained from many projects and international standardization work
- Siemens ProductCERT as partner for handling security-related incidents
- Well-tested security architectures (blueprints)
- Certified complete solution in accordance with IEC 62443
- Future-proof according to IEC 62443 and IEC 62351



#### **Siemens AG**

Energy Management Division  
Freyeslebenstraße 1  
91058 Erlangen, Germany

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E-Mail: [support.energy@siemens.com](mailto:support.energy@siemens.com)  
Tel: +49 180 524 70 00

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