Manage & Monitor Industrial Networks

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OT Network Management System

The Network Management System for digital enterprise

SINEC NMS

A comprehensive Network Management System that monitors and manages the entire network infrastructure, providing visibility on everything, anytime.

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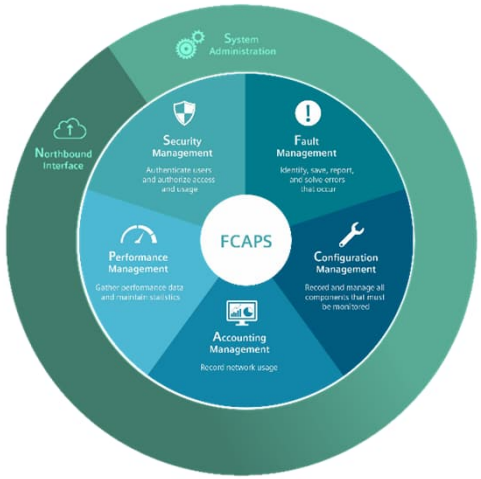
OT Network Management
FCAPS model following ISO 10040 standard

The term "network management" usually refers to the administration, the operating technology and the monitoring of IT and telecommunication networks.



The International Organization for Standardization (**ISO 10040**) defined five pillars of state-of-the-art network management and developed **FCAPS**:

(F) Fault Management:
Identify, save, report and solve any error status that occur

(C) Configuration Management:
Record and manage all components that must be monitored

(A) Accounting Management:
Record network usage to generate an invoice

(P) Performance Management:
Gather performance data, maintain statistics and define thresholds

(S) Security Management:
Authenticate users and authorize access and users

An OT NMS goes beyond FCAPS, offering two essential system elements specifically addressing the industrial network requirements.
They complete the NMS offering necessary for the OT environment:

- **System Management**
- **Northbound Interface**

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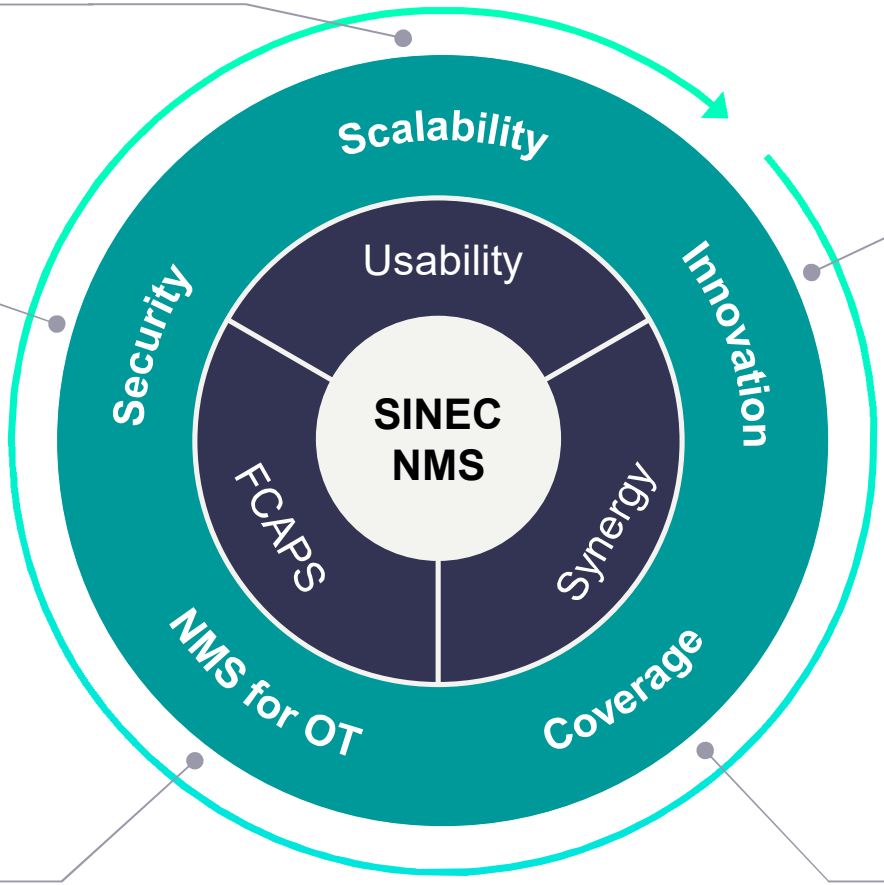
SINEC NMS - for today and future
Feature overview

Ready to grow
The distributed architecture allows the system to scale and adapt to any network size. From tens to tens of thousands of components.

Hardening the network
Developed with refence to cybersecurity standards, e.g. IEC 62443, the system helps IIoT networks to meet their cybersecurity requirements.

State-of-the-art
The system brings the latest technologies and concepts from IT and is tailored for OT environments; providing a comprehensive and secure NMS solution.



Future proof
Our agile development team responds fast to market and customer demands by continuously delivering innovative features and synergies with other Siemens solutions.

Siemens, partners and third-party
The system offers excellent support and automation for SCALANCE, and RUGGEDCOM devices, while also providing easy integration of partner and third-party devices.

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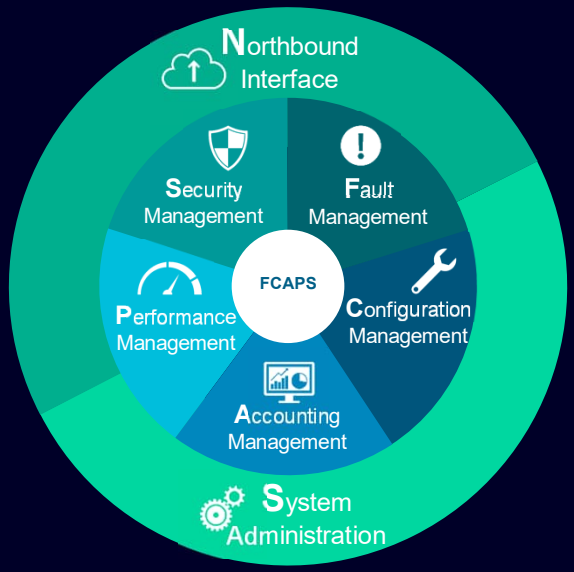
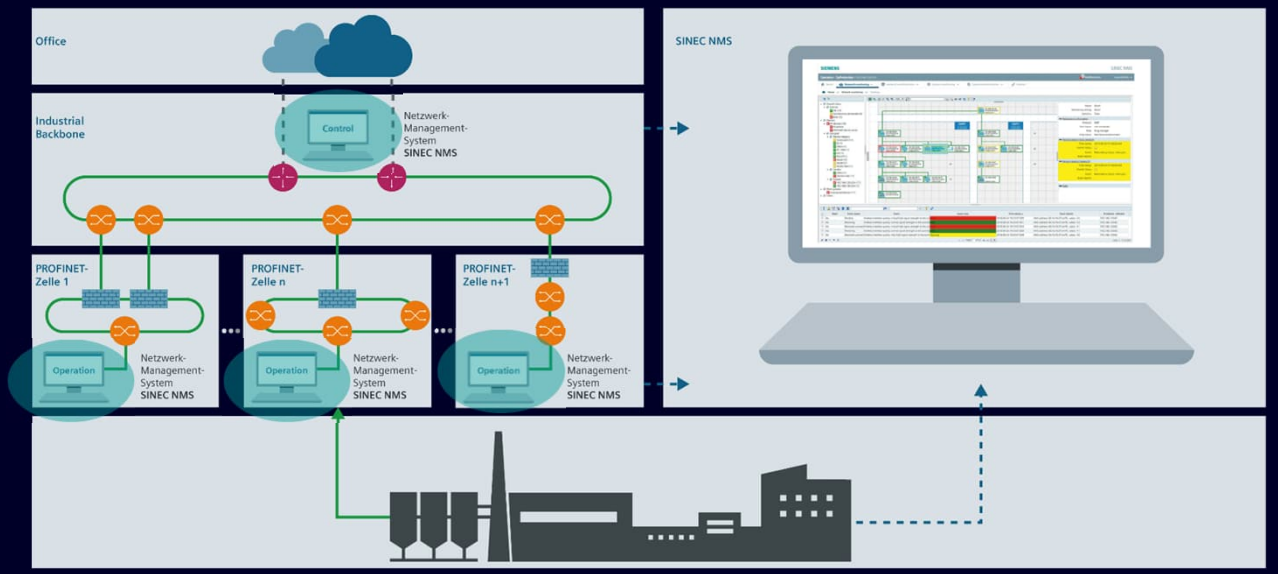
NMS
Cockpit for the nervous system of the digital enterprise



Architecture: Distributed approach



Fault Management
Error localization through clear status overview, structuring of the networks and evaluation of the network load.

Graphic representation
Topological recognition and representation of the network as well as integration in HMI- / SCADA systems.

Validation and documentation
Repeatable testing and documentation of network properties and documentation of network participants.

Policy-based configuration of the network
Reduces the complexity of network configuration and saves time and money.

Security Management
Increased security through connection to existing user management systems and use of data encryption.

Transparent diagnostics
through automatic topology recognition, extensive diagnostic options and integration of 3rd-party devices.

Openness and flexibility
Integration of 3rd party devices. Diagnostic data is made available to the HMI, PCS 7 Neo, WinCC Unified.

Scalability thanks to distributed architecture
Scalability up to 37,500 devices.

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Fault Management
Method and phases in OT

Network scan

- Configure IP address ranges for device discovery
- The SCAN is done with the following protocols:
  - Discovery Configuration Protocol (DCP)
  - Internet Control Message Protocol (ICMP)

Filtering possibilities

Monitoring

- Discovery of the network participants via IP addresses
- Identification of network participants via:
  - DCP
  - SNMP
  - PROFINET
- Reading of device and diagnostical information via:
  - SNMP
  - PROFINET read record
  - SIMATIC S7 Protocol
- Discovering the network topology with SNMP via LLDP-MIB ("neighborhood relations")

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Thank You

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